upon the basis of the cost of material and double the time employed.

Austria.

Normal Aichungs Commission.—Established at Vienna in 1871, upon the adoption of the metric system by Austria; to exercise a technical control over the inspection of weights and measures throughout the Empire; to establish regulations regarding inspection; to fix the limits of tolerance; to provide for the custody of the standards; to construct and verify copies of the standards; and to equip the local inspection bureaus with copies of standards and measuring apparatus; to verify, for institutions and individuals, standards and measuring apparatus submitted. The commission is subordinate to the Minister of Commerce, and is composed of a director and a number of co-ordinate members. The director is empowered to appoint a suitable force of technical clerical assistants.

Total annual expenses, including salaries, equipment, and incidental expenses for the year 1897–98..... $46,000

Russia.

Central Chamber of Weights and Measures.—Established 1878, at St. Petersburg, reorganized 1893, to exercise control over all systems of weights and measures in use in the Empire. The work at present is largely preliminary, and comparisons are confined to standards of length, mass, and capacity, but it is the intention of the Government to include the comparison of thermometers, barometers, hydrometers, alcoholometers, etc., and electrical measuring apparatus. Experiments in most of these branches are now being conducted in the laboratories of the chamber, and results of extreme precision are now being obtained, under the minister of finance and the supervision of a director. One hundred and seventy-five thousand dollars was originally appropriated for buildings and grounds.

Total annual expenses, including salaries, equipment, and incidental expenses, for the year 1897–98..... $17,500

The total amounts annually appropriated by different governments for standardizing purposes are as follows:

Germany	$116,000
England	62,100
Austria	46,000
Russia	17,500
United States	10,400

A NEW ENZYME OF GENERAL OCCURRENCE IN ORGANISMS.

A PRELIMINARY NOTE.

WHILE occupied with investigations on the enzymes in the tobacco leaf the writer observed that the clear filtered juice of the fresh leaf, although giving strong reaction for oxidase and peroxidase, yields but a very weak reaction with hydrogen peroxid, *i. e.*, develops mere traces of oxygen upon addition of this substance. The *unfiltered* juice, however, containing in suspension protein matter, chlorophyll bodies, starch granules, etc., yields a very energetic development of oxygen. This behavior caused the writer to doubt the correctness of the now generally adopted teaching that the power of catalyzing hydrogen peroxid is a property of all enzymes. The known enzymes are soluble in water and although they can be retained in a certain measure by some suspended matters, the difference of behavior of the unfiltered and filtered juice in the case just mentioned could hardly be so very marked.

Further tests have shown the writer that the power of catalyzing hydrogen peroxid is found also in manufactured tobacco which had been air-cured, while flue- or fire-cured tobacco was generally indifferent in this regard. Air-cured tobacco that was subjected to a subsequent 'sweating in bulk' shows this power often in a high degree although it is impossible to find the common enzymes. Even oxidase and peroxidase may be destroyed in the sweating process, without the loss of this catalytic power.

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,