

PHYSIOLOGY—MEDICINE

Rats' Tasting Abilities Show Life-Saving Function of Tongue

Psychiatrists Are Told That Taste May Point to Dietary Needs; Fatal Brain Ailment Described

YOUR tongue saves your life, Dr. Curt P. Richter of the Johns Hopkins Hospital told the American Neurological Association as the result of tasting tests.

Not only can it save you from swallowing poisons, but the tongue and its taste buds can guide your selection of foods so that you will get all the life-essential elements of diet, from salt to vitamins.

"The tongue is the watchdog of the diet," Dr. Richter said, "but dietitians and doctors have largely neglected it in their consideration of human diets."

The tragic story of a three-year-old baby girl whose craving for salt was not recognized as a vital demand of her body until too late to save her life was a dramatic example of the importance of the tongue as a guide to diet that occurred coincidentally with Dr. Richter's innumerable tests of rats' tasting abilities which were the actual basis of his report.

The little girl was brought to Johns Hopkins Hospital from Florida to find why she was growing up too fast, with precocious sexual development. While in the hospital she was given the dietetically correct food for her age. After her death, it was found that a tumor of the adrenal glands was responsible for the sexual precocity. More than this, it had crowded out the vital outer part of these glands, causing a condition like that in once-fatal Addison's disease.

In this condition, large amounts of salt are lost from the body and must be made up in the diet. Because the condition had not been recognized before her death, the child was not given any extra salt. But afterwards her mother reported that the child had for a long time craved salt, eating it by the handful, as most children like to eat sugar.

This same condition in rats helped Dr. Richter to discover the vital importance of the tongue and its taste buds. Rats, he has found, can tell the sweetness, sourness, saltiness and many other flavors of foods or drinks. They tell it by taste.

This was proved when the animals

lost their tasting ability after all nerve connections were cut between the taste buds of the tongue and the brain centers. So long as some of the nerve connections remained the animals could detect different tastes.

The rats that had no adrenal glands, for example, could detect salt well enough to save themselves from death by drinking all the salt water they needed. When all the nerves were cut, however, taste was completely destroyed. The animals drank indifferently from either salted or unsalted water supplies. They thus failed to get enough salt and died.

Taste guides the animals not only to enough salt. Normal rats, relying on taste alone, can select as good a diet for themselves, with the necessary amounts of fat, sugars and starches, proteins, minerals and vitamins, as scientists with all their knowledge can provide. Dr. Richter discovered this when he supplied the animals with a wide variety of food substances and let the animals help themselves.

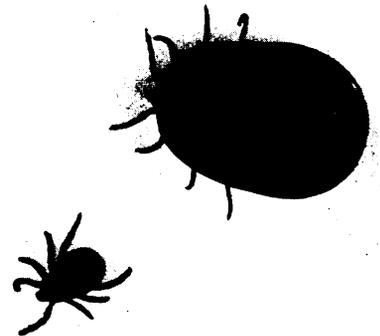
When he gave them a diet lacking in any essential, vitamin B, for example, and supplied this in a tube of water identical with the drinking water tube, the animals invariably drank enough of the vitamin B water, although the only way they could tell it was by the taste.

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Fatal Brain Ailment

DISCOVERY of a new and fatal convulsive ailment of babies, caused by a germ that attacks the infant's brain, probably before birth, was announced by Drs. Abner Wolf, David Cowen and Beryl H. Page, of the College of Physicians and Surgeons, Columbia University.

Five cases of the new ailment have been recorded. It has been given the jaw-breaking name of toxoplasmic encephalomyelitis, to show that it is a brain and nervous tissue ailment caused by a toxoplasma. This is a rather large germ which has (*Turn to Page 382*)



HOW THEY LOOK

Here is the tick before and after gorging on a dog. Be careful how you remove this pest from your pet. It may be infected.

MEDICINE

Rocky Mountain Fever Is Vacation Time Ailment

ONE of the most serious of the dangers that threaten the vacationist, especially the one who goes on camping and hiking trips into the country, is Rocky Mountain spotted fever.

The disease is caused by the bite of an infected tick. The common dog tick and the wood tick carry the germs.

Rocky Mountain spotted fever had the reputation some years ago of killing 85 or 90 out of every 100 persons who got the sickness. More recent reports to the U. S. Public Health Service put the rate at about 18 or 20 deaths for every 100 cases.

This serious sickness got its name because it was first discovered in the Rocky Mountain area, specifically in the Bitter Root Valley in Montana, and was for a long time believed to be limited to that area. It has gradually spread throughout the country, and cases have now been reported from 31 of the 48 states, including the District of Columbia. It is most prevalent in the Pacific and Mountain states and the South Atlantic states.

