

blood, lymph obtained from venous blood surcharged with waste products; offensive lymph is the stimulus.^s

It is interesting to note the wide distribution of involuntary muscle. We find it composing largely the walls of each hollow viscus. It is fully distributed in the stroma and capsules of glands and organs. And I would venture to say that more than one-half the involuntary muscle of the human body would be found to be in the immense area of the skin. Its slow rhythmic contractions with intervening relaxation suggest a tardily beating heart. The attachment of the erector pili muscle to the root sheath of the hair in such a way as to pump nutritive lymph into the hair shaft, and the acting of the ciliary muscle on the canal of Schlemm are two examples of this involuntary muscle acting as lymph to have associated with it in this action white fibrous and yellow elastic tissue. In the lungs the lymph circulation is almost wholly effected by voluntary muscle, during inspiration producing vacuum in the chest cavity, which would favour lymph entrance into lymph spaces and reservoirs.

The expiratory effort effected in natural breathing almost entirely by the elastic recoil would act as a pump to expel.

I have said enough to show how varied are the ways in which the forces act. Vital movement is best seen in muscular tissue, but is not peculiar to it, as doubtless all tissue is capable of some degree of vital movement. Vital movement does not always take the form of contraction, thorough relaxation may fill the enclosed spaces with lymph and dilute the offending lymph.

The lymphatic glands, spleen, uterus, intestines, ureter and bladder undergo variation in volume, rhythmically due to their involuntary muscle, and this will continue even when removed from the body. The rhythmic flushings of transparent parts (Albino rabbits' ear or bats' wing) and periodic variations in volume of one's arm (when in a plethysmograph), are explained as arising from this smooth muscle tissue. Traube-Hering blood pressure curves seen in states of asphyxia are similarly induced. We have the same rhythmic contraction of the walls of the lymphatic duct, and the intestinal lacteal is emptied by this tissue.

Offensive lymph inaugurates the respiratory and cardiac movements. Note how both will speed in states of asphyxia. A piece of steel embedded in the cornea has long taught us that this nonvascular structure can vascularize itself. This can only be explained on the theory that the tissues effected this by suction. Inflammation under such a view of lymph circulation would be simply excessive selection or extraction of fluid and cells from the blood. In states of asphyxia the lymph