instructive films of this kind for exhibition except by applying to a number of different firms. The Macmillan Educational Film Co., Ltd., 32 Charing Cross, S.W.1, has now, however, made a collection of educational and scientific films which they are able to offer for hire. We have before us a list of such films relating to geographical, industrial, Nature-study, and other subjects, and a copy can be obtained by anyone upon application to the company. There are also lists of suggested programmes—one of a varied kind, and another in which geographical subjects are appropriately grouped together. It may be hoped that local education authorities will avail themselves of such assistance as is afforded by these lists to give a new character to kinematograph displays in local picture-houses. In the United States thousands of schools make use of the moving picture for educational purposes, and there is a great opportunity for its wise employment here when existing prejudices have been overcome.

Societies and Academies.

CAMBRIDGE.

Philosophical Society, November 22.—Prof. Seward, president, in the chair.—F. A. **Potts**: A note on vital staining. In studies which have been made on the penetration of neutral red into the living body of the soil nematode Diplogaster it is found that most of the stain makes its way through the mid-gut and none through the skin. In the mid-gut a zone of granules arranged peripherally round the lumen of the gut takes up the stain particularly.—W. F. **Lanchester** and A. G. **Thacker**: Preliminary note on the superior vena cava of the cat. Thirty cats were dissected to observe the point of entrance of the internal jugular, which in every case except one fell into the external jugular. Observations were also made on the length of the superior vena cava in twenty-one adult cats, and the length appeared to be varying round more than one mean.—Miss M. D. **Haviland**: Preliminary note on a Cynipid hyperparasite of Aphides. Charips (Cynipidæ) is a hyperparasite of Aphides through Aphidius (Braconidæ). The female pierces the Aphidius larva while the latter is lying inside the living Aphid, and deposits an egg within its body. The first-stage larva of the Cynipid is hypermetamorphic, with a thick chitinous skin and tail, but during development, which takes place within the Aphidius, the larva gradually assumes the form usual among parasitic Hymenoptera. Shortly before metamorphosis the hyperparasite leaves its host, the remains of which it devours, and its tracheal system becomes functional. It afterwards pupates within the cocoon previously woven by the Braconid.—Dr. E. H. **Hankin** and F. Handley **Page**: The problem of soaring flight (see p. 518).—Sir George **Greenhill** and Dr. G. T. **Bennett**: The rotation of a non-spinning gyrostat.—E. V. **Appleton**: A method of testing triode vacuum tubes. A dynamic method of measuring the slope of the principal voltage-current characteristic of a three-electrode thermionic tube is described.—W. B. **Frankland**: The astronomical bearing of the Einstein theory.—Dr. W. **Burnside**: The representation of the simple group of order 660 as a group of linear substitutions on five symbols. Except in the cases of two and of three variables, the explicit forms of groups of linear substitutions have been given only in a few cases. Thus it is hoped that the explicit forms in the case referred to may be of interest. The existence of a cubic three-spread, in space of four dimensions, admitting a group of 660 collineations into itself may be compared with the more familiar case of Segre's cubic three-spread which admits a group of 720 such collineations.

MANCHESTER.

Literary and Philosophical Society, November 2.—Sir Henry A. Miers, president, in the chair.—Dr. W. J. **Walker**: The polytropic curve and its relation to thermodynamic efficiency (with a note on the theory of the uniflow steam-engine). An inquiry made into the reason for the diminution of internal-combustion engine efficiencies when the value of n in the equation, pv^n=constant, for the compression line is reduced by water injection or other means.—W. H. **Pearson**: Notes on a collection of Hepatics from the Cameroons, West Coast of Africa. The collection, made by Mr. W. G. Travis from logs of ebony in the Liverpool docks, contained the following species: *Aneura Travisiana*, n.sp., Pears.; *Lophocolea Newtoni*, St.; *Mastigolejeunea . . .* ?; *Homalolejeunea excavata* (Mitt.), Sp.; *Ceratolejeunea Saxbyi*, n.sp., Pears.; and *Cheilolejeunea Principensis*, St. The type-specimens are in the Manchester Museum.

SHEFFIELD.

