

rainbow of colors from light passed through a prism there are lines absolutely characteristic of the chemical elements producing them. Others have compiled famous lists of spectral lines, such as Rowland's measurements of all the solar lines. More recently Dr. W. F. Meggers of the National Bureau of Standards, with the collaboration of Dr. Henry Norris Russell of Princeton, a great authority on spectra, has compiled catalogs for numerous elements.

A tiny bit of an element placed in a flame or spark discharge can be instantly detected by its tell-tale spectrum as a result of such catalogs.

The great inclusive catalog at MIT is the result of Prof. Harrison's application of factory methods to the problem. The WPA has furnished skilled labor and funds to speed the task. Special machines were designed and built to reduce the labor and improve the accuracy of measuring microscopically the location of the "fingerprint" lines in photographs. Figures by the thousands are compiled to chart the results. First result is a publication containing about 100,000 of the strongest lines of all elements. Later will come complete catalogs.

Science News Letter, June 24, 1939

MEDICINE

Cancer-Producing Substance Found in Roasted Foods

CANCER-PRODUCING substances have been found in roasted foods, specifically in roasted horse meat, browned butter and roasted coffee. This discovery was made by Dr. E. M. P. Widmark of the University of Lund, Sweden. (*Nature*)

Whether eating roasted foods can cause cancer in man is not stated in Dr. Widmark's report of experiments with mice. Extracts of the roasted foods were painted on the backs of the animals' heads. None of the males developed cancers, but nine out of 23 females developed cancer of the breast.

The cancer-causing substances probably get into the animals' bodies through being swallowed, Dr. Widmark points out, because there was very little change in the skin where the extracts of roasted foods were applied, but the animals very quickly licked the substance off their skins.

Dr. Widmark is now trying to isolate the cancer-producing substances in roasted foods so as to learn what they are.

Science News Letter, June 24, 1939

MEDICINE

Largest Cancer Hospital Aids Patients in Remote Villages

New Ways of Fighting Dread Disease Are Being Developed And New Fighters Trained at New York Institution

CANCER patients in the big city of New York and in tiny hamlets thousands of miles from there will be helped by Memorial Hospital which opened the doors of its new, \$5,000,000 building on June 14.

They will be helped even though they never cross the threshold of this, America's first and now the world's largest exclusively cancer hospital, and even though they never have rays from the hospital's new, pocket-edition million-volt X-ray machine trained on the malignant growths that are sapping their lives.

This is true because from this hospital every year there go forth young men trained to detect every variety of cancer, even in the earliest forms, and trained, also, to give the most effective cancer treatment known to science.

These young doctors, ready to devote themselves to the fight against cancer and picked for the ability they have already shown during hospital training, are given three and one-half years of special training in cancer-fighting under the Rockefeller research fellowships established at Memorial Hospital in 1925. Details of their training were told by Dr. Lloyd F. Craver, chairman of the fellowship committee, at the dedication and opening of the new hospital building.

These young men and additional fellows getting the same training at Memorial Hospital under grants from the National Advisory Cancer Council will not for some time to come constitute a large enough band of cancer-fighters to see all cancer patients throughout the nation. But patients the world over are getting other help from the activities of Memorial Hospital.

New ways of fighting cancer or improvement of old and tried ways, and new knowledge about cancer that might lead to its prevention are constantly being developed at the hospital. The new pocket-edition million-volt X-ray machine, described by Dr. William D. Coolidge, of the General Electric Company whose researchers developed it, is an

example. Heretofore the benefit of these powerful and penetrating X-rays from million-volt machines had to be limited to hospitals or other institutions that could afford a building 62 feet long, 32 feet wide and 36 feet high to house it. In addition, many tons of lead were needed to protect operators and patients from the cumulative effects of the X-rays.

By improvements described by Dr. Coolidge, a pocket-size edition was developed for Memorial Hospital which can be housed in a grounded metal container four feet in diameter and seven feet long, and complete with its lead protection, this million volt machine, which is equivalent in radiation to \$90,000,000 worth of radium, weighs about 4,000 pounds including about 1,000 pounds of protecting lead. Many hospitals which could not afford a special building for giant X-ray machines can find room for such pocket-size giants of cancer-killing power.

Very few persons, if they get cancer, are able to avail themselves of the best opportunities for diagnosis and treatment, Dr. Ludvig Hektoen, executive director of the National Cancer Advisory Council, stated at the dedication.

Even self-supporting persons in the moderate income brackets, Dr. Hektoen said, cannot meet the cost by their own means. In large areas of the country, moreover, adequate centers for diagnosis and treatment of cancer are not available.

To meet the needs of the people, co-operation between public and private agencies is necessary in Dr. Hektoen's opinion.

Science News Letter, June 24, 1939

● RADIO ●

Dr. Reuben T. Shaw, president of the National Education Association, will be the guest scientist on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Monday, July 3, 5:45 EDST, 4:45 EST, 3:45 CST, 2:45 MST, 1:45 PST. Listen in on your local station. Listen in each Monday.