

complete cessation of stuttering, was noted when the stutterer spoke while walking on all fours," she reported from her study of twenty-four cases.

No explanation can as yet be given for the phenomenon, Miss Geniesse states, but she has a theory about it. Reduced to very elementary terms, it is a matter of blood pressure and spasm in part of the brain. If stuttering is looked on as a kind of spasm, it may be caused by a temporary stimulus to a motor nerve cell. The stimulus, in turn, may

be caused by temporary dilatation of small blood vessels in part of the brain. Getting on all fours changes the blood pressure, releases the blood that dilates the small blood vessels, the state of spasm stops, and the stutterer carries on a more nearly normal conversation.

"If this view proves correct," Miss Geniesse states, "then present theories and methods for correcting stuttering should be revised and greater efforts should be made to place them upon a physiological basis."

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PSYCHOLOGY

Sleep After Memorizing Makes Recall Easier

IF A PERSON memorizes certain kinds of material perfectly, and goes to sleep afterwards, he will recall more of it, and also re-learn the whole task more economically after a lapse of 24 hours, than if he waits even a few hours before he goes to sleep, Dr. H. M. Johnson, professor of psychology of American University, Washington, D. C., announced at Cornell University.

Experiments based on different methods, made by Dr. Rosa Heine Katz, at the University of Göttingen, and by Joseph F. O'Brien, graduate student at American University, showed that all the subjects who were studied were better able to recall and also to re-learn material that they had learned by rote and partially forgotten, if they first slept for eight hours and then worked for 16 hours, than if they distributed their rest and activity in any other way during the 24-hour period.

The differences in favor of sleeping immediately varied between 20 per cent. and 30 per cent., according to the subject and the task. One would be justified in offering a bet of 100,000 to one that Mr. O'Brien's results were not due to chance, Dr. Johnson said.

Two explanations have been offered. One, which Dr. Johnson called the "hardening" hypothesis, pictures the brain as inert during sleep, giving recently received impressions a chance to become "set." The other, called the "reverberation" hypothesis, regards the brain as an active organ even during sleep, and supposes that it goes on repeating or "reverberating" recently received impressions during the unconscious period.

Dr. Johnson does not regard either

hypothesis as satisfactory. The "hardening" hypothesis is cast into doubt by the poor recall of memorized material made by persons who had "hardened" their brains with the equivalent of only one highball. Furthermore, very recent studies on brain waves show that these fluctuations in the electric potential of the brain go on continuously during sleep, though not in their ordinary "waking" patterns. Finally, studies on sleep conducted by Dr. Johnson himself several years ago at the Mellon Institute show that sleepers assume muscular positions which they can maintain only by dint of strenuous brain exertion.

Dr. Johnson offered a third hypothesis, which, however, he did not urge as necessarily correct. He suggested that the memorized material might "reverberate" in the brain, but during the drowsy periods before sleep and during the slow awakening process, and also during the frequent half-wakeful periods during the night which most persons experience without realizing or remembering them.

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MEDICINE

Treatment Saves Drunks From Dangerous Stupor

FOR DRUNKS who have reached a state of coma, medical science has discovered an emergency treatment. The new treatment will bring them speedily out of the dangerous state of paralytic alcoholism which sometimes leads to death. Dr. Leon J. Robinson and Dr. Sydney Selesnick of Boston City Hospital report results of the treatment. (*Jour-*

nal, American Medical Association, Nov. 30)

These cases of acute alcoholism are brought immediately to the hospital, and are allowed to breathe a mixture of 10 per cent. carbon dioxide and 90 per cent. oxygen for half an hour or longer. This, in the words of the Boston physicians, is what happens:

"In every case of unarousable alcoholic coma, with slow, jerky, shallow respiration and cyanosis, carbon dioxide-oxygen inhalation caused the respirations to become deep and regular almost at once."

The doctors emphasize that this is an emergency treatment and is not indicated in the moderate degrees of intoxication frequently encountered.

By comparing man with animals, these doctors believe that it would require about a pint of whisky taken at once to cause coma in man. This coma, accompanied by troubled breathing, paralysis and blueness of the skin, constitutes a medical emergency. Death may be definitely prevented and recovery hastened by the inhalation of this mixture, they declare.

Administration of this treatment increases the amount of alcohol exhaled from the lungs and so decreases the total alcohol in the body.

The Boston physicians make no attempt completely to arouse the stuporous patient but merely use this treatment to reduce him from a state of dangerous paralytic alcoholism to a less deep stage of anesthesia from which he can be expected to recover safely.

Science News Letter, December 14, 1935

ENGINEERING

Concreting Nearly Done At Norris Dam of TVA

See Front Cover

SUSPENDED high in the air from the cable-way, the photographer looked down on the view of Norris Dam which appears on the front cover of this week's SCIENCE NEWS LETTER.

Water is now impounded to a depth of 50 feet. When full, the dam will back water 40 miles up the Clinch and Powell River valleys.

Ninety-five per cent. of the concrete has now been poured.

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Cornell scientists hope for a time when hens can be bred and managed, so as to produce eggs for many years, thus doing away with the expensive process of renewing at least half of a flock each year.