

Applied Physics at the New South Wales University of Technology: Mr. N. F. Astbury

ANOTHER chair of the newly founded New South Wales University of Technology (see *Nature*, August 13, p. 287) has been filled by the appointment of Mr. N. F. Astbury to be professor of applied physics. On leaving the University of Cambridge, Mr. Astbury joined the staff of the National Physical Laboratory and became responsible for much of the work on primary and secondary electrical standards, including the re-establishment of the primary inductance standard and a redetermination of the ohm with Hartshorn. During the War he worked on problems of harbour defence and electro-acoustics in the Royal Naval Scientific Service, and in 1945 joined Joseph Sankey and Sons to organise a research laboratory. This became the central laboratory of the Guest, Keen and Nettlefold group of companies, and Mr. Astbury is at present the director there. He has taken part in work on the processing and properties of electrical sheet-steel and has expanded the organisation to deal with a wide range of problems in applied physics.

Pacific Ocean Earthquake of August 21

A VIOLENT Pacific Ocean earthquake, late on August 21 near the coast of British Columbia, was the occasion for a very successful operation of the Hawaiian seismic sea-wave warning service developed by the U.S. Coast and Geodetic Survey. Upon the arrival of the earthquake waves, automatic alarms connected with seismographs sounded at the Survey's observatories at Honolulu, Hawaii; Tucson, Arizona; and Fairbanks, Alaska. The observers at all of these stations immediately attended their instruments, developed records and made readings. Tucson and Fairbanks promptly communicated theirs to the central station at Honolulu. Based upon these reports, the observer at Honolulu determined an almost exactly correct epicentre location and issued preliminary advisory warnings to military and public authorities at Honolulu in about one hour and a half after the time of the earthquake. This warning preceded the estimated arrival time of a seismic sea-wave, which might have resulted from this earthquake, by about four hours. Subsequent inquiries and messages to tide stations in Alaska showed that a small seismic sea-wave was produced; however, no such wave reached Hawaii in damaging proportions. The earthquake, though little publicized, was actually of greater magnitude than the disastrous recent earthquake of Ecuador, South America.

The development of this warning system grew out of the disastrous seismic sea-wave of April 1, 1946, when 173 persons died and damage amounting to 25,000,000 dollars was done in Hawaii. It has involved the development of visible-recording seismographs equipped with automatic earthquake alarms, and arrangement with a number of co-operating tide observers on Pacific islands or shores prepared to report seismic sea-wave information upon inquiry or in case such a wave is noted. Some of the tide stations are equipped also with a unique seismic sea-wave alarm device developed by the Survey. This is 'tuned' to respond to these characteristic waves of 10-25 min. period. Also involved was the development of high-priority communications facilities between the various points involved. The co-operation of the military services of the United States has been invaluable in the latter connexion.

Mathematical Colloquium in Manchester

A MATHEMATICAL colloquium was held in the University of Manchester during September 8-10. It was attended by more than a hundred members from most of the British universities and university colleges. The discussion sessions which occupied the greater part of the three days were devoted to analysis (two sessions), algebraic geometry, algebra, differential geometry and topology. They took the form of a short review of recent progress, followed by a general discussion. Lectures were given by Prof. H. R. Pitt (Belfast), on "Fourier Transforms", by Mr. P. Hall (Cambridge), on "The Basic Concepts of Abstract Algebra", and by Prof. J. H. C. Whitehead (Oxford), on "Homotopy Theory". The fact that most of the members were staying together in Dalton Hall, one of the halls of residence of the University, gave plenty of opportunity for those informal discussions which are so important a part of such meetings. It was the view of all those who took part that such a gathering should be a regular event, and a second colloquium will be held in 1950, probably in Oxford. To avoid clashing with the International Congress in September, this meeting will be held in the Easter vacation. The following were appointed a committee for the 1950 meeting: Prof. H. A. Heilbronn (Bristol), Prof. W. V. D. Hodge (Cambridge), Dr. W. Ledermann (Manchester), Prof. M. H. A. Newman (Manchester), Dr. D. Pedoe (London), Prof. H. R. Pitt (Belfast), Prof. W. W. Rogosinski (Newcastle), Prof. H. S. Ruse (Leeds), Dr. F. Smithies (Cambridge), Prof. A. G. Walker (Sheffield), Prof. J. H. C. Whitehead (Oxford), and Prof. E. M. Wright (Aberdeen).

