

the periphery inwards, varying in its extent and speed according to the virulence or specific strength of the inoculated cells, or cell products, the whole lymphatic system becomes spermatized and brought into a similar condition to the foreign agency introduced. We need now only recollect the intimate connection between the lymphatic system and the vascular system, to understand how the whole blood-vascular system generally becomes, in the most virulent varieties, infected. Since the vaccine lymph inoculated is foreign to its new situation, it acts as an irritative agent, producing a local and general inflammatory result, but tainted with the peculiarities of the disease from which it is derived. Looking further into the matter, let me again state that the vaccine lymph ultimately infects the whole system as above described, and so long as this general infection remains in the system, any subsequent inoculation with vaccine lymph is unable to bring about the same definite result, since it is no longer foreign to the plasma of the spaces then receiving it; but so soon as this influence has died away, or been worked out, any subsequent vaccine lymph inoculated would have the same power again, varying in extent, however, with the greater or lesser loss of the influences. In vaccination the accompanying symptoms are weak in intensity on account of the weak spermatizing influence of the vaccine lymph. They are febrile in character, and are no doubt due to an altered condition of the blood, brought about by the changes in the lymphatic system being conveyed by the lymphatics into the bloodvessels. As the contagium of variola can only produce variola of a like kind, so also the contagium of a definite exanthematous affection can only produce the skin eruption peculiar to its progenitor. It would seem that the specific fevers vary somewhat in the influencing power of their contagia; in many it seems to be life-long, and hence it is that one attack of these gives immunity from subsequent ones. But we must recollect that there is always a tendency for this influence to diminish by age, and that therefore, in some cases, it sufficiently disappears to render the subject liable to a further invasion of this particular disease. When from ill-health the physiological activity of the lymphatic cells in the system is diminished in power, it is naturally even easier for a contagium to attack them than when in perfect health. Hence it is that women after parturition so readily contract scarlet fever. Also, when so reduced in strength from nerve influence, or other causes, their products suffer and are weak, if not abnormal in constituents, and these may therefore develop diseases without any external agency whatever; hence the connection between parturition and phlegmasia dolens.

Taking the above-stated view respecting the lymph spaces, and their connection with the lymphatic system, we are enabled to state that this

system has an extremely wide distribution throughout the human body; existing, in fact, not only in the cutaneous and subcutaneous tissues, but also internally it is found in the follicles of the lymphatics, Malpighian corpuscles of the spleen, Peyer's patches and solitary glands of the intestine, follicles of the pharynx, tonsils, trachoma, glands of the conjunctiva, also around bloodvessels, in the pia mater, smaller bronchi, beneath the plural endothelium, and also that of the peritoneum, alimentary mucous lining, and medulla of bones. From this immensely wide distribution, therefore, we have no difficulty in understanding how easily the lymphatic system can be reached from without, and that the contagium of a disease need not necessarily be artificially inoculated to gain an entrance into it. Scarlet fever, for instance, seems to gain entrance by the throat and respiratory tract. In measles the conjunctivæ, seem to have a very early primary connection with the specific contagium. In typhoid fever it would seem to gain admission by the intestinal tract, judging from the lesions of the agminated and solitary glands and secondary involvement of the mesenteric glands. Passing from the so-called specific fevers, we may next mention syphilis; and here we also have a distinct inoculation in the neighborhood of the lymphatic system, and the neighboring lymphatic glands are soon involved; and further, before the characteristic eruptions make their appearance, there is a distinct latent period in which changes such as I have described can go on; moreover, we know also the beneficial effect of mercurial inunction on this disease. In syphilis, however, the specific influence seems extremely tardy in working itself out. Again, in pyæmia we find the seat of primary mischief to be some local abrasion, or wound accidentally or surgically made, or after parturition, and in all of these the connective tissues and lymphatics are early involved; and although cases do occur in which no such lesion seems apparent, we may still suppose that the virus can reach the lymphatics by the respiratory tract. In elephantiasis græcorum, the cellular matter which infiltrates the affected tissues is probably developed from the connective tissue cells and leucocytes. In ague, the spleen is soon and sometimes permanently involved, and it will be remembered that this organ is intimately connected with the lymphatic system. In skin affections we can also show forth this lymphatic connection. Thus in erysipelas the tonsils are often the seat of premonitory inflammation; the erysipelatous swellings contain lymph and corpuscles, the neighboring lymphatics are enlarged and tender, and the blood contains a distinct increase in the number of its white corpuscles. It would appear, therefore that in those forms of disease, at least, which are recognized as the result of a contagium, the lymphatic system seems to be the chief