

Paris Academy of Sciences

Annual Prize Awards

AT the annual public meeting of the Paris Academy of Sciences held on December 19, M. Aimé Cotton, president, announced the following prize awards:

Mathematics. Poncelet Prize to Prof. S. Mandelbrojt, for the whole of his work on analytical functions. Franceour Prize to Prof. J. Dieudonné, for his work on the theory of functions.

Mechanics. Montyon Prize to Prof. L. Couffignal, for his work on mechanisms. Fourneyron Prize to V. Hégly, for researches in hydraulics. Henri de Parville Prize to Mme. M.-L. Dubreil-Jacotin, for her work on periodic waves. Henry Bazin Foundation (5,000 francs) to M. Mennesson, for his work on the utilization of pneumatic currents for the measurement of lengths and thicknesses.

Astronomy. Lalande Prize to A. Lallemand, for his work on physical astronomy. Damoiseau Prize to H. Fabre, for his work on recurrent movements in celestial mechanics. Benjamin Valz Prize to P. Lacroute, for his work on physical astronomy. Janssen Medal to B. Lindblad, of Stockholm, for his work in theoretical and physical astronomy. La Caille Prize to P. Baize, for his work on visual double stars. Antoinette Janssen Foundation (5,000 francs annually for 1938-42) to V. Kourganoff, for his work on theoretical astronomy.

Geography. Delalande-Guerineau Prize to J. Soubrier, for the whole of his travels in the Sahara, French West Africa and Liberia, northern Albania, Kurdistan and Iraq. Gay Prize to A. Romer, for the organization and starting of the Geophysical Observatory of Martinique and for his observations on Mont Pelée. Tehihatchef Foundation to P. Carton, for his work on the meteorology of Indo-China. Binoux Prize to Capt. A. Nandillon, for the whole of his work on applications of acoustics to navigation.

Navigation. Plumey Prize to M. Serruys, for his work on internal combustion motors.

Physics. L. La Caze Prize to Prof. H. Ollivier, for his work on the relations of magnetism and magnetic rotatory polarization. François Hébert Prize to M. Haïssinsky, for his work on atomicity and chemistry. Hughes Prize to P. Girard, for his work on the measurement of dielectric constants. Danton Foundation to P. Lambert, for his researches on radiation. Clément-Félix Foundation to R. Freymann, for his work on infra-red radiation. Général Ferrié Foundation to F. Bedeau, for his work on high-frequency waves.

Chemistry. Montyon Prize (Unhealthy Trades), a prize (2,500 francs) to the late R. Schmutz, for his work on hygiene and passive defence, in particular that which concerns the detection of gases; an honourable mention (1,500 francs) to G. Courtois, who has taken an active part in perfecting apparatus for protection against noxious gases. Jecker Prize to Prof. A. Wahl, for his work on colouring matters and, in particular, on the indigoids. L. La Caze Prize to Prof. P. Jolibois, for inorganic chemistry. Cahours Foundation to R. Guillemet, for his work on [biological] chemical analysis. Houzeau Prize to M. Badoche, for his work on bodies of the rubrene family and for his measurements of heats of combustion of numerous nitrated derivatives. Ch. Adam

Girard Foundation to Prof. R. Quelet, for his work in organic chemistry.

Mineralogy and Geology. Fontannes Prize to L. and J. Morellet, for their palaeontological studies of the tertiary areas of the Paris region. André-C. Bonnet Prize (palaeontology) to J. Piveteau, for the whole of his palaeontological work and notably for his memoir "Paléontologie de Madagascar, XXII. Un Amphibien du Trias inférieur. Essai sur l'origine et l'évolution des Amphibiens Anoures". James Hall Prize to J. Goguel, for a thesis entitled "Description tectonique de la bordure des Alpes, de la Bléone au Var".

Geophysics. Victor Raulin Prize to G. Grenet and J. Coulomb, for their work on electrically registering seismographs.

