logical microscope made upon the same lines; also, a small box for holding slides, for which a patent had been obtained by Mr. Moseley, its inventor. The slides were held in flat trays in the usual way, but they were so arranged that, upon opening the front of the box, the trays were drawn forward so as to form a series of layers overlapping sufficiently to expose the labels at the front end of each row, and enabling the position of any particular slide to be seen without the necessity of removing the trays in search of it.-Mr. Crisp exhibited apparatus by which it was proposed to convert a microscope into a microtome by placing the embedded substance in the lower end of the tube, and cutting sections by means of a blade fitted to move upon the stage plate.—Mr. J. Mayall, Jun., described the various microscopes and accessories which he had examined at the Paris Exhibition, pointing out that, whereas at former International Exhibitions most of the best makers in England, America, and other countries were exhibitors, on this occasion they had been rather conspicuous by their absence. The French opticians were fairly well represented as to numbers, but the instruments they exhibited were for the most part of the old, not to say antiquated, types. He had seen very little that was new in the matter of design.

Zoological Society, December 3.—Mr. Osbert Salvin, F.R.S., Vice-President, in the chair.—The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of November 1889.—An extract was read from a letter received from the Rev. G. H. R. Fisk, concerning some specimens of Bipalium kewense, which he was keeping in captivity at Cape Town.-Mr. Henry Seebohm exhibited and made remarks upon some specimens of new or rare species of birds lately received from the Bonin Islands, North Pacific. - Mr. Sclater exhibited and made remarks on an egg of the crested screamer (Chauna chavaria), from the collection of Mr. J. J. Dalgleish.—Mr. F. E. Beddard read the first of a series of contributions to the anatomy of Picarian birds. The present communication treated of some points in the structure of the hornbills (Bucerotidæ), particularly of the syrinx, and of the muscular anatomy of these birds.-Mr. Beddard also read a paper upon the anatomy of Burmeister's cariama (Chunga bur meisteri), and pointed out the differences between this form and Cariama cristata.—Mr. G. W. Butler read a paper on the relations of the fat-bodies (subperitoneal and subcutaneous) of the Sauropsida. The author showed that a consideration of the subperitoneal fat-bodies appeared to throw light on the condition of the abdominal membranes in the monitors.—A communication was read from the Rev. H. S. Gorham, containing descriptions of new species of the Coleopterous family Erotylidæ from various localities. - A communication was read from Mr. L. Taczanowski, containing the description of a new warbler of the genus Locustella from Corea, which he proposed to call Locustella pleskei .-Mr. Oldfield Thomas pointed out the characters of a new mungoose, allied to *Herpestes albicaudatus*, which he proposed to call *H. grandis*. The type specimen (a skeleton) had been obtained by Mr. T. E. Buckley in South-East Africa.

Royal Academy of Sciences, December 11.—The Ascoceratidæ and the Lituitidæ of the Upper Silurian formation of Gotland described, by Prof. G. Lindström.—Researches on the constitution of the spectra of emission of the chemical elements, by Dr. T. R. Rydberg.—On the observations at the Observatory of Upsala to determine the equinoctium of the spring 1889, by Dr. K. Bohlin and C. Schulz-Steinheil.—Definitive elements of the orbit of the comet 1840, by C. Schulz-Steinheil.—On the ores and minerals of the Gellivard district, especially the apatite, by Herr A. Sjögren.—The English edition of the atlas of fac-simile maps, by Prof. A. E. Nordenskiöld, exhibited by himself.—On the conductibility of snow, by Dr. S. Hjältström. On the influence of the averting force of the telluric rotation on the movement of the air, by Dr. N. Ekholm.—A large collection of mosses from Japan, Korea, and East India, presented to the State Museum by Captain S. Ankarcrona, R.N., and determined by Dr. W. Brotherus, of Helsingfors, and by Dr. Carl Müller in Halle, arbibited by Prof. Wittendt. Carl Müller, in Halle, exhibited by Prof. Wittrock. On the recently-published first part of the second supplement to C. F. Nyman's "Conspectus floræ Europeæ," by Prof. Wittrock.—Echinologica, by Prof. S. Lovèn.—Some morphologic researches on the arteries of the brain of the Vertebrata, by Herr A. Klinkowström.—Derivatives of ortho-amido-benzyl alcohol, ii., by Dr. G. H. Söderbaum and Prof. Widman.—On distri azol combinations, by Dr. Bladin.—On naphtoe acids, by Dr. Ekstrand.

