

## ASTRONOMY

## 109 More Solar Eclipses May Be Seen This Century

► IF YOU missed seeing the two eclipses of the sun which took place this year, you will undoubtedly have another chance. There will be 109 more solar eclipses before the year 2000, reports Gordon Grant of Goodsell Observatory, Carleton College, Northfield, Minn.

Within the next 48 years, 35 total eclipses of the sun will be visible somewhere in the world, Mr. Grant states. Two annular eclipses have already occurred this year, and there are 32 more scheduled where the moon swings so far from the earth it appears to be smaller than the sun and thus does not completely cover it.

Three solar eclipses this century will be part total, part annular, for only part of the earth along their path will be near enough to the moon for the sun to be entirely hidden. In addition, there will be 39 partial eclipses of the sun, when the moon is a bit off-center as it passes between us and the sun.

The central path of few of these solar eclipses, however, will be visible from the United States.

The moon has not really been eclipsed this year, but there will be 72 lunar eclipses before the year 2000 rolls around. The moon will go entirely within the earth's dark shadow during 43 of these eclipses, but it will be only partially within for 29 of them.

In all, 181 more eclipses, most of them solar, are scheduled before the end of this century, Mr. Grant points out in *POPULAR ASTRONOMY* (Oct.).

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## NUTRITION

## Square Meal for Lunch Either at Home or School

► WHETHER JUNIOR and Sister come home for lunch or eat it at school, they need a square meal to nourish their active growing bodies and minds. The meal is square if it furnishes plenty of protein for growth and repair of the body, plenty of calories for the active school age, important minerals like iron and calcium, and the essential vitamins.

One way of insuring a square noontime meal, whether prepared at home or at school, is to follow the Type A lunch of the National School Lunch Program. This calls for:

1. One-half pint of whole milk as a beverage.

2. Two ounces of lean meat, poultry, fish or cheese, or one egg, or a half cup of cooked dry beans or peas, or four tablespoons of peanut butter.

3. Three-fourths cup of vegetables or fruit or both.

4. One or more portions of bread or muffins—or other bread of whole-grain cereal or enriched flour.

5. Two tablespoons of butter or fortified margarine.

The lunch can be served hot or cold according to the season and other circumstances. A hot lunch may taste better on a cold day, and the cold lunch may be more appetizing on the warm days of Indian summer. But the meal can be nourishing regardless of its temperature.

The phrase, "hot school lunch," dates back to 30 years ago when the food needs of growing children were not too widely known. Many people then got the mistaken idea that if the school lunch was hot, it was all right. The nourishing value was either not known or not given enough attention.

The famous Oslo breakfast which has done so much for the health of Scandinavian school children was a cold meal. But it included ample milk, cheese, bread and other sturdy foods.

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## MEDICINE

## Report Ways to Relieve Feet That Are Painful

► IF YOUR job calls for long hours of standing, you may be troubled by painful feet. Reason for it is the continuous strain on the arches, according to the Illinois State Medical Society. The pain results from the rigidity of the tissues and the spasm the muscles go into in their effort to overcome the strain.

One way to relieve the condition is to rest in bed, but this obviously is not practical for most persons. Another way is to have the shoes properly padded to change the strains and relieve them. This is best done under the supervision of a specialist who knows the anatomy of the foot and where strain comes from standing.

Some people have a painful foot condition known as "spurs." Lumps that look like small callouses are seen on the bone of the heel. This condition is often relieved by alternating each day a pair of shoes with different heel heights, thus removing the constant irritation caused by a rubbing shoe.

Pain in the feet at night often comes from disturbance of blood circulation. A contrast bath is advised to relieve this kind of pain. Use two pails, each big enough to put both feet in. Put hot water in one, cold water in the other. Place both feet in warm water for one minute, then in cold water for one minute. Keep up this alternating from hot to cold for 10 minutes. Massage and exercise also help.

Other causes of foot pains are shoes and stockings that do not fit properly and, in older people especially, arthritis.