Botany. Desmazières Prize to J. Feldmann, for his researches in algology. Montagne Prize to R. Heim, for his researches on the Agaricinæ. De Coincy Prize to Mlle. M.-T. Gertrude, for her work on the morphogenesis of *Veronica Anagallis*.

Rural Economy. Paul Marguerite de la Charlonie Prize to Prof. V. Ducomet and E. Foëx, for their researches on plant pathology and genetics during the past twenty years on the potato.

Anatomy and Zoology. Cuvier Prize to G. Seurat, for the whole of his zoological work. Savigny Foundation to C. Crossland, director of the Zoological Station of the Egyptian University at Ghardaqa, for his researches on the fauna of the Red Sea. Jean Thore Prize to T. Monod, for his work on Crustacea.

Anthropology. André-C. Bonnet Prize to Prof. E. Dubois (Amsterdam), for his discovery of *Pithecanthropus* in Java and his researches on the phylogenetic development of the brain.

Medicine and Surgery. Montyon Prizes (2,500 francs) to Prof. L. Binet and G. Weller, for their book "Le Glutathion"; Prof. A. Pettit, for his book "Sérothérapie antipoliomyélitique d'origine animale"; F. Trenszy, for the whole of his work on paludal serology. Honourable Mentions (1,500 francs) to Prof. M. Barthélemy, for his book "Les diagnostics chirurgicaux au lit du malade"; A. Bensaude, for his book "L'évolution cancéreuse des tumeurs bénignes du rectum. Son importance pour la prophylaxie du cancer du rectum"; Mlle. M. Ladet, for her book "Le syndrome malin au cours des toxi-infections". Barbier Prize to Prof. L. Courty and M. Ansel, for their work "Le traitement chirurgical du goître exophtalmique et des goîtres avec hyperthyroïdie". Bréant Prize to P. Remlinger and J.-E. Bailly, for their work "Contribution à l'étude du virus de la maladie d'Aujeszyky". Godard Prize, no award. Mège Prize (1,000 francs) to A. Donatien and F. Lestoquard, for their work concerning animal ricketts. Bellion Prize to Prof. P. Coulouma, for his work "La terminaison des nerfs pneumogastriques et ses variations. Étude d'anatomie descriptive comparée chez l'homme et dans la série des Vertébrés", and the whole of his anatomical work. Baron Larrey Prize to Colonel M. Liégeois, for his memoir relating to the general etiology of scarlatina, its modes of propagation, its prophylaxy and its therapy. Jean Dagnan-Bouveret Prize (6,000 francs) to Mme. A. Randoïn (née L. Fandard), for the whole of her researches on the physiology of nutrition;

5,000 francs to X. Henry, for his method of diagnosing paludism called melano-flocculation; 4,000 francs to L. Delhoume, for his work "L'École de Dupuytren: Jean Cruveilhier et Claude Bernard: pensées".

Cancer and Tuberculosis. Roy-Vaucouloux Prize to V. Vilter, for his researches on the physiological mechanism of the variations of colour of amphibians and fish. Louise Darraçq Prize, awarded for work in the fight against cancer, to A. Peyron and his collaborators of the Institut Pasteur, for the whole of their work. Eugène et Amélie Dupuis Prize, not awarded.

Physiology. Montyon Prize to M. Fontaine, for the whole of his work. L. La Caze Prize to Prof. A. Mayer, for the whole of his work. Pourat Prize to M. Florkin, for his work "Physiologie comparée du milieu intérieur dans la série animale". Martin-Damourette Prize to R. Duffau, for his work "Avitaminoses et Métabolisme glucidique musculaire".

Statistics. Montyon Prize (1,000 francs) to H. Bunle, for the whole of his statistical work; and 1,000 francs to Prof. G. Ichok, for his work "La mortalité à Paris et dans le département de la Seine".

History and Philosophy of the Sciences. Binoux Prize: 2,000 francs to Prof. A. Sesmat, for his works "Le système absolu classique et les mouvements réels" and "Les systèmes privilégiés de la physique relativiste"; 1,500 francs to J. Torlais, for his work "Réamur".

