MEDICINE-NEUROLOGY

Trigger Mechanism in Brain Trips Epileptic Convulsions

Discovery by Harvard Experimenters May Cause Change In Epilepsy Diagnosis—Not a Diseased Condition

MEDICINE has discovered the part of the brain believed to cause convulsions like those occurring in epilepsy. The convulsion-causing brain center acts like a "trigger" which, when stimulated, sets off a neurological "explosion" throughout the whole brain.

Drs. F. A. and E. L. Gibbs of Harvard Medical School described before the meeting of the International Neurological Congress at London experiments leading to the discovery of the brain trigger.

The trigger is a short fiber system running between the frontal cortex basal ganglion and the thalamus.

Parallel research on brain tumors of cats and in man indicate, the scientists reported, that the same part of the brain is responsible for convulsions in each.

Studies on four hundred cats in which the trigger mechanism was stimulated by means of an electrode inserted through a small hole in the skull served to determine finally the location of the convulsion-causing brain fibers.

It is not believed that the trigger is a pathological mechanism. Dr. Gibbs believes it is present in all brains, normal or otherwise, but that in epilepsy the mechanism is disordered.

The position of the mechanism, the scientist said, is now located as well as are the brain fibers controlling the dilation of the eye's pupil.

The Harvard experiments provide strong evidence that former ideas about the cause of convulsions were wrong. It had been suggested that convulsions came about because of stimulation of the blood vessels or of certain other parts of the brain.

The new discovery may change the diagnosis of epileptic convulsions. Dr. Gibbs explained that physicians formerly sought a diseased condition responsible for epilepsy but that as a result of his research they will now have to seek a disorder in the neurological mechanism which he believes is present normally as a safety valve in the brain.

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ARTIFICIAL SUNLIGHT

Looking up a ventilating shaft in a New York City apartment house where lights have been installed to simulate the radiance of the sun.

ENGINEERING

Electricity Brings "Sun" To Low Level Apartments

NEW YORK'S "cliff-dwellers" who live on lower level apartments facing ventilating shafts can now get up in the morning, raise the window shades and be flooded in the glow of artificial sunlight.

Electrical engineers have installed in the court of an apartment on Central Park South a system of powerful electric lights which shine down the dark central shaft and simulate sunlight.

And so that the dawn does not "come up like thunder," as Kipling has it in the Far East, the wiring circuit is so arranged that the glow comes on gradually in the morning for "sunrise" and dies away slowly for "sunset."

Engineers of the General Electric Company, which installed the system, have adjusted the device so that it takes the lamps 15 minutes to come up to full intensity. (*General Electric Review,* July.)

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POPULATION

Migration To Poor Farm Land Seen As National Danger

OUT OF the frying pan, into the fire. This is the predicament of the many thousands of Americans who have been forced by unemployment to desert the city and go "back to the land."

The Government's policy should be to discourage these people from taking roots and settling down permanently in the poor farm areas to which the depression has driven them, in the opinion of Prof. Carter Goodrich of Columbia University, who with his associates, Dr. Bushrod W. Allin and Miss Marion Hayes, has just completed a survey of the migrations of Americans and the planes of living in various parts of the United States.

The unemployed of the present depression were not able to follow the example of those of the past century. They could not "go west" and take up fertile lands in the Government's public domain. Instead they were forced to settle on cheap or abandoned farms in submarginal areas—perhaps returning to the very lands which they or others had deserted as worthless in good times.

These bad lands, including the Cut-over Country of the Great Lakes States, the Old Cotton Belt, and counties in the mountains of the Southern Appalachians, are the parts of the country that normally are deserted in good times by those who can move to the city and find jobs.

In these areas the plane of living is

lower than elsewhere in the nation, even in boom times. These same counties have had excessively high relief loads in the present depression.

"Their low rating by both the prosperity and the depression measures raises a strong presumption that these counties are doomed to permanent poverty unless the pressure of population can be reduced," Dr. Goodrich and his assistants have concluded.

"Whatever directions of migration may in the long run be desirable within the United States, they cannot be those marked out by the depression years," the report states.

