

self as a medical author of the first standing, and an everlasting monument of the status of medical education which could be obtained in Montreal in the fourth decadal period of this century.

XXII.—*Principles of Comparative Physiology.* By WILLIAM B. CARPENTER, M.D., F.R.S., F.G.S., &c. &c.

Man in his origin, to all appearance, differs in no respect from the simplest plant or animal. A simple nucleated cell, which reproduces similar cells, is the first advance from the germ or starting-point. An accumulation of cells next takes place. These cells soon exhibit various dispositions which establish differences among them, although microscopically they present identically the same appearance. Some of them seem capable of selecting from the nutritive fluid only those elements which are necessary to the construction of the osseous portion of the frame. Others again will only elaborate muscular fibre; others nervous tissue, and so on. It will be observed, then, that all the cells in the human body, no matter how diversified soever their functions may be, have their source and origin in the single primordial cell. This favors the idea of one force, of which the vital phenomena are so many separate manifestations; the differences being caused by some peculiarities in what Dr Carpenter terms the "material substratum" through which the force operates.

As the nervous exhibit more markedly than the other vital phenomena the relations of the vital force to the different physical forces,* we shall then proceed to illustrate more particularly this part of our subject. The nervous system consists essentially of two distinct structures—the vesicular or grey, and the fibrous or white. The vesicular substance is composed of cells, and is found only in certain portions of the nervous system, such as the brain, spinal chord and ganglia. These portions have received the name of *nervous centres*, from the belief that they are the generators of nervous energy, and that they receive all the impressions from the extremities of the ner which impressions they dispose of in various ways. So necessary to the development of nervous force do some physiologists consider the presence of cells, they are of opinion that either cells or cell-nuclei are the agents in the origination of nerve force at the peripheral extremities of the nerve-fibres; although, up to the present, no such cells or cell-nuclei have been demonstrated. The