

Morogues, to M. Millardet (Mildew).—*Anatomy and Zoology*. The Prix Thore, to M. Corbière (Muscineæ).—*Medicine and Surgery*: The Prix Montyon was distributed between MM. Huchard (Heart Diseases), Delorme (Army Surgery), and Pinard and Varnier (Pathological Atlas). The Prix Barbier, 500 fr. each to MM. Sanson (Heredity) and Dr. Mauclair (Osteo-Arthritis). The Prix Bréant, being the interest on a sum of 100,000 francs offered for a cure for cholera, was distributed amongst MM. Netter and Thoinot (French Cholera, 1892) and MM. Grimbart and Burlureaux (Treatment of Tuberculosis by Creosote Injections). The Prix Godard of 1,000 francs, to Dr. Tourneux (Physiological Atlas). The Prix Serres of 7500 francs, to M. Pizon (Blastogenesis), with small portions to MM. Sabatier (Spermatogenesis) and Letulle (Inflammation). The Prix Bellion of 1400 francs, to Dr. C. Chabré (Physiology of the Kidney) and Dr. Coustan (Fatigue). The Prix Mège to Dr. Herrgott (History of Obstetrics). The Prix Lallemand of 1800 francs, to M. Trolard (Venous System).—*Physiology*: The Prix Montyon of 750 francs, to M. Lulanić (Respiration) and MM. Abelous and Langlois (Renal Capsules). The Prix La Caze, of 10,000 francs, to M. d'Arsonval (Physiological Effects of Electricity). The Prix Pourat to M. E. Meyer (Renal Secretion). The Prix Martin-Damourette, of 1400 francs, to Dr. Géraud (Albuminuria).—*General Prizes*: The Arago Medal to Mr. Asaph Hall (Satellites of Mars) and Mr. E. E. Barnard (Jupiter's First Satellite). The Prix Montyon, for improvements in unhealthy industries, was divided between MM. Garros (Porcelain Manufacture) and Coquillon (Fire-damp Meter). The Prix Trémont, of 1100 francs, to M. Jules Morin for his useful hydrostatic and other inventions. The Prix Gegner of 4000 francs to M. Serret. The Prix Petit d'Ormoz of 10,000 francs, to M. Stieltjes (Mathematics), and another of the same amount to M. Marcel Bertrand (Physics of the Globe). The Prix Tchihatchef of 10,000 francs, to M. Grégoire Groum-Grschimailo (The Pamirs). The Prix Gaston Planté, of 3,000 francs, to M. Blondlot (Electric Interference). Mme. de Laplace's Prize, consisting of Laplace's works, to M. Bès de Berc, of the École Nationale des Mines.

BERLIN.

Physical Society, December 1.—Prof. Schwalbe, President, in the chair.—Prof. Neesen demonstrated a method of coating aluminium with other metals. This consists in dipping the aluminium in a solution of caustic potash or soda, or of hydrochloric acid, until bubbles of gas make their appearance on its surface, whereupon it is dipped into a solution of corrosive sublimate to amalgamate its surface. After a second dipping into caustic potash until bubbles of gas are evolved, the metal is placed in a solution of a salt of the desired metal. A film of the latter is rapidly formed, and is so firmly adherent that, in the case of silver, gold, or copper, the plate can be rolled out or polished. When coating with gold or copper, it is well to first apply a layer of silver. When thus treated the aluminium may be soldered with ordinary zinc solder.—Dr. Wien spoke on the entropy of radiation.

Meteorological Society, November 7.—Prof. von Bezold, President, in the chair.—Dr. Arendt spoke on the transport of heat by means of aerial currents on the earth's surface, based on calculations derived from material provided by the Hamburg station. He first determined for each month of the year the direction and rate of the wind, from which he calculated the resultant volume of air transported over Hamburg. From the temperature and speed of the winds he obtained, under certain assumptions, numerical values for the amount of heat carried towards Hamburg during each month of the year.