Applied Electronics for Spectroscopists

DURING the week of July 23-30 a summer school on "Applied Electronics for Spectroscopists", sponsored by the Photoelectric Spectrometry Group, was held at University College, Southampton, by arrangement with the professor of electronic engineering, Prof. E. E. Zepler, and the professor of physics, Prof. A. M. Taylor, who with their staff gave generous help. Mr. C. G. Cannon was organiser for the Group. The syllabus was designed to meet the needs of spectroscopists requiring electronic techniques, and of electronic engineers who have to design suitable equipment. Its value was confirmed by the very good attendance. Lectures and demonstrations were given by Prof. Zepler, and by Messrs. S. W. Punnett, T. B. Tomlinson and G. H. Johns, of the University College. Prof. A. M. Taylor gave an introductory talk on the research in progress in the Physics Department, which stimulated many informal discussions. Three members of the Group, Messrs. P. Popper (Mitcham Works, Ltd.), J. C. O. Rochester (Sir Howard Grubb, Parsons and Co.), and E. Schwarz (Hilger and Watts, Ltd.), also contributed lectures on special subjects. A full account of the summer school will appear in the *Photoelectric Spectrometry Group Bulletin*, and it is hoped eventually to issue the complete notes of the course in book form.

Electrical Power System Analysis

A COURSE of lectures and discussions dealing with power system problems and with the analytical methods available for solving them was held in the Electrical Engineering Department of the Imperial College of Science and Technology, London, during the week September 19-23. The course was attended

by seventy electrical engineers, of whom twelve came from universities and electrical undertakings abroad. In his opening address Colonel B. H. Leeson, director of the British Electrical Manufacturers' Association, referred to the importance of periodically taking stock of progress, and of preparing a co-ordinated plan for further development and research. Mr. F. J. Lane, of the British Electricity Authority, considered practical problems to be faced in developing a power system, and this was followed by a review of practical methods for performing network calculation by Mr. C. H. Lackey, of Messrs. A. Reyrolle. The latest analytical methods for the determination of the circuit parameters of overhead lines, underground cables, transformers and loads were reviewed by Mr. L. A. Gosland, of the Electrical Research Association; and Dr. J. R. Mortlock, of the British Thomson-Houston Co., Ltd., discussed the theories used in determining equivalent circuits for alternators. A review of the most useful methods of determining the steady-state and transient power limits of networks was given by Mr. G. W. B. Mitchell, of Messrs. Merz and McLellan, and this was followed by a visit to the a.c. network analyser of Associated Electrical Industries at Willesden. A lecture on methods of solving complex simultaneous equations by Mr. M. W. Humphrey Davies, of the Imperial College, advocated greater use of computing machines for the simpler problems in system engineering work. Finally, Mr. F. J. Lane discussed the effect of some of the economic and technical considerations which it had not been possible to include in the course. In concluding, Prof. Willis Jackson stressed the need for increased co-operation between the universities, the technical colleges and industry to ensure wider dissemination and better utilization of the results of research already performed, and to stimulate the development of improved methods of analysis.

American Pectoral Sandpipers in Britain

In the autumn of 1948 a miniature invasion of American pectoral sandpipers (*Calidris melanotos*) occurred in Great Britain. Birds were recorded in nine different localities including Scotland, Cornwall and the east and west Midlands (*British Birds*, 42, No. 5, May 1949). It is difficult to state whether the immigration was due to anything unusual in wind or other conditions because of the scattered nature of the occurrences both regarding date and place. The pectoral sandpiper breeds in north-eastern Siberia as well as in arctic America and has been met with, though not positively proved to breed, as far west as the Taimyr Peninsula. The Taimyr is the nearest regular breeding ground of the knot (*Calidris canutus*), which visits Western Europe in great numbers, and this has raised the question whether some of the pectoral sandpipers visiting the British Isles may not come from Siberia rather than across the Atlantic from America. That some do come from America is suggested by the fact that half of the records from the west of England come from the Scilly Isles; this conclusion is strongly reinforced by the several occurrences in the west of Ireland and the virtual absence of records from the Continent. The supposition that some of the visitors come from Siberia is supported by the fact that there are about twice as many records for the eastern part of England as for the west.

