excretion of uric acid in the bird serves to maintain a low plasma level of this substance in spite of, or in association with, relatively poor glomerular development and a limited capacity to elaborate an osmotically concentrated urine.

THE EXCRETION OF INORGANIC PHOSPHATE IN *SQUALUS ACANTHIAS*

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Phosphate excretion in *Squalus acanthias* was studied in an effort to discover the method of acidification of the urine and to determine whether or not endogenous inorganic prosphate is excreted by the renal tubules in this species.

The urine of the dogfish may normally contain large quantities of acid soluble (inorganic) phosphate which, apart from chloride, is usually the most important anion and the only significant inorganic buffer in the urine. The average pH of the urine (42 samples from 18 fish) is 5.72 ± 0.11. The reaction is not significantly altered by the injection of 4 cc. per kgm. of saturated $NaHCO_3$ or the same dose of a 20 per cent solution of Na_2HPO_4/NaH_2PO_4 at pH 7.5.

From the simultaneous renal clearances of inulin and PO_4 and the pH of the blood urine it is possible to determine whether either the basic or acid phosphate ion is excreted or reabsorbed by the tubules. Such calculations show that there is a copious tubular excretion of NaH_2PO_4 both at normal plasma PO_4 levels and when the plasma PO_4 has been elevated by the injection of inorganic phosphate. The total excretion of Na_2HPO_4 appears to be slightly greater than the quantity filtered through the glomeruli; but the accuracy of this calculation depends upon precise knowledge of the ionic activity of PO_4 in both plasma and urine, and final decision in this question is reserved.

It is concluded that exogenous phosphate is excreted by the tubules in *Squalus acanthias,* chiefly as NaH_2PO_4, and that the maximum rate of excretion may be reached at a plasma level of PO_4 of 6 to 7 millimols per liter. Phlorizin in doses sufficient to produce complete glycuresis had no effect upon the tubular excretion of phosphate.