

among them a hood of fine-mesh wire cloth. Simplest and cheapest arrangement, the investigators found, is a mask or respirator with rubber face piece and a charcoal cartridge to act as "ion trap." This was easy for the patients to wear and effective in 98 per cent. of the cases.

### New, Mysterious Disease

The strange case of a man whose bones have turned pale red was reported by Dr. Eugene Freedman of Cleveland. No other case just like this one has ever been reported, Dr. Freedman said. He asked members of the Congress for help in discovering "the true nature of this man's disease."

The patient's bones show other changes besides that in color, and the bone marrow has been replaced by fibrous tissue. Hip bones, vertebrae and shoulder blades are affected. The condition has been going on for 12 years, starting when the patient was 16 years old. Although the disease has been progressing, the young man is not incapacitated by it. Dull, aching pains in the back and joints are the symptoms that have brought the patient into the hospital from time to time for treatment. Each time thorough study by X-ray, chemical and microscopic methods have been made, but the doctors still do not know the true nature of the disease or its cause.

### More Broken Necks

More people are getting their necks broken these days than in the horse and buggy era, and the automobile is responsible, Dr. H. F. Plaut of Cincinnati told members of the Congress.

The particular part of the neck which gets broken is the atlas, the first vertebra at the base of the skull which forms the pivot on which the skull rotates.

"Previously fractures of the atlas were reported among longshoremen and in gymnasium accidents," Dr. Plaut recalled. "Now automobile accidents throw riders against the tops of cars and pitch them to the pavement with many cases of fractured atlases."

Most of these patients recover and are fully active, Dr. Plaut said. Fractures of the skull above the atlas are more dangerous.

The atlas is not easily injured by direct violence because it is well protected by other bones and is deeply imbedded in surrounding soft tissues. But in a head-on fall the force is directed against the weakest part of the atlas by the pressure of the skull at this point.

*Science News Letter, October 2, 1937*

### PHYSICS

## Radioactive Sodium Isotope Giving Off Positrons Found

DISCOVERY of a long-lived radioactive isotope of sodium, whose atoms are similar to the ordinary variety of the metal but have a slightly different weight and are radioactive, is reported by Prof. L. Jackson Laslett of the University of California. (*Physical Review*.)

This new discovery is not to be confused with artificially radioactive sodium itself, discovered three years ago by Prof. E. O. Lawrence of the same University. Prof. Lawrence's discovery is believed to be of medical value because it is a cheaper source of gamma rays, useful in treating cancer, than radium and because sodium is a constituent of salt, which can readily be injected into the body.

Positrons, like the more familiar electrons in mass but with the opposite kind of electric charge, are emitted by the metal whose atomic weight is 22. It has an unusually long life for an arti-

ficially radioactive material, it is reported, the period during which half of it will be decomposed being about three years.

Heavy hydrogen atoms, speeded up by means of the Berkeley institution's famous cyclotron, were hurled at a magnesium target to produce the sodium isotope. Seven months of observation and testing determined the "half-life" period of the element. Positrons are one of the newly-discovered "building blocks" of the atom and have not been frequently observed as a part of radioactive radiation.

At the same time, Dr. Harold Walke of the University of California reported discovery of an additional radioactive isotope of potassium. The new member of the potassium family has an atomic weight of 42. Other radioactive potassium isotopes have enabled scientists to calculate the age of the earth.

*Science News Letter, October 2, 1937*

### CHEMISTRY

## Scientists to Honor "Father of Modern Industrial Chemistry"

NATIONAL science organizations will join in a month-long series of events in New York City from Oct. 6 to Nov. 4 to celebrate the 100th anniversary of the birth of Dr. Charles Frederick Chandler, "father of modern industrial chemistry."

Dr. Chandler, a founder of the Columbia School of Mines in 1864 and of the American Chemical Society, one of the United States' premier scientific societies, will be honored in three Chandler Memorial Lectures, at presentation of the highly prized Chandler Medal to Dr. John H. Northrop of the Rockefeller Institute, by an exhibition of Chandleriana and at a Centennial Banquet on Nov. 4, Prof. J. Enrique Zanetti of Columbia University, chairman of the Centenary Committee, announced.

Thomas Midgley, Jr., vice-president of the Ethyl Gasoline Corporation and pioneer chemist in the field of anti-knock engine fuels, will deliver the first

Chandler Lecture at Columbia's McMillin Academic Theater on Oct. 6. Dean William de B. MacNider of the University of North Carolina Medical School will discuss chemical discoveries and their application to the chemistry of cells at the second Chandler lecture on Oct. 13.

A week later, Dr. Haven Emerson of the Institute of Public Health in Columbia's Medical School will speak on the late Dr. Chandler, "New York's First Public Health Chemist."

More than 20,000 former students of Dr. Chandler will join in doing him honor. Numbered among the 20,000 are many of the leading American chemists today.

Public health was the field in which Dr. Chandler achieved his greatest fame, but his work reached into almost every chemical industry in the United States during the decades following the Civil War.

*Science News Letter, October 2, 1937*