Paris Academy of Sciences.

PRIZES AND GRANTS AWARDED IN 1926.

MATHEMATICS.—The Bordin Prize has been awarded to Serge Bernstein for his "Lecons sur les propriétés extrémales et la meilleure approximation des fonctions analytiques d'une variable réelle"; the Poncelet Prize to Paul Montel for his mathematical work as a whole; the Francœur Prize to Gaston Julia for his works on the theory of functions.

Mechanics.—The Montyon Prize has been awarded to Kyrille Popoff for his book, "Les méthodes d'intégration de Poincaré et le probleme général de la balistique extérieure"; the Henri de Parville Prize to Antoine Alayrac for his work on the theory of flight; the Henri Bazin Foundation to Léo Escande and Marcel Ricaud for their researches concerning the mechanics of fluids.

Astronomy.—The Lalande Prize has been awarded to Armand Lambert for his catalogue of fundamental stars; the Damoiseau Prize to Joseph Renaux for the whole of his work; the Valz Prize to Frank Schlesinger, Director of the Yale University Observatory, for the whole of his work, particularly for his researches relating to the measurement of the parallax of stars by the trigonometric method; the Janssen Prize to Francisco Miranda da Costa Lobo for the whole of his astronomical work; the La Caille Prize to Gaston Fayet for the whole of his astronomical work.

Geography.—The Delalande-Guérineau Prize has been awarded to Jacques Hippolyte Grossard for his geodesic work in the Nile and Congo basins; the Gay Prize to Henri Michel for his studies on the improvement of tidal rivers; the Tchihatchef Prize to the late Jean Govin for his geodesic work; the Binoux Prize between François Roland for his work, "Les cartes anciennes de la Franche-Comté," and Jules Gaultier for his researches on surveying instruments.

Navigation.—The Prize of 6000 francs (in equal parts) has been divided between Émile Georges Barrillon, for his study on the waves produced by the motion of a ship, and André Apard for his work on the hygroscopic properties of the B powders; the Plumey Prize (2000 francs) has been awarded to Frédéric Marquet for his treatise on navigation.

Physics.—The La Caze Prize has been awarded to Charles Fabry for the whole of his scientific work; the Hebert Prize to Paul Bunet for his electrotechnical work; the Hughes Prize to François Croze for his work in spectroscopy; the Clément Felix Foundation to Georges Reboul for the continuation of his studies on badly conducting substances.

Chemistry.—Montyon Prize (Unhealthy Trades). A prize (2500 francs) has been awarded to Ernest Portier for his work as a whole on industrial hygiene, and an honourable mention (1500 francs) to Louis Chelle for his researches on gases used in warfare; the Jecker Prize is divided between André Wahl (6000 francs) for his work in organic chemistry and Gustave Vavon (4000 francs) for his researches on catalysis with platinum black; the La Caze Prize to André Job for his researches on the mechanism of oxidation; the Cahours Foundation between Raymond Delaby for his work on the homologues of glycerol, and Michel Samson for his work on glass; the Houzeau Prize to Louis Hackspill for his work in inorganic chemistry.

Mineralogy and Geology.—The Fontannes Prize has been awarded to Léon Moret for his "Contribution à l'étude des spongiaires siliceux du Crétacé supérieur français."

Meteorology and Physics of the Globe.—The Victor Raulin Prize has been awarded to Joseph Lacoste for his work in mineralogy and atmospherics.

Botany.—The Desmazières Prize has been awarded to Robert Kühner for his memoir entitled "Contribution à l'étude des Hyménomycètes et spécialement des Agaricacées"; the Montagne Prize divided between Georges Mangenot (1000 francs) for his memoirs on algæ, and Pierre Dombray (500 francs) for his work entitled "Contribution à l'étude des corps oléiformes des hépatiques des environs de Nancy"; the De Coincey Prize to Irénée Thériot for work on the analysis and specification of exotic mosses.

Anatomy and Zoology.—The Cuvier Prize has been awarded to Édouard Chatton for his work on the Protozoa; the Savigny Prize to Édouard Lamy for his work on molluscs; the Thore Prize to Rémy Perrier for his two volumes on entomology in his "Faune de la France."

