constituents, could be built, it is still doubtful whether the harmonic method can be adequately used for the direct prediction of tides for estuary ports; part of the difficulty has to do with the validity of the resolution into harmonic constituents at such places. It is possible, however, to apply adequate corrections to the machine predictions, and such corrections may be 'non-harmonic' (functions of the range of tide) or 'harmonic'; in the latter case the machine may be used with a special time-scale to run off a separate curve for the corrections. Even this method is not without its difficulties. The harmonic method has thus had to confront many serious hindrances to universal adoption, especially in the case of the most important ports where its defects are most apparent; there is no doubt, however, that the harmonic method of prediction and the use of predicting machines will increase, but perhaps with some loss of apparent simplicity of operation.

Various details of the machines hitherto constructed are brought together in Special Publication, No. 13, issued by the International Hydrographic Bureau of Monaco, entitled "Tide Predicting Machines." Most of the remarks appear to have been culled from official accounts of the machines. The whole volume would have been more useful if it had been subjected to more helpful criticism. Appendix II. and the tables of astronomical arguments for ten constituents are of no value to any one likely to be using a machine and are out of place in the volume. Certain formulæ on p. 81 are inconsistent, and the table on p. 83 cannot be understood unless certain symbols, x and y, are explained.

A. T. DOODSON.

University and Educational Intelligence.

CAMBRIDGE.—An offer has been made of 25,000*l.* by the Empire Marketing Board, through the Committee of the Privy Council for Scientific and Industrial Research, for the building and equipping of an extension of the Low Temperature Research Station.

Sir Josiah Stamp has been appointed Rede lecturer, Dr. C. Hose has been elected to an honorary fellowship at Jesus College, and C. Rimington, Emmanuel College, has been elected Benn W. Levy student in bio-chemistry. The Raymond Horton-Smith Prize has been awarded to Dr. A. J. Copeland, Pembroke College, for his thesis on "The Cocaine Substitutes, with Special Reference to Borocaines"; *proxime accessit*, Dr. T. A. Butcher, Queen's College, for a thesis on "The Normal Gastric Secretion as Determined by the Fractional Test Meal."

EDINBURGH.—At the meeting of the University Court on November 15, Prof. Baldwin Brown was appointed Munro lecturer for the current academical year. He will deliver a course of ten lectures in the summer term on "Activities of Prehistoric Man in their Relation to the Origin of the Arts."

Mr. J. A. V. Butler was appointed a lecturer in the Department of Chemistry.

LEEDS.—The following appointments have been made in the Cancer Research laboratories: Mr. J. S. Young to be lecturer in experimental pathology and assistant director of cancer research; Mr. Young has held appointments as resident assistant physician at the Western Infirmary, Glasgow, as University assistant to Prof. Muir, and, for the past two years, as assistant pathologist at the Western Infirmary; Mr. H. J. Channon to be bio-chemist in the Department of Experimental Pathology; Mr. Channon held a Beit Memorial Fellowship for Medical Research under Prof. J. C. Drummond, University College, London; Cancer Research fellowships to Dr. Georgiana M. Duthie, who has been a demonstrator in the Pathology Department of the University since January 1925; and to Mr. G. A. Collinson, who during the same period has acted as research assistant to Sir Berkeley Moynihan.

LONDON.—The following free public lectures are announced:—"The Present Position of the Logic of Induction," Dr. C. D. Broad, at King's College, at 5.30, on December 1; "Colour Vision," Prof. H. E. Roaf, at University College, at 5, on December 1 and 8; "Nervous Affections of the Œsophagus" (The Semon Lecture), Dr. A. Brown Kelly, at the Royal Society of Medicine, at 5, on December 2; and "Influence of Environment on Bacteria," Mr F. W. Twort, at the Royal College of Surgeons of England, at 4, on December 6, 7, 9, 13, and 14.

