Where the egg was deposited in clean combs, and the infection reaches the brood through the food, growth of brood continues until the infectious growth changes the nutriment, produces poisons, and death results. The brood may continue to the pupa state, and death may take place after casting of the pupa skin, just before the bees is ready to emerge as a perfect insect. The fact that the alimentary tract is not a fully developed passage until the perfect state is reached, may influence to some extent the virulence of the infection, and be held to explain why diseases which belong to the larval and pupal states do not infect the perfect state.

I have been unable to find any valid evidence for holding queens responsible for, or that they have any influence upon, the perpetuation of any disease with which I am acquainted. Cheshire's statement of finding the bacillus alvei in the undeveloped egg, in the blood of the queen, in spermatozoa of the drone, etc., has not been verified in this or in any other instance, so far as I am aware. He cites as a parallel case the silkworm disease, which was once so destructive in France. Bechamp, who was first to investigate the case, gave quite a lengthy detail of his investigations. Here is what he says, that led Cheshire to quote him :

"The microzyma multiplies in the interior of the moth, developing with its growth so that the infected moth is unable to lay its eggs without depositing the spores at the same time, and thus expose the young grub to attack as soon as it is born."

Bechamp nowhere states that the miniature ovum, or undeveloped egg, is attacked. Again, this is not a parallel case, inasmuch as the silkworm larva partakes of much solid food, voids solid excreta, is active, chooses it food, etc.; while the female moth lives but a few days, deposits thousands of eggs regardless of surroundings, and partakes of little or no food during her life.

Let us follow the undeveloped egg from its beginning to its deposition, and we shall see where the infection comes in contact with it.

The egg at first is a microscopical atom in the ovary answering to the ovum of higher animals, and subject to the same developmental changes; its growth begins under certain stimuli, and we now see it as a shapeless mass of apparently homogeneous matter, containing certain microscopical and chemical elements, in the minute channels of the ovary ; as it continues to grow we find it in the larger channels, and finally the surrounding conditions to which it is subjected induce condensation of the peripheral zone, whereby the definate form is greatly favored ; this progressive condensation is productive of a distinct limiting membrane ; here, by high amplification, we discover the micropyle (little gates), or open pores, through which syermatozoa enter the interior of the egg for the purpose of fertilization. Now passing the gate whose opening leads to the seminal receptacle, or speratheca, it receives the seminal element, which later results in fecundation ; passing now into the still broader channel — the oviduct — it comes in contact with a liquid secretion called "chitin" which appears at first of a gelatinous nature, but which soon hardens, forming the shell of the egg. In this chitinous fluid we may meet the infectious germ, but this is the only place we may reasonably expect to meet it. This gelatinous fluid serves to fasten the egg to the base of the honey-comb cell. If the infection were to depend upon the transmission by the seminal elements