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**Chemical studies on the urine of eunuchs.**

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Read<sup>1</sup> and McNeal<sup>2</sup> reported the presence of creatinuria in eunuchs. The purpose of the present investigation was to make a thorough urinary analysis based upon their findings. The results, however, are somewhat different from theirs.

The eunuchs studied were selected from those recently discharged from the Manchu household. A series of four has so far been collected for careful study. No change was made in their usual diet.

They were all middle aged, ranging from 44 to 57 years, and had been castrated at ages of from 16 to 26; *i. e.*, about thirty years prior to this investigation. During the period spent in the Imperial Palace they led sedentary lives, and were accustomed to rather rich diet. But after their discharge they were almost all vegetarians. The daily food of those in my series consisted largely of millet and, to a less extent, of wheat flour and also salted vegetables; only one of them (W. C. H.) took meat in moderate quantities.

After a thorough preliminary physical examination they were kept under observation for 10 to 40 days for daily collection of urine throughout the period. They were all physically sound except one (T. W. C.) who had mild chronic emphysema and bronchitis. Repeated determinations by Van Slyke's method<sup>3</sup> for creatin and creatinin failed to show the presence of the former in the urine, except on a few occasions when the amounts found were very well within the limit of analytical error.

Attention is also called to the fact that with the protein-poor diet there have been found in the urine subnormal quantities of ammonia, total nitrogen, phosphorus, and organic acids.

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<sup>1</sup> Read, B. E., *J. Biol. Chem.*, 1921, xlvii, 281.

<sup>2</sup> McNeal, M. D., *Am. J. Med. Sc.*, 1922, clxiv, 222.

<sup>3</sup> Folin, O., *J. Biol. Chem.*, 1914, xvii, 469.

The daily average is tabulated below :

Patient	Age of Operation	Ht. Cm.	Wt. Kg.	No. of Specimens	Ammonia Nitrogen Gm.	Total Nitrogen Gm.	Creatinin Gm.	Creatin Gm.	P <sub>2</sub> Gm.	Organic Acids (=cc. N/10 NaOH)
*Controls										
L. T.		173	63.0	3	0.3018	10.967	1.7448	0.0	0.7087	159.3
L. C. C.		173	67.5	3	0.1959	14.070	1.9776	0.0	0.6528	292.0
Eunuchs										
L. H. P.	16	176	60.0	19	0.3495	12.865	1.2806	0.0254	0.4378	183.7
T. W. C.	26	163	52.0	10	0.8606	8.622	1.1742	0.0	0.3647	279.6
W. C. H.	18	155	66.5	10	0.6265	9.620	1.4384	0.0	0.4587	110.5
C. Y. S.	18	170	58.0	10	0.5169	9.996	1.1676	0.0	0.5130	121.8

\*The controls were laboratory technicians living on a protein-poor diet.