

In the fight against infectious diseases a great victory had been won in the discovery of vaccination by Edward Jenner. Later on Henle's ingenious speculations concerning the nature of contagious diseases set many great minds in motion. With Pasteur and Koch came illumination. The infectious agent in the majority of infectious diseases is now known, can be cultivated in pure culture and can be utilized in animal experiment.

Physiological and pathological chemistry have been unveiling the mysteries of the fluids and solids of the body; pharmacology and toxicology are investigating the influences of drugs and poisons upon these. The application of Lister's happy idea with regard to wound infection, aided by the American-born boon of anæsthesia and a bloodless technique, totally changed the aspects of surgery. Wound infection, if not entirely an event of the past, has been enormously reduced. The holiest places of the body are to day invaded by the surgeon's knife; the abdomen, the thorax, the joint cavities and even the brain are frequently and fearlessly explored. The heart, the last organ of man to be made accessible to surgical treatment, can now be sutured with success.

But more time must be spent in glancing at the past; it is necessary at once to look at the present and to divine, if it be possible, whither we are being led.

As a result of development along so many diverging lines the study of modern medicine is concerned with a field so wide that he who glances over it, cannot fail to be appalled by its magnitude. No single intelligence can in these days be familiar with the details of growth in all its parts; no single individual can hope to work efficiently in more than one or two of its subdivisions. The complexity of the work demands a division of labor, and most is gained from the efforts of men who, familiar with the general trend of progress in the whole field, concentrate their activities upon some one corner of it. Individual workers in the special medical sciences are pushing their investigations at the moment with unwonted zeal. Anatomists are ever devising new technical methods; the cells formerly believed to be very simple "elements" are found to be highly complex organisms; parts of the body as, for example, the nervous system, are having their true cellular nature for the first time revealed; the structural basis of the intrinsic mechanisms of individual cells is in process of demonstration; the relations of the basis in one cell to that in other cells are being found out. Physiology, so long interested in the hydraulic principles of the circulatory apparatus and the muscle-nerve preparation, is being diverted into new channels of research, utilizing in its experiments the newly discovered principles underlying chemical and physical phenomena. The oxygenating and reducing processes which occur on the body, the various stages of anabolic and catabolic metabolism, the phenomena of secretion and excretion, the interrelations of the various bodily activities, the functions of the different neural complexes, the mechanisms of defence and adaptation—these are some of the subjects with which physiologists are now busying themselves.

In pathological anatomy and physiology just as strenuous efforts are being made as in the other fundamental departments. Our ideas