

meshes of the fibrous tissue from a very early period of its existence ; and this organization is for the most part retained in the structure to the most extended term of its existence. The cellular structure of the cartilage does not appear to be directly nourished through the medium of blood-vessels ; the finer portion of the blood passing by transudation around the fibrous element is absorbed by the cell wall, so as to fill this structure and nourish its growth ; the fluid absorbed, consequently, must be of the most attenuated character ; and we find, to furnish this material, that the cartilaginous structure is every where surrounded with large ampullæ or varicose dilatations of blood-vessels ; these supply due nourishment to the cellular structure without the necessary intervention of capillary vessels, as takes place in other parts of the body. That a similar condition of cell formation is also present in the early stages of the formation of bone, has been fully proved ; it would seem to me that this formative process had been arrested in cartilage covering the extremities of bone ; and that the condition of cartilage is maintained by the function of the parts ; the universally intermitting pressure to which this structure is submitted, preventing the elaboration and deposit of the calcareous salts in the fibrous tissue ; hence a limb maintained in perfect rest for a very long period of time may become anchylosed, while cartilage will invariably be found at the extremities of fractured bones, submitted to the intermitting movement, which causes a false joint to be produced. A point of great importance to be remarked is the absence of nervous filaments in the structure from which cartilage is formed ; hence diseases of this part may progress to a very considerable extent and for a very considerable period without much pain being complained of by the patient, a fact which is very remarkable, as long as the disease is confined to this structure.

Such being the mode in which cartilage is formed and nourished, let us consider the first result of inflammatory action or the flow of an increased amount of blood to the vascular apparatus which supplies the cellular structure of the cartilage. The first stage, then, of inflammatory action is a local hypæmia, a dilatation of the ampullæ and a relaxation of their coats, with an especial increase in the amount of the red corpuscles of the blood ; these, with all the other component materials, are increased in quantity while the walls of the capillaries are distended to their utmost. The result of this congestion of the ampullæ is a greatly increased supply of the natural secretion, the nutritive material of the cells, so much so, that the fibrous ele-