PATHOLOGY

# Type Intestinal Germs

➤ HOW TO TELL which germ has caused a particular intestinal upset is being made easier by tests and a classification scheme reported at the First North American Conference of Medical Laboratory Technologists in Quebec, Canada.

One big group of these germs are rod-shaped germs named *Salmonella* after an American pathologist, Daniel Elmer Salmon. The diseases these cause range from typhoid fever and the para-typhoid fevers to food poisoning.

There are 500 different types of these salmonella bacteria that can cause intestinal infections, Dr. Fritz Kauffmann, director of the International Salmonella Center at Copenhagen, reported. Dr. Kauffmann set up the internationally used Kauffmann-White scheme for differentiating and labeling types of bacteria that look alike under the microscope.

Instead of classifying bacteria infecting the intestinal tract into families and species, bacteriologists now group them on the basis of their reaction to chemicals, and distinguish types within the groups by the reactions they stimulate in the blood of animals. Identification can sometimes be checked by the known reaction of the type to various sugars.

Dr. Kauffmann's scheme has room for 3,000 different types in the salmonella group alone, and for hundreds of thousands of different types of the coli bacteria responsible for epidemics of diarrhea among newborn babies in hospitals. Broader use of more delicate testing methods will fill many of these places, Dr. Kauffmann believes.

The most common 12 types of salmonella account for about 90% of salmonella disease, but precise "fingerprinting" of the rarer ones has proved a valuable clue to epidemics. When outbreaks of enteric disease in several European cities were traced to a type of salmonella prevalent in the United States, public health detective work, establishing that all those stricken had eaten powdered eggs shipped from America, led to a cleanup.

Identification of a rare salmonella in the stools of a Copenhagen victim of stomach upset traced her infection to bananas imported from the Belgian Congo, where the type has previously been reported.

Dr. Kauffmann's laboratory in Copenhagen is the World Health Organization's clearing house for new types of salmonella found all over the world.

Better methods of detecting and identifying these intestinal germs, which infect animals also, show that intestinal infections once considered typical of the tropics are actually common in temperate and Arctic climates. Dr. Harold J. Fournelle, U. S. Public Health Service scientist stationed in Alaska, for example, has found many cases of enteric disease among Eskimos.

Science News Letter, June 30, 1956

BIOPHYSICS

## Spleen Blood Protects Against Radiation

➤ BLOOD PLASMA freshly drawn from the spleen will protect against radiation, Drs. Bruce R. Allen, H. Gwendolyn Wardell and Michael Clay of Columbia University's Radiological Research Laboratory find.

Their studies were made with rabbits. Blood right from the spleen of donor rabbits was centrifuged and cell-free plasma obtained. It was injected into other rabbits as soon as possible after they had been given a whole-body dose of X-rays of 1,000 roentgens. At the end of 30 days, 24% of rabbits given spleen blood plasma were still living, compared to four percent of rabbits given the same X-ray dose without the plasma.

Because shielding the spleen of an animal during radiation protects the animal, it has been thought that the spleen produces an anti-radiation substance. If so, it should be found in higher concentration in blood leaving the spleen.

To test this point, the Columbia scientists made their studies under an Atomic Energy Commission contract.

The protective action in the spleen blood plasma "is very definite," they state in *Science* (June 15).

Science News Letter, June 30, 1956

## ● RADIO

**Saturday, July 7, 1956, 1:45-2:00 p.m. EDT**

**"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.**

**Prof. Rahel Shalon, associate professor of civil engineering, Israel Institute of Technology, Haifa, will discuss "Engineering in Israel."**

TECHNOLOGY

## Radioactive Soda Bicarb Saves Holes in Street

➤ A LEAKING WATER MAIN under a main street no longer means traffic chaos in Britain, while laborers search with pickax and shovel for the fault.

City councils now call on Harwell atomic scientist, Miss Anne Wildblood.

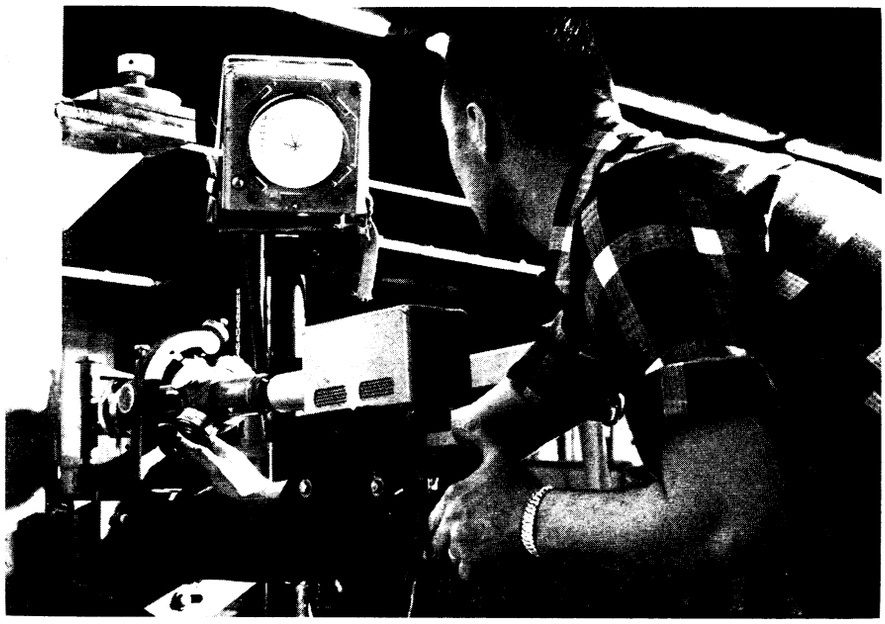
In place of the pickax, 30-year-old Miss Wildblood works with an eight-foot, chromium-plated Geiger counter pole. Her atomic counterpart of the shovel is a handful of radioactive sodium bicarbonate tablets.

In jodpurs and riding coat, Miss Wildblood searches for leaks in water mains and oil pipelines.

The water in the mains is made harmlessly radioactive with the sodium bicarbonate. Then small holes are bored in the road for Miss Wildblood to reach the mains with her Geiger pole. When it finds the spot where water has leaked, it registers positive radioactivity.

Only where the exact point of the leak has been found does the road have to be dug.

Science News Letter, June 30, 1956



*TV OPTICAL TOOLING—A closed circuit television system that can cut costs and speed production of supersonic fighter-bombers has been developed by Republic Aviation Corporation. Previously a two-man operation in an optical tooling process, now the TV camera automatically "looks" through the telescope while the operator positions jig contour plates by lining up cross-hair patterns as they appear on the TV screen.*