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MEDICAL RESEARCH[1]

I HAVE said that I would not plunge with you this evening into the ocean of science; but if you are a little tired of hearing of the dependence of medicine upon science you may find refreshment or diversion in contemplating the debts of science to medicine. My old medical friend Mr. Meade, of Bradford, was almost the only man who knew much about flies at the time when Manson and Ross began to watch these little pests. Without medicine, bacteriology and the study of the cell would have made slow way; yet it is the study of the cells of bacteria, of algæ, of protozoa—not of mandarins—which has brought us nearer to the secret of life. On the wonderful world of the cell I have spoken before. Professor Hopkins has lately described to us the almost incredible coexistence in it of different constitutions, phases, and events; though every change in any phase affects the equilibrium of the whole cell system. And every one of these is essential to the whole; "so long, for example, as a liver cell remains alive its glycogen constituent can not be wholly removed." If a cell be so ground up as to become more homogeneous, its reactions fall out at haphazard, and the cell dies by mutual destruction of its parts. This process of nature is illustrated on a mighty scale to-day in the disintegration of the Russian social organism.

Some of the apparently simple cell constituents, hæmoglobin for instance, are incredibly complex; this substance is specific for every kind of animal; in allied species, if concordant, it is not identical. Of the chromosomes I need say nothing; except to hope that as X rays have analyzed crystalline structure some such rays may analyze nuclear constitutions.

By another way, medicine has promoted research on organic syntheses; and conversely on

[1] From the address of the president of the British Medical Association at the Cambridge meeting.