

from an almost identical word which means "I advertise or proclaim with a trumpet." These substances which prepare for ingestion are what Sir A. E. Wright speaks of as "Opsonins." It was a question at the time whether the white blood corpuscles or the opsonins in the blood was the more important agent. In order to answer this question he took a patient who was very badly infected with the tubercle bacillus and he contrasted the blood of this patient with what he calls "pool," which means the pool of the blood of all the normal men in the laboratory. With this blood pool as control he contrasted the blood of this highly infected tubercular patient and investigated the question as to whether the patient's white blood corpuscles or the opsonins in his blood were deficient. He found that the white blood corpuscles of his patient were just as active in phagocytosis as were his own normal white corpuscles but that the patient's serum was only half as active as his own serum. Hence if the activity of normal serum for phagocytosis be expressed as 1.0 we must express the abnormal activity of the patient's serum as 0.5. These figures represent respectively what he terms the "Opsonic Index" of the normal person and of the disease.

The question was then,—Does the substitution of another medium for the citrated blood plasma, which bathes the corpuscles, exert an influence on phagocytosis, and do the blood fluids co-operate in phagocytosis by exerting a direct stimulating effect upon the phagocytes or by effecting a modification in the bacteria?

By a series of experiments, mixing heated—or as he called it, inactivated—serum with the corpuscles and bacterial suspension, and also unheated serum, and at the same time doing a series of control experiments, he found that the heated serum, like the salt solution, acts merely as an inert diluent, and that the blood fluids modify the bacteria in a manner which renders them a ready prey to the phagocytes, and the elements in the blood fluids which produce this effect he called the "opsonins."

The question as to whether the unheated serum contains in addition to the opsonins also elements which directly stimulate the phagocytes, that is stimulus, remains for the present unsolved.

The increased phagocytic effect which is obtained with the blood of successfully immunized persons is attributable not to any modification induced in the leucocytes but to an increased opsonic power in the blood fluids. Conclusive evidence of this was obtained by separating in the case of two bloods with little if any conspicuously different phagocytic powers in each case, the blood fluids from the corpuscular elements, and then effecting an interchange of the blood fluids. The leucocytes of the successfully immunized patient exhibited under these circumstances the