

pages upon physiological chemistry. Nor have the newer methods of industrial chemistry been overlooked, as for example, the Solvay process and the bi-sulphite process of paper manufacture; a brief outline of the metallurgical treatment of all the metals which are technically important, is also a valuable addition.

Some may note the brevity of the account of the action of nitric acid upon the metals, and regret the omission of the Raoult method of the determination of the molecular weight by the lowering of the freezing point, and notice some points in which the old usage has been adhered to, as for example the Chevreul explanation of the action of soap, and the symbol of arsenious oxide given as As_2O_3 .

The work, however, leaves little to be desired as a text-book of general chemistry in our higher institutions of learning and cannot fail to be of more than ordinary interest to the general reader.

A. H. G.

NOTES.

THE CHEMICAL MIDWINTER FAIR CONGRESS AT SAN FRANCISCO.

The great success of the international congress held in connection with the World's Fair at Chicago, in August, 1893, was probably the stimulating cause which led the chemists of the Pacific coast to organize a similar congress in connection with the San Francisco Midwinter Fair. The committee in charge of the congress consisted of Prof. W. B. Rising, chairman, Professors E. W. Hilgard, John M. Stillman, G. M. Richardson, A. L. Lengfeld and Messrs. W. M. Searby, Alfred Ropp, Edmond O'Neill, Harry East Miller, Theodore J. Wramplmier and E. C. Burr. The sessions of the congress were held in Golden Gate Hall, 625 Sutter street, June 7, 8 and 9, 1894.

The attendance at the meeting was most gratifying in the number of chemists, although the public, not much interested in such matters, was but sparsely represented. Unfortunately, no record was kept of those in attendance and only an estimate can be made of the total number, but this was in excess of

fifty, showing the lively interest taken by the Pacific coast chemists in the success of the meeting. Only two cismontane chemists were in attendance.

In the arrangement of the program of the congress but little attempt was made to group the topics together by subjects, but the arrangement was simply such as was thought would best fill in the time. The titles of the papers read on each day of the session follow:

THURSDAY, JUNE 7, 10 A. M.

- Chairman W. B. Rising
1. Introductory Remarks James D. Phelan
 2. "Industrial Applications of Chemistry" W. B. Rising
 3. "A Theory of the Dissociation of the Products of Explosives" W. R. Quinan
 4. "Concerning the Conversion of Mechanical Energy into Chemical Action" J. M. Stillman
 5. "Achievements and Aims of Physical Chemistry" J. R. Trevor
 6. "Contraction of Aqueous Solutions of Acetone" Karl P. McElroy
 7. "Modern Conceptions of Affinity and Valence" S. W. Young
 8. "Analytical Notes" W. B. Rising
 9. "Determination of Nickel in Nickel-Steel" L. R. Lenox
 10. "Limitations of the Cyanide Process" C. W. Merrill
 11. "Device for the Adjustment of a Balance" Frank Green
 12. "Methods for Standardizing Reagents used in Acidimetry and Alkalimetry" C. G. Hopkins and G. C. Caldwell
 13. "A Volumetric Method for the Determination of Sulphuric Acid" H. H. Deuban and G. C. Caldwell

FRIDAY, JUNE 8, 10 A. M.

- Chairman H. W. Wiley
1. "Properties of Typical Florida Soils" H. W. Wiley
 2. "Hawaiian Soils and Notes on the Chemistry of Certain Hawaiian Esculeuts" A. B. Lyons
 3. "The Nitrogen Contents of Soil Humus" E. W. Hilgard and M. E. Jaffa
 4. "Oil Tests" F. Shapely
 5. "Chemical and Physical Properties of some California Vegetable Oils" W. C. Blasdale
 6. "Some Characteristics of California Wines" W. H. Krug
 7. "California and Nevada Shales and their Products" A. A. Cunningham
 8. "Hydrocarbons of the Pyridin and Chinoline Series in California Petroleum and Asphalts" Dr. Frederick Salathe
 9. "Saccharimetry in Medicine" A. E. Regensberger, M. D.
 10. "Kryolith and its Industrial Application" Theodore Armstrong

SATURDAY, JUNE 9, 10 A. M.

