

1931

The Oxidation of Nitrogenous Material in Contaminated River Water

Ben H. Peterson
Coe College

John Hann
Coe College

Let us know how access to this document benefits you

Copyright ©1931 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

Recommended Citation

Peterson, Ben H. and Hann, John (1931) "The Oxidation of Nitrogenous Material in Contaminated River Water," *Proceedings of the Iowa Academy of Science*, 38(1), 165-165.

Available at: <https://scholarworks.uni.edu/pias/vol38/iss1/23>

This Research is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

refractive index and were found to decrease with increase in concentration, the values for all salts approaching the same small value at saturation. The activities were calculated according to the equation given by Huckel for concentrated solutions of strong electrolytes and were found to agree qualitatively with experimental values.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

THE OXIDATION OF NITROGENOUS MATERIAL IN CONTAMINATED RIVER WATER

BEN H. PETERSON AND JOHN HANN

A study is made of the rate of oxidation of the nitrogenous material in water taken from the Cedar River above, within and below the city of Cedar Rapids. Some of the carbonaceous material is first oxidized, requiring all of the dissolved oxygen if the sample is highly polluted. If sufficient dissolved oxygen remains, the free ammonia is converted to nitrite form accompanied by a change of the organic nitrogen to ammonia. When nearly all the nitrogen is in nitrite form, further oxidation to nitrate nitrogen occurs.

DEPARTMENT OF CHEMISTRY,
COE COLLEGE,
CEDAR RAPIDS, IOWA.

THE ADSORPTION OF NEGATIVE IONS BY A COLLOIDAL SUSPENSION OF ALUMINIUM HYDROXIDE

BEN H. PETERSON AND FLOYD H. TRIMBLE

The adsorption of Ferricyanide and Oxalate ions by colloidal aluminium hydroxide at concentrations below and above the coagulation values is measured. The plot of the amount adsorbed as a function of the total concentration of the electrolyte shows three characteristic "breaks." The results are of the same general type as obtained by Storks in the adsorption of the Chromate ion by the same suspension. The adsorption is considered as of two types; first, a neutralization of the positive charges on the colloidal particle, followed by surface adsorption by the coagulated particle.