

profit to those undertaking the burden of schemes suggested. Mr. Bull is virtually the organizer of the cruise of the 'Antarctic' in the years 1894-95, when a landing was effected on the assumed Antarctic Continent at Cape Adare, and his opinions and estimates are deserving of respectful consideration. He confidently assumes that a joint commercial and scientific expedition could be arranged so as to render its outcome largely profitable to investors, even to the extent of £500 or more, and yet so directed as to place it mainly to the purposes of scientific investigation. In his various estimates, however, which cover the purchase of one or more suitable steamers, the absolute hiring of full officers and crews, the amount of capital required is so large, £9,000 to £14,000, as to render an association in this form of combined enterprise doubtfully desirable. Your Committee believe that an expenditure of \$40,000 to \$50,000, or perhaps even less, would suffice to construct an independent scientific expedition of its own, which would be in every way, if we may judge by past experience and results, to be preferred to an expedition whose associations must be largely commercial. Your Committee believe that independent subscriptions to the extent of \$40,000 or \$50,000 could be obtained at this time only with great and united effort, and yet it is by no means impossible that patrons of exploration may be found who would generously contribute to the fund of a properly organizing expedition. And it is almost certain that Arctic and Antarctic enterprises, despite the generous criticisms which are meted out to them in various quarters, will, for a long time, receive the favor of American good-will and protection. It seems very probable, also, that a selected number of scientific associations and institutions of general learning, such as universities and colleges, might be induced to coöperate to a common end, sending repre-

sentatives to an expedition proportional to amounts of cash subscriptions.

Your Committee, if so desired, will be pleased to still further prosecute their inquiry. It is with satisfaction that they report the departure of the Belgian Antarctic Expedition under command of Lieutenant Gerlache, and with it the association of the American explorer, Dr. F. A. Cook, a prominent member of the Peary Expedition of 1891-92.

Respectfully submitted,

ANGELO HEILPRIN.

Chairman Committee on Antarctic Exploration.

ELIZABETH THOMPSON SCIENCE FUND.

At a meeting of the Board of Trustees, held at Boston January 13, 1898, reports were read from the recipients of previous grants, and the record of the following grants was closed, the authors having published their investigations:

No. 54. Samuel H. Scudder, Esq., of Cambridge, Mass., \$250, granted June 29, 1894, for a monograph on the caliptenoid series of North American Acridians. The publication is: 'Revision of the Orthopteran group Melanopli (Acridiidae) with special reference to North American Forms.' *Proceedings U. S. National Museum*, Vol. XX., p. 1-421, Pl. I.-XXVI.

No. 64. Dr. Julius Elster and Dr. H. Geitel, Wolfenbüttel, Germany, \$185, granted April 8, 1895, for photo-electric investigations with polarized light. The publication is: 'Ueber die Abhängigkeit des Photoelectrischen Stromes vom Einfallswinkel und der Schwingungsrichtung des erregenden Lichtes und seine Beziehung zu der Absorption des Lichtes an der Cathode.' *Annalen der Phys. u. Chem.* N. F., Bd. 61, p. 445-465.

The following new grants were made:

No. 72, \$150 to Professor J. McK. Cattell, Garrison-on-Hudson, New York, for the Study of fatigue in relation to mental conditions. Application 737.

No. 73, \$250 to Professor J. von Kennell, Dorpat, Russia, for a Monograph of the palæarctic Tarteicidæ. Application No. 742.

No. 74, \$300 to Professor Georges Urbain, 1 Rue Victor Cousin, Paris, France, for the chemical investigation of rare earths. Application No. 746.

No. 75, \$25 to Professor Wm. Z. Ripley, Massachusetts Institute of Technology, Boston, Mass., for a Bibliography of the Anthropology and Ethnology of Europe. Application No. 747.

No. 76, \$300 to Professor A. Béloupsky, Observatoire centrale, St. Petersburg, Russia, for Experiments on the Principle of Doppler-Fizeau. Application No. 749.

No. 77, \$100 to Professor C. H. Eigenmann, Bloomington, Illinois, for the Study of Blind Fishes. Application No. 751.

No. 78, \$250 to Professor P. Francotte, Rue Gillon 66, Brussels, Belgium, for the investigation of the fecundation and segmentation of the eggs of Polyclada. Application No. 755.

New applications will be considered in January, 1899, provided they are received by the Secretary before December 1, 1898. Circulars announcing the terms of the trust for the guidance of applicants may be obtained by application to the Secretary.

CHARLES SEDGWICK MINOT,
Secretary.

HARVARD MEDICAL SCHOOL,
BOSTON, MASS., January 22, 1898.

JOHN A. GANO.

MR. JOHN A. GANO, of Cincinnati, Ohio, who died on January 15th, should be remembered by American scientists as the one who most efficiently encouraged the establishment of a system of daily weather predictions for the benefit of business men. This subject was suggested in my inaugural address, as Director of the Observatory, in May, 1868, and Mr. Gano, as one of the trustees, at once took the matter up for favorable action. On the 28th of July, I explained it more fully to him and, at his request, put my ideas in writing for his use as editor of the *Cincinnati Commercial*. In 1869 he became President of the Chamber of Commerce, and a second letter from me was requested by him, which gave him the

desired opportunity to urge the matter upon the attention of that body. He appreciated the whole scope and bearing of the proposed work; he appointed the Committee of Conference and in every way forwarded the enterprise with the greatest intelligence and discretion. After the 'Weather Bulletin of the Cincinnati Observatory' began to appear, September 1, 1869, he advocated a still wider extension of the work. I had already visited the Chicago Board of Trade and written to the daily papers of New York City, hoping to extend the scope of our work. In addition to this, Mr. Gano and Mr. William Hooper, as delegates to the National Board of Trade meeting at Richmond in November, 1869, contemplated bringing our work to the attention of that body, but when they found a scheme already formulated by my correspondent, Professor I. A. Lapham, and the Hon. H. E. Paine, of Milwaukee, and about to be presented by the Hon. C. D. Holton as delegate from the Milwaukee Board of Trade, they heartily supported that and on their return to Cincinnati assured me that they regarded a national weather bureau as the inevitable outcome of the work at Cincinnati.

The Cincinnati Weather Bulletin and predictions of 1869 was really my personal effort to utilize science for the benefit of the people, but historically it may also be considered as a revival of the reports and maps started by Espy and Henry, under the joint auspices of the Federal Government and the Smithsonian Institution, in 1848, and maintained at Washington with the coöperation of the various telegraph companies until 1861. Professor Espy was personally well known in Cincinnati, where he died in 1857. The merchants of that enterprising city had long been accustomed to secure special weather telegrams to guide them in their business operations, and every one responded to Mr. Gano's endorsement of the