

## MEDICINE

## Anemia Patients Die From Not Keeping up Treatment

**T**HE LIVES of fifteen pernicious anemia patients were lost because of failure to keep up treatment with liver or liver extract, the annual report of President Alexander G. Ruthven of the University of Michigan showed.

Of 290 patients studied at the Simpson Memorial Institute of the university, 24 died during the year covered by the report. Twelve of these patients died of spinal cord degeneration, a condition frequently accompanying pernicious anemia. In a majority of the cases, the patients had discontinued the advised treatment, often over a long period. Nine died of accidents or diseases wholly unrelated to pernicious anemia. Three died of bronchopneumonia.

These three deaths and those from spinal cord degeneration could have been prevented, had the patients cooperated early and sincerely in the prescribed treatment with liver and vitamin, stated Dr. Cyrus C. Sturgis, director of the institute.

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## AVIATION

## Airplane Radio Freed From Ignition Interference

**A** METHOD of eliminating radio interference caused by an airplane's own engine is covered in a U. S. patent (1,893,287) granted recently to C. Francis Jenkins, Washington inventor who holds many patents on television and motion pictures.

"It has been customary," Mr. Jenkins explained, "to suspend a wire under the plane with a lead weight, a 'lead fish' attached to the free end thereof to hold it steady, and as nearly vertical as possible; or to fasten the antenna to a vertical mast carried by the plane. Antennae have also occasionally been fastened along the leading edge of the wings and from the wing tip to tail structure.

"All such antennae locations have serious interference from engine ignition radiation. For this reason costly shielding of the magnetos, the spark plugs and high tension leads must be employed to avoid ignition noises in the exposed antenna preventing voice reception aboard the plane, and seriously interfering with code reception."

Mr. Jenkins found that electrical high-tension radiation from the engine ignition system is spherically radiated,

and envelops the plane, and by exploration he has discovered that a radiation-free zone exists aft of the plane which probably results from absorption by the metal parts of the plane fuselage creating an electrical cone-shaped shadow free of interference behind the plane spreading out from a point directly behind the engine.

The Jenkins invention therefore holds the antenna axially in this zone by unreeing the antenna and permitting it to fly aft from the tail structure. A small celluloid ball or balsa-wood "fish" is attached to the end of the antenna so as to keep it horizontally taut in the electric shadow in the wake of the plane. The antenna in this position does not pick up any radiation from the ignition system of the engine.

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## PUBLIC HEALTH

## Influenza Deaths Threaten 1932 Good Health Record

**D**EATHS during the closing weeks of 1932, banner health year, increased in 85 cities of the country, due to the outbreak of influenza. The average death-rate for these cities increased from 11 per thousand for the first week of December to 14.7 per thousand for the week ending December 31.

During the corresponding period of 1931 and 1930, the death-rate was 11.5 per thousand. However, in the closing weeks of 1928 and the first ones of 1929, when the last influenza epidemic occurred, the death-rate rose from 12.6 early in December to 18 at the height of the epidemic. It is still too early for health authorities to know whether the increase will have a marked effect on the general health record for 1932, which, up to the outbreak of influenza, was remarkably good.

Influenza is now decreasing throughout the country, both in the number of cases and in the number of deaths, reports received at the U. S. Public Health Service indicate.

For the week ending January 7, the latest for which figures are available, 72,241 cases were reported. This is almost twenty thousand less than the previous week's total. Deaths for 85 cities of the country have also decreased from the year-end high of 14.7 per thousand to 13.6.

While the epidemic is not yet over, no more great rise in the number of cases is expected.

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# IN SCIENCE

## ENTOMOLOGY

## Grasshopper Menace Diminished in West

**G**RASSHOPPERS will not cause major crop damage in the West during the coming summer, unless unexpected weather conditions favoring them should occur. This is predicted as a result of the annual grasshopper survey of the bureau of entomology of the U. S. Department of Agriculture. The field research men of the bureau examine the soil in trouble-promising areas, counting grasshopper eggs and judging as well as they can the climatic conditions that favor or hinder their development when warm weather returns.

In only one state, North Dakota, is the egg count higher than it was in the fall of 1931, though there are local "bad spots" in a number of other states. In these places the farmers may again have to spread poison bran bait for the young 'hoppers, unless a cool, moist spring favors the development of parasites and fungus diseases and thus keeps the insects down by natural means.

The droughty summers of 1930 and 1931 favored the development of large numbers of grasshoppers, but the long, wet, somewhat chilly spring of last year tilted the balance in favor of the grasshoppers' enemies.

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## CHRONOLOGY

## One P. M. Would be 13 o'Clock to Royal Mail

**T**HE TIME designations of a. m. and p. m. will be obsolete and the hours run from 0 to 24 in British post offices if a proposal before the House of Lords finds approval. The movement for continuous numeration of the hours has the support of Sir F. W. Dyson, the astronomer royal, who says that there is no valid objection to the 24 hour system which is less confusing and has been in use on the European continent for a long time. Astronomers and other scientists already use the 24-hour notation, with 0 at midnight and 13 o'clock corresponding to old-fashioned 1 p. m.

