SIMULTANEOUS XYLOSE AND INULIN CLEARANCES IN THE SCULPIN

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In a previous paper[1] the glomerular activity of a marine teleost, *Myoxocephalus octodecimspinosus,* was studied by the use of xylose. It has since become evident that in the elasmobranch, dog and man there is some reabsorption of this sugar by the renal tubules, raising doubt as to the validity of the xylose clearance as a measure of glomerular filtration in the teleost. Since evidence has been adduced that there is no secretion, and little if any reabsorption of the polysaccharide inulin in the dogfish,[2] dog[3] and man,[4] comparisons have here been made of the simultaneous xylose and inulin clearances in the sculpin.

The general method of experiment was the same as in our previous studies (1). The average slope of the plasma inulin curve after the intramuscular administration of this substance was determined on 15 fish; this curve was then used to determine the average plasma concentration of inulin by extrapolation from the particular plasma level observed at the end of the period of urine collection in each fish. The ratios of simultaneous xylose and inulin clearances in 8 sculpins were .70, .72, .78, .80, .81, .83, .88 and .95; averaging .81. While the scatter of the data is large, they are confirmatory of the view that a small portion (average 21 per cent) of the filtered xylose is reabsorbed by the tubules in this animal, as in the other animals listed above. No significance is attached to the absolute values of these clearances in this study, since no special care was exercised to maintain a normal urine flow.

EXPERIMENTAL PRODUCTION OF DIURESIS IN THE DOGFISH

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In contrast to the sculpin,[1] the dogfish rarely exhibits any marked diuresis under ordinary experimental conditions. On the contrary, there is usually a moderate decrease in urine flow shortly after the urinary papilla is cannulated, and thereafter the rate of urine formation is constant until the terminal decline. The adequate

[1] Clarke, R. W., 1934; J. Cell. Comp. Physiol., *5,* p. 73.
[2] Shannon, J. A., 1934; J. Cell. Comp. Physiol., *5,* p. 301.
[3] Shannon, J. A., 1935; Am. J. Physiol., *112,* p. 405.
[4] Shannon, J. A. and H. W. Smith, 1935; J. Clin. Invest., *14,* p. 393.
[1] Grafflin, A. L., 1931; Am. J. Physiol., *97,* p. 602.