

chain of which the vanishing molecule is made up. The result, when the intramolecular procedure is normally carried out, is the production of carbon dioxide, water, and ammonia,—products devoid of latent energy. Should it happen, as may in the presence of abnormal conditions be the case, that arrest at an intermediate stage takes place, the effect is the throwing off of a product retaining unexhausted energy.

I have shown that, with a redundancy of carbohydrate, glycogen is dissociated for storage purposes. Condensation, or building up within the bioplasmic molecule, must be here in operation, seeing that it is in the form of sugar, and not glycogen, that the carbohydrate enters the molecule. Precisely the same sort of thing happens in the case of fat. Under the existence of a redundancy, fat becomes, by cleavage from the bioplasmic molecule, microscopically visible where none, whilst in a locked-up state, was previously to be seen. Here again constructive work must be performed, inasmuch as neutral fat is devoid of the needed dialysability to permit of its passage through cell membranes to reach the bioplasm within. The transport must occur in association with a dialysable state, and an enzyme—lipase—exists widely distributed through the body, which performs the office of breaking down fat into fatty acid and glycerine, when transmission through a cell membrane is wanted. This operation, followed by saponification, provides for the transmission, and then, should the conditions be such as to lead to neutral fat coming into view, a re-synthetic action is brought into play. What has been stated stands in accord with the teachings of the present day, and it is seen that the line of procedure in the case of fat fits in with that appertaining to carbohydrate.

These phenomena cannot for a moment be conceived to issue from the effect of mere chemical action working independently of the influence of living power. Everything tends to show that actual incorporation in living matter precedes metabolic activity. Living matter is made up of more or less highly complex molecules, and, thence, saying that a body enters into the constitution of living matter is tantamount to saying that it enters into the composition of the complex molecules of which it is made up. This renders it justifiable to speak of living action as resulting from incorporation of food-stuff in the bioplasmic molecules and its subjection to the influences that are there existing. Intramolecular activity in this way stands at the foundation of living action.

Now, taking carbohydrate and fat, it has to be said of them that they both, in a suitably hydrolysed state, become linked on to the bioplasmic molecules. What subsequently occurs depends upon the circumstances