at the time existing. If they are oxidised, they disappear in the form of carbon dioxide and water, giving rise to the liberation of a concordant amount of energy of one kind or another. If they are not consumed in this way, and the supply of nutrient material goes on, they become dissociated and laid by as storage stuff, the carbohydrate in the form of glycogen, and the fat in the form of glycerine or neutral fat.

I strongly demur to the terminology that is in common use among pathologists in connexion with this matter. It is a terminological inexactitude to speak of these operations as falling generically in the category of degenerations. They are virtually in themselves of a physiological nature, and, moreover, constitute representations of, it may be said, the largest and the widest spread class of action occurring in the living world. Look at the production of starch, cellulose, etc., and of fats in the vegetable kingdom, and of glycogen and fats in the animal kingdom, as the issue of indisputable physiological procedures. It is through bioplasmic agency that the phenomenon is brought about. Either carbohydrate or fat, entering the bioplasmic complex and not being oxidised or consumed, will not remain fixed there, but be dissociated or thrown off in one form or another, according to the potential conditions existing. Carbohydrate may enter and be thrown off as carbohydrate, and fat as fat; or, it may be, that carbohydrate may be taken on and fat cleaved off, or fat enter and carbohydrate be cleaved off.

Illustrations demonstrative of these actions are readily obtainable from the vegetable kingdom. With respect to the production of fat from carbohydrate, I may cite a passage from Sachs, quoted in my "Physiology of the Carbohydrates" (page 247). "Before maturity such (oily) seeds contain no fat, but only starch and sugar. Such unripe seeds (e.g. of *Pæonia*) may be detached from the mother plant, and allowed to lie in moist air with the result that the starch disappears and is replaced by fatty oil." With respect to the production of carbohydrate from fat, the growth of the oily seed suffices to afford a demonstration. From the oily seed placed in contact with water, a young plant springs, just as happens with its starchy congener, the fat obviously constituting the source of the cellulose that comes into existence. Concordantly, there cannot be any doubt about fat emanating from carbohydrate as a metabolic procedure in the animal kingdom, but concerning the production of carbohydrate from fat, I do not consider that any point of evidence is yet before us that can be definitely said to settle the question.

I submit that, in the dissociation process of which I have been speak-