ful growth, building the scaffolding and laying down the framework of all our human system.

Without question, the lymph circulation existed long before the cardiovascular, and was in possession of independent forces and functions. Can it be possible that this ancient circulation, which called into being the cardiovascular system, would lose in the new comer its own identity and independence? Or was the cardiovascular system secured for greater importation and exportation facilities?

The studies of Dr. A. B. McCallum on the inorganic composition of certain sea forms and sea water show that the former's degree of salinity can only be explained on the ground that the cells lining their gastro-vascular channels and the covering cells have a vital selective action. Speaking of the inorganic composition of blood plasma and its strong resemblance to ancient sea water the author says, "these can hardly be mere coincidences, and they seem to indicate that the properties in plasma are an ancestral feature derived from a form which had its habitat in the ocean in the earlier geological periods, when ocean water was very much less rich in salts of magnesia than it is now. Just as in the Medusæ of to-day the gastro-vascular fluid is but sea water, so in the ancient oceanic prototypes of the Vertebrates and of Invertebrates which are provided with a distinct circulatory system, the fluid in their vascular channels which communicated with the exterior was probably but modified sea waters as regards its inorganic constituents, and in the long period of time during which the forms were exposed to the conditions of such an environment a physiological relation between the tissues and the salts in their vascular fluids, in the proportions occurring in their environment, became so fixed and established that it was of necessity transmitted to the descendant forms living in different habitats, whether on land or in fresh water."[6]

By the blood stream, oxygen ard nutrition are carried to the issues, and waste products are carried away. If we knew how oxygen was utilized by the tissues, it would give us "scientific anticipation" of the modus operandi of the other functions of the lymph circulation.

The history of the physiological teaching of oxidation is interesting. The ancient belief that arteries contained air and carried it to the tissues was abandoned after Harvey, and in its place came the teaching that the lungs were two furnaces burning up the waste products carried to them. Then followed the teaching that the blood oxidized the tissues through walls of the systemic capillaries. This was replaced by the teaching that blood oxidized the perivascular lymph, and the tissues became oxidized by contact. The present day teaching is that cells oxidize themselves by their own inherent vital activity. By their own