

## NUTRITION

## Vitamin B Sandwich Proposed to Scientists

**P**LACING upon the national health menu of a new low cost vitamin B sandwich was advocated by Dr. Tom D. Spies, of the Universities of Texas, Alabama and Cincinnati, at the vitamin symposium held at the University of Chicago.

The filling of the prophylactic and therapeutic sandwich would be peanut butter combined with up to 20% dried brewer's yeast. The outside of the sandwich advocated by Dr. Spies would consist of peeled wheat bread produced by the Earle flotation process of manufacture.

The mixture of peanuts and yeast is a good source of the natural vitamins of the B complex and high in protein, fat and calories as well, while the bread, Dr. Spies said, furnishes more proteins, vitamins and minerals than are contained in white bread or so-called whole wheat bread.

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## PHYSIOLOGY

## If Your Feet Hurt It May Be Way You Sit

**I**F YOUR feet hurt, it may be, strangely enough, because of the position you take when sitting. Faulty position of the feet while sitting is a new cause of aching feet discovered by Dr. Philip Lewin, of Chicago. He describes it in his book for physicians. *The Foot and Ankle*. (Reviewed, SNL, this issue.)

The pain in this kind of aching feet comes in the metatarsal region between the toes and the instep. Doctors call the ailment metatarsalgia. Besides the pain there may be rigidity and muscular spasm. Women are more likely to have metatarsal troubles than men because they more often wear improper or badly fitting shoes, short stockings and tightly gartered stockings. Many conditions may cause the trouble, ranging from arthritis to chilblains.

Sitting with your heels off the floor and your toes turned up, and thumping or pressing on the tips or balls of the toes causes the trouble very often, Dr. Lewin believes. Short-legged persons are very likely to sit this way, but Dr. Lewin says he has seen the position taken by long-legged persons too, and by doctors, lawyers, professional artists, stenographers, and even orthopedic sur-

geons. He has observed it in people at games and sporting events, at meals, at their desks, at the card table and during periods of relaxation.

Sitting in this "half-toe" position exaggerates the depression of the metatarsal arch and the strain on the heads of the metatarsal bones, joints and their capsules, ligaments, tendons and muscles. Push the knuckles of one hand down with the thumb of the other and at the same time squeeze the knuckles together and you will get an idea of how and why your feet hurt if you sit much with them in this position.

If your feet hurt, you should consult a physician, but no amount of treatment with shoes, pads, exercises and the like, Dr. Lewin says, can undo the damage done over long and short periods of improper sitting posture. So watch your feet when you sit down, keeping them flat on the floor.

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## RESOURCES

## Pulverized Coal Pumped Through a Pipeline Urged

**P**ULVERIZE coal at the mines, add water to make a sludge, pump the sludge through pipelines to the consuming end, remove the moisture and blow the pulverized coal into industrial furnaces. This suggestion was made by Prof. H. E. Babbitt of the University of Illinois.

This would cut the transportation cost in half, he said, and release rail facilities for war-time demands. Whether the cost of such pipelines would be prohibitive is a question on which he declined to comment.

Until now, pipelines have been confined to transporting liquids. A research on the flow of sewage sludges, recently completed at the University of Illinois by Prof. Babbitt and David H. Caldwell, special research assistant, has opened the way for pipeline transportation of any material that can be made into a sludge. Among many others, mixed concrete can be pumped through pipelines on construction jobs, such as big dams.

The research has provided tables and formulas for both steady and turbulent flow and other data which will help engineers to plan pipelines for solid materials. The results of the research have been published in two bulletins of the University's Engineering Experiment Station.

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# IN SCIENCE

## GENERAL SCIENCE

## Popular Science Books Issued in Bulk in Russia

**T**O MAKE the Russian people science-minded, the Soviet Union publishes popular scientific books in very large editions—700,000 copies of about 70 such books being scheduled for this year.

A report just received in the United States, describing 1941 progress of this popularization of science program before the present Nazi invasion began, says that members of the Soviet Academy of Sciences and other prominent scientists are among authors of the latest publications.

Especially popular, says the report, is a series on "Modern Problems in Science and Technics," which describes the latest achievements in chemistry, biology, physics, mathematics, geography, natural science, and engineering.

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## PHYSICS—RADIO

## Ultraviolet From the Sun Blamed For Poor Radio

**U**LTRAVIOLET rays from the sun are mainly responsible for poor radio reception when the sun is high, or when sunspots are many, it has been shown by measurements carried out by J. R. Ashworth, an English scientist. (*Nature*, Aug. 23.)

That ultraviolet light is the chief culprit has long been suspected because it is capable of producing changes in the upper atmosphere that are known to affect radio reception. But this had remained theory. The measurements of Mr. Ashworth now show it to be fact.

The quantity measured was the proportion of ultraviolet rays in the sunlight reaching the earth. This proportion was found to be less when the sun was high, less in summer than in winter, less when sunspots were plentiful, thus agreeing with the times when radio reception is poor. That the proportion of ultraviolet in the sunlight reaching the earth is less at those times means that more of it is used up in the upper atmosphere, in producing those changes that reduce radio reception.