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# CE FIELDS

## GEOGRAPHY

### New National Monument Near Grand Canyon

**A** NEW national monument has been set apart on the Grand Canyon of Arizona, about fifty miles downriver from the point in Grand Canyon National Park now most visited by tourists. The new area, which will be known as Grand Canyon National Monument, comprises a total of 392 square miles, and has one magnificent vantage-point from which one can look down on the Colorado, winding its way at the bottom like a silvery ribbon. From most points on the rim in the present Grand Canyon National Park the river is quite invisible.

Another feature of the new National Monument is a volcanic cone, thrown up in some long-past time and now wholly extinct. It bears the imposing name of "Vulcan's Throne."

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## ENGINEERING

### Four-Fifths of All Autos Indicated as Dangerous

**S**EVENTY-NINE per cent. of all automobiles in operation are so out of repair that they are dangerous on the highway.

This interpretation might be put on the results of an examination of 2,134 cars voluntarily submitted to Prof. R. A. Moyer, highway engineer at Iowa State College, Ames, Iowa. Since the cars had an average age of about three years and mileage of 30,000, they were considered to be average automobiles.

The most common fault Prof. Moyer found was in distribution of braking power. Of 1,686 cars failing to pass the test, 45 per cent. had poor distribution of braking power. Prof. Moyer rejected cars for this fault when there was a variation of 40 per cent. or more between braking power of the front or of the rear wheels.

Bad headlights, in which the beam of light was elevated too high, were found on 42 per cent. of the total. Twenty-three per cent. of the cars had no stop

lights, or had stop lights which were not in working order. Headlights on 18 per cent. were out of focus, while 12 per cent. had no headlight dimmers.

Front wheels of 13 per cent. were found to be out of line, a fairly common cause for accidents, according to Prof. Moyer. Rear wheels were found out of alignment on two per cent.

Seven per cent. of the cars tested had no parking lights, and tail lights did not work on six per cent. No windshield wipers were found on four per cent.; steering gears were loose on three per cent.; horns were missing or did not work on two per cent.; headlight power was weak on two per cent.; tires were worn smooth on two per cent.; while another two per cent. had no rear vision mirrors.

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## GEOPHYSICS

### Underground Gold Sought By Electrical Method

**G**OLD has recently become an object of search by the geophysicist, who, by manipulating electrical devices on the surface, is able to tell where wealth is likely to be found far underground.

The latest developments of geophysical instruments make the search for gold-bearing quartz veins possible, Sherwin F. Kelly, consulting geologist and geophysicist, reported to the Science Forum of the New York Electrical Society.

"Heretofore," Mr. Kelly explained, "variations in the electrical resistance of rock and soil above suspected quartz have masked the very slight differences in resistance between quartz veins and the enclosing rock. Improvements now make it possible to eliminate these surface variations and thus unmask the slight variations in electrical effect of the underlying material."

He cautioned that it is still impossible to tell whether or not the quartz contains gold. The method should only be applied, it was pointed out, in regions where quartz veins are known to be gold-bearing as an intermediate stage between the first geological reconnaissance and diamond drilling.

Mr. Kelly also described methods that have been used to locate other forms of gold deposits. Placer deposits have been found magnetically because they are often accompanied by so-called black sands, consisting of particles of magnetic iron ore, he said.

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## PHYSICS

### Cosmic Rays May Be Born of Neutral Rays From Stars

**A** NEW THEORY of the origin of cosmic rays has been suggested to the American Physical Society by Dr. Ross Gunn of the U. S. Naval Research Laboratory, Bellevue, D. C.

Out in the stars that are still young there are born in great "star-spots," like sunspots on our sun, negatively charged ions or electrons which are given great energies. These pass through the outer layers of the star and each picks up a positive ion, and the two together form an energetic neutral pair of some 10 to 100 thousand million electron volts. When such particles hit the earth they become separated in the upper atmosphere by electromagnetic forces or collisions and become the cosmic rays.

Such neutral pair particles which are fathers to cosmic rays are uniformly distributed in space, Dr. Gunn believes, thus accounting for the cosmic radiation coming from all directions. The sunspots give rise to weaker neutral radiation which gives rise to the aurorae and magnetic storms but are not powerful enough to generate cosmic rays, Dr. Gunn's theory holds.

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## ARCHAEOLOGY

### Seven Sleepers' Catacombs Explored by Archaeologists

**ONE OF THE** most venerable of Christian legends, running back through the middle ages into late antiquity, is that of the Seven Sleepers of Ephesus; seven youths who hid themselves from the persecution of a pagan Roman emperor, and awoke two hundred years later to find the empire Christian. Then, the story continues, they joyously went to sleep again.

Although the sleeping place of the seven young men is indicated as a cave in the usual version of the legend, there is a catacomb in Ephesus in Asia Minor which is also known by their name. Perhaps it was dedicated to them by a later generation, or it may be an older catacomb that was renamed in their honor. During recent months this "Catacomb of the Seven Sleepers" has been opened up and explored by a European archaeological expedition, in the course of a comprehensive excavation of this famous city of classical and New Testament antiquity.

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