

thal's comet (1888, I.) made with the 0.38 m. equatorial at the Observatory of Bordeaux, by MM. G. Rayet and Courty. The observations range from April 4 to July 12.—Potential energy of the gravitation of a planet, by M. O. Callandreu. The object of this note is to show that the potential energy of a planet's gravitation—in other words, the power of attraction displayed in drawing the molecules from boundless space to their present position—may be approximately calculated if its dimensions, mass, and angular velocity of rotation be known, irrespective of the law of internal densities.—On actino-electric phenomena, by M. E. Bichat. The passage of electricity of high or feeble tension is known to be greatly facilitated when the electrified body is illumined by very refrangible radiations. In a previous communication it was shown that in Stoletow's experiment the substitution of a sheet of water for the metallic plate produces no deviation of the galvanometer, which seems to prove that the electricity is not transmitted by conduction. This inference is confirmed by the experiments here described.—On some new electric phenomena produced by radiations, by M. Auguste Righi. In continuation of previous researches, the author here reports a series of further results connected with the same order of phenomena.—On the employment of the sulphite of soda in photography, by M. Paul Poiré. The process here described has the advantage of avoiding the cloudiness produced by the prolonged action of the carbonate. Plates left forty-five minutes in the bath acquire a continual increase of intensity without presenting the least appearance of cloudiness.—On the land locomotion of reptiles and four-footed Batrachians compared with that of Mammalian quadrupeds, by M. G. Carlet. The locomotion of frogs, toads, lizards, and the like is described as a peculiar action, somewhat analogous to the trot of quadrupeds, and exactly like that of two men walking one behind the other with *contrary* step. It is a sort of slow trot, without any suspension of the body in the air.—M. Carlet communicates a supplementary paper in illustration of the same subject, on the locomotion of an insect rendered tetrapod by deprivation of the two middle legs. The experiment explains the persistence in all these organisms of the six legs, which appear to be not merely useful, but even necessary to secure stability and rapid locomotion.—A series of papers are contributed by MM. Philippe Thomas, P. Fliche, and Bleicher, on the petrified vegetation of Tunis. These fossils are shown to belong to the same Pliocene formation, and to be otherwise closely analogous to the well-known petrified forests in the neighbourhood of Cairo. Specimens of a like character have been picked up in Algeria and other parts of Mauritania, rendering it highly probable that the whole of North Africa, from the Mediterranean to the verge of the Sahara, was covered with a somewhat uniform vegetation in Pliocene times.

STOCKHOLM.

Royal Academy of Sciences, September 12.—Demonstration of a proposition, which touches upon the question of the stability of the planetary system, by Prof. Gylden.—The same exhibited a calculating machine made by Herr Sörensen.—On a paper by Baron von Camerlander in Vienna, on the fall of meteoric dust in some parts of Austria in February this year, by Baron Nordenskiöld.—The same exhibited a new mineral from Pojsberg, which he had named Brandtit.—On crystals of native lead from Pojsberg, by Herr A. Hamberg.—On two new chlorides of indium, and on the density of the vapour of the chlorides of indium, gallium, iron, and chromium, by Profs. Nilsson and Pettersson.—On the theory of the numbers and functions of Bernoulli, based on a system of functional equations, by Dr. Berger.—On change of the sea-level at Altenfiord, by Commodore Littichöök.—On some definite integrals, by Dr. C. F. Lindman.—Contributions to the theory of a singular solution of a partial differential equation with two independent variables, by Dr. J. Möller.—Observations on the condensation of the vapour of water in a humid, electrical atmosphere, by Herr G. A. André.—On a species of Annelida living with hermit crabs, by Dr. Wirén.—On some derivatives of α - β -dichlor-naphthaline, by Herr P. Hellström.—On the former occurrence of *Felis catus* in Scania, by Prof. Qvennerstedt.—On Dahllit, a new mineral from Bamle, in Norway, by Prof. W. C. Brögger and Herr H. Bäckström.—On the freezing-point of dilute aqueous solutions, by Dr. S. Arrhenius.—Galvanometric measurements on the influence that is exercised by an electric spark on another spark, by Dr. C. A. Mebius.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

