

THE BACTERIOLOGY OF "INFLUENZA."

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In order to understand the apparent vagaries of the present epidemic it is necessary to go to the root of the matter, and look upon it as just one of the numerous battlefields on which the eternal war between the microbe and the man is being waged.

This conflict is always going on between the opposing armies. That of the microbes is composed of many military units—some of them are famous regiments, have won their spurs, and are known as formidable foes; the organisms of tubercle, diphtheria, and enteric fever are good examples. When a patient is attacked by one of these we are not surprised, as we know his microbe of old, and can often defeat him by methods with which we are also familiar.

Sometimes, however, we are faced with the activities of what the general public—and especially the sensation-mongering section of the daily press—hastens to call a new disease. It usually goes on incidentally to affix such sensational titles as "the scourge in our midst," "the terror that flieth by night," and so on. Furthermore, the public is more impressed by the fact that a disease has killed the local mayor than by any accurate conception of what it can and cannot do in the way of destruction or damage.

An epidemic, however, is simply the bringing into action by the enemy of a microbial unit that has not recently seen much fighting, and to get a clear view of its activities it is better to look at large maps. Otherwise we are in danger of not being able to see the wood for the trees.

Let us carry the military analogy a little further. A fighting force does not consist merely of one arm. For infantry, for instance, to be effective, they must have the way prepared for them by artillery fire, and their rations and ammunition brought up to them by the transport. So it is in an epidemic. There is the microbe that actually delivers the attack, and is always found in the tissues of a patient suffering from the disease, but it is accompanied by other germs whose function is to weaken the patient generally, or to damage some particular organ, so that on the whole the patient's power of resisting the principal germ is lessened or destroyed altogether.

Thence comes confusion. When the bacteriologist gets to work, he may find numerous organisms in his patients, sometimes one,

sometimes another, and until he has had the opportunity of examining a fair number of cases, he is often unable to work out the precise function of each microbe.

But the general public has no such difficulty. One newspaper says the "pestilence" is due to a streptococcus—if it is able to spell it—while another trumpets the rival claims of a pneumococcus, until the effusions remind one of the Eatanswill election. Occasionally they become lurid by summoning alien bacilli altogether, such as those of plague, spotted fever, and goodness knows what besides, to their aid, if there are signs that the public is getting tired of their previous microbial claimant.

All this, incidentally, is not merely inaccurate or ridiculous: it does great harm by actually lowering the resistance of those who are impressed by it, so that they are more likely to succumb than those who keep not only a healthy body, but a sane mind also.

Let us, however, come back to influenza. There are really two kinds of "influenza," one that is and one that is not. The latter is the type that a man has, or says he has, every year, and is due not to the *Bacillus Influenzæ*, but to another organism altogether, the *Micrococcus Catarrhalis*. Personally, I dislike the term influenza when it is applied to an illness for which the old name "feverish cold" is much more appropriate, as it is quite sufficiently accurate.

This epidemic, however, is true influenza, that is to say, it is due to the *bacillus influenzae*, or, as it used to be called, Pfeiffer's bacillus. If one examines any particular patient, or if you like, any particular half-dozen patients, it is quite possible that the *bacillus influenzae* will not be found in one's cultures, but it does not follow that it is not present in the patient. As a matter of fact, the *bacillus influenzae* is rather difficult to cultivate. For one reason, in a swab containing a mixture of other organisms with it, the *bacillus influenzae* is apt to be choked out by the more rapid growth of the others. Then it will not grow at all unless the culture medium employed exactly suits it. It prefers human blood to any other food, and in practice one often succeeds in cultivating it on an agar tube that has been streaked over by blood shed from a finger prick. Curiously enough, some people's blood seems to be more use than others in this respect. I remember, for instance, that I could more often succeed when I punctured my own finger than when I performed a similar human sacrifice on a certain laboratory assistant!

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