

Research Reports: 1954

reabsorbed by kidney, are substrates of mutarotase while the others which are not reabsorbed or transported are not mutarotase substrates. Furthermore, mutarotase is inhibited by low concentrations of phlorizin, a drug which is known to block reabsorption of glucose.

During the stay at the laboratory experiments were carried out to determine the mutarotase content of kidneys of various amphibians and fishes. Previously mutarotase had been found in the kidneys of mammals and birds. The aglomerular fish, *Lophius*, was found to contain no detectable amounts of mutarotase in its kidney, while frog and catfish contained appreciable amounts of the enzyme in their kidneys. These data are regarded as consistent with the involvement of mutarotase in reabsorption of sugars, inasmuch as the aglomerular *Lophius* does not excrete appreciable amounts of glucose and the others reabsorb glucose.

Effect of Commercial ACTH upon Chromatophore Number

Herbert G. Langford
Medical College of Virginia

While treating a case of Addison's Disease with cortisone and DOCA, the regression of a mole, which later proved to be a junctional naevus, was noticed. It was presumed that the ACTH level had been reduced by therapy. It was, therefore, hypothesized that a substance behaving like ACTH controlled the number of pigment-bearing cells. ACTH had been shown previously to cause pigment dispersal of chromatophores, but there had been no studies of its effect upon the number of such cells. Therefore, the following study was done.

Young bull-frogs (*Rana catesbeiana*) were used as the test animal. The number of chromatophores in an area 1.5 mm. square of the web of one hind limb was counted. Alternate animals were injected in the dorsal lymph sac with 0.16 units ACTH daily. The number of chromatophores was followed daily. At the end of five days, six frogs in both series were available. The untreated animals showed a mean drop of 0.3 chromatophores while the treated series showed a mean rise of 53.1. This is a statistically significant difference.

It is felt that ACTH or a substance contaminating it controls chromatophore number as well as pigment spread in the frog. The case cited above suggests that the same phenomenon may take place in man.