

vertical axis. The wooden stand in question has a base of $6\frac{3}{4}$ by $13\frac{1}{2}$ inches, supporting a pair of wooden sockets. Between the sockets is a small mirror set at an angle of 45° , which throws light up through the two "Nessler" tubes under comparison, and permits the observer to see them in the upper mirror as though in horizontal position. The "Nessler" standards being placed in the set of tubes on the left and the "free" and "albuminoid" ammonias on the right, the two sets can be rotated at will until the colors on the right hand are matched by those of the standards on the left.

W. P. MASON.

RENSELAER POLYTECHNIC INSTITUTE,
TROY, N. Y.

*Occurrence of Manganese in a Deposit Found in City Water Pipes.*¹—The author recently had occasion to examine a deposit that, it was said, would occasionally entirely stop up the service pipes in the city of Hutchinson, in the Arkansas valley. The water is obtained from points driven from 40 to 60 feet into the gravel, and from a well about 25 feet deep. The pipes have been laid from ten to fifteen years, and a direct pressure of 45 pounds is maintained upon them. It is almost impossible to remove this material by flushing out the pipes.

The deposit, of which several pounds were received, when dry, is of an earthy brown color, porous, soft, and friable. It forms both in lead and iron pipes, but seems to form more quickly at points nearest the pumps.

The analysis of a sample, dried at 100° C., is as follows:

Silica.....	9.25
Ferric oxide	13.00
Aluminum oxide.....	3.02
Manganese sesquioxide.....	45.20
Zinc oxide.....	5.94
Calcium oxide.....	0.48
Copper oxide.....	0.66
Barium oxide.....	0.11
Water	7.59
Loss on ignition, less water.....	13.67
Total.....	98.92

In addition to the above, there was present a small quantity of chromium oxide, magnesium oxide, phosphoric anhydride, carbon

¹ Read at the St. Louis meeting of the American Chemical Society, December 30, 1903.

dioxide, sulphuric anhydride, ammonia and organic matter. The air-dried specimen contained 29.79 per cent. of water.

An examination of this analysis suggests immediately the great similarity between the composition of this deposit and bog manganese, or "Wad," which, it is stated, is a mixture of different oxides, and not entitled to the dignity of being called a distinct mineral. As the specimens reported contain copper, lead, barium and cobalt, it is perhaps not strange to find quite an appreciable quantity of zinc in this specimen, though the locality is more than a hundred miles from any known zinc region.

The water that is carried in the pipes at the present time contains only 0.0014 gram of manganese sesquioxide per liter. It is evident that this artificial "Wad," as we call it, is made by a process of concentration in the pipes, and it suggests the method to which we owe the formation of many other minerals in the underground channels of the earth. E. H. S. BAILEY.

UNIVERSITY OF KANSAS.
LAWRENCE, KAS.

NEW BOOKS.

BIOCHEMICAL RESEARCHES. COLLECTED REPRINTS OF PUBLICATIONS FROM THE LABORATORY OF PHYSIOLOGICAL CHEMISTRY OF COLUMBIA UNIVERSITY, TOGETHER WITH CONTRIBUTIONS FROM SIMILAR LABORATORIES IN OTHER INSTITUTIONS. By WILLIAM J. GIES and collaborators. Volume I. Edited and issued by WILLIAM J. GIES, Columbia University. July, 1903. Price, \$5.00.

Bound together in this volume are reprints, forty in number, of the published research work done by Professor Gies individually and by him in collaboration with his instructors and pupils, and also work done under his supervision. A large part of the work was done in the Laboratory of Physiological Chemistry of Columbia University at the College of Physicians in New York, while the remaining part was done in laboratories at other institutions. It comprises a record of work in which Professor Gies was either directly or indirectly concerned during the period from 1896 to 1903, and is splendid evidence of the true research spirit and indefatigable industry possessed by him. The generous fairness displayed by Professor Gies in placing the name of the collab-