decennium of the past century, by improving the method of examining minute objects by compound lenses. For more than half a century microscopes have extended the domain of biological science, as to bring within our comprehension, a clearly defined basis of human structure such as could not fail to convey a tolerably correct idea of functional activity in the human system. In 1831 the celebrated botanist, Robert Brown, announced for the first time that an aureola or nucleus was seen in many plants, and that this circular spot was present in each cell. In 1839, Theodore Schwann discovered that there was one universal principle of development in the elementary part of organisms, consisting in the formation of cells. This great advance in biological science is undoubtedly the most important feature of the past century, and one which has given an impetus to physiological investigations of vast moment to the entire human race, owing to the influence thus exercised on the progress of practical medicine.

John Goodsir, the great Anatomist of Edinburgh, announced in 1842, that the nucleus is the reproductive organ of the cell, and that new cells are formed from it; in fact that an organic continuity existed between the mother cell and its descendants. through the nucleus. Virchow, in his "Cellular Pathology," 1858, maintained that, in pathological structures, there is actually no cell development *de novo*; where a cell is found, there must have been a cell before, in fact cell development is continuous by descent.

In 1842, John Goodsir established the principle that cells are the ultimate secreting agents. A nerve cell is not a secreting cell, however, like the general glandular cells of the system. Nerve cells, through the remarkable changes which take place in them, generate that form of energy, known to exist as a special outcome of a nervous system, and defined as "Nerve Energy" or "Nerve Force." A nerve fibre is actually an essential part of the cell with which it is continuous, and the cell and nerve fibre associated make up what is termed a neuron, now known to play so important a roll in the entire nervous system.

The Brain, like other parts of the body, may be in a state of activity or fatigue. When active, the nucleus increases in size, and when fatigued, the nucleus diminishes, and finally shrivels up, becoming in fact useless, as far as functional activity is concerned. It is very remarkable that nerve cells have not the power of reproducing their kind, their especial power being closely connected with the evolution of nerve energy. This is a point on which I desire to place particular stress, as once a portion of the brain, or other nerve centre, is destroyed, new brain material, or a new nerve centre cannot be produced, to replace the injured parts, as