The following doctorates have been conferred: *D.Sc. in Physiology* on Prof. D. T. Harris (University College) for a thesis entitled "Biological Action of Light"; *D.Sc. (Engineering)* on Mr. H. E. Merritt (West Ham Municipal College) for a thesis entitled "Generated Gear Teeth."; *D.Sc. in Physics* on Mr. C. E. P. Brooks, for a thesis entitled "The Variations of Pressure from Month to Month in the Region of the British Isles," and on Mr. Wilfred Jevons for a thesis entitled "(1) A Band Spectrum of Tin Monochloride exhibiting Isotope Effects; (2) The More Refrangible Band System of Cyanogen as developed in Active Nitrogen."

MANCHESTER.—The honorary degree of D.Sc. has been conferred upon Mr. S. L. Pierce, formerly manager of the Manchester Corporation electricity undertaking and an Electricity Commissioner; Prof. A. C. Seward, professor of botany in the University of Cambridge; Dr. A. E. H. Tutton, formerly H.M. Inspector of Schools (Technological Branch).

THE date of the second biennial conference of the World Federation of Education Associations, to be held at Toronto, Canada, in 1927, is to be August 7–12 instead of some days earlier. The secretary of the Federation is Charles H. Williams, 101 Jesse Hall, Columbia, Missouri, U.S.A.

ACCORDING to a note in the October issue of the *Scientific American*, Princeton University is appealing to the public of the United States for an endowment of two million dollars in order to strengthen and enlarge its research work in the fundamental sciences. A further one million dollars will be granted by the General Education Board if the public subscribes the two million. The note directs attention to the large amount of research in science which has been carried out at Princeton during the past twenty-five years without an adequate endowment, and repeats Secretary Hoover's warning that the United States is falling behind in research in pure science. Several other universities of the United States are making similar appeals for endowment.

MR. W. R. BOWER, Head of the Department of Physics and Electrical Engineering at the Huddersfield Technical College and a past president of the Association of Teachers in Technical Institutions, is retiring at the end of the current term after holding his present post for thirty years. The College authorities are now creating separate departments of physics and electrical engineering. The new head of the Physics Department will be Mr. H. Lowery, lecturer in physics at the Bradford Technical College and formerly assistant lecturer in physics in the

University of Manchester, who has published several papers on spectroscopic and other subjects. Mr. W. M. Wilcox, now lecturer in electrical engineering in the College, will become head of the new Electrical Engineering Department.

THE League of Nations International Committee on Intellectual Co-operation held at Geneva on July 26-29 its eighth plenary session, a report of which has recently been issued. A large number of resolutions proposed by sub-committees were approved, including the following, proposed by the sub-committee on university relations: National universities' associations and similar organisations should be asked for their views and observations on a scheme for the institution of an international universities' association, to be prepared for by an inter-university conference. A summary should be published of the subjects dealt with in the various universities' courses devoted to contemporary history, foreign literature, and international law. A special committee should investigate ways and means and with the least possible delay present a detailed plan for the publication of year-books and catalogues of interest to the university and scientific world. Special agreements, on a basis of reciprocity between States, should provide for reductions in transport rates for students, and the International Institute should consider, in agreement with the Transit Section of the League of Nations, the best means of achieving this result. Among resolutions prepared by other sub-committees and approved by the plenary committee was one for establishing an international office of museums, one for constituting an autonomous international society or academy of translators, and one for convening expert committees early in 1927 for the co-ordination of bibliography in (*a*) economic sciences, (*b*) Greco-Roman antiquity, and (*c*) biological sciences.

