

## NOTE.

*Further Facts Regarding "Ureine."*—The September number of the Journal (Review of American Chemical Research, p. 396) gives an abstract of the latest repetition of the "ureine" fallacy, this time published in *Le Physiologiste Russe*.

About three years ago, Dr. William Ovid Moor began his series of communications on "The Discovery of Ureine, the Principal Organic Constituent of Urine and the True Cause of Uraemia."<sup>1</sup> The announcement of the alleged discovery was made in such extravagant terms that it was next to impossible to have any faith in the results and conclusions Dr. Moor brought forward. Thus, "ureine" was said to be the "most characteristic component part of urine," existing in "a quantity superior to urea." "Ureine belongs to the group of alcohols of the aromatic series," wrote Dr. Moor; in another part of the paper it was referred to as "a ferment" with "a potential energy of at least 130° C.," "being the principal cause of the ammoniacal fermentation of urine, as without its presence urea cannot be decomposed into ammonia and carbon dioxide." "Without ureine," it was further stated, "all organic matter would become converted into urea, which would remain in nature without any use, and thus, within a limited period of time, all vegetation and animal as well as human life would cease."

Shortly after Moor's first publication, Chace and I failed completely to obtain any of Moor's essential results, in spite of special care in all our operations. We were able to show, however, that "ureine" is a *mixture* of substances—in fact, merely urine, *minus* most of its water and urea, and some of the other constituents, *plus* material added to and formed in it during the manipulations. Employing customary methods of separation and detection, *purified* "ureine" has been found to contain sodium, potassium, ammonia, phosphate, urea, creatinin, pyrocatechin, phenol-alkaloidal substances and purin bases. Other urinary substances are present, which we have not attempted to identify. Although we avoided excess of mercuric nitrate in the process of decolorization, following Moor's method precisely, we always found mer-

<sup>1</sup> Moor: "The Discovery of Ureine, the Principal Organic Constituent of Urine and the True Cause of Uraemia." Communication presented to the Thirteenth International Medical Congress, Paris, 1900. Published in the *Medical Record*, 58, 336 (September 1, 1900).

cury in "ureine." Doubtless a soluble compound of mercury was formed in the "purification" process. Nitrate and oxalate, also introduced during this so-called purification, were constant constituents. Shaken repeatedly with excess of ether in a separatory funnel, "ureine" gradually separates into several layers of different color and degrees of transparency, and the ether itself takes on a yellowish tinge. Samples that had been allowed to stand exposed to the air for several months deposited crystals of urea. The amount of ash from four preparations varied from 9 to 24 per cent. A wax-like mass can be obtained immediately on treatment of the "ureine" with concentrated nitric acid. When this mass is broken up mechanically in an excess of nitric acid and examined under the microscope, crystals of urea nitrate are seen to cover the field.

Our general conclusions<sup>1</sup> have been that "ureine" is a *mixture*, containing several of the organic substances, and a considerable proportion of inorganic matter, ordinarily found in normal urine; also matter introduced with reagents in the so-called purification process. Further, the toxicity of "ureine" is due to some of the normal urinary constituents, such as the potassium and the alkaloidal bodies, and to the radicals introduced in "purifying." Consequently, much as it is to be regretted, "ureine" does not furnish a clue to the cause of uraemia nor can any of Dr. Moor's biological deductions regarding "ureine" be accepted.

Our criticism of Moor's work and conclusions in this connection have been endorsed by several investigators, but none of the questions raised by us has ever been answered by Dr. Moor. In the meantime, however, "ureine" is being exploited in the same manner in one journal after another, and impossible chemistry and biology receive wide circulation.

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## NEW BOOKS.

THE ELEMENTS OF ELECTRO-CHEMISTRY, TREATED EXPERIMENTALLY.  
By DR. ROBERT LÜPKE. Second English edition, translated from the fourth German edition. By M. M. PATTISON MUIR. 250 pp. Price, \$2.50. Philadelphia: J. B. Lippincott Company.

The work is divided into three parts: (1) Recent theories of

<sup>1</sup> Chace and Gies: "Some Facts Regarding 'Ureine,'" *Medical Record*, 59, 329 (March 2, 1901); also Gies and collaborators: "Biochemical Researches," reprint No. 31 (1903).