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Effect of Carinamide on Sulfate and Thiosulfate Secretion in the Aglomerular Kidney of *Lophius americanus*

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Competition between sulfate and thiosulfate ions in renal tubules was demonstrated earlier by Berglund and Forster in the dog and in the aglomerular *Lophius* (Fed. Proc. 16:10, 1957). In *Lophius*, thiosulfate depresses tubular secretion of sulfate. In dogs, thiosulfate depresses the tubular reabsorption of sulfate, and sulfate also depresses the reabsorption of thiosulfate. In neither species does probenecid exert any effect on either sulfate or thiosulfate transport. Carinamide, closely related to probenecid, does, however, block the tubular secretion of thiosulfate or sulfate. As both ions are secreted in *Lophius*, the effect of carinamide was tested in this species. In a dose of 4 mg/kg, carinamide exerted a 60 and 70% depression of sulfate excretion respectively in two *Lophii*, and a 29% depression of thiosulfate excretion in one *Lophius*. There was no effect on the excretion of magnesium and calcium. These results should be compared with earlier experiments in this laboratory, in which probenecid in a dose of 3 mg/kg produced a 75% depression PAH secretion, but had no effect on the excretion of sulfate or magnesium ions. Neither do cinchoninic acid derivatives, which markedly depress the tubular secretion of PSP (phenolsulfonphthalein) in the dog, have any effect on the thiosulfate clearance in that species. Among agents which depress the tubular secretion of PSP, PAH and many other organic acids, carinamide so far is unique in its ability to depress tubular secretion of sulfate or/and thiosulfate ions in widely different vertebrate species. This feature demonstrates further the close relationship between sulfate and thiosulfate with respect to renal tubular transport.

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The Effect of Ca Reduction On Skeletal Development In *Echinarachnius Parma* Embryos

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Observations were made on the development of the embryos of *E. parma* in which the Ca content of the sea water in which these organisms develop was reduced without however modifying the osmolarity of this medium.

It was shown that when the Ca content was reduced to one tenth the normal value, the embryos developed in a relatively normal manner for the first 24-36 hours except for the appearance of a skeletal system. When