

bird of the genus *Drepanis*, discovered by Mr. R. C. L. Perkins in the island of Molokai, Sandwich Islands.

PARIS.

Academy of Sciences, November 13.—M. Lœwy in the chair.—On the new star of 1892, T Aurigæ = 1953 Chandler, by G. Bigourdan (see our Astronomical Column).—Observations of the comets 1893 II. (Rordame) and 1893 c (Brooks, 1893, October 16), made at the Paris Observatory, by the same author. Observations of position are given, extending from November 6 to 8.—Elements of Brooks's comet, by M. Schulhof. The elements of this comet closely resemble those of the comet 1864 I.—Control of the trunnions of a meridian instrument by Fizeau's interferential method, by Maurice Hamy.—Measurement of the absorption of light by thin laminae possessing metallic reflection, by M. Salvador Block.—Determination of the true atomic weight of hydrogen, by M. G. Hinrichs. Taking as abscissæ the weights of hydrogen employed by Keiser, Dittmar, and Morley, in their respective determinations of the atomic weight of hydrogen, and as ordinates the values found, the author has obtained a diagram which indicates that the values vary according to the weight of gas used in the experiments. In his opinion this proves that the ratio of H to O is absolutely as 1 is 16.—On baryta emetic, by M. E. Maumené.—On the production of sucrose during the fermentation of barley, by M. L. Lindet. The experiments described indicate that sucrose and invert-sugar increase proportionally to the decrease of starch during the fermentation of barley.—On the nitrification of prairie lands, by MM. J. Dumont and J. Crochetelle. The following conclusions seem to be justified by the experiments: (1) Nitrification is forwarded in soils rich in humus by the addition of small quantities of potassium carbonate (2 or 3 parts per 1000); on the other hand, large quantities of the carbonate are hurtful. (2) Potassium sulphate is efficacious, and favours the production of nitrates when about seven or eight parts per thousand are used. (3) Chloride of potassium only exercises mediocore action. (4) Sodium carbonate does not appear to favour nitrification.—On the influence of mineral poisons on lactic fermentation, by MM. A. Chassevant and C. Richet. This paper is in continuation of a previous one. The authors divide the toxic action of metallic salts on lactic fermentation into two parts, terming the dose that retards the reproduction and pullulation of the ferment *antigénétique*, while that which arrests functional activity is called *antibiotique*. It appears that the antigenetic dose may be as much as three times greater than the antibiotic dose, though for certain metals the two quantities are the same.

DIARY OF SOCIETIES.

LONDON.

THURSDAY, NOVEMBER 23.

ROYAL SOCIETY, at 4.30.—On the Photographic Arc Spectrum of Electrolytic Iron: Prof. Lockyer, F.R.S.—Magnetic Observations in Sengambia: Prof. Thorpe, F.R.S., and P. L. Gray.—Alternate Current Electrolysis: Dr. Hopkinson, F.R.S., E. Wilson, and F. Lydall.—A Certain Class of Generating Functions in the Theory of Numbers: Major MacMahon, F.R.S.—On the Whirling and Vibration of Shafts: S. Dunkerley.—On Plane Cubics: Charlotte Angus Scott.
 INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—The Electrical Transmission of Power from Niagara Falls: Prof. Geo. Forbes, F.R.S. (Discussion).
 SANITARY INSTITUTE, at 8.—Metallic Dusts, Cutlery, Tool Making, and other Metal Trade: Dr. Sinclair White.

FRIDAY, NOVEMBER 24.

PHYSICAL SOCIETY, at 5.—The Magnetic Shielding of Concentric Spherical Shells: Prof. A. W. Rücker, F.R.S.—The Action of Electro-Magnetic Radiation on Films containing Metallic Powders: Prof. G. M. Minchin.
 AMATEUR SCIENTIFIC SOCIETY, at 7.—Exhibition of Lantern Slides of Recent Photographs of Volcanoes: L. W. Fulcher.—At 8.—The Dawning of Life: J. Wilson Wiley.

SATURDAY, NOVEMBER 25.

ROYAL BOTANIC SOCIETY, at 3.45.

SUNDAY, NOVEMBER 26.

SUNDAY LECTURE SOCIETY, at 4.—Curiosities of Bird Life: Dr. R. Bowdler Sharpe.

MONDAY, NOVEMBER 27.

ROYAL GEOGRAPHICAL SOCIETY (at the University of London, Burlington Gardens, W.), at 8.30.—Antarctic Exploration: Dr. John Murray.

TUESDAY, NOVEMBER 28.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Tansa Works for the Water-Supply of Bombay: William J. B. Clerke.—The Paroda Water-Works: Jagannath Sadasewjee.—The Water-Supply of Jeypore, Rajputana: Colonel S. S. Jacob.—On the Design of Masonry Dams: Prof. Franz Kreuter. (Discussion).