Works of Science. Henri de Parville Prize: 2,500 francs to A. Danjon and A. Couder, for their work "Lunettes et télescopes. Théorie. Conditions d'emploi. Description. Réglage"; 2,000 francs to M. Duportet, towards his work on the topobibliography of France, of which three volumes have appeared.

Medals. Berthelot Medals to the late R. Schmutz, M. Badoche, and R. Quelet.

General Prizes. State Prize (Grand Prize of the Mathematical Sciences) to Prof. J. Favard, for his work in algebra and geometry. Bordin Prize to H. Schoeller, for his geological work in the Alps and his hydrogeological researches in Tunisia. Lallemand Prize to A. Fessard, for his researches on the rhythmic functions of the nerves. Serres Prize to Prof. R. Courrier, for his work on the genital function in mammals. Vaillant Prize to Prof. L. Bounoure, for his researches on the embryogeny of amphibians. Estrade-Deleros Prize to Prof. J. Jolly, for the whole of his histophysiological work. Houlevisgue Prize to B. Lyot, for his work on the solar corona. Saintour Prize to A. de Cugnac, for his work on the Gramineæ. Jules Mahyer Prize to R. Echevin, for his work on plant physiology. Lonchamp Prize to J. Lavollay, for his work on the biochemistry of magnesium. Henry Wilde Prize to H. Hulubei, for his discovery of element 87, belonging to the series of alkali metals. Caméré Prize to Prof. L. Grelot, for his contribution to the progress attained in the construction of metal and reinforced concrete bridges. Gustave Roux Prize to Prof. H. Vigreux, for his work "Le soufflage du verre dans les laboratoires scientifiques et industriels". Thorlet Prize, not awarded. Albert I^{er} de Monaco Prize to Prof. A. Denjoy, for the whole of his mathematical work. Marquet Prize to Prof. R. Bricard, for his work in geometry. Général Muteau Prize to Prof. H. Abraham, for his work in electricity, principally for apparatus he has devised, some of which has been used in national defence, and for progress made in high precision measurements.

Prix des Grandes Ecoles. Laplace Prize to R. Loison. L.-E. Rivot Prize between R. Loison (750 francs), L. Boucheny (500 francs), A. Pages (750 francs) and P. Clos (500 francs).

GENERAL FUNDS FOR SCIENTIFIC RESEARCHES

Trémont Foundation to Mme. L. Nouvel, for her work "Contribution à l'étude de la mue, de la croissance et de la régénération chez les Crustacés Natantia".

Gegner Foundation to M. Aubert, for his researches on internal combustion motors.

Jérôme Ponti Foundation to Prof. J. Pérès, for his work on the mechanics of fluids.

Hirn Foundation to Prof. H. Chrétien, for his researches on optical instruments.

Henri Becquerel Foundation to Prof. P. Delens, for his work on analysis and geometry.

Loutreuil Foundation (total grants, 117,500 francs).

Researches on set problems. 3,000 francs to Mlle. F. Bloch, for work on cutaneous tuberculosis; 2,000 francs to A. Brizard and R. Florio, for researches on dermatoses of the horse and of the dog; 7,500 francs to D. Chalonge, D. Barbier and A. Arnulf, for work at the international scientific station at the Jungfrauoch; 6,000 francs to Prof. L. Daniel, for work on the pedigree culture of the Jerusalem artichoke; 3,000 francs to Prof. R. Dubrisay, for studies of the action of sulphur on different metals, and notably silver; 5,000 francs to A. F. de Lapparent, for work on the Dinosaurs of the south of France; 2,000 francs to Prof. A. Métral, for work on the improvement of output of heat engines by the transformation into reactive energy of the potential and kinetic energy of the exhaust gases; 5,000 francs to Prof. M. Pierre, for researches on the regulatory mechanism of calcæmia and of phosphatæmia in the domestic animals.

