

These two opinions, however, are still *sub judice*, but it seems to me the physico-chemical theory is nearer the truth than the vital theory, being more in accordance with the few well-ascertained facts. These refer chiefly to the morphology, etc., of vaccinine and varioline, nothing definite being known of the physical aspect of the other zymotica. Dr. Klein, of the Brown Institution, London, is at present investigating the minute pathology of enteric fever, and possibly, when his labors are completed, some new facts may be disclosed. As to vaccinine and varioline, these are colorless, lymph albumens, alkaline in reaction, coagulable by heat, precipitated by certain acid bodies, and odorless. Dr. Braidwood, of Birkenhead, in an interesting paper, "The Morphology of Vaccine Lymph," concludes "that the latter presents three very distinct species in human variola, variola vaccinae, and in variola equina. That the virus of variola ovina may be allied to those, but this has not yet been determined. That an attack of one of these by inoculation or contagion protects against the other two members of the species. That this protective quality distinguishes this type of virus from that of other epidemic fevers. That vaccine virus is unaffected by, and does not affect other febrile viruses. That the syphilitic virus more closely resembles the vaccine than do other febrile viruses, being inoculable and almost always affording protection against a second attack; but it differs from variolic viruses in not being contagious (infectious) under any circumstances, and being incapable of inoculation into the lower animals. That the several febrile viruses differ from one another, and operate on separate elements of the blood."

Dr. W. B. Richardson, ten years ago, produced pyæmic poison salts from the serous fluids of a pyæmic patient, by the addition of hydrochloric and sulphuric acids. These he termed hydrochlorate and sulphate of septine. From this it was inferred that the base was of an alkaloidal character. In the present year he found that all septinous poisons liberate oxygen from peroxide of hydrogen, with evolution of heat, from which he concludes that the septinous product acts upon the blood in the extreme circulation, when it has accumulated in sufficient quantity, by liberating a portion of oxygen, and hence creating a febrile temperature.

A portion of variolic or vaccine lymph placed under a microscope is seen to consist of a mixture of *granules* about  $\frac{1}{20000}$  of an inch in diameter, and certain corpuscles not unlike those of pus, termed *leucocytes*, suspended in the lymph plasma.