

obtain code numbers and get duplicate keys on motor cars. A copy-proof lock whose keys can be obtained from a central manufacturer after scrutiny of credentials should, it is hoped, reduce crime. While figures vary, police officials have good reason to feel that a majority of burglaries are committed with the aid of stolen cars.

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INVENTION

Razor Blade That Lasts Six Months Shown

A RAZOR blade that lasts six months, a piano an invalid can play in bed and radio for the deaf are the features of this year's British Industries Fair now in progress at London's two largest exhibition arenas—"Olympia" and the "White City."

The razor blade which lasts six months is exhibited by an American, Alfred Schmidt of New York City. Its blade consists of five feet of stainless steel ribbon wound up like a watch spring. A twist of the knob brings a new section into place for shaving.

The "invalid" piano makes it possible for a bedridden person to play the instrument providing he or she can be propped up just a little. Secret of the device is a highly-extensible and adaptable keyboard which comes out over the bed to the hands of the patient.

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COSMOLOGY

Man Just an Accident Says Sir Arthur Eddington

THE universe was apparently designed for other purposes than man, Sir Arthur Eddington, Cambridge astronomer, concludes in his latest book (*New Pathways in Science*—Cambridge U. Press).

Admitting that the scientific picture of the universe misses the point in that it does not include the senses, beauty, morality, the presence of God, etc., Sir Arthur nevertheless emphasizes the idea that man is an accident.

Matter normally collects in big masses with excessively high temperatures, but, he said, "by a trifling hitch not of serious consequence in the development of the universe some lumps of matter of the wrong size have occasionally been formed."

PHYSICS

Scientists May be Searching Vainly for Negative Proton

ALTHOUGH perhaps vainly, because they live in the wrong part of the universe, scientists are hunting for another fundamental particle—the negative proton—out of which atoms, and hence all matter, may be constructed. To explain and simplify present concepts of how the cores of atoms are composed which need protons, electrons and neutrons to fill the picture, scientists hope to find the negatively charged counterpart of the positively charged protons.

This, in substance, is the conclusion of Prof. George Gamow, world-famous Russian scientist, now visiting professor of theoretical physics at George Washington University, Washington, D. C.

Dr. Gamow who first predicted the levels of energy now found within the atom nucleus also predicted such negative protons still to be found.

Asked at the meeting of the Chemical Society of Washington why the negative proton is still unfound in spite of sensitive experiments to find it, Dr. Gamow said:

"The search for the negative proton is difficult because man and the planet

on which he lives may be in the wrong part of the universe. We live in a world where protons and electrons exist. Yet if the universe as a whole is electrically neutral there must be other regions and worlds where the opposite is true; regions where negative protons and the newly-discovered positrons make up atoms.

"One can think," he continued, "of the splitting of some giant star into two parts. One component might be like our sun and its planet earth. The other half might have charges of the opposite sign. The first part would be a region like that found on earth where protons and electrons predominate. The latter might be the negative proton world."

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PSYCHOLOGY

Long Radio Blurbs Hard to Remember

HOPE for radio listeners who are bored by long detailed advertising announcements comes in the report of Drs. F. H. Lumley and C. H. Calhoun, of Ohio State University, that short radio talks with few ideas are remembered best.

Long lists of addresses, prices, telephone numbers and facts about merchandise cannot be remembered by the average listener and speaking slowly will not help much to "put them over," experiments conducted with 946 grade and high school children revealed. The results are disclosed in the current issue of the *Journal of Applied Psychology*.

Most familiar words were used in the tests, and memory was tested immediately after presentation. The average number recalled by each child ranged from 2.1 words for third graders to 4.7 for high school seniors. They remembered the same number of words from a list of six and from a list of ten, it was found.

If radio messages are to be remembered, it appears to be more important for the advertiser to limit the number of ideas included than it is for the announcer to speak slowly. Slow speech seemed to make memory easier for the

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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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