Untersuchungen zur Morphologie und Systematik der Vögel; I. Spezieller Theil, II. Allgemeiner Theil: Max Fürbringer (T. Van Holkema, Amsterdam).—Fossils of the British Islands: Vol. i. Palaeozoic: R. Etheridge (Clarendon Press).—A Class-book of Elementary Chemistry: W. W. Fisher (Clarendon Press).—General Report on the Operations of the Survey of India Department during 1886-87 (Calcutta).—Fourfold Root and Will in Nature: A. Schopenhauer (Bell).—University College, Liverpool, Calendar for the Session 1888-89 (Holden, Liverpool).—Papers and Proceedings of the Royal Society of Tasmania for 1887 (Tasmania).—Laboratory Manual of General Chemistry: R. P. Williams (Ginn, Boston).—An Introduction to Practical Inorganic Chemistry: W. Jago (Longmans).—Les Formes du Terrain, Texte et Planches: G. de la Noë and E. de Margerie (Paris).—The International Annual of Anthony's Photographic Bulletin (Greenwood).—A Catalogue of the Moths of India, Part 3: E. C. Cotes and C. Swinhoe (Calcutta).—Sixth Annual Report of the Fishery Board for Scotland, for the year 1887: Three Parts (Edinburgh).—Instruction in Photography: eighth edition: Captain W. de W. Abney (Piper and Carter).—The Metallurgy of Gold: M. Eissler (Lockwood).—Key to Lock's Arithmetic for Schools: Rev. R. G. Watson (Macmillan).—Report on the Eruption of Tarawera and Rotomahana, N.Z.: A. P. W. Thomas (Wellington, N.Z.).—Die Schwankungen der Hocharmenischen Seen Seit 1800: Dr. R. Sieger (Wien).—Bulletin du Comité International Permanent pour l'Exécution Photographique de la Carte du Ciel, 2e Fascicule (Gauthier-Villars, Paris).—Die Fossile Pflanzen-Gattung Tylocladon: H. Potonié (Berlin).—Ueber den Einfluss niedriger Sauerstoffpressungen auf die Bewegungen des Protoplasmas: J. Clark (Berlin).—Der Feuerstoff: L. Mann (Berlin).—The Minerals of New York County, U.S.A. (New York).—Journal of the Chemical Society, October (Gurney and Jackson).—Bulletin de l'Académie Impériale des Sciences de St. Pétersbourg, tome xxxii. Nos. 2 and 4.

CONTENTS.

PAGE

The Zoological Results of the <i>Challenger</i> Expedition	564
Our Book Shelf:—	
Sherborn: "A Bibliography of the Foraminifera, Recent and Fossil, from 1565 to 1888"	562
Harrison and Wakefield: "Earth Knowledge"	563
Jones: "An Introduction to the Science and Practice of Photography"	563
Blaine: "Numerical Examples in Practical Mechanics and Machine Design"	563
Foster: "A Text-book of Physiology"	564
Johnson: "The Analyst's Laboratory Companion"	564
Letters to the Editor:—	
Prophetic Germs.—The Duke of Argyll, F.R.S.	564
The Geometric Interpretation of Monge's Differential Equation to all Conics.—Prof. Asutosh Mukhopadhyay	564
Upper and Lower Wind Currents over the Torrid Zone.—Dr. W. Doberck	565
The Natural History of the Roman Numerals.—Edw. Tregear	565
Indian Life Statistics.—S. A. Hill	565
A Shell-Collector's Difficulty.—Consul E. L. Layard	566
"Fauna and Flora of the Lesser Antilles."—H. A. Alford Nicholls	566
Sun Columns.—Hy. Harries	566
The Report of the Krakatoa Committee of the Royal Society. II.	566
Foundations of Coral Reefs. By Capt. W. J. L. Wharton	568
Recent Visit of Naturalists to the Galapagos. By Dr. P. L. Sclater, F.R.S.; Leslie A. Lee	569
The British Association:—	
Section A—Mathematical and Physical Science. (With a Diagram.)	569
Notes	573
Our Astronomical Column:—	
The Light-Curve of U Ophiuchi	576
Comets Brooks and Faye	576
Comet 1888 e (Barnard)	576
Astronomical Phenomena for the Week 1888	
October 14-20	577
Geographical Notes	577
Electrical Notes	577
Molecular Physics: an Attempt at a Comprehensive Dynamical Treatment of Physical and Chemical Forces. III. By Prof. F. Lindemann	578
Compressibility of Water, Salt Water, Mercury, and Glass. By Prof. P. G. Tait	581
Scientific Serials	582
Societies and Academies	583
Books, Pamphlets, and Serials Received	584