

PSYCHOLOGY

Drug to Improve Memory

➤ A DRUG to improve memory is in the laboratory. It is likely soon to be tried on human beings, particularly those who are old but not yet senile.

The new drug may hopefully be used even on children who are slow learners.

While the exact nature of the substance is hidden in a new drug application filed with the U.S. Food and Drug Administration, it appears to have resulted from observations that RNA, the chemical that transmits genetic information, had memory improving properties. A substance extracted from yeast by Dr. D. Ewen Cameron of McGill University, Montreal, Canada, seemed to have improved memory in human patients.

The substance, now being proposed for experimental use on human beings, has been synthesized in Abbott Laboratories. An experimental test on animals suggests that the substance enhances nucleic acid synthesis with the result that learning and memory are aided.

The research group working on this problem included N. Plotnikoff, pharmacologist, and A. J. Glasky, biochemist, at Abbott Laboratories, and L. Simon, biochemist at the Illinois State Pediatric Institute. They are in the process of publishing scientifically and are on the program announced for the meeting of the American Association for the Advancement of Science at Berkeley, Calif., the week after Christmas.

Experiments on flatworms or planaria, goldfish and rats have been made to explore the effect of RNA and other amino acids on learning. Possible transfer of memory by chemicals from one organism to another has been suggested.

A new day of memory drugs seems to be dawning. They may rival the tranquilizers in their hold on the popular imagination and there may result some drugs that will help all of us, school children, forgetful oldsters and others, to cure our faulty memories.

• Science News Letter, 88:386 December 18, 1965

PSYCHOLOGY

Learning Transfer Hit

➤ WAS A BIT of memory really transferred from hamsters to rats in recent California experiments? Two scientists, one British and one American, have their doubts.

At the Massachusetts Institute of Technology Dr. John E. Young of the University College, London, proposed a memory theory that if true, challenges all claims of learning transfer to date.

The controversy centers around the body chemical called RNA, short for ribonucleic acid. Three researchers at the University of California, Los Angeles, claim to have transplanted a learned response by squeezing RNA from the brain of trained hamsters and injecting it into untrained rats. The implication that learning and memory are somehow contained in the chemical is a revolutionary theory among neurologists.

Dr. Young told scientists attending the MIT international conference on life sciences that he does not believe RNA carries learned information. Instead it influences the use of memory channels, opening some, restricting others.

When an animal reacts to a stimulus and finds his action harmful, Dr. Young said, then RNA works together with brain cells called amacrine to block that channel and prevent a similar response in the future. Such physical changes mean learning has occurred.

Dr. Young's theory is only one of several. Dr. W. Dingman, who has been studying cell biology at the National Cancer Institute, said there are as many theories of memory as there are people working in the field.

It is doubtful that RNA works differently in the brain than in other parts of the body,

Dr. Dingman said. Elsewhere, RNA facilitates protein synthesis necessary for the growth and regeneration of cells. The chemical helps learning. It contains whatever information is needed to change cells, but probably does not itself carry memories.

This could explain the transfer of learning experiment with rats and hamsters, he said.

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PSYCHOLOGY

Speech Compressed Half Time for Blind

➤ SPEED TALK, compressing speech to half its time, promises to allow people to hear faster, saving time.

The blind will be the first to benefit from a practical application of compressed speech, until now used only experimentally. Compressed speech, made possible by a Bell Telephone Laboratories new machine, called a harmonic compressor, is being tested at the American Foundation for the Blind in New York.

The machine compresses speech into half its normal rate. Though speaking time is cut in half there is no Donald Duck effect as pitch remains the same.

Recorded speech is fed into an electronic device which separates sound and cuts them in half. The halved signals then are run through circuits to remove distortions and recombine the sounds.

The compressed voice resembles a man in high anger or excitement. It has a commanding quality.

Word rate is about the same as average speed reading (300 to 400 words per minute).

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EDUCATION

Arkansas Evolution Suit Recalls Scopes Trial

➤ JUST AS IT DID in the famous Dayton, Tenn., evolution trial of 1925, the American Civil Liberties Union is planning to come to the aid of the Arkansas high school teacher of biology who has filed suit against school officials in Little Rock. She contends that constitutional rights of freedom of speech are violated by the 1928 referendum-adopted state law forbidding teaching that man descended from a lower order of animals.

The Union, which protects civil liberties by legal action, is gathering facts on the case of Mrs. Susan Epperson with the likelihood that they will join in the trial.

The Arkansas Educational Association and the Arkansas Council of Churches are both backing Mrs. Epperson.

Thus another court case like the Scopes trial in which Clarence Darrow and William Jennings Bryan faced each other seems to be in the making.

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MEDICINE

Cause of Bone Marrow Destruction Seen in Drug

➤ SEVERAL DEATHS suspected of being caused by an antibody resulting from administration of the antibiotic chloramphenicol were reported in San Diego, Calif.

Chloramphenicol is used against diseases such as typhoid and meningitis, but has been used with caution in recent years because it appeared to cause destruction of bone marrow, thus causing an often fatal disease called aplastic anemia.

It has long been thought that antibodies could not be formed against the drug, but laboratory experiments with rabbits at the University of California at San Diego now indicate the possibility that an antibody can be harbored in the bodies of a few rare individuals.

Dr. Robert N. Hamburger says that if the suspected antibody can actually be formed in the human body, it could be a factor in the death of a few patients taking it.

Dr. Hamburger, who is a pediatrician and assistant dean of the School of Medicine, theorizes that if certain rare persons are sensitive to the drug, their bodies could form an antibody after the first dose, so that if a second dose is given, cells of the bone marrow could be destroyed.

Normally, humans will not form antibodies to chloramphenicol, whether it is given by mouth or by injection. The supposition is that rare individuals have a naturally occurring attachment site for the antibiotic, and for this reason, they form antibodies against it.

Dr. Hamburger has been able to produce another antigen capable of detecting antibodies caused by chloramphenicol in humans. He plans to treat those people who produce naturally occurring antibodies to the drug.

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