

four words of biographical information, but in so doing he comes to grief. Mannheim was not "a German army officer." As a young man he was a French army officer, and for about half a century he was professor in the Polytechnic School in Paris.

FLORIAN CAJORI.

Annuaire du Bureau des Longitudes pour l'An 1910, Paris. Gauthier-Villars.

THIS handy little volume makes its annual appearance as usual in good time. So far as we know there is nothing approaching to it in completeness for giving the astronomical, physical, electrical, meteorological, magnetic, and chemical constants. And what is of even more importance, everything is easy to find and the matter is constantly kept up to date. For the construction of problems in which one wishes to insert numerical data, the hunting in various books can be avoided and much time saved by having the *Annuaire* at hand. Two consecutive volumes give everything likely to be needed.

The principal appendix this year is an article on earth tides and the elasticity of the globe by M. Ch. Lallemand. A full historical survey of our knowledge up to the present time forms one of its most useful features. M. B. Baillaud tells of the work done at the last international conference on the photographic chart of the sky, and M. G. Bigourdan appends a list of all the Notices which have appeared in the *Annuaire* since its foundation in 1796.

ERNEST W. BROWN.

NOTES ON THE INSTITUT DE FRANCE AND THE ANNUAL MEETING OF THE ACADÉMIE DES SCIENCES.

IT is not generally known in America that the Institut de France is made up of five distinct bodies, known as the Académie Française, the Académie des Sciences, the Académie des Inscriptions et Belles-Lettres, the Académie des Sciences Morales et Politiques and the Académie des Beaux-Arts. Each of these academies has 40 members, with the exception of the Académie des Sciences which — in addition to its two permanent secretaries, one in each of the departments, physics and

mathematics — has 66 members, six in each of the eleven sections: geometry, mechanics, astronomy, geography and navigation, general physics, chemistry, mineralogy, botany, agriculture, anatomy and zoology, medicine and surgery. Each academy appoints its own officers, elects its own members and each, with the exception of the Académie Française has, in addition to its regular members, “académiciens libres,” “associés étrangers,” and “correspondants.” The term “forty immortals” is exclusively applied to the members of the Académie Française, which however is much less eminent in the matter of erudition than its less widely celebrated fellows. Its chief official function is to prepare a dictionary, for which it has no exceptional philological equipment. The other academies are extremely active and have great influence on the progress of learning. The weekly *Comptes Rendus* edited by the secrétaires perpétuels and published by the Académie des Sciences is known to all mathematicians.

The following are the regular academicians in the sections of geometry, mechanics, and astronomy:

Geometry: Appell, Humbert, Jordan, Painlevé, Picard, Poincaré.

Mechanics: Boussinesq, Deprez, Léauté, Levy, Sebert, Vieille.

Astronomy: Baillaud, Bigourdan, Deslandres, Hamy, Radau, Wolf.

Mathematics gets another representative through the fact that Darboux is a secrétaire perpétuel.

By way of closing this introductory note, it may be pointed out that the term Académie des Sciences is also used in quite a different sense, namely, as one section of the Académie de Paris or the Académie de Bordeaux or any other of the sixteen groups of educational institutions into which practically all schools (primary, secondary, and superior) in France are divided.

The annual meeting of the Académie des Sciences occurred on December 20, in the ancient circular assembly hall adorned with statues of Fenelon, Bossuet, Descartes, Sully, and Henri d'Orleans, Duc d'Aumale. An audience of several hundred had assembled when on the stroke of one o'clock the drums began to roll and the four gorgeously arrayed officers of the Académie (President Bouchard, Vice-President Émile Picard, Secrétaires perpétuels Darboux and Van Tieghem), followed by some fifty of the academicians, took their places. Throughout the two-hour programme, the officers remained seated behind

the table on the raised platform and occasionally refreshed themselves from the conspicuous carafe of water and bowl of sugar. With the words "La séance est ouverte," the president, who is a member of the Faculty of Medicine in the University of Paris, commenced to read his "allocution." Before proceeding to his main theme, which was a discussion of the decrease in birth rate of the French population, he announced that the only break in the ranks of the academy during the year was caused by the death of their illustrious "associé étranger," Simon Newcomb. Drawing freely from his "Reminiscences of an Astronomer," which he compared with the autobiographies of J. J. Rousseau and Franklin, M. Bouchard sketched Newcomb's early career down to the age of 23 when he was made Docteur ès Sciences. He then concluded as follows: "I can not follow him in his glorious career as astronomer. His discoveries of the retrograde movement of Hyperion, his theories of the four inner planets suffice to place him in the first rank. He is considered as the follower of Leverrier . . . We elected him our associé étranger in 1903." From the representative of one of the greatest scientific societies in the world, one might well expect greater accuracy of statement. Newcomb received the degree of *Bachelor* of Science from Harvard in 1858, and was elected one of the eight associés étrangers on June 17, 1895, in place of von Helmholtz. Franklin was the only American to be so honored previously, and Agassiz alone remains now. By a decree of December 1, 1909, the number of associés étrangers was increased from eight to twelve.

