

main political divisions of the world: the remaining eighteen, including Germany, the U.S.S.R., the United States, India, Brazil, Australia, and Canada, are excluded because their ministries of education, where they have any, are less than national in their legal and functional characteristics. Under the heading "General Characteristics" are dissertations on the internal organisation of the ministry in Italy, Belgium, Persia, and Uruguay, and organisations advisory to the ministry in Hungary, Belgium, Spain, England, New Zealand, and Bulgaria. In a chapter on the relations of the ministry to secondary education, the systems in force in Spain, Portugal, and Rumania are described as typical of the twenty-five Latin language countries studied, those of Yugoslavia, Denmark, and Hungary for the Germanic type, and those of the Irish Free State, New Zealand, and England and Wales for the English language countries. Special chapters are devoted to the Board of Education of England and Wales and the ministries of France, Belgium, and Mexico. The other bulletin, on "Accredited Higher Institutions", is a compilation of the lists of institutions of college grade accredited or approved or classified by recognised State or voluntary agencies, including national professional organisations, with descriptions of standard criteria used.

Birthdays and Research Centres.

Oct. 26, 1874.—Prof. T. M. LOWRY, C.B.E., F.R.S., professor of physical chemistry in the University of Cambridge.

I am interested in problems of valency, especially in the compounds of nitrogen, phosphorus, sulphur, and tellurium, and in the study of molecular structure by physical methods. Optical and spectroscopic methods have been used extensively for this purpose; but researches on photochemistry, the diffraction of electrons, the scattering of molecular rays, electrode potentials, electrolytic conductivity, and lubrication are also in progress in the Laboratory of Physical Chemistry at Cambridge. In polarimetry, the study of optical rotatory power has been extended to vapours, and measurements are now being made of the form of the dispersion curves in the region of absorption within which the Cotton phenomenon is observed.

Oct. 27, 1856.—Prof. E. W. HOBSON, F.R.S., formerly Sadleirian professor of pure mathematics in the University of Cambridge.

It is very improbable that, at my age, I shall be able to take up investigation of any new subject. I hope, however, to be able to fill up some gaps in subjects such as the theory of integral equations, and possibly in the calculus of variations; subjects at which I have worked in past years.

Oct. 27, 1894.—Prof. LENNARD-JONES, Melville Wills professor of theoretical physics in the University of Bristol.

The theoretical researches in the Wills Physical Laboratory, Bristol, centre round problems of cohesion and molecular structure. The main investigations, in which we are now engaged, aim at (1) a detailed knowledge of the electronic structure of certain atoms and molecules, (2) a calculation of the cohesive forces between atoms in a molecule, (3) a correlation of certain properties of gases and solids with the electronic structure of the atoms and molecules of which they are composed.

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Societies and Academies.

LONDON.

Society of Public Analysts, Oct. 7.—J. Cecil Maby: The identification of wood and wood charcoal fragments. The economic and forensic importance of distinguishing between different woods by their microscopical structure is discussed, and the value of the method in archaeological investigations is illustrated by various examples, such as the identification of the nature of the wood in the piles of lake dwellings, and of the charcoal from ancient furnaces.—T. Callan and N. Strafford: The examination of dyed leathers in cases of alleged dermatitis. The possibility of applying to dyed leather the tests used by Cox for the detection of diamines and allied bodies in fur has been investigated. The tannins in leather may interfere with many of these tests, but four of them will enable definite conclusions to be drawn, provided that control tests are applied to portions of the extract from the leather, after the addition of very small amounts of a meta- and para-diamine respectively.—W. L. Davies: The determination of chlorides in dairy products and biological material. The advantages of a wet (nitric acid) method are described, and suggestions for obtaining a sharper end-point in the titration of the excess of silver nitrate are made.

Physical Society, Oct. 16.—G. A. Wedgwood: Young's modulus for steel in two directions in a bar. Experiments showed that the elastic constant E of the various steels from which the hollow cylinders used were made is the same in two directions at right angles, one direction being along the axis of the original bar and the other across a diameter.—N. W. McLachlan: On the effective mass of flexible discs and conical diaphragms used for sound reproduction. The effective mass of a circular aluminum disc vibrating in air is zero at the centre-stationary and centre-moving modes. At a centre-stationary mode the effective mass attains a positive maximum before the zero value and a negative maximum thereafter. From the shape of the curves for a disc it is possible to interpret those obtained for conical diaphragms. In the latter case the curves depend upon the apical angle of the cone.—A. T. McKay: Further study of diffusion for the infinite plane sheet. A method is developed whereby the diffusivity and surface constants can be evaluated from experimental data. In order to facilitate the practical application of the methods propounded to this and similar diffusion problems, tables have been specially calculated giving the first four roots of each of the four equations $\tan \left. \begin{matrix} x \\ \cot \end{matrix} \right\} = \pm x \cdot \tan \left. \begin{matrix} x \\ \cot \end{matrix} \right\} \lambda$.

PARIS.

Academy of Sciences, Sept. 7.—André Blondel: New graphical solutions of calculations for electric cables transmitting at high voltage.—E. Bataillon and Tchou Su: The three types of mitosis characteristic of the first development in the egg of *Bombyx*, fertilised or parthenogenetic.—R. Tremblot: The application of (optical) interference to some problems of flow at high velocities. By means of the apparatus described in an earlier communication the author has measured the distribution of the densities in a Laval tuyère in order to decide between the conclusions of Prandtl, Steichen, and Stodola (rigorously adiabatic flow) and those of Müller (at constant heat). The curves obtained agree with the first hypothesis within one per cent.—Jean Peltier: The search for want of symmetry and faults in ferro-