

60 to 65 degrees Fahrenheit. The main canteen, or restaurant, is above ground, but a small room for making tea is underground, and tea is served on trolleys to men and women at work.

Feature of this factory is the Control Room, built in an old seepage pit. It is linked to all parts of the factory by

telephone, loudspeaker and microphone. Hourly production records are made, and by a glance at the charts the managing director can check any section.

In both underground factories, irreplaceable machines and skilled workmen are safe from the most severe bombing.

Science News Letter, April 18, 1942

PHYSIOLOGY

Excessive Acid in Nerves May Cause Altitude Ills

When Nerves Are Too Acid, They Discharge Excessive Quantities of Acetylcholine Which Affects Muscles

EXCESSIVE acidity of the nerves may be responsible for a host of serious ailments, including the dangerous condition that overcomes high-altitude flyers and mountain climbers, Dr. Robert Gesell, of the University of Michigan, announced at the meeting of the Federation of American Societies for Experimental Biology in Boston.

The acid nerve condition which may be responsible for pilot failure in high-altitude flying without oxygen cannot be counteracted by the soda bicarbonate or other alkaline powders which the layman takes for his so-called acid stomach. Excessive alkalinity of the nerves may cause just as much trouble as excessive acidity, but it cannot be corrected by taking lemon juice. Neither

acids nor alkalis that people could take into their stomachs would change the acid or alkaline state of the nerves. To change nerve acidity requires injections directly into the veins of the very powerful alkalizing or acidifying chemicals.

The degree of acidity or alkalinity of nerves that makes the difference between health and serious illness is actually rather small. But the shift from just the proper balance to excessive acidity or alkalinity of the nerves may influence all body processes, including breathing, heart action and digestion, Dr. Gesell believes.

When the nerves are made too acid, he discovered, they discharge excessive quantities of the chemical, acetylcholine. It is this chemical, many scientists be-

● RADIO

Saturday, April 25, 1:30 p.m., EWT

"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Frank C. Hibben, of the Museum of the University of New Mexico, will talk on discoveries in Sandia Cave.

Tuesday, April 21, 7:30 p.m., EWT

Science Clubs of America programs over WRUL, Boston, on 6.04, 9.70 and 11.73 megacycles.

Mrs. Katherine Fowler Billings, New England Museum of Natural History will describe "Prospecting for Gold in West Africa."

One in a series of regular periods over this short wave station to serve science clubs, particularly in the high schools, throughout the Americas. Have your science group listen in at this time.

lieve, which causes a muscle to move in response to a nerve impulse. Sometimes muscles go on moving long after the nerve impulse has ceased. A familiar example is the trembling that follows prolonged or excessive physical exertion. Epileptic fits are attributed by some scientists to the same mechanism, which is called the after discharge. The theory is that the nerves continue to release acetylcholine which, as it piles up in the muscles, keeps them contracting. Excess acid, Dr. Gesell's experiments show, is responsible for this condition.

Why the nerves become too acid or too alkaline is not entirely known. Too little oxygen and too much carbon dioxide apparently can cause acidity, and the reverse can cause alkalinity. Increasing nerve alkalinity, Dr. Gesell found, facilitates the destruction of the nerve chemical, acetylcholine. This might lead to paralysis. A kind of convulsion accompanied by muscle cramps, called tetany, and coma or unconsciousness, are other conditions which may be explained on the basis of acid or alkaline nerves, Dr. Gesell believes.

Working with him on the experiments were Prof. Charles R. Brassfield, Elwood T. Hansen and Arnold Mason, also of the University of Michigan.

Science News Letter, April 18, 1942

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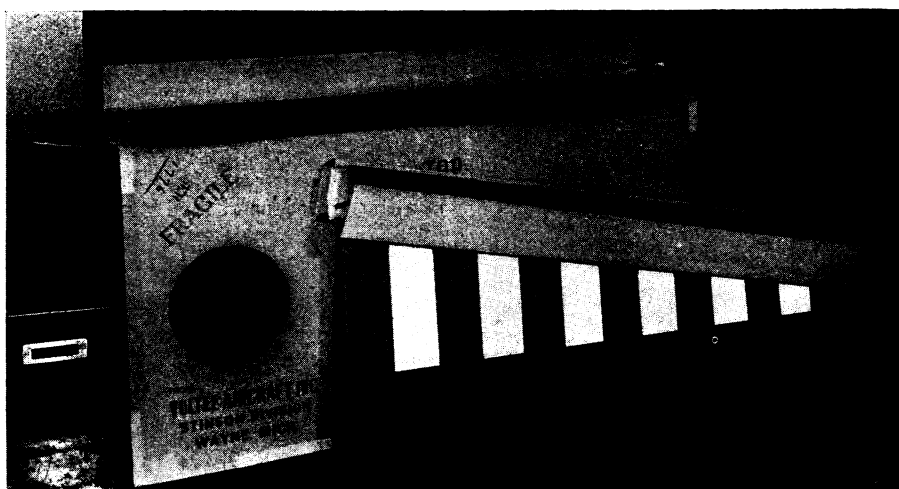
WYOMING

Fish in its mountain streams. Ride horseback thru its hills and canyons. Find Indian relics and marine fossils in this region of great historical and geologic interest.

The Patons welcome a limited number of guests at their ranch home in the Big Horn country. Cabins are comfortable, food good and horses gentle.

Write for illustrated folder with map

Paton Ranch, Shell, Wyoming



BOXED AIRPLANE PART

This airplane rudder is partly packed and ready to slip into its carton for transportation to the assembling plant.