plants was described by Dr. Jean Dufrénoy, of the Plant Pathology Station at Brive, France. Living protoplasm, Dr. Dufrénoy said, is smooth, uniform, without even ultramicroscopically visible markings. As it streams around the cell, the only way its progress can be marked is by watching certain foreign bodies included in it, such as crystals and oil droplets. These show its movements as chips on the surface and loose pebbles on the bottom show the current of a crystal-clear brook. But when death comes, all is changed. The flow of the protoplasm slows down and stops, and the highest powers of the microscope disclose the appearance of numberless granules—the sure sign that the once uniformly assimilated substance has broken down and separated into distinct and unlike parts. While a cell is living, Dr. Dufrénoy continued, all its vital activities are carried on at the various surfaces of its protoplasm, where they front on its sap cavity, oil droplets, etc. Its chemistry is all surface chemistry. An outstanding exchange, indispensable to the continued life of the cell, is the taking up of oxygen and the voiding of carbon dioxide. The more active the cell, the more surface it exposes for this and other chemical exchanges, by throwing out extra folds and filaments of its protoplasm. But there can be too much of a good thing, in plants as well as in human beings and animals. Dr. Dufrénoy described a condition seen in the cells of plants afflicted with certain diseases, where there is an excessive development of these oxygen-exchanging protoplasmic surfaces. An examination of the respiration of such plants shows it to be much in excess of that of healthy plants: the sick plants are suffering from a real fever.

TWENTY thousand pairs of photographs were taken at the University of Chicago to show what occurs when an atomic nucleus is disintegrated when it is struck by a neutron—an atom of zero atomic number and zero electrical charge. So Professor William D. Harkins told the American Physical Society. Among the results of this long research, Professor Harkins enumerated the following: The slowest neutron which disintegrated an atomic nucleus had a velocity of 11,000 miles per second. The highest velocity for any neutron was found to be 35,000 miles per second, or about one fifth the velocity of light. This is an extremely great velocity for a particle of the mass of an atom. The energy of this neutron was extremely high, 16,000,000 electron volts, or very much higher than could be obtained by any artificial means now known. The mean velocity of the neutrons which disintegrated nitrogen nuclei was found to correspond to a temperature of 46 billion degrees. Such a temperature is not attained except possibly in the interior of a star. Since nothing is known by astronomers about the temperature of the interior of a star, except that it is very high, anything may be assumed. The nuclei of nitrogen atoms were found to disintegrate relatively often, while those of carbon and neon are very much more difficult to disintegrate. Evidence was obtained that the neutron, when it causes the disintegration of an atom is itself captured by the nucleus of the atom, but no good evidence was obtained to show that any disintegration can occur if the neutron is not captured. It was found that when an atom is disintegrated by the impact of a neutron, energy disappears, and gamma-rays, a very penetrating form of radiation, much more penetrating than x-rays, are given off. A new apparatus has been built for the photography of atomic disintegrations or syntheses. During the last day of operation this apparatus gave 6,400 pairs of photographs of excellent quality. Two motion picture machines are used to take the photographs, and to aid in the mathematical analysis of the photographs. Professor Harkins has suggested the name Neuton for this new element made up of all of the free neutrons in the universe. This is in many ways the most remarkable of all of the elements, since it is as different from all the others as the number zero is different from all positive whole numbers.

BRIGHT light "cures" nerve tissue poisoned with carbon monoxide in much the same manner that oxygen revives nerve tissue asphyxiated by oxygen starvation. This was announced by Professor Herbert Gasser, of Cornell University Medical College. When a nerve is stimulated it develops a sudden high charge or potential of electricity which comes and passes in a few thousandths of a second. This is followed by a longer period of milder electrification called the "after-potential." This potential can be diminished by various types of poisoning including carbon monoxide and asphyxiation. The after-potential is not only restored to normal but is raised above the usual level by the light or oxygen "cures."