-Derivatives of sulphate of ammonium, by Herr O. S. Hector. -Demonstration of some theories of Poincaré, by Herr de

## DIARY OF SOCIETIES.

## LONDON.

SATURDAY, DECEMBER 28.

ROYAL INSTITUTION, at 3.—Electricity (adapted to a Juvenile Auditory):

Prof. A. W. Rücker, F.R.S.

TUESDAY, DECEMBER 31.

ROYAL INSTITUTION, at 3.—Electricity (adapted to a Juvenile Auditory):

Prof. A. W. Rücker, F.R.S.

WEDNESDAY, JANUARY 1.

SOCIETY OF ARTS, at 7.

THURSDAY, JANUARY 2.
ROYAL INSTITUTION, at 3.—Electricity (adapted to a Juvenile Auditory): FRIDAY, JANUARY 3.

GEOLOGISTS' ASSOCIATION, at 8.

SATURDAY, JANUARY 4. at 3.—Electricity (adapted to a Juvenile Auditory): ROYAL INSTITUTION, at 3.—E. Prof. A. W. Rücker, F.R.S.

## BOOKS, PAMPHLETS, and SERIALS RECEIVED.

The Bala Volcanic Series of Caermarthenshire and Associated Rocks: A. Harker (Camb. University Press).—The Popular Works of Johann Gottlieb Fichte, 2 vols.; translated lby Dr. W. Smith (Trübner).—Astronomy with an Opera-Class: G. P. Serviss. and edition (Appleton).—Logic Taught by Love: M. Boole (Edwards).—The Collected Mathematical Papers of Arthur Cayley, vol. ii. (Camb. University Press).—Aperçu des Travaux Geographiques en Russie: Baron N. Kaulbars (St. Pétersbourg).—Magnetic and other Physical Properties of Iron at a High Temperature: Dr. J. Hopkinson (Trübner).—On a Fossil Fish: M. Browne (Leicester).—Journal of the Chemical Society, December (Gurney and Jackson).—Brain, Part 47 (Macmillan).—Proceedings of the Geologists' Association, vol. xi. No. 5 (Stanford).—The Prevention of Measles: C. Candler (K. Paul).—Lectures on the Religion of the Semites: W. Robertson Smith (Edinburgh, Black).—Le Temps de Pose: A. de la Baume Pluvinel (Paris, Gauthier-Villars).—Manual de Phototypie: M. G. Bonnet (Paris, Gauthier-Villars).—The Proceedings of the Linnean Society of New South Wales, vol. iv. Part 2 (Sydney).—Internationales Archiv für Ethnographie, Band ii. Heft 5 (Trübner).

	AGE
Recent Ornithological Works. By R. Bowdler	
Sharpe	169
A Text-book of Organic Chemistry	171
Our Book Shelf:—	172
Du Chaillu: "The Viking Age; the Early History,	
Manners, and Customs of the Ancestors of the	
English-speaking Nations."—F. Y. P	173
Dunman and Wingrave: "A Glossary of Anatomical,	
Physiological, and Biological Terms	173
Letters to the Editor:-	
Acquired Characters and Congenital Variation.—The	
Duke of Argyll, F.R.S	173
Prof Oswald H Latter	174
Prof. Oswald H. Latter	174
St. George Mivart, F.R.S.	174
St. George Mivart, F.R.S	-7-7
John Murphy	175
Does the Bulk of Ocean Water Increase?—T.	
Mellard Reade	175
A Natural Evidence of High Thermal Conductivity	
in Flints.—Prof. A. S. Herschel, F.R.S Foreign Substances attached to Crabs.—Francis P.	175
	176
Pascoe	176
Suggestions for the Formation and Arrangement of	-10
a Museum of Natural History in Connection with	
a Public School. By Prof. W. H. Flower, F.R.S.	177
The Fishery Industries of the United States	178
Notes	180
Our Astronomical Column:—	.0.
Objects for the Spectroscope.—A. Fowler Variable Star in Cluster G.C. 3636	183 183
Changes in Lunar Craters	183
On the Future of our Technical Education	183
A First Foreshadowing of the Periodic Law. (With	5
Diagram.) P. J. Hartog	186
Scientific Serials	188
Societies and Academies	189
Diary of Societies	192
books, ramphiers, and Serials Received	192