THURSDAY, NOVEMBER 30.

SANITARY INSTITUTE, at 8.—Textile Manufactures, Silk, Cotton, Woollen, and Linen Industries: Dr. J. T. Arlidge.

FRIDAY, DECEMBER 1.

GEOLOGISTS ASSOCIATION, at 8.—Notes on a Discovery of Fossils at Little Stairs Point, Sandown Bay, Isle of Wight: Thos. Leighton.—Notes on the Sharks' Teeth from British Cretaceous Formations: A. Smith Woodward.—The Breaking-up of the Ice on the St. Mary River, Nova Scotia, and its Geological Lessons: Geoffrey F. Monkton.
 INSTITUTION OF CIVIL ENGINEERS, at 7.30.—Forms of Tensile Test-Pieces: Leonard H. Appleby.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

BOOKS.—Alembic Club Reprints, No. 4:—Foundations of the Molecular Theory: J. Dalton, &c. (Edinburgh, Clay).—Practical Agricultural Chemistry: J. B. Coleman and F. T. Addyman (Longmans).—Methods of Practical Hygiene, 2 Vols.: Prof. Lehmann, translated by W. Crookes (K. Paul).—Suicide and Insanity: Dr. S. A. K. Strahan (Sonnenschein).—Mechanics of Hoisting Machinery: Dr. J. Weisbach and Prof. G. Herrmann, translated by K. P. Dahlstrom (Macmillan).—In the High Heavens: Sir R. S. Ball (Isbister).—Collected Mathematical Papers of Arthur Cayley, vol. vi. (Cambridge University Press).—Cancer, Sarcoma, and other Morbid Growths considered in Relation to the Sporozoa: J. J. Clarke (Baillière).—International Maritime Congress, London, 1893, Sections 1 to 4, Minutes of Proceedings and General Report (Unwin Brothers).—Report of the Commissioner of Education for the Year 1889-90, Vols. 1 and 2 (Washington).—Royal Natural History, vol. 1, part 1: edited by K. Lydekker (Waine).—The Beauties of Nature: Sir J. Lubbock, 5th edition (Macmillan).
 PAMPHLET.—Owens College Museum Hand-books—General Guide to the Contents of the Museum, 2nd edition (Manchester, Cornish).
 SERIALS.—Bulletin Astronomique, October (Paris).—Meteorological Record, vol. xiii. No. 49 (Stanford).—Quarterly Journal of the Royal Meteorological Society, October (Stanford).—Journal of the College of Science, Imperial University, Japan, vol. 6, part 3 (Tokyo).—Journal of the Franklin Institute, November (Philadelphia).—Proceedings of the Aristotelian Society, vol. 2, No. 2, Part 2 (Williams & Norgate).—Brain, Part 63 (Macmillan).—Boletín de la Sociedad Geográfica de Madrid, Tomo 35, Nos. 1, 2, 3 (Madrid).—Journal of Marine Zoology and Microscopy, No. 1 (Jersey, Sinel and Hornell).—Journal of the Polynesian Society, vol. 2, No. 3 (Wellington).

CONTENTS.

PAGE

Watson's Kinetic Theory of Gases. By Prof. P. G. Tait	73
A History of Crustacea	74
Our Book Shelf:—	
Mukhopadhyay: "An Elementary Treatise on the Geometry of Conics"	75
Briggs and Edmondson: "The Geometrical Properties of the Sphere"	75
Carroll: "A Key to Carroll's Geometry"	75
Letters to the Editor:—	
"Geology in Nubibus"—A Reply to Dr. Wallace and Mr. LaTouche.—Sir Henry H. Howorth, K.C.I.E., M.P., F.R.S.	75
Rock Basins in the Himalayas.—R. D. Oldham	77
"Composite" Dykes. (Illustrated.)—Henry E. Ede	77
Weismannism.—Dr. George J. Romanes, F.R.S.	78
Correlation of Solar and Magnetic Phenomena.—A. R. Hinks; William Ellis, F.R.S.	78
Artificial Amoebæ and Protoplasm.—Dr. John Berry Haycraft	79
The Royal Society Club	79
The De Morgan Medal	80
Notes	80
Our Astronomical Column:—	
Mechanical Theory of Comets	84
The New Star in Norma	85
The Natal Observatory	85
Magnitude and Position of T Aurigæ	85
The Period of Jupiter's Fifth Satellite	85
Geographical Notes	85
Flame. (Illustrated.) By Prof. Arthur Smithells	86
University and Educational Intelligence	92
Scientific Serials	92
Societies and Academies	93
Diary of Societies	96
Books, Pamphlets, and Serials Received	96