

Prize Awards of the Paris Academy of Sciences.

AT the annual public meeting of the Paris Academy of Sciences, held on December 22, M. Guillaume Bigourdan in the chair, the prizes awarded in 1924 were announced as follows:

Mathematics.—The Poncelet prize to Ernest Vessiot, for the whole of his mathematical work; the Francœur prize to the late Ernest Malo, for his researches in algebra and arithmetic.

Mechanics.—The Montyon prize to Eugène Huguenard, Antoine Magnan, and André Planiol, for the important improvements which they have made in hot wire anemometry; the Fourneryon prize to Marcel Crozet-Fourneryon, for his historical work and inventions connected with the hydraulic turbine; the Boileau prize to Georges Routin, for his hydraulic researches; the Henri de Parville prize to Paul Bloch, for his work in ballistics, with especial reference to the projection of missiles from aeroplanes.

Astronomy.—The Lalande prize to Jules Baillaud, for his work in celestial photography; the Janssen medal to George Willis Ritchey, for his work on the construction of mirrors; the La Caille prize to Dominique Saint-Blancat, for his work on the catalogue of stars. The Benjamin Valz prize was not awarded.

Geography.—The Delalande-Guérineau prize to Charles le Maître, for his cartographical work in Algeria; the Gay prize to Émile Delcambre, for his work in topography and meteorology; the Tchihatchef prize between Ernest Benoit (1500 francs), for his work on geodesy in Indo-China, and Laurent Friquegnon (1500 francs), for geographical work in Indo-China; the Binoux prize between Jacques Bourcart (1000 francs), for his work on the physical geography of Albania, and Édouard de Martonne (1000 francs), for his topographical, geodesic, and cartographical work in French Western Africa.

Navigation.—The prize of 6000 francs between Yves Le Prieur (4000 francs), for inventions connected with naval artillery, and Émile Georges Barrillon (2000 francs), for his study of the gyration of ships; the Plumey prize between Antoine Foillard, for his memoir on marine machines with electric transmission, and Paul Dumanois, for his volume on internal combustion motors.

Physics.—The La Caze prize to Paul Langevin, for the whole of his scientific work; the Hébert prize to Edgar Haudidié, for his "Cours d'électricité générale"; the Hughes prize to Alexandre Dufour, for his cathodic oscillograph; the Clément Félix prize between Jean Mercier, for his researches on the velocity of propagation of electric waves, and Pierre Fleury, for his researches on the measurement of the temperatures of electric furnaces.

Chemistry.—A Montyon prize (Unhealthy Trades) (2500 francs) to the late André Brochet, for his researches in organic chemistry and electro-chemistry; an honourable mention (1500 francs) to Isidore Lazennec; the Jecker prize to Louis Jacques Simon, for his work in organic chemistry; the La Caze prize to Camille Matignon, for the whole of his chemical work; the Cahours foundation to Suzanne Veil, for her physico-chemical researches on metallic oxides and hydroxides; the Houzeau prize to Pierre Chevenard, for his inventions of apparatus used in metallurgical research.

Mineralogy and Geology.—The Fontannes prize to Frédéric Roman, for his work in palæontology; the Victor Raulin prize to Jules Barthoux, for his memoir on the petrographical and geological study of the Arabian desert.

Botany.—The Desmazières prize to René Vanden-

dries, for his memoirs on sexual determinism and sexuality of the Basidiomycetes; the Montagne prize to Alphonse Labbé, for his volume on the biological cycles of the *Dunaliella*; the de Coigny prize to François Pellegrin, for his memoir on the flora of Mayambé, from the collections of M. G. Le Testu.

Anatomy and Zoology.—The da Gama Machado prize to Christian Champy, for his researches on the spermatogenesis in *Discoglossus pictus*; the Savigny prize to Clodomir Houard, for his work on galls in Northern Africa; the Jean Thore prize to Adrien Perret-Maisonneuve, for his researches in apiculture.

