

## BIOCHEMISTRY

# Give Mental Symptoms

➤ A SUBSTANCE in the blood serum of patients with the serious mental sickness, schizophrenia, will produce symptoms "quite characteristic" of schizophrenia when injected into the blood stream of normal persons.

Discovery of this substance was announced by Dr. Robert G. Heath of Tulane University School of Medicine at the meeting of the American Psychiatric Association in Chicago.

It has implications for finding the biochemical cause of the disease and a specific cure or preventive or both, although Dr. Heath would not elaborate on this point.

The substance has been injected into two volunteers from the state prison. Previous psychiatric examination had shown them to be free of mental disease.

Within five to ten seconds after injection of the schizophrenia blood material, the two prisoner-volunteers developed the classical picture of schizophrenia. Dr. Heath avoided saying that they developed schizophrenia because, as he pointed out, that would be difficult to prove, but they did have the characteristic symptoms.

To Dr. Heath's surprise, although both men got the same substance, one developed symptoms of the kind of schizophrenia psychiatrists label paranoid, with delusions of being persecuted and hallucinations of hearing voices. The other developed symptoms of a different type of schizophrenia, labeled catatonic, in which the patient sits or stands like a living statue.

Neither developed any change in neurological state or in the autonomic nervous system.

Within two hours both had recovered completely.

Before giving the schizophrenia blood substance to the volunteers, Dr. Heath had tried it on monkeys. These animals also developed symptoms suggesting schizophrenia. They seemed dazed and out of contact with their surroundings. They looked like patients with catatonia. They sat staring across the room or grimaced and gesticulated in a way that suggested they were having hallucinations.

There was, of course, no way of finding out whether the monkeys actually were seeing things and hearing voices as schizophrenia patients say they do. So the trials on humans were made.

Blood serum from normal persons when treated in the same way that gave the schizophrenia substance had no effect on either monkeys or humans.

The chemical nature of the substance is not yet known. When it is, scientists may be able to find a drug to counteract it and thus remedy the disease.

The substance presumably results from a defect in the body chemistry in schizophrenia. The nature of this defect has yet to be found. When found, it may show the cause of this serious and widespread mental disease and perhaps a way to prevent it.

Science News Letter, May 19, 1956

## ICHTHYOLOGY

# Fish Navigate by Sun

➤ FISH are able to navigate by the sun. A University of Wisconsin zoologist, using a light as an artificial sun, forced minnows to observe the angle of the light to find food in a circular tank.

Reasoning that salmon, which have an acute sense of smell, might not be able to "smell" their way home through thousands of miles of tributary-studded rivers, Dr. Arthur D. Hasler concluded the sun might play an important role in guiding the fish.

Dr. Hasler trained minnows to look for food in one of two dishes in a circular aquarium. The fish proved they were good at learning landmarks, such as pipes and scratches on the wall. When the landmarks were moved or taken away, the fish had to rely on the angle of the light to guide them toward the correct food dish. This does not necessarily mean all fish use the sun for navigation, according to Dr. Hasler.

"It cannot be denied that the fish learn to recognize an artificial sun. This proves that the ability exists, and just how it may

be used in nature must still be determined," he said.

Working under a Fulbright fellowship at the Von Frisch laboratory in Germany, Dr. Hasler devoted one year to his research.

It is generally known that fish respond to light. Patterns of light on water have been used as negative stimuli, to keep salmon out of certain areas of rivers.

The theory that fish use the angle of the sun in navigation is not new, but until now little experimental work has been done to prove it.

Science News Letter, May 19, 1956

## BIOCHEMISTRY

# Fruit Mold Prevented By Exposure to Gas

➤ CITRUS FRUIT can be kept free of mold by exposure to gas en route to market, tests made at the University of California have shown.

The new "gas chamber" technique is

cheaper and more effective than the old method of wrapping each orange, grapefruit or lemon in chemically treated tissue paper.

The gas-producing chemicals can be released from small pellets scattered throughout each crate or incorporated on sheets of paper placed on the fruit.

The chemical consists of a mixture of salts producing ammonia gas when moistened. The gas does not change the flavor, color or vitamin content of the fruit, nor is it harmful to humans.

Additional tests are being made with the gas on the citrus fruits and on vegetables.

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