

manner to lead to the dissociation of sugar. An influence is brought into play which leads to the sugar being broken off from the bioplasmic complex, and, perforce, carrying with it unutilised energy.

This molecular disruption attended with the dissociation of sugar stands, in reality, in the position of a reversed natural action, occurring in place of the line of change that ought to be passed through. The built-up molecule, under the influence of the environment existing, fails to continue functioning in a proper manner, and, instead, undergoes the dissociation observed. As we have already seen, a similar disruption occurs whilst blood impregnated with phloridzin is circulating through the kidney. Away from the kidney, phloridzin exerts no action, but in association with a condition supplied by the kidney structure, it brings about, after the manner of enzymic agency, the severance noticed.

I must here state that, because a certain amount of sugar is being eliminated upon what may be regarded as a properly restricted diet for diabetes, it must not necessarily be taken that the sugar is derived from the wrong breaking-down process being referred to. Meat contains a limited quantity of free carbohydrate. It also contains locked-up carbohydrate in its protein ingredient. From these sources, sugar may pass into the urine in a purely alimentary case of diabetes. If it does, the defect in carbohydrate assimilative power must be of an extreme character and closely border on the next step in which, in addition to the absence of assimilative power, there is a commencing breaking-down of protein in which carbohydrate has been previously locked up.

Facts can be adduced in substantiation of the proposition just set forth. I have now and then observed in cases of diabetes without the coexistence of associated elimination of the acetone series that, after a large quantity of meat taken at a meal, there has been a show of sugar in the urine, whilst after a moderate quantity, there has been none. Two large helpings of meat, in other words, might give rise to an appearance of sugar when one might fail to do so. This agrees with results that I notice recorded showing the effect of the ingestion of meat on the elimination of sugar in experimental pancreatic diabetes. If reference be made to Hill's "Recent Advances in Physiology and Bio-chemistry," 1906, page 348, it will be found that an experiment on a dog is mentioned in which, in the absence of food, the sugar fell to 0.77 grms. in the 24 hours, and that, after then giving meat, it rose in the first 24 hours to 3.61, and in the next to 6.09.

Allied to the sugar elimination that has its source in a wrong breaking-down of the bioplasmic molecule may, I consider, be classed the elimination of the acetone series of bodies. This constitutes one of the