Researches to be carried out in France Overseas. 8,000 francs to A. Lasserre, for work on terrestrial magnetism in Algeria and the Algerian Far South.

Purchase of laboratory material. 4,000 francs to Prof. F. Diérent, for apparatus for utilizing geophysical methods for the study of subterranean currents; 5,000 francs to Prof. P. Fleury, for a Moll double thermo-converter, for the study of the photometry of incandescent lamps fed with alternating current; 3,000 francs to Prof. P. Frémy, for a photomicrographic apparatus; 3,000 francs to Prof. P. Lamare, for a precision balance; 2,000 francs to Prof. J. Lefèvre, for microphotography material; 10,000 francs to Prof. E. Marchoux, as a contribution towards a Feussner spectrograph installed at the Pasteur Institute; 9,000 francs to P. Teilhard de Chardin, as a contribution towards the equipment of his laboratory for advanced studies in human palæontology.

Libraries. 7,000 francs to the National Veterinary School of Alfort, for the purchase of periodicals; 7,000 francs to the National Veterinary School of Lyons, for the purchase of books and foreign periodicals; 2,000 francs to the National Veterinary School of Toulouse, for the purchase of books and scientific publications; 2,000 francs to the National Agronomic Institute, for the acquisition of foreign periodicals.

Publications. 8,000 francs to the Comité de physique du globe des colonies, as a contribution to the publication of the *Annales de physique du Globe de la France d'Outre-Mer*; 3,000 francs to P. Chabaud, for the publication and illustration of works on the morphology of non-symmetric teleosteans; 3,000 francs to G. Guilbert, for printing a work entitled "L'Orage, sa genèse, ses mystères, sa prévision"; 8,000 francs to Prof. P. Lemoine, to assist in the publication of a geological study of Mauritius.

Mme. Victor Noury Foundation (four prizes of 2,500 francs each): A. Lenoble, for his researches on

the chronological succession of the volcanic eruptions of central Madagascar, the age of the *coulées* of the east side and his discovery of organic remains in the Cristalophyllian of the island; Prof. A. Luquet, for his biogeographical work and particularly for that concerning the Central Massif; E. Thellier, for his work on the magnetization of clays and of burnt earths, with application to the study of the evolution of the terrestrial magnetic field; P. Vintemberger, for his researches in experimental embryology.

Millet-Ronssin Foundation: 4,000 francs to A. Balachowsky, for his work on agricultural entomology, and in particular for his book "Les Insectes nuisibles aux Plantes cultivées", published in collaboration with L. Mesnil; 3,000 francs to Prof. A. Carpentier, for his palaeobotanical work, and particularly for that concerning the oil earths of the north of France and of the Central Massif, the Permian, the Jurassic and the Cretaceous of France, Morocco and Madagascar; 3,000 francs to Prof. H. Chermezon, for his work on the Cyperaceæ and the flora of Madagascar.

Villemot Foundation: 12,000 francs to L. Blaringhem, for the installation at the Gaston Allard Arboretum, at Angers, of an exact electrically heated bed; 14,000 francs to Mlle. G. Cousin, for the purchases of stoves; 10,000 francs to G. Deflandre, for the purchase of microscope objectives; 12,500 francs to Prof. L. Dunoyer, for the purchase of a Ribaud optical micropyrometer; 5,500 francs to E. Esclançon, for the construction of a double clock with two dials, indicating simultaneously, with very high precision, mean solar time and mean sidereal time; 15,000 francs to Prof. H. Guillon, for perfecting an apparatus for the measurement of high temperatures of gases by the method of aspiration pyrometry; 10,000 francs to C. Harnist, for his projected researches on the manufacture of sulphuric acid from gypsum; 10,000 francs to the Institut Marey, for researches on the ultra-rapid cinematography and oscillographic recording of the nerve influx; 25,000 francs to P. Lejay, director of the Observatory of Zi-Ka-Wei, for his researches on the application of the inverted electrical pendulum to the precise determination of the inclination of the axes of astronomical instruments; 10,000 francs to Prof. M. Machebeuf, for his researches on the chemical phenomena of immunity; 15,000 francs to R. Martin, for perfecting thermochemical material intended for the determination of the quantity of energy resulting from the chief combustions and reactions utilized in industry; 8,000 francs to A. Peyron, for his experimental and comparative studies of the pathology of tumours; 20,000 francs to A. Savornin, for the purchase of an inclination needle for absolute magnetic measurements; 12,000 francs to H. Vincent, for the purchase of reactive experimental animals for his researches on the pathogeny of certain infectious maladies and the conditions of immunity; 10,000 francs to R. Wurmser, for the purchase of experimental animals.

