

seventh and eighth grade pupils but not for younger or older listeners.

Numbers are more easily remembered than words. The pupil who remembers fewer than four words will recall six numbers from a list of equal length. But the broadcaster is reminded that the upper limit for number memory span is not much beyond seven when he is tempted to repeat long lists of telephone numbers, street addresses, and prices.

Teachers are advised not to rely entirely on the pupils' hearing to fix the radio lesson in memory. She should supplement the speech by writing the ideas presented on the blackboard, thus stimulating both ears and eyes.

The experiment was conducted under the auspices of the Payne Fund for the Study of Radio Education.

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PHYSICS

Leningrad Institute Celebrates 50th Anniversary

See Front Cover

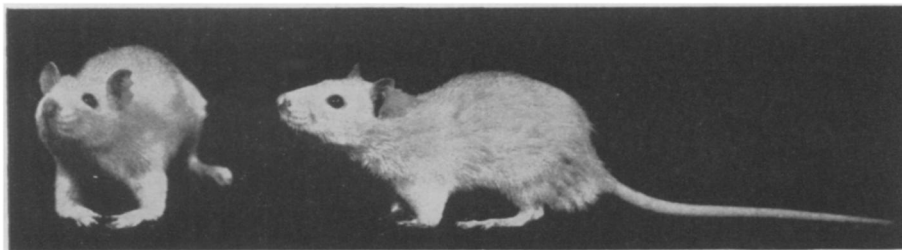
THE cover illustration of the SCIENCE NEWS LETTER this week shows a test discharge of the great copper gaps in the high voltage laboratory of the Electrotechnical Institute, Leningrad, U. S. S. R., which recently celebrated its fiftieth anniversary.

In the test, 1,200,000 volt sparks are jumping.

Research at this institution is primarily directed toward the practical aspects of electricity. Latest of the research projects has been an investigation of means for the protection of the high-powered transmission lines from the hydroelectric generating stations in the Ural Mountains.

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White men seem to have first encountered the American buffalo when Cortez and his followers visited the menagerie of Emperor Montezuma in Mexico, in 1521.



THIS LITTLE RAT HAD NO VITAMIN D

The runty body and bowlegs are typical signs of rickets. The little animal has his mission in life, however; he strikingly points a moral on one of the government's new nutrition charts.

NUTRITION

New Government Charts Indicate Diet Requirements

THIS white rat had vitamin D. This white rat had none—

No, the U. S. Bureau of Home Economics has not yet suggested that the nursery rhyme piggies be revised, not even to teach children to drink their milk and eat the nice vegetables.

But a series of picture charts, just issued by the Bureau, drives home its lesson of dreadful consequences of unbalanced diet, by the haunting, effective repetition of a refrain reminiscent of the piggies. The charts are not for children to pore over. The lesson is intended for adults, and boys and girls old enough to recite the vitamin alphabet, with definitions, in home economics study courses.

"Rats grow rapidly and mature early," explain the Government nutrition scientists in the new picture-lesson series. "They eat the same kinds of food we do and show the same effects of good and bad diet."

"This rat had no vitamin D; note the short body and bowlegs—typical signs of rickets," runs the warning beneath a pathetic little white rat portrait. The 20-week-old rat actually has such weak forelegs that the front joints curve down and rest on the ground. His partner who "had plenty of vitamin D" has good, strong bones. And below is pictured an array of foods that make the difference to bones and teeth.

Besides showing what vitamins do for muscles, bones, appetite, and general well being, the lessons go on to show the work of iron, calcium, and phosphorus in building and repairing body tissues.

Twin rats six months old sum up

the demonstration on growth. One young rat ate only meat, potato, bread, and butter, and he weighed just 89 grams. How he felt when he woke up in the morning or after a hard day's play in his cage, nobody knows. That is the one drawback to experimenting with rats. They can't describe their symptoms with all the convincing eloquence of humans who feel terrible. But on visible evidence the little white rat who ate a traditional working man's diet was a runt. Below poses his twin in all his well fed glory. "This rat ate plenty of milk and vegetables, besides meat, potato, bread, and butter. He weighed 194 grams."

The Government nutrition scientists who patiently photographed their rat charges for this new set of food lessons, have one worry. They expect to be bombarded with requests from the public for free copies of their work. But the charts, they explain emphatically, will have to be sold, for a moderate sum, (50 cents) via the government's publisher, the Superintendent of Documents.