If your feet bother you, you should see a doctor to learn the cause. Then proper treatment can be prescribed.

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# IN SCIEN

## METEOROLOGY

## Cold November Predicted For Two-Thirds of Nation

► THAT SUDDEN cold spell which hit the eastern part of the nation the first week of November was only a taste of more to come.

"Recurrent surges of cold air from Canada" are expected during the month of November to drive temperatures over most of the eastern two-thirds of the nation down below what is usually expected. This is the prediction of the Extended Forecast Section of the U. S. Weather Bureau for the rest of November.

The coastal areas along the Gulf of Mexico and the Atlantic will escape this colder than normal weather. There, temperatures are expected to be more like what usually occurs in November.

Greatest departures from normal—in a downward direction—are expected in the central plains and Great Lakes regions.

Rain and snow will follow the weather. They will exceed seasonal normals during November east of the Mississippi.

West of the Continental divide, November will be slightly warmer than usual. The Pacific Northwest and the northern plains areas can expect more rain and snow than normal for November. In the Southwest, subnormal or normal amounts of precipitation are predicted.

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## INVENTION

## Metal Sheets Perforated and Expanded in One Operation

► METAL SHEETS are expanded in length and drawn out into perforated sheets with diamond-shaped openings in a single operation by means of a machine into which the solid sheeting is fed at one end to come out at the other as slitted sheet or expanded metal. It can be used with other flexible materials.

In the machine a series of short cuts is made in the material along a line across it. Then another series of cuts is made a short distance from the first but with the centers of these cuts opposite the non-cut sections of the first line. Other alternating cuts follow in order.

The output end of the machine has rollers that rotate faster than the intake so that the cut material comes out in a stretched or expanded form. Inventor is Adam Ziska, Wauwatosa, Wis. Patent 2,565,641 was issued to him. Rights have been assigned to Research Products Corporation, Madison, Wis.

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# CE FIELDS

## DENTISTRY

### Lifetime Tooth Protection For \$2.10 Via Fluoridation

► FOR A couple of bucks a baby today can have lifetime protection of his teeth against decay. In round numbers, that is what it costs per person if the community fluoridates its water supply. More specific figures were given by Dr. Herman E. Hilleboe, Commissioner of Health for New York State, as follows:

Cost of fluoridation per person is five to 15 cents annually, depending on the amount of natural fluorine in the community water supply. Fluoridation, trials in some communities over the past several years show, will reduce the amount of tooth decay expected by about two-thirds. If a person lives to be 70 years old, which is about what children born this year can expect, he will receive for the total cost of \$2.10 an expected reduction of 67% in tooth decay.

Fluoridated water is water to which a small amount of a fluorine salt is added. There is no danger to health from this water if treatment is properly done. Children drinking this water from birth get enough of the fluorine to protect their teeth from decay to a large extent. Even older children get some benefit from such water. More and more communities are fluoridating their water supply.

"If this trend should continue," Dr. Hilleboe predicted, "we may reach a point where with the present complement of practicing dentists we may be able to treat such caries as may occur and reduce tooth mortality and untreated caries to a negligible level."

Dr. Hilleboe reported at the American Public Health Association meeting in San Francisco.

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## TECHNOLOGY

### Steel Shortage Partly Met By 11 New, Huge Furnaces

► ELEVEN HUGE new open hearth steel-making furnaces now in operation in Pittsburgh, capable of an output of 2,000,000 tons annually of steel ingot, will go far in relieving the present steel shortage due to emergency world conditions. The first heat of steel was tapped on Oct. 30 in public ceremonies dedicating the new plant.

This plant was built and will be operated by Jones and Laughlin Steel Corporation, the nation's fourth largest steel producer, and will increase the company's annual production of steel ingots from

close to 5,000,000 tons a year to 7,000,000 tons annually. Construction was started in May 1950 and was pushed to completion in record time because of the steel emergency. The tapping marks the first major increase in the country's ingot production since the Korean emergency.