Charles Frémont Foundation to C. Berthelot, for his works "Technique et Économie nouvelles des carburants de synthèse" and "Épuration, séchage, agglomération et broyage du charbon".

SPECIAL FOUNDATIONS

Lannelongue Foundation to Mme. G. Cusco; Girbal-Baral Foundation (10,000 francs each) to F. Marty and F. Roger; D'Aumale Prizes (5,000 francs each) to the widow of C. Gravier and the daughter of the late C. Flahault.

Science News a Century Ago

Samuel Cunard and Robert Napier

THE long connexion of Robert Napier with the Cunard Steamship Company, for which he built eighteen trans-Atlantic steamships, began with two letters, one written by Samuel Cunard on February 25, 1839, and the other, Napier's reply written three days later. Writing from Piccadilly to his Glasgow agents Cunard said, "I shall require one or two steamboats of 300 horse power and about 800 tons. I am told that Messrs. Wood and Napier are highly respectable builders and likely to be enabled to fulfil any engagement that may enter into." In his reply to Cunard's agents, Napier said, referring to the price, "I have done them as low as £35 per ton of total measurement of the vessel, and I have got above £50 per ton for some others. I may, however, state that good vessels, warranted to stand any inspection and give entire satisfaction both as to the vessel and machinery, cannot be done for less than from £40 to £42 per ton—this for the vessel ready for sea, with cabins, sails, rigging, anchors, cables, etc. . . ."

After further negotiations a contract was arranged for the construction of the four vessels, *Acadia*, *Britannia*, *Caledonia* and *Columbia*. The *Britannia*, 1,150 tons, 420 horse-power, was the first finished, and she sailed on her maiden voyage from Liverpool to Boston, July 4, 1840.

University College, London

THE annual meeting of the proprietors of University College was held on February 27, 1839. The chief topic handled in the report of the Council, said the *Athenæum* of March 2, was the regulations of the University dealing with the degree in arts. From the report it added, "we learn that the Exhibitions offered by the Government as a reward for proficiency in passing the matriculation examination have been divided between students of University College and King's College." Among the novelties announced were the class for schoolmasters, the class for civil engineers and the school for practical chemistry; the erection of a spacious building for the practice of anatomy, and the fitting up of a large room as a library for medical students. In 1837-38 there were 497 students in medicine, 142 in arts and 337 boys in the Junior School.

Prof. W. T. Brande as a Lecturer

ON March 1, 1839, Faraday's colleague at the Royal Institution, Prof. William Thomas Brande (1788-1866), gave a lecture on steel, a report of which appeared in the *Mechanics' Magazine* of March 16, 1839. The report concluded with saying, "No one will question the great ability of Mr. Brande as a lecturer, but we could almost indulge the wicked wish of being able to tamper with, and manœuvre a little, the progress of the clock in order to see the good effect for once of surprising him out of the extreme deliberateness of his delivery. . . . Unfortunately, also he does not think it necessary to raise his voice higher than in common conversation, but though his enunciation is so beautifully distinct, that with listening attention, he may be heard in most parts of the theatre, yet the continued effect to give such attention, especially at this time of the year, when everybody thinks it his duty to cough, soon becomes very fatiguing, and at last so painful as quite to mar the pleasure of hearing him lecture."