

figures which can be made to coincide by such stretchings and distortions are said to have the same topological properties.

In Euclidean geometry there are right angled triangles and equilateral triangles, but in topology all triangles are the same. If the two triangles be thought of as cut from a sheet of rubber, they can be stretched until they coincide. The surface of a sphere is topologically different from the surface of a doughnut, because

no deformation without tearing will change a sphere into the surface of a doughnut. The fact that a figure is made up of several disconnected pieces is a topological property; such a figure is distinct from one consisting of a single piece, for it is not permitted to glue the parts together when they are compared. Although distinct in Euclidean geometry, a sphere and an egg-shaped surface are the same in topology.

*Science News Letter, January 6, 1940*

MEDICINE

## High Blood Pressure Reduced By Kidney Extract Cocktail

### Extract From Whole Healthy Organ Believed to Supply Substance Missing From Kidney of Hypertension Patients

**C**OCKTAILS made of the extract of healthy kidneys will bring back from the point of death, patients suffering from high blood pressure, it was reported to the American Association for the Advancement of Science by Dr. Arthur Grollman, of the Johns Hopkins University School of Medicine and Drs. Tinsley R. Harrison and John R. Williams, Jr., of Vanderbilt University School of Medicine. The extract may be to patients with high blood pressure what liver is to the anemic.

Physicians at the meeting welcomed this promise of a new life-saver for thousands of sufferers from high blood pressure, killer of more men and women, than any other disease. Even cancer, tuberculosis and syphilis are not so destructive of human life as is this condition known to physicians as hypertension.

Tried first on rats, the kidney extract brought the blood pressure of those with hypertension down to normal. On normal rats, however, there was no lowering of blood pressure, and no toxic or other objectionable effects were observed even when the dose was set at four times that taken by the rats with hypertension.

In rats in which the kidney had been cut off to produce experimental hypertension, the extract has another effect. These animals, for whom the high blood pressure was evidently a necessary condition for life, fell into a state of apathy, vomiting, and staggering and died.

The extract is not yet ready for use as a medicine, Dr. Grollman warned the physicians, until further research and testing has been conducted. About twelve

human cases ranging in age from 36 to 60 have already received the treatment and have been brought out of a state of coma bordering on death when the blood pressure was brought down to normal.

If you are suffering from high blood

pressure, don't bother to make yourself kidney stew. Eating kidneys won't lower your blood pressure, Dr. Grollman explained, because unlike rats, humans haven't a ravenous enough appetite to eat the quantity of whole kidneys necessary for the medicinal effect. And, besides, humans like their food after cooking, which would destroy the medicinal value. The extract is not difficult to take by mouth; in alcohol it is said to be quite palatable.

Apparently very similar in action to the extract used by Dr. Grollman and his associates is another substance reported for the same purpose by Dr. Irvine H. Page, of the Lilly Laboratory for Clinical Research of Indianapolis City Hospital.

Renin, a substance contained in the kidney, Dr. Page told the meeting, reacts with a substance in the blood to produce a third substance christened angiotonin. When either renin or angiotonin is injected into the blood stream, an inhibitor is liberated, and such an inhibitor also has its origin in the kidney. These inhibitors (or inhibitor) serve to counteract renin and prevent or cure hypertension.

*Science News Letter, January 6, 1940*



**INSECTS AT MEETING**

*Colonies of 2,000 bedbugs and 3,500 croton bugs, or German roaches attended the science meetings in Columbus. They were an insect exhibit by Ohio State University demonstrating how insecticides are tested. As the roaches breed, babies fall through to a tray below and are scooped up in celluloid dishes like the one held here by Dr. H. A. Waters, Columbus entomologist. These young insects are used for the insecticide tests.*