Faraday Society and Institute of Metals (Sheffield Section), November 19.—Afternoon session, Prof. C. H. Desch in the chair.—Dr. L. **Aitchison**: Electroplating for the prevention of corrosion. The paper dealt more especially with the protection of iron and steel and their alloys. The conditions for proper protective coatings were defined and the value of the various protective coatings was discussed with relation thereto.—W. A. **Thain**: Some applications of electrodeposition in aeronautical engineering. Three cases of the electro-deposition of copper were considered, viz.: (1) As a protection against carburisation in case-hardening practice; (2) as a means of increasing heat conductivity; and (3) as a means of building up a definite constructional detail.—B. **Carr**: The electrodeposition of cobalt. From a bath containing $4\frac{1}{2}$ lb. of cobalt sulphate crystals, $5\frac{1}{2}$ oz. of boric acid, and $2\frac{1}{2}$ oz. of sodium chloride per gallon, and used at 34° C., excellent hard, adherent deposits of cobalt were obtained, provided that these were not too thick, with 150 and 72 amperes per sq. ft. for periods of immersion not exceeding 2 and 4 minutes respectively. The deposit is exceedingly resistant to atmospheric corrosion, and superior to nickel in the rapidity of deposition and hardness.—W. E. **Hughes**: The use of colloids in the electrodeposition of metals.—S. **Field**: The commercial electrolysis of zinc sulphate solutions. Commercial electrolysis aims at the maximum extraction of zinc with a minimum of energy. The greater the extraction the smaller the volume of liquor which circulates through the extraction plant, and the smaller the proportion of zinc which demands repeated purification. A limit to this extraction is set by the cost of increased energy necessary to take out zinc from dilute liquors. Current efficiency is dependent upon a number of factors, including current density, amount of zinc present, temperature, and the presence of impurities.

Evening session, Mr. E. A. Smith in the chair.—W. R. **Barclay**: Electro-silver plating and its technical development. This paper dealt with the history of technical investigation and research into the electro-deposition of silver so far as the more practical aspect of electro-plating is concerned. Emphasis was laid on the necessity for careful co-ordination of the factors of metal and free cyanide content to that of current density. It was shown that though considerable latitude is allowable in practice, the best results and highest efficiency lie within fairly well

defined limits. It was pointed out that silver solutions in existence more than sixty years still continued to yield excellent results, and that, generally, old solutions yielded better deposits at higher current densities than those newly made up from pure materials. This was due in a great measure to the presence of substances other than the simple double cyanide of silver and potassium, especially potassium carbonate.—G. B. **Brook** and L. W. **Holmes**: The chemical composition of old silver-plating solutions, with observations on their working properties. The paper dealt with a large number of solutions varying in age from one to fifty years, furnishing historical, chemical, and physical data with regard to each, and correlating the composition with the working properties in actual works practice.—F. **Mason**: A new maximum current density in commercial silver-plating. With a free cyanide content in excess of that usually advised, and with potassium carbonate in considerable quantities, not only can the current density be increased enormously, but the deposit is of an exceptionally fine texture and takes a high finish.—G. B. **Brook**: The crystalline structure of electro-deposited silver.—S. **Field**: The deposition of gold-silver alloys. A series of experiments has been carried out in order to trace the influence of varying conditions on the composition of the gold-silver alloys deposited in the well-known "green gold."

DUBLIN.

Royal Dublin Society, November 23.—Dr. F. E. Hackett in the chair.—Prof. H. H. **Dixon** and Nigel G. **Ball**: A determination, by means of a differential calorimeter, of the heat produced during the inversion of sucrose. The heat of inversion of sucrose in presence of invertase was determined by means of a differential calorimeter in which the temperature was measured with a sensitive thermocouple. Two vacuum flasks were employed, in one of which the reaction took place, while the other was used as a control, one junction of the thermocouple being in each flask. The enzyme solution was contained in a capsule of paraffined paper immersed in the sugar solution to secure that both were at the same temperature. In the control flask a similar arrangement was used, but the enzyme solution had been previously heated to 100° C. These capsules could be ruptured without opening the flasks. The temperature effects of dilution of the sucrose were eliminated by these arrangements. Stirring was effected by shaking the flasks. A value for the heat produced during the inversion of sucrose by invertase was obtained which agrees closely with that previously given by Brown and Pickering, the mean of the results being 3·83 calories per gram-molecule.

PARIS.

