

PSYCHOLOGY

Rats Have Heredity Weakness That Puts Them In Convulsions

Seizures Occur When Animals Are Faced With Problems Which They Cannot Solve; Other Behavior Also Abnormal

RATS with hereditary weakness that throws them into epileptic-like convulsions may lead to new understanding of human nervous breakdown, psychologists learned at the meeting of the Midwestern Psychological Association in Athens, Ohio. A method of preventing or curing this common and war-aggravated mental ill is a future possibility.

One strain of rats of "neurotic" descent was reported by Dr. William J. Griffiths, of the University of Cincinnati. These animals go into severe convulsions when they are faced with problems they cannot solve. They act in other abnormal ways. They have muscular twitches, mild convulsions, and abnormal muscular contractions. But glandular treatment is giving "excellent results" in curing or relieving their convulsions, Dr. Griffiths reported.

Another "family" of rats, described by Dr. Norman R. F. Maier, of the University of Michigan, has a hereditary noise-weakness which causes them to go into fits when they hear the sound of jingling keys.

Jitters and war nerves produced by the crash of exploding bombs and the shriek of shells and air raid warnings may be a human parallel to this hereditary noise-weakness in rats.

But another link between the convulsions of the rats and human mental illness was reported by Dr. Maier. The sanity-restoring convulsions produced by the drug metrazol, now rescuing thousands of human "living dead," are

somehow tied up with this hereditary noise-weakness, he found.

In rats of noise-sensitive heredity, convulsions produced by metrazol are not at all the same as they are in normal animals. They last much longer, and are more severe.

In normal rats, metrazol convulsions are very much like those seen in human patients.

After injection of the drug, there is only a short wait—never more than two to four minutes. Then comes a sudden spasm that twists the spine and draws up all four legs and feet. This contraction is followed by a second phase in which muscles are contracted and relaxed with great rapidity. The whole seizure lasts only one minute.

In the noise-sensitive strain, a much smaller dose is sufficient to bring on a convulsion, but the onset is frequently delayed. The spasm of contraction is followed by rigidity and extreme sensitivity. Then comes a series of hopping or leaping movements which is similar to those Dr. Maier has observed in rats with what he believes to be a true "nervous breakdown." This whole thing may be repeated again and again after the one dose of metrazol. Dr. Maier has seen animals go through a series of 26 separate convulsions.

In previous research, Dr. Maier produced nervous breakdown in rats by a situation in which they were punished for doing what they had previously learned was right. But at that time the

mental conflict was complicated for the animals by the noise of a blast of air, so that some psychologists have believed the seizures might be due to the noise.

Dr. Griffiths' results seem to confirm Dr. Maier's earlier findings. His rats, although bred from a noise-sensitive strain of animals, went into convulsions when they were unable to solve problems. They were not exposed to noise.

Science News Letter, April 26, 1941

Why of Votes in Congress

PARTY lines in the Senate are not the same as in the House of Representatives. In the House, it is a Republican-Democrat division. But in the Senate, it is New-Deal—Anti-New-Deal.

This was revealed by a complicated modern statistical study of congressional votes cast, results of which were reported by Drs. Hilding B. Carlson and Willard Harrell of the University of Illinois.

Insight into hidden factors behind legislative votes not provided even by the intimate acquaintance with Washington of newspaper correspondents may be obtained by this technique, the scientists told the meeting.

A second factor producing voting blocks in the Senate is, they found, economy except in the matter of defense—a conservative outlook. A third way by which votes are lined up is by attitude toward Government re-organization and toward PWA and WPA. Another appears to be isolationism and a tendency to favor own constituents.

In the House, too, there is a line-up of votes for economy, and another for the protection of American interests.

In both houses there were factors that linked certain individuals in their voting, but for which the significance of the tie was not clear.

Science News Letter, April 26, 1941

Zoo animals in England are learning to eat *substitutes*: Kashmir deer, for instance, eke out small rations of the usual corn and hay with roots, vegetables and acorns.

SCIENCE NEWS LETTER SUBSCRIPTION COUPON

To Science News Letter, 2101 Constitution Avenue, Washington, D. C.

Start Renew my subscription to SCIENCE NEWS LETTER for 1 year, \$5 2 years, \$7

Name _____

Street Address _____

City and State _____

(No extra postage to anywhere in the world)

● RADIO

Dr. Harlow Shapley, director of Harvard College Observatory, will tell about his latest measurements of the globular star clusters, spherical masses of thousands of stars surrounding our Milky Way System, as guest scientist on "Adventures in Science," with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Thursday, May 1, 3:45 p.m. EDST, 2:45 EST, 1:45 CST, 12:45 MST, 11:45 a.m. PST. Listen in on your local station. Listen in each Thursday.