The disease starts, from 2 to 14 days after the virus or germ has entered the body, with a chill, headache, sweating, and pain in the abdomen, bones and muscles. Other symptoms are the mottled rash and the fever.

absurdly nationalistic issue. For most Danes favor the extermination theory, and most Norwegians the one of amalgamation.

Stefansson provides good ammunition for the amalgamation theory: A plague would have weakened Eskimos as well as beleaguered Norse. Malnutrition would hardly have beset Norsemen who fell back on the same meat diet on which Eskimos thrive; but on the contrary a mixed diet of imported food and meat handled in European manner might have diet deficiencies. And certain observers who reported the Norse extinct may have misunderstood what they saw.

Science News Letter, June 17, 1939

MEDICINE

Lack of Vitamin C May Be a Cause of Food Allergy

LACK of the scurvy-preventing vitamin C from citrus and other fruits and fresh vegetables may be one cause of food allergy, Drs. J. Bronfenbrenner, D. M. Hetler, Frances Love and Jack M. Burnett of St. Louis announced.

People with food allergy are the "one man's meat is another man's poison" folks. Eating tiny amounts of certain foods, most often eggs, milk or wheat, gives these patients severe attacks of asthma, hives, migraine headaches or other allergic ailments. Treatment with ascorbic acid, as vitamin C is now called, may enable these people to eat the foods to which they are sensitive.

Guinea pigs furnish the evidence for this theory. Pigs made sensitive to egg white could eat this food when they were given the vitamin. When the vitamin was removed from their diet, practically 100 per cent. of the animals developed allergic symptoms when fed egg white. If enough vitamin was given to these animals over a period of weeks, they could eat the egg white, although hypodermic injections of it showed they were still sensitive to the substance.

Science News Letter, June 17, 1939

MEDICINE

Kidney, Heart and Artery Ailments Analyzed

EVERY other person in the United States past 50 years of age dies of diseases of heart, blood vessels and kidneys. That statement and an analysis of the problem was presented by Drs. F. W. Konzelman, Lawrence W. Smith, Edw. Weiss, Walter I. Lillie and Edwin S. Gault of Philadelphia at the recent meeting of the American Society of Clinical Pathologists.

Since the average age of the population is getting older, more and more people are reaching the period at which these degenerative diseases take their toll.

The cardiovascular renal diseases, as listed by the Philadelphia physicians, are: 1. high blood pressure, without previous kidney disease, resulting in diffuse hardening of the arteries; 2. atherosclerosis, a special kind of hardening of the arteries which is a senile degenerative process affecting the large blood vessels and their branches; 3. the kidney ailment, glomerulonephritis, in which the kidney disease is primary and the high blood pressure secondary; and 4. a combination of these conditions, especially of the first and second.

With this as a background, the Philadelphia doctors list the main causes of death from cardiovascular renal diseases after age 45 as follows: 1. heart failure and hardening and blockage of the heart's arteries accounts for 50 per cent.; 2. hemorrhage, blockage or other accidents to the blood vessels of the brain, familiar to the layman as apoplexy and "stroke," accounts for from 30 per cent to 40 per cent.; 3. kidney failure with uremia accounts for 10 per cent.

In childhood, adolescence and early adult life, rheumatic fever, syphilis and other infections are chiefly responsible

for the damage to heart, blood vessels and kidneys. In middle life syphilis is the chief villain. In older life it is the degenerative diseases which weaken the structure and impair the functions of the vital organs.

About half of all those over 50 years who die of cardio-vascular renal diseases have had high blood pressure. One-half of all women who have toxemia of pregnancy will within five years develop high blood pressure or chronic kidney disease. The younger the person who develops heart, blood vessel and kidney ailments, and the higher the diastolic blood pressure, the less favorable is the prognosis.

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never before been recognized as a cause of human illness, although it has been found in other animals.

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Study Brain in Operation

BRAIN wave studies can now be taken directly from the patient's brain as it lies exposed on the operating table. A method of doing this under aseptic conditions and the results of such studies were reported by Drs. Ernest Sachs, Henry G. Schwartz and Alan S. Kerr of St. Louis.

Brain tumors, tumors of the pituitary gland, hydrocephalus (water on the brain) and Meniere's disease were the conditions studied with this new technic. Tumor tissue itself is not electrically active, the St. Louis doctors reported. Characteristic waves of high amplitude and slow frequency were found in tissue overlying or adjacent to a tumor. More marked activity was noted in the record from tissue overlying a cerebellar tumor than from a similar area of the brain in a patient with Meniere's disease. In one case of hydrocephalus, no electrical activity could be discovered until after release of the fluid in the ventricles.

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Although a cow "mows" with mouth only three inches wide, she can gather in 150 pounds of herbage in a good day.

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