

Williams have demonstrated. Again, at the Exeter Meeting of the British Medical Association, I described some observations made in the Ralli Laboratory, which showed that the polynuclear leucocytes of a healthy person were three-fold as phagocytic as those of a patient with myelocytæmia, "æqualia æqualibus." The variation from normal leucocytes in this case was, therefore, both of structure and function.

Also the brilliant work of Dr. Opie is quoted in Sir A. E. Wright's address in the *Lancet* (August 17th and 24th, 1907), in this respect, in which Dr. Opie indicates that in addition to ingestion of bacteria by leucocytes, digestion must occur, if the patient is to be protected. Dr. Opie has proved that leucocytes, freed from blood serum, are able to digest blood clot and gelatine, though *not* in the presence of serum. This reminds us of Metchnikoff's views of the importance of phagocytes and of their digestive ferments. On these grounds the further study of the leucocytes is requisite and further points at once suggest themselves for research. Shattock and Dudgeon confirm this view, that immune leucocytes may have a higher phagocytic power than normal ones (April, 1908, Royal Soc. Med.).

A word as to our knowledge of opsonins. Muir and Martin (Proc. Roy. Soc. B., Vol. 79, 1907) believe them to be of two classes; one of the nature of immune body (specific substances) resistant to heat; the other of the nature of complement, an unstable substance in normal serum. Wright and Bullock (*Lancet*, 1905, II., p. 1605) consider them to be specific; Simon (*Jour. Exper. Med.*, Vol. VII., Dec. 14, 1906, No. 6) does not find them so. Dean (Proc. Roy. Soc., Vols. I., and XVI.) and also Smith, have shown that they are not altogether destroyed by heat, which agrees with Muir and Martin's work. (The opsonic power is said to stand at about one-half of what it was originally after standing five or six days, and Simon considers that it is necessary to dilute the serum to estimate the opsonic content.)

The last consideration is the administration of the vaccine, and this is all-important when we remember the disastrous effects that followed over dosage with Koch's old tuberculin. Therefore, I quote to you the practice of Sir A. B. Wright: "Where an examination of the patient's blood, taken twenty-four hours before inoculation, shows a subnormal index, and examination of his blood taken twenty-four hours after inoculation shows that the index has been considerably reduced, I take it that the smaller dose would have been appropriate. Where examination of the blood twenty-four hours after inoculation shows that the index has been raised, and where, after the expiration of a week or ten days, the index has fallen back to what it was before