SCIENCE:

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The growth of abstract science in this country is perhaps no better illustrated than by the advance which has been made of late years in the various departments of mathematics. It is only a few years since Prof. Peirce was about the only person in the United States who held a position among the original mathematicians of the world, while to-day there are in this country a number of persons whose writings are destined to rank among the classics, and a journal of mathematics of the highest rank is published under the auspices of the Johns Hopkins University and sustained almost entirely by American contributors. Among the best of the abstract writers referred to is Mr. William Ferrel, who has been hitherto best known by his tidal researches, but is now engaged in investigations on the mathematical principles of meteorology. His latest work, just published by the Coast Survey, is now before us, and although nominally consisting only of researches on Cyclones, Waterspouts and Tornadoes, is in reality a valuable contribution to the theory of storms in general.

The Board of Directors of the Ohio Mechanics' Institute have organized a "*Department of Science and Arts*" for the purpose of increasing the usefulness of the Institution. A Section of Mechanics and Engineering under the chairmanship of Professor H. T. Eddy, and one of Chemistry under Professor F. W. Clark, have been arranged. Meetings for the public discussion of scientific subjects will be held once a month, and various other arrangements are in progress which will contribute to the success of the present attempt to provide increased facilities for technical and scientific education for the youths of Cincinnati.

SCIENTIFIC SOCIETIES OF WASHINGTON.

THE BIOLOGICAL SOCIETY, WASHINGTON.—Since our last report the following papers have been read: "Roan Mountain, North Carolina, and its Flora," by Prof. J. W. Chickering, Jr.; "Notes on the Flowering of *Solanum rostratum* and Cassia chamaecrista, with illustrations," by Prof. J. E. Todd; "A Critical Review of Günther's Ichthyology," by Prof. Theodore Gill; "On the Mortality of Marine Animals in the Gulf of Mexico," by Mr. Ernst Ingersoll: "A Statistical View of the Flora of the District of Columbia," by Prof. Lester F. Ward. It is to be regretted that the absence of our Washington correspondent from the meetings deprives us of abstracts of these valuable papers.

THE ANTHROPOLOGICAL SOCIETY.—The Constitution of this society, now in its third year, makes it obligatory upon the President to prepare at the commencement of each year, a summary of the transactions of the organization during the past year. At the close of the first year, the President overlooked this fact, but made ample amends at the commencement of the third year by preparing a pamphlet containing both annual addresses, and copious abstracts of all the papers that had ever been read.

Since our last report, the following papers have been read: "The Savage Mind in the Presence of Civilization," by Prof. Otis T. Mason; "Prehistoric Trephining," by Dr. Robert Fletcher; "Some Superstitions of the Sioux Indians," by Dr. H. Yaddow; "The Chief's Son and the Thunders: An Omaha Myth," by Rev. J. Owen Dorsey.

The design of the first named paper was two-fold: first, to show that the presence of other peoples better furnished and skilled in some respect had always operated as a stimulus in the onward march of civilization; and second to draw attention to the fact that in the treatment of the Indians, Chinese, and Negroes, the phenomena of the past history of civilization were being re-presented. The two latter papers were recitals of exceedingly interesting Indian myths, Dr. Fletcher, who is associated with Dr. Billings in publishing "Index Medicus," having collected all that could be gathered on the subject of prehistoric-trephining, from two years reading, gave an elaborate summary of his investigations.

THE PHILOSOPHICAL SOCIETY OF WASHINGTON.—THE SPECTROPHONE.—At the 198th meeting of the Philosophical Society of Washington, Prof. Alexander Graham Bell communicated the announcement of his discovery of the Spectrophone, the latest outgrowth of the Photophone.

In a paper read before the American Association for the Advancement of Science, in which he announced the discovery of the photophone, Mr. Bell ventured the prediction that probably all matter would be found to posses sonorous properties of the same nature as those manifested by the discs used in that instrument. More recent investigations in Europe with gases and liquids have fully verified this prediction. Any liquid or gas placed in a test tube and exposed to the action of a beam of light condensed upon it by a lens can be made, by means of an interrupter, to emit musical tones. This has been shown by Prof. Tyndall in his memoir, to the Royal Society, on Radiant Heat. Some substances thus emit feeble sounds, others stronger ones. Iodine vapor, Nitrogen Oxide and Bromine give very loud sounds. It is found that those substances which emit loud sounds are those which absorb heat in a high degree, and among these lamp-black is especially remarkable. It has been questioned whether such sounds are provoked by the luminous rays or by the dark ones. M. Mercadier expressed the belief that the inciting rays are the red and dark ones. This led Mr. Bell, with the assistance of Mr. Sumner Taintor, to experiment with the sonorous properties of Carbon Disulphide, actuated by the light of the Spectrum.