Academy of Sciences, November 22.—M. Henri Deslandres in the chair.—A. T. **Schloesing**: The separation of two salts having a common ion. In the preparation of ammonium nitrate from sodium nitrate and ammonium bicarbonate an aqueous solution of sodium nitrate and ammonium nitrate is obtained, from which the latter salt has to be extracted. Solubility curves of mixtures of these two salts have been worked out and are given in the paper and the mode of applying these to the problem is indicated.—E. **Imbeaux**: New systems of electric towing on canals. The haulage difficulties on canals with numerous locks, such as those of the Marne, Rhine, and the Sarre coalfields, are summarised, and a description is given of the systems at present in use.—E. **Ariès**: The heat of evaporation of a liquid at low temperatures. Reply to a note of M. G. Bruhat.—T. **Varopoulos**: Algebroïd functions and increasing functions.—J. **de Lassus**: The essential properties of pneumatic transmission in a closed cycle.—J. **Andrade**: The last perturbations of isochronism.—W. **Margoulis**: A new method of testing aerodynamic models in gas currents. In existing apparatus serious errors may arise, as it is impossible to observe the conditions required by the law of similitude. The author suggests the replacement of air by carbon dioxide at high pressures and temperatures, and gives formulæ showing the resulting reduction in the horse-power of the motor necessary for moving the gas.—Lord **Rayleigh**: The light diffused by argon. Remarks on a recent paper by M. J. Cabannes.—C. **Matignon** and M. **Fréjacques**: The transformation of ammonia into urea. The problem of the economical transformation of ammonia into urea is of undoubted technical interest, since it contains 47 per cent. of nitrogen as against 35 per cent. of nitrogen in ammonium nitrate, and it behaves as an excellent manure. An account is given of studies on the conversion of ammonium carbamate into urea.—A. **Muguet** and J. **Seroin**: The age of the autunites of Portugal. These minerals are of recent formation, and were formed between 1250 and 1900 years ago. The figures are based on the determination of the ratio of radium to uranium in the minerals.—G. **Denizot**: The stratigraphical position of the Montabuzard limestone.—A. **Rolland**: The existence of formations of ground called *rideaux* in Cantal.—R. **Souèges**: The embryogeny of the Urticaceæ. The development of the embryo in *Urtica pilulifera*.—A. **Chevalier**: The variations of the buds of cultivated trees and shrubs as a cause of decadence of old varieties.—J. **Barlot**: New colour reactions utilisable for the diagnosis of mycological species. The colour reaction with potash solution serves to distinguish between the poisonous *Mycena pura* and the variety *amethystina* of *Laccaria laccata* (edible). The same solution gives different colour reactions with *Gomphidius glutinosus* and *G. viscidus*.—P. **Dangeard**: Metachromatine and the tannic compounds of the vacuoles.—W. **Mestrezat** and Mlle. Marthe **Paul-Janet**: The comparative evaluation of the total nitrogen in urine by the methods of Dumas and Kjeldahl. The Kjeldahl method applied to urine gave only from 98·5 per cent. to 90·3 per cent. of the nitrogen found by the Dumas method.—A. **Damiens**: The toxicological detection of poisons containing bromine. An application of the methods described in previous communications for the detection and estimation of traces of bromine in animal tissues.—G. **Bohn** and Mme. A. **Drzewina**: Variations of sensibility to soft water of the Convoluta, according to the physiological states and the number of animals under experiment.—L. **Joubin** and E. **Le Danois**: Biological researches on the thermometry of the Atlantic off Ushant during the summer of 1920. The data obtained are represented on two diagrams, showing the distribution of temperatures in a section W.-N.W. through Ushant.—C. **Lebailly**: The conservation or disappearance of the virulence of apthous milk in the course of the manipulations following treatment. If the contaminated milk is allowed to stand for cream long enough for an incipient lactic fermentation to take place the virus is attenuated or destroyed, and young animals fed on such milk during an epidemic have either remained healthy or have had only a mild attack. When the milk is collected in large creameries and the cream quickly separated mechanically, the skim milk rapidly spreads the fever.

ROME.

Reale Accademia dei Lincei.—(Communications received during the vacation.)—G. **Fano**: Surfaces of the 4th order with infinite discontinuous groups of birational transformations, ii.—C. **Crema**: Deposits of bauxite in the Apennines, Istria, and Dalmatia (with illustration of section).—C. **Artom**: Biology and systematics of the genus Artemia, ii.—M. **Genna**: Nutrition of *Anopheles claviger*. The male feeds only on sweet juices, but the female also requires to suck blood before it can lay its eggs. The processes of digestion of the two kinds of food are not only different, but they take place in different organs in the female.

