Further tests have revealed the fact that various enzyme preparations of commerce, as emulsin, papain, trypsin, may have no trace of the power of catalyzing hydrogen peroxid and nevertheless be very powerful in their specific actions, and it is evidently only due to another substance of enzyme nature present as an impurity when the common enzymes exhibit that catalytic power on hydrogen peroxid. This specific substance occurs in an insoluble and in a soluble form. The former seems to be a compound of the latter, a kind of albumose, with a nucleo-proteid. There seems to exist no plant and no animal which is without that peculiar enzyme, which the writer proposes to name *catalase* from its catalytic action on hydrogen peroxide. It belongs to the group of the oxidizing enzymes.*

In aqueous solution this enzyme is 'killed' between 72° and 75° C. Its action on hydrogen peroxide is retarded by certain salts, especially nitrates of the alkaline metals, and stimulated by others, as sodium carbonate.

One of the functions of this enzyme appears to be to prevent any accumulation of hydrogen peroxid which might be formed as a by-product in the series of energetic oxidations that characterize the cellular respiration process. Hydrogen peroxid is a poison for the living protoplasm, hence the activity of catalase is of vital importance. Recent investigations of Eugen Bamberger and also of Manchot leave no doubt that hydrogen peroxid is generally produced in the process of autoxidations of many labile organic compounds when exposed to air.

A detailed investigation of catalase will be published in a special Bulletin of the U. S. Department of Agriculture.

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*It also plays a rôle in the 'sweating' process of tobacco.

THE RECENT ANNUAL RECEPTION AND EXHIBITION OF THE NEW YORK ACADEMY OF SCIENCES.

The seventh annual reception of the New York Academy of Sciences took place April 25th and 26th, at the American Museum of Natural History. A beautiful and spacious hall on the main floor in the east wing was assigned by the Museum authorities and proved admirably adapted for the purpose. The several branches of science were in charge of the following specialists, who together made up the general committee:

Anthropology, Franz Boas.
Astronomy, J. K. Rees.
Botany, D. T. MacDougal.
Chemistry, C. E. Pellew.
Electricity, Geo. F. Sever.
Geology and Geography, R. E. Dodge.
Metallurgy, H. M. Howe.
Mineralogy, L. McI. Luquer.
Paleontology, Gilbert van Ingen.
Physics and Photography, Wm. Hallock.
Psychology, Edw. L. Thorndike.
Zoology, Charles L. Bristol.

In the section of Anthropology, some of the interesting collections of the Jesup and Huntington expeditions to the northwest coast were shown. They illustrated designs in gold from the Amoor river; the archæology of the coast of southern British Columbia, including jade implements from graves, that were very striking; and implements of the Eskimo of Southampton Island. In addition, symbolism among the Arapahos received attention, and basketry work from California was well represented. In the section of Astronomy the work of many observatories was exhibited through the courtesy of their Directors. The Lick observatory showed photographs of nebulæ; the Lowell observatory at Flagstaff, Arizona, its recent work on planets and satellites; the University of Pennsylvania, its results with the zenith telescope; Sir Norman Lockyer, his enlargement of the spectrum of Alpha Cygni,

and the Columbia University observatory various lines of recent work.

The Botanical section contained many individual exhibits and others which specially illustrated recent progress at the New York Botanical Garden. Many preparations were shown with microscopes. Professor Geo. E. Stone, of the Massachusetts Agricultural College, had one series of apparatus that he had used in the study of plant physiology, and that attracted especial attention. Under Chemistry the new synthetic indigo and numerous artificial perfumes drew the attention of many visitors, while recently developed apparatus and preparations interested others. At the tables devoted to Electricity many new and improved forms of apparatus were shown. In the section of Geology and Geography, the U. S. Geological Survey gave a very full exhibition of its recent maps and publications, all of which aroused much interest and many inquiries. The work of the Maryland Geological Survey and Weather Service was admirably presented and received very favorable comment.

Metallurgy appeared this year for the first time, and was especially rich in illustrations of Metallography, as developed in the School of Mines at Columbia University. New varieties of steel; various metals, more or less rare; alloys; by-products and refractory materials gave many visitors an opportunity to see objects seldom exhibited. Under Mineralogy, the greater number of the new minerals described during the year were shown, and many superb specimens of older ones. Of especial interest was a series of 51 specimens of American tellurides, shown by Professor A. H. Chester, of Rutgers. The Egleston Museum of Columbia University displayed both minerals and apparatus. In Paleontology, the most interesting exhibits were the recent collections of vertebrates from the West by the parties of the American Museum. The remarkable find of five complete skeletons of the last extinct horse of North America (*Equus occidentalis*), which was previously known only in scattered individual bones, excited the liveliest interest. In addition, a camel that possessed many features of the giraffe, and complete mounted skeletons of *Oxyaena* and *Patriofelis*, together with many other fine specimens, gave visitors an idea of the remarkable progress of the Museum in this branch. The members of the Academy were gratified to note that Mr. Charles Knight is continuing his restorations, two new ones being shown, viz, *Tylosaurus* and *Megaceros hibernicus*. A valuable collection of fossil fish recently acquired by the American Museum, from Ohio, was also shown through the courtesy of Professor Whitfield.

