

given moment, arbitrarily called death, an organ can turn round and do what it never did before. Even in the case of blood-congulation, which appears to be a direct instance to the contrary, there is no doubt, from recent research, that the blood is always tending to clot even during life, and is prevented from doing so by the production of anti-substances (anti-thrombin produced in the liver), which neutralise the activity of the thrombin or fibrin ferment."

It is a matter of surprise to me to find that Professor Halliburton has written in this way in the face of what is contained in my work on "Carbohydrate Metabolism and Diabetes," a presentation copy of which was forwarded to him. At page 68, the text runs: "the suggestion presents itself that sugar is taken on as a side-chain by a proteid constituent of the blood and transported to the tissues, where it is taken off for subjection to utilisation. The suggested operation is identical with what occurs in connexion with the transport of oxygen. Oxygen is taken on by hæmoglobin, and, in a state of combination, transported to the tissues, where it is taken off and applied to utilisation. Glycogen is a storage material consisting of very large molecules and therefore not adapted for shifting its position. I should think that the first action that occurs is the breaking down of its molecule into molecules of glucose, which become instantly taken on by the alluded-to molecules of the blood. There may be concerted action between the breaking-down and taking-on processes, and that there is such in operation is rendered probable by the fact that there is no show of sugar in connexion with the occurrence. Enzyme action, it may be considered, of necessity constitutes a part of the process, and the enzyme concerned, and set in motion as needed, may, in the presence of altered conditions, be intelligibly conceived to be capable of producing the deviation from the natural living state with respect to sugar that so quickly takes place as a post-mortem occurrence in the liver."

On the following page, in speaking of the effect of phloridzin, the statement is to be found: "The first effect of the phloridzin is to sweep away the glycogen that is present in the different parts of the body. If this passed through the circulatory system as free sugar there ought to be hyperglycæmia in proportion to the glycosuria, which there certainly is not. This being the case, the only conclusion to be drawn is that the katabolised glycogen (sugar) enters into side-chain or loose combination with a constituent (proteid) of the blood, and is thus conveyed to the kidney where it is set free and eliminated."

It will be seen that the view that can be now put forth, emanating from the knowledge that has been acquired during the last few years, and