(Vol. xxix. (2), i., ii.)—S. **Pincherle**: Iterated function of a rational integral one, ii.—G. **Fubini**: Projective differential geometry.—E. **Artini**: Cassiterite and titanite of Baveno. The former mineral was represented by a small crystal 5 mm. long and 4 mm. broad, being a multiple twin crystal found by G. Codara in the granite mines, and a few fragments discovered on a later visit. Of titanite the author possesses three small purplish crystals. Both minerals are new to the granite of Baveno.—C. **de Stefani**: Siliceous fossil sponges of western Liguria. These were found mainly in crystalline schists, but also in Triassic limestone, between Genoa and Savona. The majority are Hexactinellidæ dichyoninæ, and the structure was well preserved both in microscopic sections and in specimens treated with acid.—G. **Marletta**: Abelian varieties.—P. **Nalli**: A functional equation.—M. **Pascal**: Resultant pressure on an aeroplane wing, ii. A continuation of the previous hydrodynamical problem of two-dimensional stream-line motion in an incompressible fluid. The present paper proceeds to calculate the lift.—L. P. **Eisenhart** (of Princeton University): Congruences of spheres of Ribaucour which admit of a finite deformation.—R. **Serini**: Theory of the circular plate electric condenser.—E. **Adinolfi**: Centres of absorption of coloured solutions. The author describes a method in which the absorption spectra are observed in solutions of variable density, using a cylindrical receiver which acts as a lens.—R. **Ciusa** and L. **Vecchiotti**: Nitro-derivatives and nitrohydrazones, ii.—M. **de Angelis**: Crystalline form of nitrodibromoacetanilide.—M. **Gortani**: The Permo-Carboniferous and Permian formations in the Caracorum chain.—V. **Novarese**: The Cambrian of Iglesias.—G. de A. **d'Ossat**: Chalk and American vines. The effect of chalk in giving rise to chlorosis in vines already forms the subject of abundant literature. The present experiments appear to negative the empirical results previously obtained, while they suggest that methods adequate for the requirements of practical viticulture may be comparatively easy to carry out in working.—V. **Bambacioni**: Fibrillar structures of Nemec. The protoplasmic cords present in the cells of the radical apices in most plants do not present the complex structure described by Nemec, but in *Aspidium aculeatum* structures are observed comparable with his fibrillæ.—C. **Artom**: Biology and systematics of the genus Artemia, iii.—C. **Jucci**: Differentiation of caste in the society of termites, i. The neotenics.—E. **Artini**: Presence of chrysoberyl in the dolomite of Campolongo (Canton Ticino).—G. **Marletta**: Abelian varieties, ii.—P. **Nalli**: A functional equation.—E. **Adinolfi**: Influence of dissociation on permanganate. As in the previous paper mentioned above, researches on absorption centres can advantageously be made with solutions of concentration rendered variable by diffusion. Permanganates of potash and of lime have the same absorption spectra, and dissociation has no influence on the absorption spectrum of the potash compound.—V. **Cuttica**: Thermic analysis of the system of nitrate of thallio-nitrite of thallium. In view of the thermic behaviour of fused mixtures of $TlNO_3$ and $TlNO_2$, the author excludes the formation of complexes. The two salts form a continuous series of mixed crystals and the transformation to the solid state is referable to Roozeboom's second type in the classification of binary systems with polymorphic transformations.—G. **Cusmano**: Catalytic reduction of *o*-nitroazoxybenzol.—C. **Jucci**: Differentiation of caste in the society of termites, ii. The neotenics.—M. **Boldrini**: Sexual differences of weight in the human body and organs. A table showing the relations between the medians, the probabilities of transvariation, the relations between the arithmetical means, and the intensities of transvariation for numerous series of weights of male and female individuals and organs. The table furnishes a summary of the observations of Frascani, Demoor, Benedict, Bischoff, Bean, Boldrini, and others, the subjects observed including new-born infants from Pisa, Brussels scholars, white and black Americans, Germans (both living and dead), Romans, and a few French and others.

CAPE TOWN.