THE University of London Bill passed its second reading in the House of Commons on November 19 without a division. Lord Eustace Percy, president of the Board of Education, in explaining the provisions of the bill, emphasised the importance of the creation of a council to deal with all questions of finance, and the need to secure the direct representation of the colleges on the Senate. He disclaimed any desire on the part of the Board of Education to control the University, the chief object of the representation of the Crown and the London County Council on the Council of the University being to introduce elements outside the University "competent in matters of business administration and finance." On this point he gave the most emphatic assurance. He promised to move an amendment in Committee to meet the special position of the theological colleges which did not receive public grants. Replying to the criticism that the bill might affect adversely the interests of the external student, he said that the Government "desired to preserve the external side in the full enjoyment of its privileges." Mr. Trevelyan, on behalf of the Labour Party, supported the second reading and hoped the bill would become law this year. Dr. Graham Little, member for the University, moved the rejection of the bill. He laid stress on the present financial independence of the colleges which was threatened by the bill, because public grants to the colleges would in future be paid through the University. Those who belonged to the external side felt that the menace to their special interests would be serious. Sir A. Hopkinson, supporting the bill, said that the University of London needed the business element, though he is not sure that Crown nomination is the best method of introducing this element into the government of the University.

Contemporary Birthdays.

November 27, 1849. Prof. Horace Lamb, F.R.S.
November 28, 1840. Sir James Crichton Browne, F.R.S.
November 29, 1866. Prof. Ernest W. Brown, F.R.S.
November 29, 1859. Sir Robert A. Hadfield, Bart., F.R.S.
November 29, 1847. Sir George Greenhill, F.R.S.
November 29, 1859. Prof. John Ambrose Fleming, F.R.S.
November 30, 1858. Sir Jagadis Chunder Bose, C.S.I., C.I.E., F.R.S.
December 2, 1860. Right Hon. Lord Southborough, G.C.B., G.C.V.O.

Prof. LAMB, born at Stockport, was educated at the Grammar School there, at Owens College and at Trinity College, Cambridge, graduating second wrangler. Leaving tutorial work at Cambridge he became professor of mathematics in the University of Adelaide, returning to Manchester in 1885 on acceptance of the chair of mathematics in the University, a post he held until 1920. Prof. Lamb has received from the Royal Society the Copley medal and a Royal medal.. In 1925 he was president of the British Association.

Sir J. CRICHTON BROWNE was educated at Dumfries Academy and the University of Edinburgh. An authority on mental and nervous diseases, he was from 1875 until 1922 Lord Chancellor's Visitor in Lunacy. As treasurer of the Royal Institution Sir James rendered devoted service for many years.

Prof. E. W. BROWN is a graduate of Christ's College, Cambridge. From 1891 until 1907 he was professor of mathematics in Haverford College, Pennsylvania, accepting afterwards a similar chair at Yale University. He is a corresponding member of the Academy of Sciences, Paris. In 1907 Prof. Brown received the Royal Astronomical Society's medal for his researches on lunar motion, followed in 1914 by the Royal Society's award of a Royal medal for similar studies.

Sir ROBERT HADFIELD, the well-known metallurgist, is chairman and managing director of Messrs. Hadfield's, Ltd., Sheffield. He is a corresponding member of the Academy of Sciences, Paris. In 1904 he received the Bessemer gold medal of the Iron and Steel Institute, at the hands of Mr. Andrew Carnegie, for the advancement of the metallurgy of iron and steel, in particular the discovery of manganese steel. Specimens of the first manganese-iron alloy, made in 1882, were shown on that occasion. Sir Robert is a past president of the Iron and Steel Institute and of the Faraday Society.

Sir GEORGE GREENHILL graduated at the University of Cambridge. He was formerly professor of mathematics in the Artillery College, Woolwich; he received a Royal medal from the Royal Society in 1906.

Sir JAGADIS BOSE, emeritus professor of the Presidency College, Calcutta, and founder and director of the Bose Research Institute, Calcutta, was educated in India and at Christ's College, Cambridge. He has conducted prolonged researches and written several works on life movements in plants. His latest treatise, published this year, was entitled "The Nervous Mechanism of Plants."

LORD SOUTHBOROUGH has been permanent secretary of the Board of Trade and of the Colonial Office. In 1910 he was vice-chairman of the Development Commission; in 1918–19, president of the Commission to India on reform. The National Physical Laboratory owes much to him for advice and assistance in the past.