trimethylamineoxide excretion in Lophius revealed no change in creatine excretion but usually complete cessation of TMAO excretion in the presence of tetraethylammonium. Cyanine dye 863, a potent inhibitor of tetraethylammonium excretion, decreased TMAO excretion in Lophius without an effect on creatine.

Photodynamic Action, Dark Action and Effect on Oxygen Uptake of Rose Bengal on Sperm of *Echinarachnius Parma*

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Time dilution curves were made for the inactivation of *Echinarachnius parma* sperm with rose bengal at 15°C. These curves plotted concentration of dye against the time required for complete inactivation of a sperm suspension kept in the dye solution. If less than one percent of the eggs with which these sperm were mixed exhibited fertilization membranes, inactivation was considered complete. A concentration of 4.07 x 10-6M required 900 seconds in the dark to inactivate sperm, whereas, the same dilution required less than 10 seconds when exposed to light (photodynamic action). This was the minimum concentration (4.07 x 10-6M) to show a dark action. Light had no detectable additional effect at concentrations above 2.02 x 10 - 5M. The minimum concentration for demonstration of photodynamic action was 6.6 x 10-9M and required 1500 seconds. The curves of this study did not have the sigmoid inflection in either the light or dark portion as described by Blum, et al., J.C.C.P., 9:37. Photodynamic action was inhibited with Na_2SO_3, whereas, the dark action was not.

The oxygen uptake of comparable sperm suspensions was measured in a Warburg. Rose bengal was added from the side arm of the flask to give a final concentration of dye equal to the minimum for a dark action. Sea water added from the side arm acted as the control to indicate the dilution effects. Half the flasks were kept dark with aluminum foil and the others were exposed to light (300 W bulb in the water bath at a distance of 14 cm.). When dye was added to the dark flasks the increase in oxygen uptake was equivalent to the dilution factor of sea water and would plateau near the higher level. The addition of dye and light resulted in an increase of oxygen uptake much above the dilution factor but this would drop relatively quickly to a level equal to the difference between the respiratory O_2 uptake and the O_2 used in photodynamic action. Na_2SO_3 inhibited this increase in O_2 uptake in the light and a plateau similar to the dilution factor resulted.