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ARCHAEOLOGY

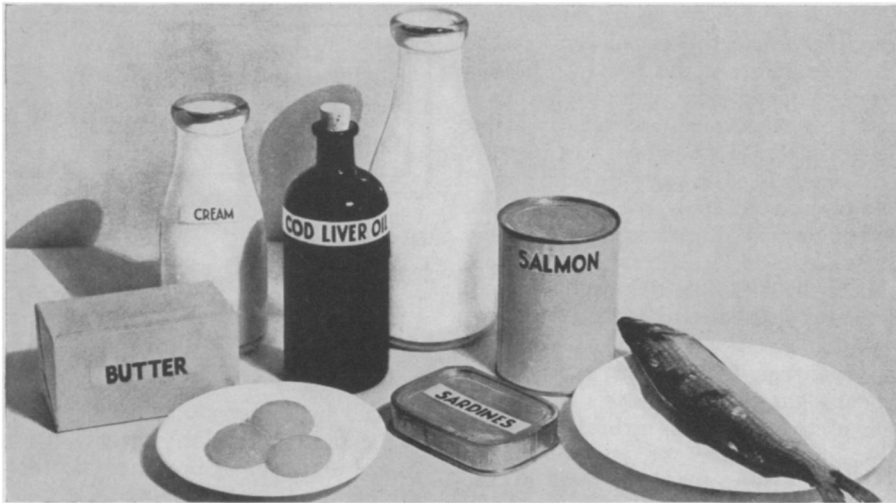
Russians Explore Caucasus Hills

RUSSIAN archaeologists exploring in the Caucasus hills have discovered there for the first time relics of ancient people buried layer upon layer.

The excavations, still to be continued, have already uncovered traces of culture from the fifth century A. D. back to the Neolithic or New Stone Age. Judging by ancient Greek and Roman writings, this region, the low country of Kolkhida, in Western Georgia, was once densely populated.

The site being unearthed is at the old city of Kvalony. About sixteen inches underground lay iron implements, bones of animals, and ceramic fragments dating from about the fifth century A. D. Lower were bronze arrow and lance heads, and still deeper were remains of the Copper Age, chiefly pottery.

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THESE ARE FOODS THAT HAVE VITAMIN D

Here are the butter and cream and oil that prevent the rickets that afflicts the rat that is deprived of vitamin D. This picture is one of a series of graphic representations issued by the U. S. Bureau of Home Economics to illustrate important facts regarding diet.

ETHNOLOGY

Red Man and Irishman Have Problems in Common

RED MAN and Irishman—what problems have they in common?

Plenty. And the experiences of Ireland in the past few decades offer strong hope to the Indian in his efforts to "come back." So the situation is interpreted by Commissioner of Indian Affairs John Collier, after conferring with Ireland's famous man of letters and statecraft, George Russell, better known by his cryptic nickname "AE."

AE, one of the pioneers of the "Irish movement" and a worker there for 30 years, met with the Indian Office staff in Washington a short time ago. He told of the despair and apathy into which Ireland drifted, over half a century ago, a state so nearly universal there that Charles Darwin actually wrote down the conclusion that the Irish stock was, or had come to be, biologically incapable, so that it were better to eliminate it from the racial bloodstream.

But 45 years ago, Ireland's population began to increase, not diminish. And, by coincidence, it seemed, renewed will to live stirred in the people. They looked back toward Ireland's ancient glories and sought to revive the Gaelic language and arts and cultural values. They looked forward at the same time, and worked out a program

of rural rehabilitation and cooperative self-help.

"The Irish revival took its rise amid a people dispossessed of the land even as our Indians have been dispossessed," said Commissioner Collier, citing close parallels with the Indian situation, brought out from AE's story of Ireland's comeback.

"The identical movement projected a land-acquisition plan for the Irish peasantry, and this plan was governmental. Essentially, it was a restoration of the landed estates to the people. The successful use of the land, and the building of a happy and, definitely, a socially creative life upon the land, was the foundation concept of the Plunkett-Russell effort.

"The planning of resources was one evident need, and to a large extent this total survey and planning of Irish resources, of their possible exploitation, and of the manner of so exploiting them that the resources shall not exploit the people, has been achieved. Of course, its theoretical achievement has become fully embodied only in some of the rural areas, as yet; but Irish national policy takes it into account."

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METEOROLOGY

Western Dust Reaches Ocean for Second Time

FOR THE second time in American weather history, a dust storm from the West has reached the sea. Charles L. Mitchell, of the U. S. Weather Bureau at Washington, D. C., informed Science Service that the dust, first reported from Amarillo, Texas, and Oklahoma City, Okla., on Monday, March 4, was observed Tuesday in Nashville, Tenn., and on Wednesday evening reached Washington.

It was found high in the air as well as along the ground. A Weather Bureau plane observer found dust at about a mile altitude at Nashville, and a commercial pilot reported dust at nearly twice that height between Pittsburgh and Washington.

Dust storms are rather commonplace afflictions in the West, but it was not until mid-April of 1934 that Kansas and Wyoming soil were blown into the Atlantic Ocean. Responsible factors were first the unprecedented drought, the worst in American history, and second the destruction of the age-old sod cover in parts of the West, plowed up for wheat during and after the War and never restored to its dust-checking mantle of grass.

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RADIO

Radiophone Used to Send Medical Advice to Ship

FIRST use by the federal health authorities of the radiophone to give medical advice to a ship at sea has just been reported to Surgeon General Hugh S. Cumming, U. S. Public Health Service.

The federal health service has used the radio to give medical care to vessels at sea for the past fourteen years, but this time the master of the S. S. Exeter when about 100 miles out of Halifax, Nova Scotia, spoke over the radiophone to Dr. A. D. Foster, U. S. P. H. S., medical director of the U. S. Marine Hospital at Chelsea, Mass.

The ship's engineer had received a severe cut on his forearm by broken glass and was having a rather profuse hemorrhage from an artery. Dr. Foster told the ship's master how to apply a tourniquet around the arm above the elbow to stop the bleeding.

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