pected to throw much light on the nature of the atom's nucleus.

Dr. Powell was once charged by Russian scientists of ignoring their claims of discovery of new mesons. Two Russian scientists stated in a letter to NATURE, British scientific journal, that they had detected 16 kinds of mesons. Dr. Powell recommended that the Russians do further experiments to reduce statistical variations of the Russian observations and to give a decisive answer as to whether the many kinds of new particles they claimed really existed.

Science News Letter, November 18, 1950

MEDICINE

Two Feet of Guts Enough

Body adapts to loss of most of small intestine by enlarging diameter of remnant and by colon's assuming some absorptive functions.

➤ YOU can get along pretty well nowadays with only about a foot or two of your small intestine—if disease or obstruction dictate its removal.

For one thing, improved surgery, antibiotics and blood plasma give you an excellent chance to survive an operation to remove nearly all your small intestine. As much as 15 feet of this organ now can be removed.

But how can patients continue living, after surviving surgery? After all, the small intestine is the organ which is responsible for absorbing the nourishment for the body. Its walls are designed to allow digested food components to pass through and into the blood stream, which distributes this nourishment to the whole body.

If only a foot or two of this important organ remains to handle the traffic of digested food, how can the body possibly get enough nourishment?

This problem and the remarkable manner in which the body adapts itself to the new conditions is a subject of a report in GASTROENTEROLOGY by scientists in the University of California School of Medicine, San Francisco, and the Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia.

The report is part of a study which Dr. T. L. Althausen, professor of medicine in the California institution, has been conducting for several years. Dr. Althausen's colleagues were Dr. Kahn Uyeyama, of California, and Dr. R. K. Doig and Miss S. Weiden, of Australia.

The scientists report two cases. One is an Australian man of 50 who developed an obstruction and extensive gangrene of the small intestine. The other is an American woman who had intestinal ulcers and inflammation with many ulcers. Each retained about two feet of small intestine.

There were three principal ways the body compensated for the loss of the greater part of the intestine.

At first it was impossible for the body to get enough nourishment by ordinary routes; so artificial feeding was employed. But in time the remaining fragment of small intestine expanded in diameter, increasing the absorption surface and the capacity of the abbreviated organ to pass nourishment.

Second, the colon assumed some of the absorptive functions of the small intestine.

Third, there was a weight loss. This loss was great immediately after operation. As the body became adapted to the situation, however, there was some increase, the weight leveling off somewhat below normal pre-operative figures. With this lighter weight, the nourishment requirements were reduced to a scale compatible with the capacity of the abbreviated small intestine.

The physicians feel that many individuals, who would have died in earlier years, will now not only survive operation, but be able to live comparatively normal lives. They point out that the Australian male now is continuing his normal occupation as a sailor on a coastal steamer, and he eats the regular food of the ship's mess. The American housewife cares for a family of three, gardens, and considers a slight intestinal instability her only problem.

Science News Letter, November 18, 1950

MEDICINE

Leprosy Germ Cultivated

Organism from blood of leprosy patients, believed to be the cause of the disease, now reported grown outside the human body.

➤ A GERM from the blood of leprosy patients, believed to be the cause of this dreaded disease, has now been grown outside the human body.

If confirmed by other scientists, this will be the first time that the leprosy germ has been cultivated outside the human body, though scientists for many years have attempted to do this.

The feat will have been accomplished by Dr. Eleanor Alexander Jackson, Rosenwald research fellow at Cornell Medical College for the past three and a half years. Dr. Jackson thinks other researchers may have grown the leprosy germ successfully but not recognized it in the different form in which she finds it grows outside the body. Work with the pleomorphic form of TB germs, which are distant cousins of leprosy germs, led Dr. Jackson to study leprosy from this angle.

Material, called lepromin, prepared from Dr. Jackson's pure growths of leprosy germs has been injected into the skin of leprosy patients. It gave the same reactions as the lepromin ordinarily used for leprosy skin tests. This seems to confirm Dr. Jackson's belief that she has actually grown the leprosy germs outside the body. The lepromin ordinarily used is obtained from leprous nodules of patients and is crude material, containing other things besides lepromin.

Dr. Jackson has injected her cultivated germs into mice. After eight months, equivalent to 20 years in man's life, the mice developed sores on their skin very like the sores in human leprosy. Skin tests of these animals with lepromin obtained from the U. S. Leprosarium at Carville, La., gave reactions indicating that the mice had leprosy.

Science News Letter, November 18, 1950

CHEMISTRY

Diels-Alder Reaction Gains Nobel Prize

➤ AN IMPORTANT chemical reaction, originated by two German chemists Drs. Otto Diels and Kurt Alder over 20 years ago, has won for them the 1950 Nobel prize for chemistry. Acknowledged as a great help in synthetic rubber and other chemical maufacture that was successfully used by the Germans in World War II, the Diels-Alder reaction is nevertheless not widely known and is referred to only in technical chemical books.

The Diels-Alder reaction is a general method for making organic chemicals. By means of it chemicals of the class of synthetic rubber material can be converted into compounds of quite different type.

Butadiene, chloroprene and similar rubber ingredients are compounds whose carbon atoms are joined by double bonds but arranged in a straight line. In the Diels-Alder reaction such materials are made to combine with the chemical maleic anhydride. The result is an aromatic material whose carbon atoms are joined in ring-shaped structures.

These ring compounds, which are very useful to the organic chemist, occur in coal tar, but can be made in the laboratory by only a few methods. Of the possible processes of making wanted ring compounds to order, the Diels-Alder process is one of the simplest.

Science News Letter, November 18, 1950