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THE NEW CYTOLOGY¹

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CYTOLOGY, if its full significance is given to this term, is the science concerned with cells and tissues, their functions as well as their structure. Such was the conception of Schwann. He considered the living organism as dependent on both metabolic and plastic activities of the cells. But his followers ignored this point of view. They contented themselves with the study of the form, and overlooked that of the function. On account of this fundamental error, the work done for nearly a century by a host of cytologists and histologists has ended in an incomplete science of the cells and the tissues. This science does not show how such cells and tissues are building up organized beings. It is also unable to give an explanation for the most common pathological phenomena, such as the cicatrization of a wound or the growth of a tumor.

¹From the laboratories of The Rockefeller Institute for Medical Research.

The unsatisfactory nature of our knowledge of the elements of the body must undoubtedly be attributed to the conception on which classical histology is based. Whether dead or living, dissociated on a slide or explanted in a drop of plasma, or sectioned and stained, cells and tissues have been considered as inert forms, unrelated to their environment and deprived of functional activity. They have been abstracted from both space and time. In fact, they have been stripped from their reality. Obviously, the traditional conception has to be given up. In order to replace it by another abstraction containing a larger part of truth, one must return to the close observation of the concrete event which a tissue is.

The first notion gained from this analysis is that cells are in physiological continuity with their environment. Cells and environment form a whole. A cell depends as strictly upon its medium as the nucleus

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