surface condensers, indeterminate structures and the design of dams. His criticism of the memoir "An Experimental Study of the Stresses in Masonry Dams", published by Prof. Karl Pearson and Prof. A. F. C. Pollard in 1907, led to a controversy which was carried on partly in *Engineering* and partly in our own columns. But the work for which Martin will chiefly be remembered was his original researches in connexion with the theory of the steam turbine and thermodynamics, subjects to which he returned again and again. His earlier series of articles on the steam turbine led to the publication in 1913 of his treatise "The Design and Construction of Steam Turbines". Afterwards he dealt with the proportioning of turbine blading, the strength of rotating discs, nozzle experiments and the reaction of steam jets, his contributions to these and other matters being of the greatest service to the steam turbine industry.

For many years a valued member of the Steam Nozzles Committee of the Institution of Mechanical Engineers and of the British Electrical and Allied Industries Research Association, Martin designed the most successful apparatus used for nozzle research, which has indeed been copied by other workers. With his wide knowledge of engineering theory and practice, he also possessed a thorough acquaintance with modern physics which, combined with his gift for writing, enabled him to produce the reports of scientific lectures which have long been a notable feature in the columns of *Engineering*. "No one but Martin," says Dr. G. Stoney, "could have given the lucid reports of the lectures of Lord Rutherford, Sir J. J. Thomson and others at the Royal Institution."

Never in robust health and somewhat reserved, Martin took but little part in outside affairs, and we believe the only mark of distinction he received from the engineering profession was his election in 1921 as an honorary member of the Junior Institution of Engineers. The indebtedness of the profession to his studies, however, is a great and lasting one.

WE regret to announce the following deaths :

Prof. J. Joly, F.R.S., professor of geology and mineralogy in Trinity College, Dublin, on December 7, aged seventy-six years.

Sir Frederic L. Nathan, K.B.E., superintendent of the Royal Gunpowder Factory, in 1900–9, and later power alcohol investigation officer under the Fuel Research Board, Department of Scientific and Industrial Research, on December 10, aged seventy-two years.

Sir William Whitla, formerly professor of materia medica and therapeutics in the Queen's University, Belfast, president of the British Medical Association in 1909–10, on December 11, aged eighty-two years.

News and Views

Aberdeen Meeting of the British Association

THE annual meeting of the British Association will be held next year in Aberdeen on September 5–12 under the presidency of Sir William Hardy, Director of Food Investigation in the Department of Scientific and Industrial Research. The following sectional presidents have been appointed : Section A (Mathematical and Physical Sciences), Prof. H. M. Macdonald ; B (Chemistry), Prof. T. M. Lowry ; C (Geology), Prof. W. T. Gordon ; D (Zoology), Dr. E. S. Russell ; E (Geography), Prof. A. G. Ogilvie ; F (Economic Science and Statistics), Prof. H. M. Hallsworth ; G (Engineering), Prof. F. G. Baily ; H (Anthropology), Capt. T. A. Joyce ; I (Physiology), Prof. H. E. Roaf ; J (Psychology), Dr. Shepherd Dawson ; K (Botany), Prof. A. W. Borthwick ; L (Educational Science), Mr. H. T. Tizard ; M (Agriculture), Prof. J. A. S. Watson. The president of the Conference of Delegates of Corresponding Societies will be Sir Henry Lyons.

The 24-Hour System of Time Reckoning

FIFTY years ago, the United States adopted zone time, the time in each zone differing by an integral number of hours from Greenwich time. Zone time has been very generally adopted throughout the world, and has resulted, in the long run, in a great deal of convenience to the world, though the choice of the Greenwich meridian rather than that of Washington may then have seemed unnecessary to some Americans. Reform in British methods of public time-keeping, namely, the adoption of a 24-hour clock, and the abolition of the distinction between a.m. and p.m. in railway time-tables and in the Post Office, is again under consideration (see NATURE, Dec. 2, p. 835). On December 7 the House of Lords adopted a resolution moved by Lord Newton recommending that the Post Office should adopt the 24-hour day, and that the railways should be invited to use it in their time-tables. The change was recommended so long ago as 1919 by a Home Office Committee. The Government reply was that there is no evidence of a general demand on the part of the public for the 24-hour day. The 24-hour day is, of course, used by astronomers, and also by the Army, Navy, and Air Force. While the present arrangement causes little inconvenience in private life, most people will probably agree with the Astronomer Royal, who is supporting the project, that the adoption of the 24-hour day would be a small but easily made step in the direction of greater ultimate public convenience.

Cinchona and Civilisation

THE Pharmaceutical Society awards bi-annually the Harrison Memorial medal, which perpetuates the memory of Colonel E. F. Harrison, a member of the Society who was Director of Chemical Warfare during the later stages of the War and died from the effects of gas poisoning contracted while testing respirators.