Royal Society of South Africa, October 20.—Dr. J. D. F. Gilchrist, president, in the chair.—Dr. J. D. F. **Gilchrist**: Observations on living fish brought by H.M.S. *Challenger* from tropical East Africa to Cape waters. In January, 1919, H.M.S. *Challenger* brought six species of fish from Dar-es-Salaam, Port Amelia, Mnazi Bay, and Zanzibar, which were transferred to the tanks of the Government Marine Station at Simon's Bay. They throve very well until April 25, when they all died within a few days of each other. At this date there was a sudden fall in the temperature of the water. The significance of this occurrence in connection with the distribution of fish in South Africa is discussed. Some observations were made on the sleeping habits of *Balistes aculeatus*.—L. **Simons**: Detection of induced β-ray emission from substances exposed to Röntgen rays by a photographic method. A narrow beam of Röntgen rays from a Coolidge tube impinging on a film of red lead laid down on paraffin wax gives a marked effect on a photographic plate placed opposite up to a distance in air of about 2 cm. from the red lead. If a photographic plate replaces the red lead, a similar, though less intense, effect is shown on the opposite plate. This excited radiation was almost stopped by the thinnest mica and paraffin wax. β-rays seem to be more important than secondary X-rays in producing a photographic impression.—J. R. **Sutton**: A contribution to the study of the rainfall map of South Africa. The monthly and annual rainfalls for 567 stations in South and East Africa are given, and the results shown graphically in thirteen maps. The isohyets form a system which moves to and fro across the equator, following the sun with a lag of a month or more. Corresponding with the general movements of the main isohyetal system are the winter rains of the south-west, which advance inland as the summer rains retreat and *vice versa*. The paper concludes with a short bibliography of special studies of South African rainfall.—J. R. **Sutton**: Some notes on ancient ideas concerning the diamond. Various prosaic "motives" for some of the legends and stories about the diamond current in ancient times are suggested. It is argued that Pliny, when he spoke of *adamas* as a name given to a crystal of gold, was probably referring to the outside appearance of the crystallisation.—F. G. **Cawston**: Experimental infestation of fresh-water snails. Infestation of *Limnaea natalensis* was caused by Fasciola from a sheep's

liver, also infestation of *Physopsis africana* by water containing the miracidia of *Schistosoma haematobium*; here the mature cercariæ were found six weeks later.—R. D. **Aitken**: The water relations of the pine (*Pinus pinaster*) and silver-tree (*Leucadendron argenteum*). The conductivity of the wood for water, rate of transpiration, total area of leaf-surface, and sectional area of wood have been determined for similar twigs of pine and silver-tree. Under the experimental conditions pine leaves exerted a much greater suction force, calculated in one instance to be about four times that exerted by the silver-tree leaves. The latter are less able to resist drying than pine leaves, in which the rate of transpiration very rapidly diminishes when the twig is not supplied with water to a much lower level than in a silver-tree twig under identical conditions.—J. W. C. **Gunn**: The action of *Eucomis undulata*. *E. undulata* contains a large amount of a saponoglucoside, soluble in water and 90 per cent. of spirit. It is a powerful hæmolytic agent. Absorption of the extract from the stomach and intestines and from the subcutaneous tissues is very slow; intravenous injections are actively poisonous, and produce symptoms like other saponin bodies.—T. J. **Mackie**: A study of the *Bacillus coli* group, with special reference to the serological characters of these organisms. The paper is a detailed record of investigations on the *B. coli* group with reference to their (1) biological classification, (2) serological characters, and (3) mutations. The biological characters of 246 strains of gram-negative, aerobic, non-sporing, and non-liquefving glucose-fermenting bacilli (not including specific pathogens of this class) were studied. Four main subgroups could be recognised: (*a*) Gas-producing, indol-forming, and non-inosite-fermenting. (*b*) Gas-producing, non-indol-forming, and non-inosite-fermenting. (*c*) Gas-producing and inosite-fermenting. (*d*) Non-gas-producing (anaerogenes types). The serological characters studied were (1) the agglutination and (2) complement deviation reactions of immune sera to certain of the commoner varieties. These observations proved of great interest from the purely immunological point of view, and also threw some further light on the biological relationships of the various types of coliform bacilli. The comparative resistance of various types to brilliant green was correlated with the grouping determined by cultural and serological tests. Mutations among these organisms were investigated, and afforded some explanation of the great diversity of cultural types and of the high degree of specialisation in the serological characters of individual strains.—E. **Newbery**: Note on over-voltages. Over-voltage appears to be a function independent both of the gas liberated and of the metal in question, and completely determined by valency alone. Whether the valency of the gas is involved or not is still an open question, since all gaseous ions used were monovalent. The over-voltage compounds probably carry excess electrons, and the addition of each electron produces a definite increment in the single potential, which increment is dependent only upon the number of free valency electrons present in the atom of the electrode or ion of the over-voltage compound.

