

undoubtedly, doing this, they trained certain of those senses, notably sight and touch, to a degree of acuteness that few in these degenerate days nearly approach. But, granting this, it must be acknowledged that their knowledge of disease was much more limited than what it is in your power to possess now-a-days, and that their treatment was in the strictest sense empirical. The advances have been rapid and remarkable: in the field of surgery they approach the marvellous. In little more than a generation medicine has been elevated from an art to a science, and to practice it the individual has to have a training in science and acquire the scientific spirit. To use rationally the instruments of precision now afforded to him he must have a sound training in physics: to utilize the information that the body fluids and discharges of the patient can yield him, to understand the action of the drugs he uses, and comprehend the normal and abnormal processes within the tissues, he must be so much of a chemist that he is familiar not merely with the principles of chemical action, but with the data of organic chemistry. Since the processes of disease are but the outcome of factors operative in health, either working in an excessive or a defective manner, to have any sane understanding of morbid states he must be well grounded in physiology—the study of the functions of the body in health—while to give him a broad and sane grasp of the principles that govern living matter, a course in biology is equally essential. It goes without saying that he must know human anatomy if he is to perform any operation, or have an adequate mental picture of the disturbances of the mechanisms of the body or of the individual viscera. Nor can he do his duty toward a patient suffering from one or other of the acute infectious diseases unless he has undergone a course in bacteriology and thereby gained a knowledge of the technique of bacterial diagnosis and of the nature of bacterial vaccines and antitoxic sera. And lastly, as the coping stone of this edifice upon which is based the scientific study of disease, he must in the post-mortem room and in the laboratory study the actual effects of disease upon the body, so that he may be familiar with the disturbances that may be set up in the individual tissues, and may, when he encounters his patient, have so vivid a mental picture of the association of disturbances likely to be present in any given form of disease, and indicated by the various symptoms and physical signs, that, as though provided with a mental fluoroscope, he sees that patient through and through and is able to picture to himself the effect that disturbance of the one viscus must have upon another and upon the system at large. For upon sound pathology depends pre-emi-