A PRELIMINARY STUDY OF THE LIGHT REACTION OF THE ROCK BARNACLE, *BALANUS BALANOIDES*

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The rock barnacle, *Balanus balanoides,* is extremely sensitive to decreases of illumination as noted by Cole '29. To an appropriate decrease of illumination active animals, viz. animals carrying on regular rhythmic movements of the cirri, respond by an immediate retraction of the cirri and closure of the valves. To an increase of illumination there is no such response. The length of the period of closure following a decrease of illumination depends upon the magnitude of the decrease. To a decrease from 24.5 to 23 f.c., seven animals given five trials each averaged 2.74 seconds of closure. To a decrease from 53 to 23 f.c. the same animals in the same number of trials averaged 9.91 seconds of closure. As expected, preliminary experiments also show a relation between the length of light adaptation and the magnitude of the decrease of illumination necessary to effect a response. Thus in animals continuously exposed to 23 f.c. an exposure for as brief an interval as 0.05 seconds to 53 f.c. sufficed to effect a response in some animals. Under similar conditions, however, an exposure of ca. 8 seconds to 24.5 f.c. was required to produce a closure in the most sensitive animals.

REFERENCE

Cole, W. H., 1929, J. Gen. Physiol., 12, 599.

RENAL CLEARANCE STUDIES IN THE FRESH-WATER TURTLE, *PSEUDEMYS ELEGANS*

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Within the past few years considerable information has accumulated concerning renal clearances in the marine and terrestrial vertebrates, but with the exception of the Amphibians, little is known concerning renal function in the fresh-water vertebrates. Inulin has been established as a glomerular filtrate measuring substance for a wide variety of vertebrates (see Smith, 1937) and was used as such in this study of turtle excretion, its clearances being compared with those of glucose, xylose and creatinine in the normal and phlorizinized animal.

The exogenous substances, the elimination of which was studied, were injected intraperitoneally four to six hours before the first urine collection. During the experiment the animal was strapped to a turtle board and held ventral side up at about a sixty degree angle. Urine was collected by inserting a long forceps into the cloaca which kept the bladder sphincter open during the collection periods. Uretral urine which emptied into the bladder just anterior