

regard to some pathogenic organisms, it might be assumed that the parent type had disappeared, and the parasitic variety only remained—just as the wild parents of many of our cultivated flowers and vegetables have disappeared, leaving behind them only their altered descendants.

How aptly, too, this view explains what used to be called the 'epidemic constitution,' and the hybrid forms and sub-varieties of eruptive and other fevers.

I must not pursue this vein further. I have said enough to indicate that this conception enables us—if it does nothing else—to have coherent ideas about the origin and the spread of zymotic diseases.

In applying the doctrine of pathogenic organisms—or *pathophytes*, as they might be termed—to the explanation of the phenomena of infective diseases, we must be on our guard against hard-and-fast lines of interpretation. So far as our very limited knowledge now extends, the pathophytes hitherto discovered all belong to that group of the fungi which are called bacteria. Now, fungi have two marked characteristics—namely, the tendency to assume the parasitic habit, and the possession by some of them of a special ferment action. Both these characteristics may bear a part in the action of pathogenic organisms. In the complex phenomena of septicæmia such would appear to be the case—a poisonous ferment-product first intoxicates the system, and then the organisms themselves prey upon the dead or moribund tissues.

There is, as Dr. B. Sanderson has pointed out, a marked distinction to be drawn between those common processes of infective inflammation which are shared in by animals generally—such as septo-pyæmia, erysipelas, and the diphtheritic process—and those specific contagia which are strictly confined, like ordinary parasites, to particular species. There is nothing in all nature more wonderful than the intimate and subtle nexus which unites a parasite to its host. A hundred examples might be given. Even different varieties or races of the species have different and exclusive parasites. It would seem as if this nexus depended on some delicate shade—a *nuance*—something like an odour, or a savour, or a colour, rather than on differences of structure or chemical composition. The same minute correlation is seen in specific contagia—all are strictly confined to one or a few species. Vaccinia is confined to man, the horse, and the cow; scarlet fever is confined to man, and perhaps the swine; most of our specific diseases are absolutely confined to man. The human and ovine small-pox, although so wonderfully similar, are not intercommunicable. I am, therefore, inclined to believe that, in regard to specific contagia, we shall find more guiding analogies in parasitism than in fermentation. Our information at present is, however, so defective that it is not wise to enter into further speculations on this subject.

Gentlemen, I have brought my task to a conclusion. I believe that the doctrine of a *contagium vivum* is established on a solid