

ture of caoutchouc, by Hermann F. Lueders. Caoutchouc has no definite structure *per se*, and all apparent structure is only the result of the conditions under which its coagulation from the latex and subsequent solidification take place.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, August 21.—M. Lœwy in the chair.—On the equations of motion of a solid body moving in an indefinite liquid, by M. C. Maltézos.—On the alternations of colours presented by gratings, by M. Georges Meslin. If the achromatic fringes previously obtained by the author by means of a grating are observed more and more closely to the latter, they become more and more delicate, and certain colours begin to appear. The black fringes remain dark, but of two consecutive bright fringes the one appears violet and the other yellow; the same phenomena occurs along the whole field, which is covered with these two alternate colours. On moving the microscope slowly forward, a great variety of colours is observed, but the most usual are a mauve-violet associated with yellow, green combined with pink, or blue accompanied by white. The two colours in juxtaposition are thus nearly complementary, and during this displacement the same appearances recur several times, becoming more complex as the distance diminishes. The black fringes become very fine, the interval between two of them closes up, whilst the adjoining interval opens out and splits into coloured bands with a blue, pink, or yellow axis. In every case the phenomenon retains its periodic character. M. Meslin has succeeded in obtaining some very instructive photographs of these fringes.—On two new diseases of the mulberry, by MM. G. Boyer and F. Lambert. One of these diseases is caused by a bacterium, the other by a fungus. The disease caused by the *Bacterium mori*, chiefly affects young nursery mulberries, and arrests the development of their branches. It is manifested by dark brown patches at some points on the under side of the leaves and on the branches. Artificial patches in the parenchyma and in the veins of the leaves have been produced by inoculation. The bacterium when isolated and cultivated on artificial solid media, gives hemispherical colonies passing from white to yellow. The fungus disease is the more common of the two. The buds and leaves wither and dry up. The disease proceeds from the twigs to the branches and the trunk, and finally attacks the roots. The grey colour assumed by the wood is caused by the mycelium of a parasitic fungus not yet completely isolated. The mycelium is varicose, septiferous, and ramified. Its colour passes from white to a pale yellow, and finally to brown.—On the geogeny and stratigraphy of the coal basins of Central France, by M. A. Julien.—The Cambrian of the Herault, by MM. de Rouville, Delage, and Miguel. The authors have recognised three groups in the Herault Cambrian which they provisionally name Anteparadoxidian, Paradoxidian, and Postparadoxidian, corresponding to the Longmynd, Menevian, and Tremadoc groups respectively. In the third group, corresponding to the Tremadoc slates and Lingula flags, traces of Lingulæ have been found. An important fact concerning the stratigraphy of the country has been discovered in certain inversions extending over great lengths, unaccompanied by any indication of violent dislocation or rupture.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

BOOKS.—The State of Para; Notes for the Exposition of Chicago (New York).—A Short Course in the Theory of Determinants: L. G. Weld (Macmillan).—A Treatise on the Theory of Functions: J. Harkness and F. Morley (Macmillan).—A Select Bibliography of Chemistry, 1492-1892: H. C. Bolton (Washington).—Cyclone Memoirs, No. V.: J. Eliot (Calcutta).—Rainfall in South Australia and the Northern Territory, 1892: C. Todd (Adelaide).—Observations of the Transit of Venus, December 9, 1874: H. C. Russell (Sydney).—Alcibiad Club, Reprints No. 3.—Experiments on Air: Hon. H. Caversham (Edinburgh, Clay).
PAMPHLETS.—Reprint on the Operations of the Department of Land Records and Agriculture, Madras Presidency, 1891-92 (Madras).—The State of São Paulo: A. A. Pinto (Chicago).—Meteorology at the Paris Exposition: A. L. Roth.—The Value of Hypnotism: T. Crisfield (London).—The Geometrical Properties of the Sphere; W. Briggs and F. W. Edmondson (Clive).
SERIALS.—L'Anthropologie, tome iv. No. 3 (Paris, Masson).—Journal of the Franklin Institute, August (Philadelphia).—Astronomy and Astrophysics, August (Northfield, Minn.).—Quarterly Journal of the Royal Meteorological Society, July (Stanford).—Meteorological Record, Vol. xii. No. 48 (Stanford).—Katalog der Bibliothek der Kaiserlichen Leopoldinisch-