*Science News Letter, September 27, 1941*

# SCIENCE NEWS LETTER

## PLANT PATHOLOGY

### New Plant Disease Attacks Mimosas

**M**IMOSA trees, widely planted for ornament and shade throughout the warmer parts of this country, are in danger from a new disease, combining symptoms of the plant diseases known as wilt and yellows. It kills a large proportion of the trees.

The new disease, described (*Phytopathology*) by Dr. E. Richard Toole of the U. S. Department of Agriculture, was originally discovered by a fellow worker in the Department, Dr. George H. Hepting, with headquarters at Asheville, N. C. It is known at present to be distributed from Virginia to Georgia.

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## ARCHAEOLOGY

### Prehistoric Indians Could Have Used Farm Relief

**F**OR WANT of something like modern America's alphabetic farm relief, Indian farmers of prehistoric America were repeatedly routed in the battle with drought in the central Great Plains. Highly organized help was out of the question in their day. They could only abandon corn patches and homes and retreat east when a blitzkrieg of dryness came.

So it appears from an enlightening study of Indian experiences at farming in areas of Kansas and Nebraska, by Dr. Waldo H. Wedel, Smithsonian Institution archaeologist. Dr. Wedel finds from buried remains that no less than four times Indians established farming settlements in the region, and later dryness temporarily choked the land.

It need not be assumed that any major change in climate occurred, the archaeologist points out. A few rainless years would have forced the Indians out, and modern farmers with whom he has talked say that five years of dryness are enough to kill grass and start serious soil damage. In the white man's farming, unwise spread of intensive cultivation into unreliable regions has been sometimes blamed for tragedy, but the plains Indians were small-time farmers

who put no such strain on the land.

The picture of prehistoric Indian farm economics in the area is still not completely clear, says Dr. Wedel in a report.

He concludes:

"It begins to look as though alternate settlement and abandonment was true of primitive man's occupation of the western plains just as it has characterized the subsequent white man's tenure where large-scale government aid was not forthcoming during periods of adverse climatic conditions."

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## NUTRITION

### Discovery of Eighth Vitamin B Announced

**D**ISCOVERY of a new vitamin, the eighth in the large group of B vitamins, was announced by Dr. Roger J. Williams, of the University of Texas, at the vitamin symposium at the University of Chicago.

The new vitamin is folic acid, taking its name from the Latin word for leaf because it is found in great abundance in leaves. Like the other B vitamins, folic acid is universally present in all animal tissues examined as well as leaves, Dr. Williams said.

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## ENGINEERING

### Danger of Static Reduced By Powder in Inner Tubes

**D**ANGER of fires and explosions on gasoline trucks and other motor vehicles, due to the building up of static electrical charges to the sparking point, is reduced by a very simple method, S. M. Cadwell, N. E. Handel and G. L. Benson of the U. S. Rubber Company told the meeting of the American Chemical Society in Atlantic City.

All that is necessary is to place in each inner tube a small amount of a special electrical conducting powder. The greater part of the static charge built up on a motor vehicle is due to the friction of tires on pavement, and is transferred from the tires to other parts of the car.

Fear of fire or explosion from static spark is the reason for the grounding-chains which practically all gasoline trucks trail. Frequently one gets an unexpected demonstration of the static capacity of a car on reaching for a door handle and having a nice, fat, blue spark jump out and bite a finger.

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## GEOLOGY

### Uncle Sam Takes Over Kentucky's Mammoth Cave

See Front Cover

**U**NDERGROUND RIVERS form sharp bends, just as surface streams do, Ranger Naturalist Arthur Lundahl tells a nice audience of one, in the depths of Kentucky's Mammoth Cave, as shown on the front cover of this week's SCIENCE NEWS LETTER.

The National Park Service is taking over operation of the famous cave in September, replacing a joint arrangement whereby sightseeing has been managed cooperatively by the State of Kentucky, the Mammoth Cave National Park Association, and the National Park Service.

The hikers are shown in Boone Avenue, one of the cave's longest, narrowest roads. The geology lesson is that long ago a river of ancient America ate away limestone in giant slow bites to form or enlarge such channels underground. Abandoning the Boone Avenue level, which is three levels down, remnants of the stream now flow five levels underground, as low as 360 feet from surface.

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## MEDICINE

### Vitamin B<sub>2</sub> May Be Cure For Lice, Bloodshot Eyes

**I**F JOHNNY gets lice in his hair, mother may in future abandon the fine-comb and start giving him doses of riboflavin, it appears from a discovery reported by Prof. Paul Gyorgy, of Western Reserve University, at a vitamin symposium at the University of Chicago.

Affliction with lice as well as a serious bloodshot condition of the eye sometimes leading to blindness are among the results of diets deficient in this vitamin, Prof. Gyorgy reported. Discovery of the eye condition resulting from lack of the vitamin, and its cure by doses of the vitamin, had previously been made by the U. S. Public Health Service.

At first when rats on a riboflavin-free diet were found to have lice, the condition (pediculosis) was not ascribed to the diet, but further studies showed that the laboratory rats never got the condition when they received plenty of the vitamin, and the lice disappeared from the other rats when they were dosed with riboflavin.

Best food sources of the vitamin are milk, liver, kidneys and eggs, Prof. Gyorgy declared.

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