

villi—because oil cannot unaided penetrate an animal membrane such as that lining the duodenum without considerable pressure, while it may be forced through with comparative facility when the membrane is saturated with a fluid which adheres to or has an affinity for oil such as bile. The required pressure is exercised by the organic muscles of the villi in the intestine, and the absorption is performed by the lacteals principally, though partly also by the intestinal capillaries—the latter fact is demonstrated by the discovery of fat in the portal vein. The lacteals are said to be exclusively operative in absorbing fatty matters, i.e., their exclusive use is the absorption of fat. It has been supposed that fat is saponified in the duodenum; by forming an emulsion according to some with the bile, according to others with the pancreatic juice; but this is wrong, for the saponaceous particles of such a compound penetrate but very imperfectly, or scarcely at all, through a moist membrane. The truth seems to be that fat is reduced to an emulsion, but the latter is entirely of a different nature to that imputed—it being solely an admixture of oil and water, without any incorporation of alkali; in its establishment the intervention of the alkali is necessary, but unlike the making of soaps no alkali is retained in constitution. The entire action consists in the fat being diffused in minutest particles through the watery fluid, and it is accomplished by the bile in association with the pancreatic juice, and with the co-operation of the intestinal movements. This intimate admixture of oil and water takes place at the very commencement points of the lacteals. The study of the morphologico-objective facts confirm these views that no new adipose compound is formed, for fat may be identified by its globules in all the stages of absorption—when spread out over the intestinal membrane—when adhering externally to the epithelia of the duodenal mucous surface—when within the epithelia, which they distort and distend by their intromission—when in the subjacent vesicles or cellular bodies that contribute to cap the villi—when inside the true parenchyma of the villi,—and lastly, when within the canals of the branching lacteals.

DIGESTIBILITY.—Popularly fats are ranked among the most indigestible matters. Physicians have accordingly always exhibited an extraordinary aversion to their use; this is the more remarkable as it is a matter of daily experience that many fats, as for instance, the fashionable though rancid cod liver oil, are very easily digested. Although they undergo no essential change in the stomach, nevertheless, when taken in large quantities, either alone or with other food, they generally remain for a long time in this organ. Beaumont found mutton suet in the stomach of Alexis St. Martin 5½ hours after its introduction. By its presence in the