## ABSORPTION AND EXCRETION OF WATER AND SALTS BY THE ELASMOBRANCH FISHES. IV. THE SECRETION OF EXOGENOUS CREATININE BY THE DOGFISH, SQUALUS ACANTHIAS

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The excretion of creatinine has been studied in the dogfish, Squalus acanthias, in relation to plasma concentration. The clearance of injected creatinine normally exceeds the xylose or sucrose clearance by a variable amount, dependent upon the concentration of creatinine in the plasma. At plasma levels below 7 mg. per cent the creatinine clearance appears to reach a maximum, varying from 4.2 to 7.2, and averaging 5.8 times the xylose or sucrose clearance. As the plasma level is raised to higher values the creatinine clearance falls, approaching the xylose or sucrose clearance falls, approaching the xylose or sucrose clearance asymptotically.

It is pointed out that the above facts are not incompatible with the assumption that the secretory work of the renal tubules relative to preformed creatinine is constant, and that the creatinine clearance approaches a maximum as the removal of creatinine from the plasma approaches completeness.

Phlorizin markedly depresses the secretion of creatinine at both high and low plasma levels.

(A complete report of this work will appear in the Journal of Cellular and Comparative Physiology, February, 1934.)

## THE DEVELOPMENT OF BATIS MARITIMA

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Work on living and preserved plants of this monotypic, neotropical, salt marsh, dicotyledon from Louisiana and Jamaica has shown the following points. Stipules, said to be absent by all earlier workers, are constantly present on all younger leaves and floral bracts, where they seem to secrete a mucilage-like substance, which is perhaps protective to young leaves and flowers. The fleshy tissues of leaf, bract and carpel include palisade layers and numerous parenchyma layers. Among the outer layers of the latter are found many crystalliferous cells, groups of thick-walled pitted, stone-cell-like elements and numerous branchlets of the fibro-vascular system. Many of the latter end just beneath the palisade in a group of short, wide, thick-walled, strikingly pitted water tracheids. These water tracheids with the rich network of vascular bundles probably play an important part in equalizing the distribution of the stored water in these fleshy tissues. The development of the stamens and microsporangia of the male flower are rather normal. The sac-like perianth of the male flower finally becomes quite closed. At the opening of the flower the stamens and staminodia push out through a newly-formed rift in the adaxial lobe of the perianth. The petal-like "staminodia" have no trace of vascular structure, which might indicate their derivation from