- Chairman Geo. C. Caldwell
1. "The Analytical Properties of Iron Phosphide and Phosphate" L. M. Dennis and B. S. Cushman
 2. "The Preparation of Crystalline Chlorides by Means of Hydrochloric Acid Gas" L. M. Dennis
 3. "Parapropionic and Metapropionic Aldehyde" W. R. Orndorff and Miss L. L. Balcom

4. "Determination of Alcohol in Fortified Wines".... T. J. Wrampelmier
5. "The Influence of Alum, Aluminum Hydroxide, and Aluminum Phosphate on the Digestibility of Bread"..
..... W. D. Bigelow and C. C. Hamilton
6. "Chrome Ore Industry"..... H. G. Shaw
7. "The Education of the Technical Chemist"..... J. M. Stillman
8. "The Teaching of Chemistry"..... General Discussion

The sessions were held in the morning beginning at ten o'clock and continuing until one. After luncheon each day excursions were made in San Francisco and vicinity, to points which were of interest to chemists.

On Thursday afternoon the Pioneer White Lead and Color Works, the Golden City Chemical Works and the manufacturing establishment of Clinton E. Wonden and Co., were visited.

On the afternoon of Friday the Pacific Coast Borax Works at Alameda Point, and the chemical laboratory of the University of California at Berkeley, were the objective points. The greatest interest was manifested by the visiting chemists in the manufacture of borax. In Southern California there are immense deposits of crystallized hydrous calcium borate, the mineral known as Colmanite. This mineral is easily crushed and reduced to a fine powder in which condition it is mixed with natural sodium carbonate obtained from the alkali deserts and heated under pressure with water to cause the reaction to take place, by means of which the lime appears as a carbonate and the sodium as a baborate. The process although a simple one is quite complicated from a technical point of view, and the visitors were much interested and thoroughly entertained by the exhibition.

The new chemical laboratory of the University of California was also the object of the greatest interest and profit. This laboratory is built upon the most modern plan and combines most thoroughly, convenience for work and efficiency of ventilation. Every department of chemistry taught in the institution has a separate place in the laboratory and the desks, apparatus, store-rooms and laboratories were all inspected with much pleasure.

On the afternoon of Saturday an excursion was made to the Western Sugar Refinery, formerly known as the Spreckels Sugar Refinery, which is one of the largest and most complete works of the kind in the world. The whole process of refining sugar was thoroughly explained and the building and apparatus inspected from top to bottom.

From the sugar refinery the party passed to the inspection of the Union Iron Works and the Pacific Rolling Mills. The gigantic operations of these two factories in the building of the great war ships which have been constructed and are under construction at this place, were thoroughly explained. No part of the excursion was of more interest to the chemist than this. The Union Iron Works kindly placed at the disposal of the chemists their private tug for the purpose of carrying the party from San Francisco to Potrero and return. The sail on the bay was thoroughly enjoyed by all.

On Saturday evening a delightful banquet of an informal nature was held at which forty, all I hope immortal, sat down. The festivities of the banquet were continued until a late hour.

On Monday the chemists were invited to visit the California Powder Works and the Giant Powder Co., situated near the Southern Pacific Railroad, about thirty miles from San Francisco. Not a very large number was able to accept this invitation, but those who did go were fully repaid for the trip.

There is no space here for comments on the scientific papers read, but, an inspection of the titles will show the broad scope of scientific research covered by the papers presented to the congress.

The visiting chemists received every courtesy from their San Francisco brethren, and those having the congress in charge certainly deserve the heartiest congratulations for the successful way in which they carried it to a happy conclusion.

H. W. WILEY.

ERRATUM.—Page 514, fifth line from bottom of page, for "*proof* silver, etc.," read "*pure* silver, etc."