Medicine and Surgery.—The Montyon prize between Victor Babès (2500 francs) for the whole of his work, Noël Fiessinger (2500 francs), for his volume on the ferments of the leucocytes in physiology, pathology, and general therapeutics; Jules Botreau-Roussel (2500 francs), for his memoir "Ostéites pianiques (Goundou)"; honourable mentions (1500 francs) to Jean Baratoux, for his volume on the voice, the scientific study of its formation and emission, its diseases; to Jean Rieux, for his book on clinical hæmatology; and to Henri Glover, for his work entitled "L'auscultation électrique en physiologie et en clinique"; the Barbier prize to Georges Mouriquand and Paul Michel, for their experimental work on accessory food substances; the Bréant prize (arrears) between Alfred Boquet and Léopold Nègre (2500 francs), for their work on tuberculosis, and Léon Marchand and Raymond Moussu (2500 francs), for their work on enzootic encephalitis of the horse; the Godard prize to Edmond Papin, for a memoir on endoscopy operations of the urinary passages; the Mège prize to Mme. Angélique G. Panayotaton, for her volume on the hygiene of the ancient Greeks; the Bellion prize between Paul Godin (700 francs), for his works on the evolution of growth, and Louis Bargerion (700 francs), for his researches on the lighting conditions of workshops; the Larrey prize to François Bassères, for his memoir on the medical service of the Third Army in the War.

Physiology.—The Montyon prize to André Charles Guillaume, for his memoir on the normal and pathological morpho-physiology of the small superficial blood vessels; the La Caze prize to Emmanuel Hédon, for his scientific work as a whole, and more especially for his researches on the physiology of the pancreas; the Pourat prize to André Paillet, for his memoir on the bacterial diseases of insects and their utilisation in agriculture; the Martin-Damourette prize to Henri Vignes, for his memoir on normal and pathological obstetrical physiology; the Philipeaux prize to Antoine Léon Garreton and Daniel Santenoise, for their researches on the oculo-cardiac reflex and vago-sympathetic toxin.

Statistics.—Montyon prizes to Michel Huber (1000 francs), for the whole of his statistical work, and Émile Lambert (1000 francs), for his work in statistics.

History and Philosophy of Science.—The Binoux prize to Mme. Hélène Metzger, for her volume on chemical doctrines in France from the beginning of the seventeenth to the end of the eighteenth century.

Medals.—The Berthelot Medal to André Brochet, Louis Jacques Simon, Camille Matignon, Suzanne Veil, and to Pierre Chevenard.

The Lavoisier Medal to Joseph Achille Le Bel, for his chemical work, as it is now fifty years since the discovery of the asymmetric carbon atom.

General Prizes.—The Grand Prize of Mathematical Sciences to Paul Montel, for his researches on suites of analytical functions; the Bordin prize to Clément Vancy, for his work on the diseases of cattle; the Lallemand prize to Henry Cardot and Henri Laugier,

for the discovery and study of the linguo-maxillary reflex; the Vaillant prize to Claude Guichard, for the whole of his work in higher geometry; the Le Conte prize to André Debiérne, for his work in the field of radio-activity; the Houlléviqgue prize between Franz Löwinson Lessing (3500 francs), for his work in petrography, and T. Husnot, for his work in botany; the Jean Jacques Berger prize to the Institut prophylactique; the Parkin prize to Ernest Fourneau, for his work in pharmacology; the Saintour prize equally between Paul Camboué, for his researches on silks of Madagascar, and Jean Jacques Kieffer, for his work on parasitic Diptera and Hymenoptera; the Henri de Parville prize to Maurice Vèzes and Georges Dupont, for their book on resins and turpentine and the industries connected with these; the Lonchamp prize between Émile Roubaud (2000 francs), for his work on the hibernation of flies, Ernest Lobstein (1000 francs), for his biochemical researches on the tubercle bacillus, and Paul Fleury (1000 francs), for his researches on laccase; the Henry Wilde prize to Charles Maurain, for the whole of his work and for the organisation of research at the Institut de Physique du Globe; the Caméré prize to M. Caquot, for his engineering work in connexion with bridge construction; the Gustave Roux prize to Eugène Séguy, for his work on Diptera; the Thorlet prize to Adolphe Richard.

Special Foundations.—The Lannelongue foundation between Mmes. Casco and Ruck.

Prix des Grands Écoles.—The Laplace prize to Philippe Charles André Coste; the L. E. Rivot prize between Philippe Charles André Coste, Lucien Félix Chadenson, Jean Charles Joseph Armanet, Vincent Louis François Pierre Bauzil.

Funds for Scientific Research.—The Gegner prize to Gustave Dollfus, for his geological work; the Jérôme Ponti foundation to the late Hippolyte Coste, for his descriptive and illustrated flora of France; the Hirn foundation to Georges Giraud, for the whole of his work; the Henri Becquerel prize to René Garnier, for his works on differential equations.