M. Van Tieghem now announced the award of medals and money prizes totalling close upon 235,000 francs. The awards as far as they were of interest to mathematicians are as follows: Prix Francoeur (3,000 fr.) to M. Émile Lemoine for his mathematical works.—Prix Bordin (3,000 fr.). The problem proposed for the prize was: "The absolute invariant which represents the number of double integrals of the second kind on an algebraic surface depends upon a relative invariant ρ , which plays an important part in the theory of integrals of total differentials of the third kind and in the theory of algebraic curves traced upon the surface. It is proposed to make an exhaustive study of this invariant and to determine in particular how its exact value can be found, at least for an extended category of surfaces." Competing memoirs were to be in the hands of the secretary before January 1, 1909, but the prize was awarded to

Professors Guiseppa Bagnera, of the University of Palermo, and Michele de Franchis, of the University of Catania, for their memoir entitled "Le nombre ρ de M. Picard pour les surfaces hyperelliptiques et pour les surfaces irrégulières de genre zéro," which did not arrive until January 15. It was stated that this case must not be thought to create a precedent, the circumstances being as follows: "The memoir was sent from Palermo on the evening of December 27, 1908, and it was in the following night that the awful catastrophe overtook Messina. The postal car containing the manuscript was in the station of that city at the moment of the earthquake, and nearly three weeks elapsed before it was despatched further." — Prix Montyon (700 fr.) to M. Lecornu, chief engineer of mines, professor in the École Polytechnique, for his work entitled *Dynamique appliquée*. — Prix Poncelet (2,000 fr.) to M. de Sparre for his studies relating to gunnery and his works on mechanics. — Prix Vaillant (4,000 fr.) for the subject: "To perfect in an important point the application of the principles of the dynamics of the fluids to the theory of the helix" was not awarded. — Prix Boileau (1,300 fr.) to M. Boulanger, assistant professor of mechanics, University of Lille, for his work entitled *Hydraulique générale*. — Prix Lalande (1,000 fr.) to M. Borrelly, assistant astronomer, observatory of Marseille, for his discoveries of small planets and comets. — Prix Valz (460 fr.) to M. de la Baume-Pluvinel for his astronomical works. — Prix G. de Pontécoulant (700 fr.) to Professor E. W. Brown, of Yale University, for his researches relative to the theory of the moon. — Prix Binoux (2,000 fr.) to M. Pierre Duhem, correspondent of the academy, for his works relative to the history of the sciences. — Fondation Leconte. 1,200 fr. to M. Ritz for his works in mathematical physics and mechanics; 2,000 fr. to M. Lebeuf, director of the Besançon observatory for his chronometric and astronomical works and in particular for his part in the publication of the works of Laplace. — Prix Laplace (Laplace's works) to M. A.V.É. Vaucheret, leader of the graduating class at the École Polytechnique. — From the Bonaparte Fund 2,000 francs were granted to M. Estanave, D. Sc. Math., secretary of the Société mathématique de France, and author of several bibliographical and mathematical works, for continuing his researches "sur la projection stéréoscopique à vision directe, sur la stéréo-radiographie et sur l'autostéréoscopie;" and 2,000 francs to M. Mathias, professor

of physics at the University of Toulouse, to permit him to pursue, in the Leyden laboratory, with its eminent director, M. Kammerlingh Onnes, researches on the rectilinear diameter of liquids and on the law of state at very low temperatures.

The following prizes to be awarded in 1910 and 1911 were announced :

1910. Grand Prix (3,000 fr.). "It is known how to find all systems of two meromorphic functions of one variable, connected by an algebraic relation. An analogous problem is proposed for three uniform functions of two complex variables having for finite regions the character of rational functions and being connected by an algebraic relation. In case a complete solution is not obtained, the Academy demands at least some illustrative examples which lead to classes of new transcendental functions." — Prix Poncelet (2,000 fr.) for a work in pure mathematics. — Prix Francoeur (1,000 fr.) for a work of merit in pure or applied mathematics. — Prix Fourneyron (1,000 fr.) for an experimental and theoretical study, in hydraulics, of the effects of the shocks (*coups de bélier*) given to elastic tubes. — Prix Janssen, biennial gold medal for the discoverer or the work making important advancement in physical astronomy.

1911. Prix Bordin (3,000 fr.). "To perfect in an important point the theory of triply orthogonal surfaces." The Academy desires to add to the list of systems already known, and it attaches a particular prize to the discovery of the triply algebraic systems which are most simple. — Prix Vaillant (4,000 fr.). To perfect in some important point the study of the movement of an ellipsoid in an infinite viscous liquid. — Prix Damoiseau To perfect Leverrier's Tables of Jupiter.

Darboux now read his long but interesting "historical notice" of General Jean Baptiste Marie Charles Meusnier (1754–1793), member of the Academy of Sciences. His scientific and military career were traced in detail and the celebrated theorem concerning the curvature of oblique sections of surfaces, with which his name is always associated, was assigned to the year 1776. The *s* in Meusnier's name is frequently omitted by English writers. May it now be correctly preserved.

With the President's announcement "La séance est levée" the meeting came to an informal ending.

R. C. ARCHIBALD.