Medicine and Surgery.—Montyon Prizes have been awarded to Maurice Blanchard and Gustave Lefrou (2500 francs) for their researches on the acute spirochætoses of French equatorial Africa, to Louis Fournier and Louis Guénot (2500 francs) for their work on the bismuthotherapy of syphilis, and to Étienne Burnet (2500 francs) for work on Mediterranean fever. Honourable mentions (1500 francs) to Jules Le Calvé for his work entitled "L'œdème, étude expérimentale et clinique," to W. B. Palgen for his essay on the biology of some bacteria, and to Alfred Weiss for his clinical and experimental researches on colectomy. Citations to Maurice Cuvigny, Leroux-Robert, Raymond Turpin, Marcel Sendrail, and Charles Dejean; the Barbier Prize to Jules Bridré and André Donatien for their work on the micro-organism of contagious agalaxy of the sheep and goat; the Bréant Prize between Yves Kermorgant (3500 francs) for his work, "Contribution à l'étude de l'étiologie des oreillons," and Charles Pérard (1500 francs) for his work on coccidioses of the rabbit; the Godard Prize to Christian Champy for his work, "Sexuality and Hormones"; an honourable mention to Jacques Benoit for his work, "Recherches anatomiques, cytologiques et histophysiologiques sur les voies excrétrices du testicule chez les mammifères"; the Mège Prize to Alberico Benedicenti for his work, "Malati, medici e farmacisti"; the Bellion Prize to Stefan Nicolau for the whole of his work; the Larrey Prize to Charles Spire and Pierre Lombardy for their work, "Précis d'organisation et de fonctionnement du service du santé pendant la guerre."

Physiology.—The Montyon Prize has been divided between Marcel Duval, for his physico-chemical and physiological researches on the internal medium of aquatic animals and the modifications produced under the influence of the external medium, and Auguste Quidor and Marcel Hérubel for their memoir on a new theory of visual perception and its applications; the La Caze Prize has been awarded to Georges Weiss for his work in biological physics; the Pourat Prize has been divided between Stefan Mutermilch (1000 francs) for his work on normal and artificial hæmolysins, and Albert Berthelot (1000 francs) for his work in bacteriology and medicine; the Martin-Damourette Prize between Henry Chabanier for his work on the rôle of the kidney in diabetes, and Maurice Chiray and Yon Pavel for their work on the contractility of the biliary vesicle; the Philipeaux Prize has been awarded to Henri Simonnet for his work on the liposoluble factor, with honourable mention to Émile Wagner for his memoir, "Le système nerveux de l'adrénalino-

sécrétion"; the Fanny Emden Prize to Louis Delherm and Albert Laquerrière for their work on the biological effects of various radiations.

Statistics.—The Montyon Prize has been awarded to the Institut de Statistique de l'Université de Paris for its contribution to the progress of applications of mathematics to statistics, finance, and political economy. Honourable mentions of 500 francs to Ernest Blin for his researches on the physical development of assisted children, and to Albert Ranc for his book, "Le budget du personnel des recherches scientifiques en France."

History and Philosophy of Science.—The Binoux Prize has been awarded to Henry de Varigny for his book, "La mort et la biologie."

Works of Science.—The Henri de Parville Prize has been awarded to René Legendre for his memoir on the concentration of hydrogen ions in sea water.

Medals.—The Berthelot medal has been awarded to Ernest Portier and to André Job.

General Prizes.—The Grand Prize of the mathematical sciences has been awarded to Eugène Bertrand de Fontviolant for his work on the resistance of materials; the Bordin Prize (physical sciences) to Auguste Pettit for his researches on serum for the treatment of infantile paralysis; the Lallemand Prize to Yvonne Sorrel-Dejerine for her work entitled "Contribution à l'étude des paraplégies pottiques," and a very honourable mention to Pierre Hillemand for his work, "Contribution à l'étude des syndromes de la région thalamique"; the Serres Prize to Charles Pérez for the whole of his work in embryology; the Vaillant Prize to Mme. Lucie Randoin for her researches on the physiology of nutrition, with special reference to vitamins; the Jean Reynaud Prize to Mme. Alfred Giard, in memory of the biological work of the late Alfred Giard; the De Joest Prize to Alain Quemper de Lanascol for his work on the geometry of compasses; the Houllevigue Prize to Jean Rey for his work on the physical properties of petrol vapours and their laws of flow; the Saintour Prize to Pierre Fauvel for the whole of his work on annelids; the Jules Mahyer Prize to Louis de Broglie for his studies on the quantum theory; the Lonchampt Prize to Charles Dhéré for his work on electrodialysis and the purification of proteids; the Wilde Prize (in equal parts) between Armand Renier for his studies of the Belgian coal measures, and Bruneau de Laborie for his African explorations; the Caméré Prize to René Feret for his researches on cement; the Jérome Ponti Prize to Maurice Fréchet for his work on the theory of functions; the Gustave Roux Prize to Pierre Chevey for his work in zoology; the Thorlet Prize to Adolphe Richard; the Albert I. of Monaco Prize to Jean Charcot to permit him to complete the equipment of his vessel the *Pourquoi pas ?*