Carolinischen Deutschen Akademie der Naturforscher, Liefg. 1 to 3 (Williams and Norgate).—Katalog der Bibliothek der Kaiserlichen Leopoldinisch-Carolinischen Deutschen Akademie der Naturforscher, Vierte, Liefg. Band II. 8 (Williams and Norgate).—Sitzungsberichte der k. Akademie der Wissenschaften. Math.-Naturw. Classe Enthält die Abhandlungen aus dem Gebiete der Chemie. Abth. II. b. 1892, June, July, October to December (Williams and Norgate).—Sitzungsberichte der k. Akademie der Wissenschaften. Math.-Naturw. Anatomie und Physiologie, &c., 1892, June, July, October to December (Williams and Norgate).—Sitzungsberichte der k. Akademie der Wissenschaften. Math.-Naturw. Mineralogie, Krystallographie, &c., 1892, July, October, November, and December (Williams and Norgate).—Sitzungsberichte der k. Akademie der Wissenschaften. Math.-Naturw. Mathematik, Astronomie, &c., 1892, June, July, October, November, and December (Williams and Norgate).—Register zu den Bänden 97 bis 100 der Sitzungsberichte der Mathematisch-Naturwissenschaftlichen Classe der k. Akademie der Wissenschaften xiii. (Williams and Norgate).—The Journal of the College of Science, Imperial University, Japan, Vol. v. Part 4 (Tokyo).—Journal of the Royal Microscopical Society, August (Williams and Norgate).—Journal of the Marine Biological Association, new series, vol. 3, No. 1 (Dulau).—Journal of the Polynesian Society, Vol. 2, No. 2 (Wellington).—Transactions and Proceedings of the N.Z. Institute, 1892, Vol. xxv. (Wellington).—Ergebnisse der Meteorologischen Beobachtungen, Jahrg. 3 (Bremen).—Journal de Physique Aug. (Paris).—Zeitschrift für Physikalische Chemie, xii. Band, 2 Hef (Leipzig).—Botanical Gazette, August (Bloomington, Ind.).—Bulletin of the U.S. Geological Survey, Nos. 82 to 86, 90 to 96 (Washington).—Jahrbuch der k. k. geologischen Reichsanstalt, Jahrg. 1893, xliii. Band, 1 Hef (Williams and Norgate).—Morphologisches Jahrbuch, 20 Band, 2 Hef (Williams and Norgate).—Mittheilungen von Forschungsreisenden und Gelehrten aus den Deutschen Schutzgebieten, vi. Band, 3 Hef (Berlin, Mittler).—The Asclepiad, No. 38, vol. x. (Longmans).—Journal of the Royal Horticultural Society, vol. xvi. Part 1 (London).—Meteorologische Zeitschrift, 1893 January to August (Wien).—Himmel und Erde, September (Berlin).—Bulletins de la Société d'Anthropologie de Paris, tome quatrième, ive série, No. 7 (Paris).

CONTENTS.

	PAGE
Birds in a Village. By T. D. P.	409
A Mathematical Miscellany	410
Our Book Shelf:—	
Vasey: "Grasses of the Pacific Slope, including Alaska and the Adjacent Islands"	411
Ellis: "Reveries of World History, from Earth's Nebulous Origin to its Final Ruin; or, the Romance of a Star"	411
Letters to the Editor:—	
The Publication of Physical Papers.—Alex. P. Trotter	412
The Definition of "Hereditv."—J. Spencer Smithson	413
Sexual Colouration of Birds.—F. C. Headley	413
Bird's Steering Methods.—F. A. Lucas	414
The Early Spring of 1893.—W. B. Crump	414
Mr. Love's Treatise on Elasticity.—A. B. Basset, F.R.S.	415
An Appeal to Mathematicians.—Kanhaiyalal	415
Arrangements for Work of Chemical Section of the British Association.—Prof. J. Emerson Reynolds, F.R.S.	416
The Bacchus Marsh Boulder Beds.—R. D. Oldham	416
Old and New Astronomy.—A. C. Ranyard; The Reviewer	416
An Old Device Resuscitated.—F. W. Levander	416
Laws of Error in Drawing.—Arthur L. Haddon	416
The Influence of Egypt upon Temple Orientation in Greece. By J. Norman Lockyer, F.R.S.	417
British Association Meeting. By Prof. Frank Clowes	419
George Brook	420
Notes	421
Our Astronomical Column:—	
Honorary Distinctions	425
A Meteor	425
A Bequest to Astronomy	425
Geographical Notes.	
The Beaver Creek Meteorite. By Prof. B. J. Harrington	426
Spangolite, a Remarkable Cornish Mineral. By H. A. Miers	426
Desulphurisation of Iron. By John Parry	427
The Meteorological Observatory on Ben Nevis. (Illustrated).	428
University and Educational Intelligence	431
Scientific Serials	431
Societies and Academies	432
Books Pamphlets, and Serials Received	432