NO_3 and SO_4 are only active when the former occurs in the ratio of 10:1 of K, and when the latter is present as 200:1 of K. The influence of molecules and ions is zero when phosphates are used.

Magnesium salts possess a greater antitoxic value than the corresponding potassium or ammonium salts. Mixing a small quantity of $(CHOO)_2Mg$ with twice the quantity of CHOOK does not modify the antitoxic value of the former in the presence of copper acetate, but with the other salts of copper its value is increased. The addition of ammonium or potassium salts to a solution of the corresponding magnesium salt decreases but does not increase the antitoxic value of the latter. The mixture of corresponding salts of potassium and ammonium, however, increases slightly their antitoxic value in the presence of some copper salts, but not for others.

A part of the antitoxic activity of mineral salts is due to the acid radicals, the NO_3 radical being the one which is most active. Therefore the inorganic salt possessing the most antitoxic activity is $Mg(NO_3)_2$.

By mixing a small quantity of $(NH_4)_2SO_4$ with twice the amount of CHOOK, the antitoxic value of the former is not modified, except in presence of copper acetate, where the antitoxic value is slightly increased. The K ions appear to decrease the antitoxic value of the $(NH_4)_2SO_4$ molecules. When $(CHOO)_2Mg$ molecules are added to $(NH_4)_2SO_4$ the antitoxic value of the Mg molecules decreases. The mixing of a small quantity of NH_4NO_3 molecules with an equal quantity of CHOOK increases their antitoxic value. The K ions are depressing when they are present in large amounts, but have the same action as CHOOK when they are present in small numbers. When NH_4NO_3 is added to less than half the same amount of $(CHOO)_2Mg$, the first salt exerts a depressing action upon the second.

The addition of a small amount of CHOOK to less than half the same quantity of $Mg(NO_3)_2$ diminishes the antitoxic value of the latter except with the copper acetate, where it is increased. The addition of CHOOK to $S+NH_4+Mg$ or to $P+NH_4+Mg$ raises the antitoxic value of these combinations.

When a small quantity of $MgSO_4$ is added to twice as much NH_4NO_3 the antitoxic value of the mixture is greater than that of the NH_4NO_3 alone, but is greater, equal or less than that of the $MgSO_4$ with different salts of copper. The addition of CHOOK to the mixture is without action upon the antitoxic value, except with $CuCl_2$, where it is lower.

The mixture of a small amount of $NH_4H_2PO_4$ with a smaller amount of $Mg(NO_3)_2$ diminishes considerably the value of the latter. The addition of CHOOK to the two salts raises their antitoxic value.

Mixing a small amount of $Mg(NO_3)_2$ with twice the amount of $NH_4H_2PO_4$ and an equal amount of K_2SO_4 represents a complete mineral nutrient and the maximum of resistance to poison.

The author's conclusions are sustained by a large mass of experimental data which will repay careful reading and constitute an important addition to our knowledge of the relations between poisons and foods.

Howard S. Reed
Department of Agriculture,
Washington, D. C.

Kurzes Lehrbuch der Organischen Chemie. By Dr. W. A. Noyes. Translation into the German by W. Ostwald. Pp. 722. Akademische Verlagsgesellschaft, 1907.

It has seldom happened that an English text in organic chemistry has been translated into the German, inasmuch as organic chemistry is essentially a German science, and practically all of our texts have come from that country. That W. A. Noyes's book has been translated into the German augurs well for organic chemistry in our own country. Especially does this seem true when it is noted that the translator is no other than Walter Ostwald, of Leipzig. The translation is remarkable. The translator has given a faithful representation of the original text, at the same time he has completely eliminated that stiffness so characteristic in translations of this kind.

Geo. B. Frankforter