

MEDICINE

High Blood Pressure Cause

Hypertension due to mental tensions may be caused by chemical in brain. New drug counteracts this brain chemical's effect in dogs.

► THE HIGH blood pressure that comes under conditions of unusual stress, anxiety and mental tension may be due to a chemical in the brain.

Discovery of the chemical and its possible role in some cases of high blood pressure is announced by Drs. Robert D. Taylor, Irvine H. Page and A. C. Corcoran of the Cleveland Clinic in Cleveland.

A relatively new drug that has been helping some patients with this nervous tension type of high blood pressure counteracts the effects of the brain chemical in dogs. This seems to strengthen the idea that the brain chemical is the cause of some human high blood pressure.

The brain chemical has not yet been identified chemically. It is not the same as the known blood-pressure raising substances adrenalin, arterenol, pitressin, renin and angiotonin. It may be the same as the substance in fluid surrounding the brain

which, Dr. Page found in 1935, raises the blood pressure in cats.

It may be related to serotonin, a blood-vessel constricting substance isolated in pure form from clotted blood by Dr. Page and associates at the Cleveland Clinic in 1948.

The drug that counteracts this brain chemical is hydrazinophthalazine. This drug is not yet for sale. It does not cure all forms of high blood pressure. It must be given every day, and often there are bad reactions which complicate treatment with it. Dr. Francois Reubi of Basle, Switzerland, was apparently the first to suggest it might be helpful in high blood pressure. Dr. Henry Schroeder of St. Louis has confirmed this view as regards high blood pressure seemingly of nervous origin. (See SNL, June 16, p. 382.)

The discovery of the blood-pressure-raising brain chemical seems to solve some of

the riddles of high blood pressure. Doctors have long believed that certain nerves were responsible for high blood pressure by their action on the walls of the blood vessels, causing these to constrict unduly. Nerve-cutting operations, done to relieve high blood pressure, are based on this theory. The operations, however, are not always successful.

Now it appears that the nerves affect blood pressure but not alone by their action on blood vessel walls, which might be called their nervous action. They apparently also affect blood pressure by producing a chemical substance that acts like a hormone, or gland chemical.

Details of the experiments leading to discovery of the brain chemical are reported in the ARCHIVES OF INTERNAL MEDICINE (July).

Science News Letter, July 28, 1951

PSYCHOLOGY

Lap Recorder Charts Every Thirsty Drink

► EVERY LAP of the tongue of a drinking animal can be recorded by a new instrument now available to scientists studying thirst and appetites.

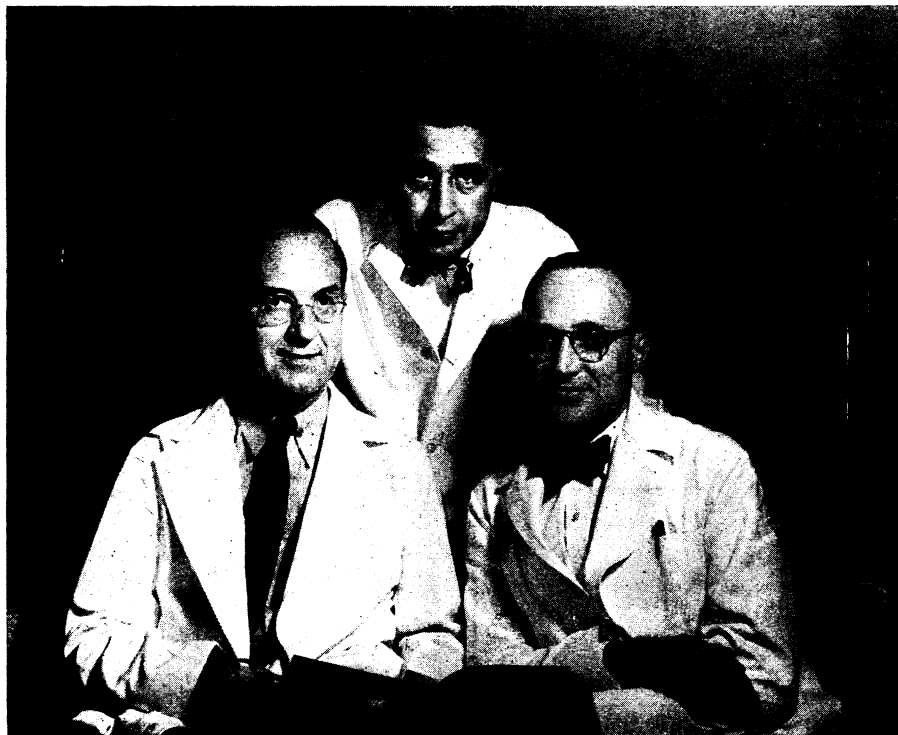
Designed especially to measure the water consumption of rats, it can also be used equally well for any other mammal or even birds or reptiles. It records not only how much the animal drinks but also when and how fast, report Drs. J. Harry Hill and Eliot Stellar, of the Johns Hopkins University, in describing the apparatus in SCIENCE (July 13).

The rat, for example, was found to do most of its drinking in the dark and to devote only about 20 minutes out of the 24 hours to satisfying its thirst. He laps at a steady rate of six or seven laps a second, regardless of how long he has been without water or how long he has been drinking.

The rat which has been deprived of water for a time will drink when first given water, perhaps not stopping for as much as eight minutes. Then he stops to rest and then drinks again. The longer he has been without water the shorter will be his rest periods and the longer he will stay at the bottle. Since he always drinks at a constant rate, this means that the longer he has been deprived of water, the more he will drink in a two-hour period when he gets the chance.

The apparatus works because an electric circuit carrying a weak current is connected to the wire-mesh floor of the animal's cage and also to the water contained in its drinking vessel. Every time the animal's tongue touches the water the circuit is completed and a mark is made on the tape of a kymograph.

Science News Letter, July 28, 1951



BRAIN-CAUSED HYPERTENSION—These three doctors suggest, on the basis of experiments with dogs, that high blood pressure in some patients may be due to a substance secreted by the brain. Left to right they are, Drs. Irvine H. Page, Robert D. Taylor and A. C. Corcoran of the Cleveland Clinic Foundation.