Scottish Needs in Building Research

THE Scottish Laboratory of the Building Research Station, which is at Thorntonhall, near Glasgow, is now partly completed, and a nucleus of staff has begun work there. In connexion with this, a one-day conference on "Scottish Needs in Building Research" is to be held on October 6 in the Rankine Hall of the Institution of Engineers and Shipbuilders in Scotland, 39 Elmbank Crescent, Glasgow, C.2. Apart from introducing the new Laboratory, the purpose of the conference is to provide a forum from which Scottish members of the building industry can express their views on Scottish building problems which need research. Admission will be by ticket, and further details can be obtained from the Director, Building Research Station, Garston, Watford, Herts.

Conference at Edinburgh on Elementary Particles

PROF. NIELS BOHR will deliver the Gifford Lectures at the University of Edinburgh on Mondays, Wednesdays and Fridays, October 21–November 11, his subject being "Causality and Complementarity". Following this a conference on elementary particles will be held in the Natural Philosophy Buildings, University, Drummond Street, Edinburgh, during November 14–16. Talks so far arranged are as follows: Prof. W. Heisenberg, "Die Erzeugung von Mesonen in Vielfachprozessen"; Prof. L. Jánossy, "On the Production of Mesons by Nucleons"; Prof. H. A. Kramers, "Quantum Electrodynamics and Correspondence-Principle"; Dr. B. Pontecorvo, "On the Decay Products of the μ -Meson"; Dr. J. G. Wilson, "Some New Measurements on the Nature of the Vertical Cosmic-Ray Beam at Sea Level"; Prof. M. Born, "General Theory of Elementary Particles"; Prof. N. Feather, "Experimental Evidence concerning the Possible Existence of the Negative Proton and the Di-Neutron"; Dr. K. C. Cheng, "Reciprocity Theory of Electrodynamics". Other participants will include Profs. F. Bopp, M. Fierz, L. Leprince-Ringuet, C. Møller, C. F. Powell, A. Proca and Dr. H. O. W. Richardson. All interested may attend and should inform Mr. A. Nisbet, Department of Mathematical Physics, University, Drummond Street, Edinburgh 8, who will assist in finding accommodation on request.

Colonial Service: Recent Appointments

THE following appointments in the Colonial Service have been recently announced. G. F. Godden, agricultural officer, Nyasaland; R. G. Hampson, agricultural officer, Uganda; L. J. C. Wells, agricultural officer, Kenya; D. W. G. Bacon, assistant conservator of forests, Uganda; C. O. Baker, geologist, Sierra Leone; J. W. Barnes, geologist, Uganda; E. F. Bradford, geologist, Federation of Malaya; J. F. Feakes, geologist, Gold Coast; N. S. Haile, geologist, Sarawak; W. N. MacLeod, geologist, Nigeria; D. Magraw, geologist, Kenya; M. G. D. Rees, geologist, Kenya; E. P. Saggerson, geologist, Kenya; J. Spence, geologist, Tanganyika; G. E. Wilford, geologist, Sarawak; J. R. Gibbs, veterinary officer, Uganda; J. A. C. Stewart, veterinary officer, Tanganyika; W. C. Davies, meteorologist, East African High Commission; T. M. Greenhill, agricultural development officer, Nigeria; D. J. Moorhead, veterinary officer, Tanganyika; A. L. Stewart, metallurgist, Geological Department, Kenya; D. B. Turner, provincial tsetse officer, Tanganyika; J. O. Wadhams, assistant conservator of forests, Northern