as that associated with the field strength of received signals at different times of the day and at different seasons of the year with different wave-lengths and with different transmitting aerials, are of a local nature, which can be solved by work in the country desiring the information. If the research board is founded in India, it will be of help, not only to India, but to the international research work now being conducted in Great Britain and other countries. The British Radio Research Board will be glad to cooperate with any research organization which might be established in India. Professor A. S. Eve (Canada) and Professor T. H. Laby (Australia) also emphasized the need for the formation of such a board to bring engineers and physicists together in solving both theoretical and practical problems.

SALE OF NEWTONIANA

IT is reported in *Nature* that as a result of the sale of the Newton Papers, and other articles of interest in connection with Sir Isaac Newton, by Messrs. Sotheby and Company, on July 13 and 14, two gifts of scientific importance have now been made possible, and are worthy of record.

That portion of the papers which deal with Newton's work as warden, and afterwards master, of the Royal Mint, is bound in three folio volumes and contains 529 pieces. These were sold for £1,400 to Mr. Gabriel Wells, who placed them at the disposal of Lord Wakefield at cost, on the understanding that they would be presented to the nation. Lord Wakefield has presented them to the Royal Mint, where they will be available for inspection.

The very valuable and unique collection of Newtoniana already in the possession of the Royal Society has been enhanced by a gift from Sir Robert Hadfield which he purchased at the same sale. The gift comprises the following letters: four from Edmund Halley to Newton: four from Edmund Halley to Thomas Molyneux; two from Fontenelle to Newton; one from Philip Naudé to Newton; and one from Brook Taylor to Newton.

A portrait of Sir Isaac Newton, painted in 1702 by Sir Godfrey Kneller (the most famous of the Newton portraits), has been purchased by the trustees of the National Portrait Gallery (with a contribution of half from the National Art-Collections Fund) from Messrs. Rosenbach, of New York. The portrait was actually sold at the same sale for £800, but through the generosity of Dr. Philip Rosenbach was resold to the trustees of the gallery at cost price.

Among the many other items of interest in connection with Newton disposed of at the sale were the following: nine letters to Newton from Edmund Halley, containing the history of the publication of the "Principia" (£310); a notebook in Newton's own handwriting, giving an interesting and amusing list of expenses, and, at the other end, various problems in geometry and conic sections (£180); an autographed draft of about 1,000 words of a very important statement on the invention of the calculus (£210).

THE SCHOOL OF ENGINEERING PRACTICE OF THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

THE appointment of new directors at the three field stations of the School of Chemical Engineering Practice of the Massachusetts Institute of Technology has been announced by Professor Walter G. Whitman, head of the department of chemical engineering. The appointments come as a result of the resignations of Professor Frederick W. Adams, director of the Boston Station; Charles M. Cooper, of the Bangor Station, and Robert L. Hershey, of the Buffalo Station, who have accepted industrial positions. Professor Adams has been appointed senior incumbent in a multiple fellowship established by the Pittsburgh Plate Glass Company at the Mellon Institute. He will direct the research activities of a group working on problems in the glass industry. Professors Cooper and Hershey have joined the staff of E. I. du Pont de Nemours and Company.

Directors of the stations have been appointed as follows: The Boston Station, Dr. Robert C. Gunness, a graduate of the Massachusetts State College in 1932; the Bangor Station, Howard S. Gardner, Jr., Massachusetts Institute of Technology, '31, chemical engineer of the Eastman Kodak Company; the Buffalo Station, Dr. John E. Eberhardt, C.E., Cincinnati, '33, assistant director of the station from 1934 to 1935, this year instructor in the department of chemical engineering at the Massachusetts Institute.

The assistant directors at the three stations will be Henry J. Ogorzaly, of Yonkers, N. Y., at the Boston Station; Roy P. Whitney, of Milo, Maine, at the Bangor Station, and George A. Akin, of Princeton, Ky., and Charles W. Smith, of Abington, Mass., at the Buffalo Station. All are graduates of the School of Chemical Engineering Practice.

THE LEVERHULME SCHOLARSHIPS IN GREAT BRITAIN

THE Advisory Committee on the awards for 1936 of Leverhulme Research Fellowships and grants in aid of research has made twenty-one nominations to fellowships and ten grants in aid of research, tenable for varying periods up to two years.

The names of the fellows in the sciences and the subjects of the researches are as follows:

MRS. A. ARBER, M.A., Camb., D.Sc., Lond., fellow of

University College, London. Studies in the principles of angiospermous morphology and in the history of botany.

S. J. DULY, M.A., Camb., head of department for the scientific study of commercial products, City of London College. The carriage of goods by sea.

F. FAIRBROTHER, D.Sc., Manc., senior lecturer in chemistry, Manchester University. The study of electrolytic dissociation process and the mechanism of chemical reactions by the use of induced radioactivity.