He was the designer of the widely used 'Harrison restorer'. The recipient of the medal delivers the Harrison Memorial lecture before the Society, a lecture which need not—and as time passes cannot—deal with Harrison himself or his work. The medal this year has been awarded to Mr. Bernard Howard, a vice-president of the Institute of Chemistry, who took as the subject of his lecture delivered on December 12, "Cinchona and Civilisation". Mr. Howard is a director of one of the largest manufacturers of quinine in Great Britain, whose records go back into the early years of the last century, and he was able to illustrate his discussion, in his presentation of the problem of man's fight against malaria, from the records of his own firm.

WHEN the British army from Bulgaria landed in the Crimea in 1857, the troops were so weak from the effects of malaria that they were scarcely able to carry their equipment. Presumably in 1857, quinine was regularly administered by army doctors to malaria patients, but Mr. Howard maintains that it is almost certain that there was no systematic method of prophylaxis at that time. From an examination of the records of his firm, he finds that the output for 1857 shows an increase of 27 per cent over the 1856 figure, while the post-Crimean War year, 1858, shows a decrease of 22 per cent. He assumes that a good proportion of the 1857 increase must have gone to the army, and that the fact that there was any army at all to be landed in the Crimea was due to the use of quinine. The first cinchona trees known to be grown in Great Britain were in the garden of the Society of Apothecaries in London, maintained to this day as the Chelsea Physic Garden. There is a record in Evelyn's Diary of his seeing cinchona trees there. At a site in Tottenham, which is now an arterial road, the Howard family grew cinchona in the early nineteenth century, and quinine was extracted experimentally from these trees. So early as 1823 it was being manufactured on a large scale in Great Britain, although from imported bark.

Exhibition of Microscopes

MESSRS. W. WATSON AND SONS, LTD., 313 High Holborn, London, W.C.1, have an exhibition of microscopes at the Central Hall, Westminster, London, S.W.1, with the view of popularising the use of the microscope and demonstrating its recreational and educational possibilities. In this connexion, several small microscopes are exhibited, the cost of which is very reasonable. The material set up shows clearly that a great deal of useful teaching work can be done with a comparatively simple instrument. Striking exhibits of differential illumination by means of Rheinberg's disc illustrate the advantages of this method for demonstration and elementary teaching purposes. A very useful instrument exhibited, which should appeal to all microscopists and naturalists who are interested in microscopy in the field, is a small portable microscope. The stand can be folded and the tube lowered so that the whole instrument may be reduced to a size of 7 in. × 3 in. × 3 in. The cost too is very reasonable. Among the demonstrations in photomicrography is one by the Kodak Co., in which experiments with a microscope and an ordinary Brownie 12*s*. 6*d*. box camera, using a super-sensitive panchromatic plate, have produced excellent results. Several new departures for methods in metallurgy and microprojection are being exhibited. A number of useful changes in construction of, and additions to, microscopes for research in biology, crystallography, metallurgy, are also on view; several types of binocular microscope, one with a new inter-pupillary adjustment, being of particular interest. The exhibition, which is open until December 16, is well worth a visit not only by microscopists, who wish to know what can be done with a simple instrument and the recent developments in the finer instruments; but also by those not familiar with microscope work, since there is much of interest to be learned from it.

Racial Elements in India

ON November 17, Dr. J. H. Hutton, the Indian Census Commissioner, gave a lecture, which is now available, before the Royal Society of Arts (*J. Roy. Soc. Arts*, 82, No. 4226). Summarising the results of his work, Dr. Hutton discussed the racial elements in the population of India at length, analysing it into no less than six distinct strains. To a Negrito (Andamanese) sub-stratum must be added a race of Australoid affinities, which is "widely spread" in India. Thirdly, an immigration of Austro-Asiatic speaking peoples can be traced from the Punjab hills to the Bay of Bengal. Fourthly came the Dravidian speaking peoples, described by Dr. Hutton as "Mediterranean" and "Armenoid", from Mesopotamia. Fifthly and sixthly, Dr. Hutton associates Indian brachycephaly with an Aryan speaking stock, described as "Alpine" and said to have preceded the true Aryans. At the conclusion, Mr. K. de B. Codrington pointed out that Dr. Hutton's analysis was based almost entirely on linguistic evidence. No craniometrical evidence can be brought forward in support of the suggested Negrito strain, nor is a widely spread Australoid type discernible. Brachycephaly cannot be seized upon as an isolated fact and labelled Alpine. Furthermore, Harrower's opinion, that there is no support for the identification of the Dravidian and Mediterranean types, should be given serious attention. In putting forward such theories, the canons of biological thought must be obeyed, and due consideration given to current anthropometrical opinion.

Jericho

PROF. JOHN GARSTANG'S survey of the results of his excavations at Jericho in his article in the *Times* of December 6, following on his lecture at the University of Liverpool on November 17, affords a consecutive story of the history of the city which it is possible to accept with assurance in the light of the excavations of last season. Among the more interesting features are the evidence of Babylonian influence in the Early Bronze Age and the conspicuous rarity of Cretan and Mycenæan motives under the eighteenth