RESISTANCE TO AND RECOVERY FROM DISEASE.

THE following is from an address by Jonathan Wright, M.D., of Brooklyn N.Y., as published in the N.Y. Medical Journal:—The question of immunity and recovery from disease has occupied the minds of medical men ever since the dawn of history. In one form or another it has been recognized that there are two opposing forces at work in any case of disease—the malignant tendency of the malady, and the resisting power of the victim's organism. Even the most savage and uncivilized races seem to have a glimmer of this clinical fact.

The microbian pathology seemed to define and materialize the morbific power of various contagious or infectious diseases, but in the hot pursuit of pathogenic bacterium men without scientific training and, still worse, those without mental equipoise seized upon the new discovery as an excuse to rush before the medical world with all manner of fantastic deductions. With no consideration of long-established and well-known clinical facts, they attempted to explain everything and anything in the light of bacterial science. If they could not make their theories conform to the clinical facts, so much the worse for the clinical facts and for the clinicians.

Practically the science of modern bacteriology began the heyday of its existence, the vigor of its youth, with Koch's great discovery. * * * The *Bacillus tuberculosis*, the *Staphplococcus pyogenes*, the anthrax bacillus, and their congeners form a link, and an important link, in the chain of our knowledge. From actual research we know that sources of infection are everywhere. The germs of phthisis, diphtheria, typhoid fever, septicæmia, lurk everywhere in the ordinary pursuits of life. We carry them about with us on our skins and mucous membranes. They float in the air we breathe, they swim in the water we drink, they burrow in the food we eat, but the number of their victims bears no proportion to the number exposed to their attacks.

It has been proved that the intact mucous membrane and the skin offer great but not perfect resistance to the inroads of bacteria. This of course is a great protective factor in the resistance of the animal organism. Abrasions of the skin, desquamations of and solutions of continuity in the epithelium lining, the mucuous membranes of the respiratory and digestive tracts, are too numerous and frequent for them to act as an efficient guard against the almost omnipresent enemy. The movements of the cilia on the ciliated epithelium (lining mucous membranes), the acid of the gastric juice, the various lymphatic glands and internal organs proved to some extent to act as a bacterial filter for the general circulation, but all these are insufficient to explain the relative immunity of the majority of the animal kingdom from various infectious diseases. Practically, infection is not carried and disease is not caused by injecting countless myriads of pathogenic bacteria under a man's skin or into his veins It has been calculated that it takes a billion staphylococci to kill a rabbit with septicæmia. In other words a healthy rabbit's organism is able to cope successfully with a smaller number. Another experimenter has calculated that it takes about 820 tubercle bacilli to kill a guinea-pig, which is the most susceptible to tuberculosis of any animal with which we are acquainted. What man's resistance to the inroads of disease, when in a condition of health, is, we of course do not know with anything like this exactness, but we are almost certain of the fact that in the vast majority of cases no such dose as that suggested in the figures above ever finds its way into the body of any man at one time.

From circumstantial evidence we have every reason to believe that many a tubercle bacillus finds its way into our lungs without producing tuberculosis. From our experience at the post-mortem table, we know that many a one takes a start in life there, produces a large and interesting family, but is finally exterminated root and branch, and leaves behind him only the cicatrical or calcareous marks of his former habitation. We don't all die of septicæmia from a boil, or