Books Received.

Manual of Tropical and Subtropical Fruits: Excluding the Banana, Coconut, Pineapple, Citrus Fruits, Olive, and Fig. By W. Popenoe. (Rural Manuals.) Pp. xv+474+xxiv plates. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 30*s*. net.

The Principles of Preventive Medicine. By Prof. R. T. Hewlett and Dr. A. T. Nankiwell. Pp. viii+536. (London: J. and A. Churchill.) 21*s*. net.

Root Development in the Grassland Formation: A Correlation of the Root Systems of Native Vegetation and Crop Plants. By Prof. J. E. Weaver. (Publication 292.) Pp. 151+plates. (Washington: Carnegie Institution.)

The New Physics. By Dr. A. C. Crehore. Pp. xii+111. (San Francisco: *Journal of Electricity*.) 2 dollars.

Physics of the Air. By Prof. W. J. Humphreys. Pp. xi+665. (Philadelphia: J. B. Lippincott Co.) 5 dollars.

The Physico-Chemical Properties of Steel. By Prof. C. A. Edwards. Second edition. Pp. xii+281. (London: C. Griffin and Co., Ltd.) 21*s*. net.

The Platinum Metals. By A. D. Lumb. (Imperial Institute Monographs on Mineral Resources.) Pp. ix+63. (London: J. Murray.) 3*s*. 6*d*. net.

Das Naturbild der Neuen Physik. By Prof. A. Haas. Pp. v+114. (Berlin and Leipzig: W. de Gruyter and Co.) 4.05 schill.

The Northern D'Entrecasteaux. By D. Jenness and the late Rev. A. Ballantyne. Pp. 219. (Oxford: Clarendon Press.) 12*s*. 6*d*. net.

The Progress to Geography. Edited by Dr. R. Wilson. Stage iii.: Myself and my Country: A Study in Civic Geography. Pp. 224. 3*s*. 6*d*. Stage iv.: The British World. Pp. 256. 4*s*. (London: Macmillan and Co., Ltd.)

Recent Advances in Organic Chemistry. By Prof. A. W. Stewart. Fourth edition. Pp. xvi+359. (London: Longmans, Green and Co.) 21*s*. net.

Department of the Interior. United States Geological Survey. Bulletin 597: Geology of Massachusetts and Rhode Island. By B. K. Emerson. Pp. 289+x plates. Professional Paper 96: The Geology and Ore Deposits of Ely, Nevada. By Arthur C. Spencer. Pp. 189+xv plates. Professional Paper 99: Chemical Analyses of Igneous Rocks. Published from 1884 to 1913 inclusive. By H. S. Washington. Pp. 1201. Professional Paper 111: The Ore Deposits of Utah. By B. S. Butler and others. Pp. 672+lvii plates. (Washington: Government Printing Office.)

La Chimie et la Vie. By G. Bohn and Dr. A. Drzewina. Pp. 275. (Paris: E. Flammarion.) 7.50 francs.

Laboratory Manual of the Technic of Basal Metabolic Rate Determinations. By Dr. W. M. Boothby and Dr. I. Sandiford. Pp. 117. (Philadelphia and London: W. B. Saunders Co.) 24*s*. net.

Advanced Lessons in Practical Physiology for Students of Medicine. By Dr. R. Burton-Opitz. Pp. 238. (Philadelphia and London: W. B. Saunders Co.) 18*s*. net.

A Course of Practical Physiology for Agricultural Students. By J. Hammond and E. T. Halnan. Pp. 106. (Cambridge: At the University Press.) 4*s*. 6*d*. net.

Girolamo Saccheri's Euclides Vindicatus. Edited and translated by Dr. G. B. Halsted. Pp. xxx+246. (Chicago and London: The Open Court Publishing Co.) 10*s*. net.

The Early Mathematical Manuscripts of Leibniz. Translated from the Latin Texts published by Carl Immanuel Gerhardt, with critical and historical notes by J. M. Child. Pp. iv+238. (Chicago and London: The Open Court Publishing Co.) 7*s*. 6*d*. net.

The Reversal of Halphen's Transformation. By H. E. J. Curzon. Pp. 15. (London: Constable and Co., Ltd.) 1*s*. net.

Dead Man's Plack and an Old Thorn. By W. H.