C. P. FITZGERALD, author. Sociology of the non-Chinese tribes of Yunnan, S. W. China.

S. D. GARRETT, B.A., Camb., formerly assistant plant pathologist, Waite Agricultural Research Institute, University of Adelaide, South Australia. The biological antagonism of the soil microflora towards root disease fungi or crop plants. (Renewal of present fellowship.)

J. DE GRAAF HUNTER, F.R.S., C.I.E., M.A., Sc.D., Camb., late director, Survey of India. Planning and execution of geodetic triangulation of great extent.

MRS. K. LONSDALE, D.Sc., Lond., research worker, Royal Institution, London. Relation between structure and physical properties of organic molecules. (Renewal of present fellowship.)

E. P. MUMFORD, M.Sc., Manc., M.A., Cardiff, late director, Pacific Entomological Survey, Honolulu. Terrestrial and fresh-water biota of the Marquesas Islands. (Renewal of present fellowship.)

F. R. PERRY, M.Sc., Manc., member of research department, Metropolitan-Vickers Electrical Co., Ltd., Manchester. Study of overvoltages due to lightning on transmission lines. (Renewal of present fellowship.)

A. L. REIMANN, Ph.D., Berlin, D.Sc., Adelaide, research physicist, General Electric Company, Ltd., Wembley, Middlesex. Electronic conduction phenomena in solid insulators and semi-conductors.

W. E. WILLIAMS, D.Sc., Lond., M.Sc., Manc., lecturer in physics, King's College, London. The determination of the vacuum wave-lengths and the structures of spectral lines by means of his reflection echelon.

Grants in aid of research have been made to the following:

A. E. BOYCOTT, F.R.S., M.A., D.M., D.Sc., Oxon., late Graham professor of pathology, University of London. The oecology and genetics of British non-marine mollusca.

H. J. FLEURE, F.R.S., M.A., Mach., D.Sc., Wales, professor of geography, Manchester University. Physical (racial) characteristics of the peoples of Wales.

J. W. HESLOP HARRISON, F.R.S., D.Sc., Durham, professor of botany, Armstrong College, Newcastle-on-Tyne. Researches on evolution and heredity. (Renewal of present grant.

T. N. HOBLYN, statistician, East Malling Research Station, Kent. A study of technical problems in the layout and conduct of horticultural field experiments under tropical and sub-tropical conditions.

W. H. PEARSALL, D.Sc., Manc., reader in botany, University of Leeds. The growth of algae.

O. W. RICHARDS, M.A., D.Sc., Oxon., lecturer in entomology, Imperial College of Science and Technology, London. The study of the habits of South American bees and wasps.

C. W. VALENTINE, M.A., Lond., D.Phil., St. Andrews, professor of education, Birmingham University. The psychology of early childhood.

The following has been awarded a Leverhulme Traveling Fellowship:

A. RUSCOE CLARKE, M.B., Lond., F.R.C.S., Eng., on nomination of the Medical Research Council.

STANDARD BRANDS FELLOWSHIPS

STANDARD BRANDS, INCORPORATED, producers of Fleischmann's Yeast, Chase and Sanborn's Dated Coffee and other products, has distributed ten annual fellowships among investigators in American universities. Six of the awards have been made to enable the continuance of previous fellowship work. Four recipients were granted awards for the first time. These fellows are undertaking specialized research along the following lines:

Dr. R. O. Bengis is continuing his work at Yale University, on the chemistry of coffee and the changes that take place when coffee grows stale.

Dr. Olaf Bergeim, at the University of Illinois, Chicago, is making a study of yeast vitamins set free in the intestinal tract and their utilization in the human system.

Dr. Virginia Fisher is collaborating this year with Dr. Lloyd Arnold at the University of Illinois, where they are making a complete survey of fungi normally occurring in or on the human body.

Dr. Walter H. Eddy, of Columbia University, New York City, is proceeding with his work on the isolation of vitamin B from yeast.

Dr. R. H. Cheney is working at Long Island University, Brooklyn, on the physiological action of fresh and stale coffee and caffeine.

Dr. R. J. Williams, at the University of Oregon, is investigating pantothenic acid, the growth stimulant that he discovered.

Dr. U. Lash Miller and his colleagues are extending their research on yeast bios at the University of Toronto.

Dr. S. I. Bechdel, at Pennsylvania State College, is engaged in studying the use of irradiated dry yeast for treating rickets in calves.

Dr. John A. Killian, at the Killian Research Laboratories, New York City, is undertaking research on the value of bread in the diet.

ARTHUR A. NOYES

DR. ROBERT A. MILLIKAN, chairman of the executive council of the California Institute of Technology, concluded his commencement address with the following words concerning Arthur A. Noyes:

The last great act of his life was altogether typical of the man. Two months ago he asked me to come over