

I have dwelt so long on chemistry, that I can but glance at another elementary study, viz., Physiology, which you should not neglect on the plea that it is not practical; for, as the chemistry of the body is liable to become deranged, so is it of the physiology. The knowledge of healthy structure and function is indispensable to a knowledge of their disordered states, and furnishes assistance in our most practical researches. Let us select for an illustration the cell-theory of growth. It is well-established that, commencing in a cell of the simplest kind, our subsequent growth and full development is by multiplication of such cells and their varied modes of union and expansion. Now this would seem at first to be a fact curious and interesting in itself, but having little bearing on medical practice; but when we look into the nature of abnormal growths, usually called tumors, we find their progress a copy of that of the normal tissue, and you then find your physiological knowledge applicable to the diagnosis of such tumors. As the natural tissue possesses peculiarities in its cell structures, so do abnormal growths distinguish themselves by varieties in the appearance of their cells. Nothing can therefore be of more practical benefit than to acquire facility in the use of the instrument by which alone such researches can be carried on—I mean the microscope. That instrument is no longer to be regarded by the physician as simply furnishing curious and important information as to the minutiae of creation, but as a valuable assistant in obtaining a practical knowledge of many of our common diseases. Indeed the results of the use of that instrument, in giving precision to the diagnosis of several diseases are of the highest importance. But I shall allude but to one of its discoveries, a very curious though not a pleasant one, the existence of minute parasites, both vegetable and animal, both on and within our very textures. The existence of the larger parasites, such as the various worms and others that may be nameless, has been of course known in all ages, but the fact that vegetable growths occur upon our skins and within our bodies, or that minute animals in large numbers occupy at times our very flesh and blood, has been revealed only recently and through the aid of the microscope. It is now known that one of the troublesome diseases of the scalp known as scald head (*favus*) is a vegetable fungus growing on the spot; that another (*porrigo decalvans*) is produced by a similar growth within the tubuli of the hair. Intractable cases of disorder of the stomach have been found owing to a minute fungus (*sarcina ventriculi*) growing within that organ. Cases have occurred where the blood on examination was found loaded with animalcula, and others where microscopic worms (*trichina spiralis*) occupied a large portion of the muscular structure.

I have thus endeavored, and I trust successfully, to impress upon your