The Louvreuil Foundation.—Thirty-two requests for grants from this fund were received; twenty-four grants were made as follows:

Establishments named by the founder:

National Museum of Natural History: 10,000 francs to P. Pierre Teilhard de Chardin, for palaeontological researches in China; Collège de France, 15,000 francs to Henri Piéron, for the purchase of material for researches at the new physiological laboratory;

National Veterinary School at Alfort: 2000 francs to Albert Henry and Charles Leblois to pursue their researches on the etiology, pathogeny, and treatment of the parasitic skin affections of domestic animals; 3000 francs to Gabriel Petit, to pursue his researches

on the radio-activation of the organism by intravenous injections of radium; 4000 francs to Gustave Moussu, for his researches on diseases of cattle and pigs; 2000 francs to François Maignon, for his work on insulin and on the mineral elements entering in the constitution of the tissue catalysts of animal and vegetable origin.

National Veterinary School of Lyons: 2000 francs to Gabriel Marotel to continue his researches on two parasitic diseases of the horse and dog; 4000 francs to Joseph Basset, to finish his researches on anthrax vaccination; 2000 francs to L. Jung, to pursue his researches on the rôle of the saliva of various domestic animals in its relations with their normal food regime.

National Veterinary School of Toulouse: 2000 francs to Jules Girard and Pierre Pons, for their researches on the modifying factors of growth (temperature, special feeding, castration); 3000 francs to Albert Daille, to finish his researches on the etiology and serotherapy of epizootic diarrhoea in newly-born calves; 2000 francs to Clément Bressou, to commence researches on the splanchnology of mammals, more particularly Carnivora, by the method of feeding and radio-opaque injections.

Grants acceded to establishments admitted for one year by the president:

Conservatoire national des arts et métiers: 4000 francs to Léon Guillet, for the purchase of a second Le Chatelier metallographic bench.

Independent requests: 1500 francs to Jean Bosler, for the *Journal des Observateurs*; 5000 francs to Jean Charcot, for the purchase of material required for the geological study of the sea floor; 3000 francs to Henri Colin, for the purchase of a combustion furnace and accessories, required in connexion with the study of new or little known carbohydrates; 1000 francs to Benjamin Jekhowsky, for assisting his work on new minor planets; 15,000 francs to Jean Mascart, for the publication of observations of variable stars; 3000 francs to the Office central de Chauffage rationnelle, for the study of the composition of a mixture of carbon monoxide and dioxide in equilibrium in the presence of carbon at various temperatures; 1500 francs to Paul Pallary, to pursue his explorations in the Middle Atlas; 5000 francs to Edmond Roy-Prémorant, for the construction of a tachylegometer invented by him; 6000 francs to the Société de Physique industrielle, for the study of the measurement of gas and steam in industry; 6000 francs to the Saint-Joseph University of Beirût, for the publication of the geological map of Syria, constructed by P. Godefroid Zumoffen.

The Bouchard foundation to Gabriel Bidon, to continue his researches on the neuro-physiology and treatment of the deformed; the Henry Le Chatelier foundation to Léon Jacqué, for researches on the fusibility of mixtures of lime, ferrous, and ferric oxides.

Medical Uses of Radium.

THE Medical Research Council has recently published, as No. 90 of its Special Report Series, a summary of reports for 1923 from research centres on the medical uses of radium. The nine clinical centres in Great Britain and Ireland which enjoy the use of radium lent to them by the Medical Research Council have been pursuing these investigations for several years, but this is the first occasion upon which the data have been arranged and used for public circulation. This is particularly welcome now, for results have been obtained which invite the careful consideration of radiologists, physicians, surgeons, and pathologists.

It may be said that the main object of the clinical

investigations is to define the proper limitations of the uses of radium in the treatment of malignant disease, and to decide the best methods of treatment for any given type of this disease. Such an aim can be achieved only by very persistent work of a collaborate character continued over some years. The forms of malignant disease are so varied, the differences in reaction of the host are so large, and the factors in dosage are so numerous, that it may well be that more years will elapse before the main object of the Medical Research Council in these investigations is achieved. Yet a perusal of this report convinces the reader that a serious effort is in hand, not only to give these radiological investigations a quantitative