December 5.—Dr. Vettin, President, in the chair.—Prof. Hellmann presented a book on "Snow-crystals," and gave an account of its contents, during which he discussed fully the structure and classification of snow-crystals. All the crystals belong to the hexagonal system, and are either flat or columnar. The radiating stars, the plates, and mixed forms belong to the first category; while the prisms and much more rare pyramids belong to the second.—Dr. H. Meyer communicated the results of his observations, made in conjunction with Prof. Köppen, on the cloud-conditions of various climates. They had rejected as valueless mean values based on determinations which are largely influenced by the personal opinion of the observer, and had in preference calculated the frequency of the occurrence of clouds. They had in this, for simplicity's sake, distinguished between three groups: (1) Complete absence of clouds; cloudiness zero. (2)

Intermittent occurrence of clouds; cloudiness 1 to 9. (3) Total cloudiness represented by 10. Taking a series of stations in various climates, they had calculated and graphically represented the frequency of the three groups for the morning, midday, and evening for each month. It appeared that for Hamburg and the whole of middle and north Europe, in passing from the cold to the warm periods of both the day and year, the intermittent cloudiness increases; while complete cloudiness, which is most frequent in winter, and in the morning and evening, diminishes. Complete cloudlessness is always the most rare condition. The above characters change gradually towards the Mediterranean, even at Lesina, and more markedly at Alexandria. In mid-Asia, East Siberia, China, Batavia, and Rio Janeiro, and on the elevated station of Pike's Peak, and also on the Atlantic Ocean, the change in cloudiness in passing from winter to summer is reversed.

BOOKS and SERIALS RECEIVED.

BOOKS.—A Text-Book on Gas, Oil, and Air-Engines: B. Donkin, Jun. (Griffin).—An Elementary Treatise on Fourier's Series: Dr. W. E. Byerly (Boston, Ginn).—Uniplanar Algebra: Dr. J. Stringham (San Francisco, Berkeley Press).—Science and Hebrew Tradition: T. H. Huxley (Macmillan).—Dictionary of the Active Principles of Plants: C. E. Sohn (Bailière).—The Country and Church of the Cheeryble Brothers: Rev. W. H. Elliot (Selkirk, Lewis).—Hints to Travellers, 7th edition (Royal Geographical Society).—The Story of the Sun: Sir R. Ball (Cassell).
SERIALS.—Insect Life, Vol. 6, No. 2 (Washington).—Cabinet Portrait Gallery, Part 52 (Cassell).—Astronomy and Astro-Physics, December (Wesley).—Economic Journal, December (Macmillan).—Journal of the Franklin Institute, December (Philadelphia).—Internationales Archiv für Ethnographie, Band vi. Heft 6 (Kegan Paul).—Journal of the Royal Microscopical Society, (Williams and Norgate).—Royal Geographical Society, Supplementary Papers, Vol. III. Part 5 (Murray).

CONTENTS.

	PAGE
Quaternions as an Instrument in Physical Research.	
Prof. P. G. Tait	193
The Manufacture of Painter's Colours and Varnishes	194
British Fungus Flora. By Dr. M. C. Cooke	195
Our Book Shelf:—	
Dawson: "Some Salient Points in the Science of the Earth."	196
Cvijić: "Das Karstphänomen."—T. G. B.	197
Letters to the Editor:—	
The Origin of Lake Basins.—R. D. Oldham, Dr. A. R. Wallace, F.R.S.	197
The Second Law of Thermodynamics.—G. H. Bryan	197
Flame.—Prof. Arthur Smithells	198
The "Zoological Record."—R. I. Pocock; F. A. Bather	198
On the Bugonia-Superstition of the Ancients—Baron C. R. Osten Sacken	198
The Earliest Mention of the Kangaroo in Literature.—Baron C. R. Osten Sacken	198
On an Undescribed Rudimentary Organ in Human Attire.—Prof. Marcus Hartog	199
Early Asterisms. III. By J. Norman Lockyer, F.R.S.	199
The Secondary Education Movement. By Sir H. E. Roscoe, M.P., F.R.S.	203
The Sonnblick Mountain Observatory (Illustrated.)	204
Notes	205
Our Astronomical Column:—	
Small Distances Measured with the Heliometer	209
The Tail of Comet Brooks (c 1893)	210
Hydrogen Envelope of the Star D.M. + 30°3639	210
L'Astronomie for December	210
Geographical Notes	210
Epidemic Influenza. By the Hon. R. Russell	210
On a Method of Separating the Mineral Components of a Rock. (Illustrated.) By Prof. W. J. Sollas, F.R.S.	211
The Cloudy Condensation of Steam. By Shelford Bidwell, F.R.S.	212
Scientific Serials	214
Societies and Academies	215
Books and Serials Received	216