

other hand, should the pathological substance not attach itself in a quantity sufficient to destroy the cell, it forms new receptors for taking up nutrition in, that its life may be maintained. Through repeated attacks of pathological substances (pathological haptophores) the cell, in order to maintain itself, grows new receptors greatly in excess, which are finally liberated into the plasma, and are capable of uniting with haptophores, either pathological or nutritious, and being separated from the cell form products of immunity, and thus animals become immune from certain poisons and pathological conditions because their cells either lack the appropriate receptor or possess an unlimited number of them. This hypothesis is accepted as accounting for natural and acquired immunity, study and observation showing that lowered vitality of the individual lowers the immunity. As pointed out by Prof. Welch, in his Huxley lecture, it was interesting to see that this theory, propounded for the purpose of explaining immunity, like the other great theory of phagocytosis, has the mechanism of cellular nutrition as its basis.

*How Fats Assimilated from the Intestines and Oils Injected Subcutaneously Meet the Great Theories of Immunity, and How They Cure the Disease.*—When fat is taken into the intestine, it is split up into oils and assimilated mechanically by absorption through the villi, the white blood cells being in readiness to absorb them and being particularly abundant at the villi, after a hearty meal. The process of assimilation of fats is not agreed by all observers, and, therefore, not exactly understood, but that it enters the blood in an emulsified or solid form, and under certain conditions is deposited directly in the tissues, is assented to. With many tubercular patients the fat is not digested, but passes away with the stools.

In subcutaneous injections of oil, we use an oil which, because of its purity, needs no straining, and not being in the form of fat tissue, needs no splitting into oil globules by the intestinal juices. The oil injected under the skin, therefore, enters the blood in a way somewhat similar as if it were strained through the villi of the intestine. Let us notice what happens when a subcutaneous injection of oil is given. First we observe a puffing up of the skin, on account of its being raised by the oil injected, and this swelling corresponds exactly to the amount of oil injected. A rosy circle, several inches in width, at once takes place. This active hyperemia, showing the blood at work, and in a period of about three hours 20 c.c. of oil will have entirely disappeared, leaving no trace of where it was injected. It has been absorbed, and has gone to make new tissue and give nutriment to the blood.

*Subcutaneous Injections of Oil Produce Immediate Growth of Blood Cells.*—An examination of the blood after an injection shows an increased growth of its cellular constituents, both in