I have dealt with this matter in my "Carbohydrate Metabolism and Diabetes" (page 68), and have suggested that the transport is effected by the glycogen molecules becoming in the first instance broken down by enzyme action, just as occurs with starch molecules in the vegetable kingdom, into molecules of sugar, and then that these sugar molecules become linked on as side-chains to protein molecules, and thus conveyed in a locked-up, large molecular state to the tissues, where they become taken off accordingly as they are wanted.

This is nothing more than what happens in the ordinary course of chemical procedure. I have previously spoken about side-chains being taken on to a central ring or nucleus, and the capability of their being afterwards withdrawn without disruption of the nuclear body. The matter resolves itself into a question of the strength of affinity operating in one direction or the other. So it may be with sugar molecules linked on to a molecular blood complex. If they should be brought under the influence of a tissue complex in want of them, and thereby possessing a stronger affinity for them, it is only in the natural order of things that they should pass from the one to the other.

The train of phenomena would be that as the side-chains of the complex tissue molecules become worked off, they require to be replaced by fresh side-chains from the blood, and, in turn, the removal of these side-chains creates a demand which leads to the storage being drawn upon. Now, if the storage, as in the case of glycogen, is not of a nature to be adapted for shifting its position, it must of necessity be placed in a suitable condition for doing so. Here comes in the requirement for enzyme action, and it is suggested that as the storage is wanted, provision is made, through enzyme agency, for its supply in a form to meet what is needed.

Viewing matters in this way, the side-chain want in the blood leads to the storage glycogen being put into a suitable state to fill the void, and thus circumstanced, the carbohydrate becomes transported from the seat of accumulation in the liver to the seat of utilisation in the tissues without passing in a state to run off with the urine, as, in the free small molecular state of sugar, it would otherwise do in proportion to its extent of presence in the blood.

The idea here broached stands in conformity with the accepted view of what occurs in connexion with the transport of oxygen. Hæmoglobin is the agent concerned in the process. Taking on oxygen in the lungs, it travels as oxyhæmoglobin to the tisues, and gives up the oxygen that is needed to replace that which has been consumed in the bioplasmic molecules. Thus unloaded and made ready for recharging, the hæmo-