

upon some vulnerable organ, and instantly leucocytosis is established and a desperate battle ensues. The leucocytes englobe and digest the bacteria, while the latter by their toxic action overcome and destroy the leucocytes. Whenever in the course of the struggle the leucocytes are able to gain a mastery over the bacteria, resolution takes place, and the inflammatory phenomena subside without suppuration. On the other hand, the bacilli gaining the mastery, the myriads upon myriads of leucocytes that are thrown into the encounter are overcome, and suppuration results.

For many years it was generally thought that the leucocytes which gathered in an inflamed area acted only as scavengers by absorbing dead cells and microbes, but it is now known that they do more than this, and from the very onset of infection wander toward and englobe the parasites in a living condition ; and as the process here described is precisely the same in the protozoa as in the vertebrata, it follows that their migratory power is due *not to the vascular circulation*, as has been supposed, but to their amœboid character.

It has also been shown that the action here described as taking place outside the vascular tissues occurs also within the vessels themselves, and explains the comparative immunity from suppuration from the presence of pathogenic organisms in the blood-stream, as in recurrent fever when the blood is crowded with spirilla, yet without diapedesis ; the leucocytes devouring the bacteria within the blood-vessels. So, too, with the anthrax and tubercle bacilli, which, though highly infectious when injected subcutaneously, cause no inflammation in the sense used by Cohnheim when thrown into the blood-current. By this it must not be assumed, however, that suppuration never occurs within the blood-vessels, embolic abscess being a good illustration of the power of bacteria to gain the mastery even here when the conditions are especially favorable for their propagation. If, then, the etiology of pus-formation is a "battle royal" between two living organisms, why is it that certain highly infectious diseases, like chicken cholera, septicemia of guinea-pigs and pigeons, and many others, terminate fatally, with little or no apparent attempt on the part of the phagocytes to withstand their onset ?

It was found by Binz some years ago, in a series of experiments, that no diapedesis took place through the frog's mesentery after this had been moistened with a solution of quinine. As quinine acts poisonously upon protoplasm, it was concluded that it paralyzed the leucocytes, which were consequently unable to pass through the vascular wall. The same experiments were repeated by Disselhorst, who confirmed the fact that diapedesis ceased, but was astonished to find that their movements were not paralyzed, for