

SHORT NOTES ON CELL THEORY

Discovery of cell and the cell theory: All animals and plants consist of certain structural units of cells. Such a concept was originally put forward by Aristotle (384-322 B.C.) Many centuries later, for these units, a term cell (Gr. kytos, cell, i., cello, hollow space) was used by Robert Hooke, who in 1665, observed these so called cells for the first time in a piece of cork under a very primitive microscope. Later, cell in the form of cavities with cellulose walls were observed in different plants by Brown and Melpighi. In 1674, Leeuwenhoek also discovered free cells and observed some organization within these cells.

The Structural unit called cell, is now known as the unit of life and the concept that the cell is basic unit of life is known as the cell theory. Although at the beginning of 19th century (1802-1836), several workers including a Frenchman, H. J. Dutrochet gave the idea of the cell theory, the credit for formulating the cell theory is normally given to a German botanist, M. J. Schleiden and a German Zoologist, T. Schwann who clearly outlined the basic features of the theory in 1839.

However, Schleiden and Schwann only took the old ideas and presented them in the form of a concrete theory. It is suggested, therefore, that the cell theory of Schleiden and Schwann was more an act of synthesis rather than of a discovery.

In recent years, large number of sub-cellular structures have been discovered and studied in detail. Consequently, it may appear that cell is no longer a basic unit of life, because life may exist without cells also. It should, however, be realised that the importance of the atomic theory in physics and chemistry did not decrease with the discovery of smaller particles like protons, neutrons and electrons. In the same way, although the details of ultra structure of the cell are now known, showing that it is a very complex structure, the cell theory still remains a very useful concept.