Open hearth furnaces are the greatest steel producers of all time. During 1950, over 85% of the steel ingot production in the United States was from open hearths. The first basic open hearth furnace in this country was built in 1880. Since that time great strides have been made in developing more efficient and larger open hearth furnaces.

These new furnaces will go far in helping the American steel industry meet its own objective of producing this year 118,000,000 tons of steel. On Jan. 1, 1951, total steelmaking capacity stood at a little over 104,000,000 tons. Steel companies are currently engaged in the greatest two-year period of expansion in history.

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## PUBLIC HEALTH

### Preventing Disabilities Of Nation's Athletes

► A FOUR-POINT program for preventing many of the disabilities that are the hazards of an athletic career in school and among professional athletes was presented at the American Congress of Physical Medicine.

The recommendations in the program were drawn up by a team physician, an active athlete with a background of physical education and a physiatrist. They are Dr. Norman C. Ochsenhirt, professor of maxillo-facial surgery and anatomy at the University of Pittsburgh and chairman of the University of Pittsburgh Athletic Committee; Clifford D. Chambers, member of the pitching staff of the St. Louis National League baseball club; and Dr. Murray B. Ferderber, professor of medicine at the University of Pittsburgh School of Medicine.

Their recommendations follow:

"(1) We believe sound physical, emotional and vocational evaluation in the high schools, colleges, and professional ranks would facilitate selection. We admit that fewer athletes might be chosen, but contend that those unfitted for sports would thus be spared and our ratio of disabilities would be materially lessened.

"(2) We believe that athletes should be examined at the beginning and end of each season to discover any physical changes which might have arisen.

"(3) We believe that a complete lay-off at the end of any athletic season should be available, being equivalent to a vacation.

"(4) We believe that mimeographed, illustrated copies of exercises should be sent to players about a month before a 'season' begins."

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## MEDICINE

### Cortisone Restores Sight Lost in Mystery Disease

► A YOUNG woman who was "almost blind" and had to be led into the hospital regained 76% of normal vision after treatment with cortisone, famous anti-arthritis hormone remedy, Drs. Louis E. Siltzbach, Adolph Posner and Myer M. Medine of Montefiore Hospital, New York, report in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Nov. 3).

The patient was losing her eyesight and also had lost 20 pounds and grown quite weak during a six-month period because she was suffering from a disease known as sarcoidosis. This is a chronic ailment affecting lymph nodes, lungs, bones, intestines, spleen, liver and skin separately or in various combinations. No cause for the disease is known and so far no specific treatment has been known.

Early this year Dr. Maurice Sones and associates of Philadelphia reported improvement in two sarcoidosis patients after cortisone treatment. Improvement in six more patients, besides the woman who was going blind, is reported in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Nov. 3) by three other doctors. They are: Drs. Francis J. Lovelock and Daniel J. Stone of the Bronx Veterans Administration Hospital, New York, and Dr. Maurice J. Small of Halloran Veterans Administration Hospital, Staten Island, N. Y.

Sarcoidosis is believed by some authorities to be a form of tuberculosis. Since cortisone is bad medicine for TB, Dr. Small warns that it should be used carefully in patients with sarcoidosis.

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## ENGINEERING

### Warning Device for Buses Forestalls Brake Failures

► THERE WILL be less danger of accidents involving city buses with a new electrical device which gives warning of the loss of oil in their hydraulic systems and consequent brake failure and loss of steering power.

This alarm system has been thoroughly tested on buses in Miami, Fla., and in New York City. It is a product of the Bendix Aviation Corporation and was described to the American Institute of Electrical Engineers meeting in Cleveland by F. O. Wisman and W. E. Windsor of the Bendix company.

In the system, a sensory cartridge containing a thermistor is placed in the oil reservoir and connected in series with a battery and alarm lamp or buzzer. The thermistor is a device in which the electrical conductivity is radically influenced by temperature.

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