Table I gives the percentage of fecal strains in the raw and tap water, Mr. Wolman's scoring of the degree of probable resistance of organisms in the raw water, and the selection ratio.

I agree with Mr. Wolman's scoring of the degree of resistance of organisms in raw water with the exception of Cherryvale. It seems reasonable to assume that only very resistant organisms would remain after five days storage.

TABLE I—INTERPRETATION OF SELECTIVE ACTION BY TREATMENT OF CERTAIN KANSAS WATERS

CITY	Wolman's scoring of probable degree of resistance of organisms in raw water	FECAL STRAINS ONLY					
		Rain			Drought		
		Per cent Raw	Per cent Tap	Selection Ratio	Per cent Raw	Per cent Tap	Selection Ratio
Cherryvale....	A—Least resistant	63.4	21.2	3.1	61.8	78.6	0.785
Humboldt....	B	23.8	38.1	0.626	60.0	66.7	0.91
Chanute....	C	50.0	39.2	1.28	56.5	63.8	0.885
Independence..	D	12.4	25.45	0.48	87.5	70.1	1.24
Coffeyville....	E—Most resistant	13.3	16.68	0.79	52.4	73.3	0.715

Table I shows that there is a difference in the resistance of the fecal strains from the several cities but that this selective action is not consistent with the variable resistance of the raw water bacilli. In other words, there is no way to prophesy, given the source of pollution, the percentage of fecal bacilli that will resist the treatment.

M. GREENFIELD AND W. N. SKOURUP

STATE BOARD OF HEALTH
LAWRENCE, KANSAS

NITRATE SUPPLY COMMITTEE—CORRECTION

Owing to a typographical error, the investment cost of the Haber Process when ammonia is the product [see table, *THIS JOURNAL*, 9 (1917), 841] was made to read \$540, when it should read \$340.

CHARLES L. PARSONS

WASHINGTON LETTER

By PAUL WOOTON, Metropolitan Bank Building, Washington, D. C.

With such matters on the tapis as the location of the nitrate plant; the investigation of the defective primers manufactured at the Frankford arsenal; the important progress being made in the study of noxious gases and the materials used in the manufacture of submarines, aeroplanes and balloons; the pyrite and manganese situation and the important information gleaned at the Boston meeting of the American Chemical Society, Washington chemists have had much food for thought and subject matter for discussion during the past month.

Rarely has there been such a demand in Washington for a publication as that evinced for the September issue of *THIS JOURNAL*. Despite the fact that proofs of the article on the nitrate report had been delivered in advance to the four daily newspapers published in the capital, nothing in regard to the report was published. The only available copies of the report were those contained in the *Journal*. The demand for the report became so great that a week following its publication in the *Journal*, the Committee on Public Information issued a statement containing some of the more important phases of the matter.

The failure of the newspapers to print the results of the nitrate investigation led Representative Longworth, of Ohio, on September 14, to address the House on the subject and to have the complete report printed in the *Congressional Record*. Mr. Longworth considered the action taken "of vast, if not vital, importance to the safety of the nation and to our continuance as a potent factor in this war."

Continuing, Representative Longworth said: "My other object, far more important, is to show that a situation has been brought about by the intelligent action of this Government, with the assistance of a number of prominent American engineers and scientists and chemists, by which the country is assured during this war, no matter what may happen, regardless of whether or not we may by some chance be cut off from the Chile nitrate supply, of an absolutely sufficient and cheap supply of nitric acid, without which it is impossible to make ammunition or explosives of any kind, without which we would be impotent in the conduct of a war, either defensive or offensive, and without which the enormous amount of money appropriated in this bill would be absolutely useless. This happy situation is better summed up than I could sum it up in a letter written by Dr. Herty, formerly the president of the AMERICAN CHEMICAL SOCIETY, now the editor of the official organ of the AMERICAN CHEMICAL SOCIETY, known as the *Journal of Industrial and Engineering Chemistry*, and a member of the committee appointed by the Secretary of War to investigate this question. In a letter written to the editor of the *Manufacturers Record* and published a few days ago he says: "Representative Longworth then read excerpts from the letter.

After recounting how Dr. Chas. L. Parsons (secretary of the American Chemical Society), whom he designated as "one of the great chemists of the country," has investigated nitrate manufacturing methods in Europe, Mr. Longworth said: "The outstanding feature of the action officially taken is the postponement indefinitely of the proposition to make nitrogen in any form by the use of water power. This, thank goodness, gentlemen, sounds the death knell of that Muscle Shoals \$20,000,000 nitrate scheme."

Accustomed as he is to the high standard of efficiency in his own organization, Dr. W. H. Nichols, chairman of the Com-

mittee on Chemicals of the Council of National Defense, finds it difficult to understand the delays in official action. The fact that the selection of the site for the nitrate plant is being deferred from week to week is giving much concern to Dr. Nichols, who characterizes the handing over to the government of the General Chemical Company's synthetic ammonia processes as the greatest sacrifice he ever made. He pointed out that the General Chemical Company has been working on this process since 1911 and, at the time of the government's appeal, had allotted a large sum of money to build a plant for the carrying out of the process on a large scale. He said the only condition which the company had stipulated was that the government take adequate steps to safeguard the company's confidences. He also called attention to the fact that the company is not receiving a penny for the use of its processes and that they had been turned over with the sole intention of being helpful to the country.

That a knotty chemical problem which will have to be solved by the special board consisting of Col. Worth Robinson, professor of chemistry at the U. S. Military Academy, Dr. H. P. Talbot of Massachusetts Institute of Technology and Dr. Chas. L. Parsons, secretary of the American Chemical Society is involved in the failure of certain primers manufactured at the Frankford arsenal became very evident during the course of the investigation conducted by a special congressional committee. H. C. Pritham, the chief chemist of the technical staff at the arsenal, testified that a number of causes contributed to the failure of the primers. Principal among these were: the presence of impurities in the ingredients; improper granulation of materials; overcrowding in the dry houses; and irregularities in manufacture. The particular impurity which Mr. Pritham held largely responsible for the trouble was potassium bromate in the potassium chlorate. "Primers may shoot fine when made," said Mr. Pritham, while on the stand, "but the potassium bromate will cause a slow deterioration. We do not know whether it is a catalytic action or whether it is simply a decomposition with the liberation of the bromine and the generation of sulfuric acid. The presence of the bromate is a result of impurities in the original potassium chloride from which the chlorate was made."

After explaining how war conditions have cut off the supplies of chlorate usually relied upon in this country, Mr. Pritham said: "The chlorate made in the United States carries a higher percentage of impurities. During manufacture the bromate is not eliminated; that is, it occurs as bromide and is oxidized to the bromate and crystallizes out with the chlorate in the ordinary process of manufacture. The improved process which Major Cushman has been working on, will be a very simple way of getting rid of the bromate. All the chlorate on hand at the arsenal has been shipped away to be treated by the new process. Previously no one had paid any particular attention to this matter because nobody had any information or had demonstrated that bromates formed a deleterious ingredient in a primer."

Mr. Pritham was graduated from the Chemical and Engineering Department of the University of Maine in 1901.

Walter Arthur, the research metallurgist for the Titanium Alloys Manufacturing Company, who made an examination of some of the primers for the War Department, told the committee that the trouble resulted wholly from too coarse granulation of the antimony sulfide and the potassium chlorate. "No