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nothing is seen, as far as the blood is concerned, of the sugar derivable from it. Proof is given that the sugar has not undergone destruction by the fact of its coming into view when the kidney is reached. It is simply for the time being concealed by entering, as may be legitimately assumed it does, into combination with a constituent of the blood. If, in the presence of these circumstances, things can run on in this way, is it not permissible to assume that sugar may be transported in a locked-up state from the intestinal seat of food absorption, and from that of glycogen storage, to where it is required for service? By admitting this, all difficulties at once disappear.

I have previously referred to Professor MacLeod's article in Leonard Hill's "Recent Advances, in Physiology and Bio-Chemistry." and criticised the grounds upon which he has sought to maintain the validity of the glycogenic doctrine. Although, in dealing with this point, he contends that there is a functional transit of sugar through the circulation in a free state, he falls in with the view of transit in a combined state, declaring in the first place (page 319) "there is reason to believe that a loose chemical compound—of a colloidal nature—exists between serum globulin and dextrose;" next remarking (page 363) that the mother substance of the sugar eliminated in phloridzin glycosuria is undoubtedly the serum proteid; and then saying (page 364) that the proteid which has been thus deprived of its sugar "becomes recombined with more of it during its circulation through the rest of the body." This, it will be seen, precisely represents what is claimed as constituting the physiological mode of transit.

There are further facts connected with phloridzin glycosuria that give support to the view that has been expressed. If repeated administrations of phloridzin are employed in a well-fed animal, continued elimination of sugar occurs without any material alteration of the associated nitrogen elimination. The carbohydrate of the food in the first part of its onward march after absorption, follows the normal course, but afterwards, through the agency of what occurs in the kidney, becomes diverted into a wrong direction and flows off with the urine as sugar. This is what happens whilst there is food supply or a glycogen reserve to be drawn upon, and the circumstances are compatible with the carbohydrate being linked on as a side-chain to a blood-contained molecular complex.

With the absence of food, and when the glycogen has been swept away from its seats of storage, the position of things with regard to the relative elimination of sugar and nitrogen becomes altered. The sugar falls until it arrives at a fixed relationship to the nitrogen, and when