Under physics and photography, Dr. P. H. Dudley exhibited further results of his observations upon strains in rails under moving trains by means of the 'stremmatograph,' his valuable and ingenious instrument, invented for this purpose. The great advantage of heavy and stiff rail sections was clearly proved. Photographs in color by means of diffraction gratings, and kinetoscope projections of the motion of a wave, both by Professor R. W. Wood of the University of Wisconsin, excited great interest. In addition many other forms of ingenious apparatus received careful attention from visitors. In the section of psychology the chief exhibits consisted of new forms of apparatus. One, by Professor Cattell, projected simultaneously upon a screen, by means of the lantern, a time scale, a curve of breathing and another of pulsation, both while being produced by a person, engaged in any prescribed occupation. This received especial attention from visitors.

On the tables devoted to zoology the visitor saw a beautiful series of photographs illustrating progress at the new Zoological Garden of New York, and few, not familiar

with the facts, were prepared for the results displayed. Many preparations of an anatomical nature were exhibited by others, and many of an embryological character, oftentimes under the microscope, attracted deep interest. A series of beautifully mounted heads of venomous and non-venomous snakes, by R. L. Ditmars, gave an excellent idea of their differences in dentition and structure.

On the whole, the exhibition maintained the high standard established in former years and gave instruction and pleasure to between two and three thousand members and their friends. Every possible courtesy was extended by the officers of the American Museum, and the Academy is again placed under a debt of gratitude to them. Our thanks may also be expressed in this place to the many friends whose contributions made the exhibition a success, and of whom only a small part could be specially mentioned above.

J. F. Kemp,
Chairman of Committee.

SCIENTIFIC BOOKS.

The International Geography. By Seventy Authors; edited by Hugh Robert Mill, D.Sc. New York, D. Appleton & Company. 1900. Pp. 1088, with 488 illustrations.

The International Geography is a large, single volume compendium of geography, rightly named international, both from the standpoint of scope, and from that of authorship. The seventy authors who have co-operated in the enterprise have been chosen from all parts of the world, each to write on his own specialty, so that the editor has secured the most eminent help possible in each of the chapters of the book. We find, for instance, that Sir John Murray contributes a chapter, with the Editor, on the ocean; Professor Penck, a chapter on the Austro-Hungarian Monarchy; and Mr. H. O. Forbes, a chapter on the Malay Archipelago, all of which are but random illustrations, that are typical of the work as a whole.

The volume is divided into two parts, the first, of 122 pages, devoted to the Principles of Geography, and the second, of 930 pages, to Continents and Countries. In the second part, each of the continents is considered in detail by countries, and special chapters are devoted to the Polar Regions. The volume closes with an accurate, inclusive, and very satisfactory index, covering 35 pages.

One reviewer has stated that perhaps no one but the editor was personally qualified to review adequately such an inclusive and complete summary of the present geographical conditions of the world, a remark with which many of us will perhaps agree. No complete analysis is, therefore, contemplated here; but attention will be given to certain special features of the volume, first, as to its general usefulness, and second, as to the special chapters on the United States and North America.

The present reviewer feels that the volume under consideration ought to be of every day use to nearly every advanced teacher of geography in grammar schools, and to every trainer of future geography teachers in normal schools and colleges, and has introduced the volume with satisfactory results in one large class of school teachers studying geography. In this volume teachers and all others who have need of getting quickly in touch with the best in reference to all countries, find that best, told concisely, interestingly, clearly and effectively. Supplied with a good atlas and this volume, any teacher is well equipped as to opportunity for securing the best information for daily use. One of the particularly valuable features of the book is that it is adapted to the abilities of the audience to which it would appeal. The editor and the authors are to be congratulated in that they did not miss their mark.

The special chapters dealing with America were written by Professor W. M. Davis, and Mr. J. B. Tyrrell, formerly of the Canadian Geological Survey; Professor Davis writing on North America as a whole, and Mr. Tyrrell on the Dominion of Canada. In the chapter on North America, Professor Davis starts out with certain comparisons between North and South America, and between North America and Eurasia. Following this is a consideration