

"When the United States entered the First World War in 1917, wide ignorance and indifference, and some antagonism, existed among both civilians and soldiers about her war aims," said Dr. Fryer. "In contrast with the British and French, American soldiers at the front were not sure for what they were fighting. Responding to German propaganda, some mountaineers of the South were convinced that a revolution was necessary to take America out of the war.

"For this reason civilian and army morale work in the United States in 1917-18 was aimed primarily at establishing conviction of evils to be averted in an intolerable situation which would result from an enemy victory.

"This, interestingly enough, is the conviction giving popular support to military activities of the United States in 1941."

But education or propaganda are effective in building morale only when the biological and economic foundations of morale are assured to the people, Dr. Fryer indicated.

"The Republican Army of Spain," he explained by way of example, "finally lost its morale because of one thing, insufficient ammunition, which changed an efficient army into a rabble that catabolized a whole population into France. Propaganda had not affected this morale, cold and hunger had not destroyed it, but the loss of the means of immediate personal defense did just that. The one remaining support for biological adaptation was eliminated."

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ENGINEERING

Turbine Shell Resembles Machine Gun and Mortar

See Front Cover

NOT a new development of science in a combination machine gun and giant mortar, as it would appear, but the upper half of an 80,000-kilowatt turbine shell being built by General Electric Co. for the Duke Power Company in North Carolina, is shown on the front cover of this week's SCIENCE NEWS LETTER. Instead of destructive projectiles, this mammoth machine will hurl kilowatts of useful electricity to keep the wheels of industry turning in grinding out the country's defense program.

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The Bureau of Mines has exploring parties searching for usable deposits of manganese ore in the Appalachian region.

PSYCHOLOGY

When Youngster Pleads for Sweets, He May Need Them

WHEN Mary or Bobby pushes away the nice meat and spinach and pleads tearfully for dessert, mother may be wise if she gives in to the childish demands.

Small humans are like other animals, recent research indicates, in naturally craving the sort of foods they need at the time. When a child is tired and emotionally upset, his digestive apparatus is incapable of caring for the foods of his regular diet. Sugar is easily digested and a quick source of energy for the tired child.

Suspecting that emotional upsets cause the unusual craving for sweets and loss of appetite for more substantial food displayed by small children who have "feeding problems," Dr. Weston A. Bousfield, child psychologist of the University of Connecticut, decided to test out this theory in laboratory experiments.

The humble laboratory rat was selected as subject because Dr. Curt P. Richter, of Johns Hopkins Medical School, and other scientists had already demonstrated that when a rat is given free choice of foods he will pick a diet that is good for him.

Dr. Bousfield's task was to discover whether emotionally roused rats would choose more sweets than usual. In order to keep strict account of the animals' food intake, he kept each one in a cage by itself. Fortunately for the experiment, this "solitary confinement" made ready fighters of the rats so that it was easy to

produce an emotional situation. Whenever two of the rats were brought together, there was pretty sure to be a rousing fight. After the fight, sure enough, the sugar intake was stepped up in relation to the amount of regular dinner eaten.

An interesting sidelight of the experiment was the observation that the rats in "solitary confinement" even before the excitement of the "quarrel" were gradually increasing the amount of sugar they ate.

Dr. Bousfield hesitates to say that those rats living alone become chronically emotional or excitable. Nevertheless, they did fight more readily than rats caged together. Perhaps there may be some significance in the fact that the feeding problems of youngsters often disappear when they are put with others in the nursery school.

These rat experiments in general confirm the findings of nutritionists that if children are given free choice to eat what they want and to go without if they wish, they will generally adapt their diet to their individual physiological needs.

When the child wants candy and refuses his dinner, it is probably a sign that he needs rest and soothing more than he needs food, Dr. Bousfield concludes. A scene at the table only increases his desire for sweets and his distaste for regular diet.

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RADIO

Ocean Cables, Like Radio, Affected By Static

TRANSATLANTIC cables, just like radio circuits, are subject to static interference, J. W. Milnor, of the Western Union Telegraph Company, told members of the American Institute of Electrical Engineers in Philadelphia.

He explained technical details of the apparatus used for sending photographs from England to the United States by cable. Interference becomes especially objectionable, he said, where current varia-

tions are faster than 110 times a second, so slower vibrations are used.

The pictures are scanned by an electric eye in London, which sets up a fluctuating flow of electricity. This varies from the maximum negative current, corresponding to blacks in the original, to the maximum positive current for whites. Intermediate positions, including no current at all, correspond to grays.

Land wires carry the picture signals to