Special Foundations.—The Lannelongue Foundation has been divided between Mmes. Cusco and Rück.

Prizes at the Grandes Écoles.—The Laplace Prize has been awarded to Georges Parisot; the L. E. Rivot Prize to Georges Parisot, Jacques Hémar, Louis Armand, and Louis Dherse.

Foundations for Scientific Researches.—The Trémont Foundation has been awarded to Edmond Marcotte for his work on internal combustion motors; the Gegner Foundation to René Baire for the whole of his mathematical work; the Hirn Foundation to Joseph Thoret for his researches on air currents; the Becquerel Foundation to Georges Bruhat for his work in optics and physical chemistry; the Bouchard Foundation to Maxime Ménard for his work on X-rays and radiations used in therapeutics; the Le Chatelier Foundation to Jean Cournot and Albert Roux for their studies on alloys by means of the X-rays.

The Geographical Association.

THE Geographical Association held its annual meetings on Jan. 6-8 at the London School of Economics. The address of the president, Sir Charles Close, on "Population and Migration," gave a statistical investigation of world population with special reference to the development of the British Dominions. The tendency of population growth, indicated by graphs of census returns, gives some foundation for a forecast of the future. Within three-quarters of a century from 1875, England will probably pass from the period of highest birth-rate—36 per 1000—to a stationary condition in which birth-rate and death-rate will balance. Any migration policy must take this tendency into consideration, as well as the absorption rate in the Dominions, estimated at 5 per 1000. This at present would give about 100,000 per annum, excluding the quota to the United States. It is a corollary of this population movement that the dissemination of geographical knowledge of the regions of the world must occupy an increasingly important position in education.

Maps constitute one of the most important groups of geographical documents. Even the significance of the 'Bactrian Triangle' of Bukhāra, Merv, and Samarkand, discussed by Dr. Eileen Power in relation to trans-Asian caravan routes, cannot be fully realised apart from a cartographical representation of the three great east-west highways in their physico-geographical setting. But the mapping of such regions prior to the coming of the aeroplane has been financially almost impossible. Air surveys open a new era. Already such regions as the lower course and delta of the Irrawaddy, and the coastlands of British Guiana, have thus been mapped. Some 100,000 square miles of Canada have been surveyed from the air. Even vegetation distribution, in certain circumstances, can be determined, the Katanga district in particular offering interesting possibilities. In the air survey about to be undertaken there, Major Heming thinks that the geologists will be able to locate copper ore deposits by the soil effect on vegetation, the distribution of which will be revealed by the air photographs.

Other possibilities of aircraft are under observation, as in the revision of the O.S. 1/2500, commonly called the 25-inch map, for south-east England. The Director-General of the Ordnance Survey, in discussing the official maps at present available to the public, indicated certain developments in the 1/1,000,000 map of England and Wales. Additional contours, a revision of the towns and certain other details, will enhance its value for general use, whilst the success of the map showing Roman roads encourages the Ordnance Survey to proceed with similar maps of an archæological and historical character. A special map has been prepared showing the track in Britain of the total solar eclipse which takes place on June 29 next, a phenomenon not to be repeated here until the year 1999. In this connexion Prof. H. H. Turner described, by means of photographs of previous eclipses and by ingenious mechanical slides, the formation and nature of an eclipse.

A visit to East Kent included an excursion to the Betteshanger Colliery and the housing schemes at Elvington and Aylesham. The latter, serving the needs of the Snowdown and Adisham Collieries, may