"Even if we believed that the trend of our entire history was to be permanently reversed, and that in the future a larger proportion of the American people would have to be supported by agriculture, it would still be obvious that the land which should support them should not be the sort to which so many of the depression migrants have had to turn. There may possibly be a case for a back-to-the-land movement. There cannot conceivably be a case for the long-run desirability of a back-to-the-worst-land movement."

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ASTRONOMY

Will the Royal Observatory At Greenwich be Abandoned?

WILL the world-famous Royal Observatory at Greenwich, England, just on the suburbs of London, be discontinued? Founded in 1675 by royal decree, British astronomers have long been wondering if the observatory has outlived its usefulness.

Dr. Spencer Jones, Astronomer Royal, in his report for the past year recently amazed some of his colleagues by coming out—point blank—with some of the objections to the present site.

Dr. Jones listed as disadvantages (*Science*, July 19):

"The pollution of the air due to the surrounding industrial works and factories by the precipitation of sulphur-dioxide, soot and hard grit, is very detrimental to mirrors and other delicate parts of astronomical instruments; the condensation of moisture from hot gases ejected from nearby chimneys is a source of trouble and especially the use of mercury vapor lamps for street lighting lately introduced in the neighborhood is objectionable because the ultraviolet light they discharge affects photographic plates exposed at low altitudes."

Although the name Greenwich is so intimately woven with all reckonings of longitude and time throughout the world, the abandonment of the Royal Observatory would not be quite the catastrophe that one might think at first consideration.

The present proud position of the Royal Observatory as premier "number one milestone" of the world is a matter of precedent and tradition rather than necessity. Any other spot on the earth which could be agreed upon would do as well.

It's the position of the Observatory—not the Observatory—which is the important matter for the time keepers and navigators of the world.

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PSYCHOLOGY

Adults Learn Faster Than Children and Gain Skills

LEARNING can no longer be considered exclusively a child's occupation to be accomplished in the days of youth when time has small financial value.

The world is changing so rapidly that today's fact may become fallacy within the decade. The trade learned by the boy now may be obsolete before he is an old man. Adults now feel the need to go to school. And the evil condition of employment scarcity has fortunately brought with it new leisure for the new necessity of adult learning.

But can adults learn? Can the aged develop new skills?

An emphatic answer of yes is provided by the well-known psychologist of Teachers College, Columbia University, Dr. Edward L. Thorndike. Those past middle age do not learn as fast as those in early adulthood, he has found. But they can and do learn if they want to.

"A man of 65 may expect to learn at least half as much per hour as he could at 25 and more than he could at 8 to 10," says Dr. Thorndike in the introduction to his new book on "Adult Interests" (Macmillan).

Childhood is not the best age for learning, he and other psychologists have found.

The age for learning that is the best in the sense of greatest returns for time spent in study is in the twenties. Any age below 45 is better than ages 10 to 14.

Why is it then that adults do not, as a rule, do much learning? Lack of interest in learning and the pressure of competing interests are the principal reasons, according to Dr. Thorndike.

"Learning always requires time and usually requires some care and effort. It competes for an adult's leisure time and attention with a host of other possible activities—sleep, rest, relaxation, excitement, display, combat, physical and mental exercises of uninstructive sorts, productive labor beyond what is prudent, family devotion, religious observances, and many others.

"To occur, it must be preferred above these, must be more desired, more interesting, either for its own sake or for some consequences expected from it."

The interest does not need to be intrinsic in the subject to be learned. It does not need to be natural. It can be roused by teachers or friends or deliberately by the self.

Adults have been known to learn well matters in which they could not possibly have interest—silly things such as learning to type words backward or toss balls over one's head at an unseen target—when their only reason for wanting to learn was some "ulterior" motive.

"If the person keenly desires to have the status or ability for which unpalatable facts or skills are required, his desire will add sufficient interest to keep his mind working and to strengthen the right thoughts and acts."

Adults should know better than children what knowledge and what skills will be of value to them. Hence the desire to learn should provide the motive power to keep the mind working when interest in the subject itself lags. They should not have as much need as children do for such external bribes as praise, prizes, and promotions.

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