

## PUBLIC SAFETY

**Quick, Convenient Test For Drunkenness Urged**

**W**HAT traffic and police officers need to check drunken driving is a quick, accurate and legally accepted test to tell when a driver is intoxicated. This is the consensus of opinion expressed at the meeting of the Highway Research Board of the National Research Council.

The report of the committee on traffic, whose chairman is W. A. Van Duzer, director of vehicles and traffic of the District of Columbia, revealed new findings about intoxicated drivers and accidents.

While intoxication is listed as the cause of only 10 per cent. of all accidents reported to the police, the committee's report states there is almost a certainty that the figure is too low due to the underreporting of drunkenness as a cause of accidents.

A study made independently at Uniontown, Pa., has shown that alcohol can be detected in the blood of nearly half the people taken to hospitals after accidents there. The committee withheld comment on this finding but urged that similar investigations be made through the country to check the results obtained.

How widely divergent is public opinion about drunken driving as judged by the laws on the subject, is shown by the fact that penalties may vary in fines from one cent to \$300 and in imprisonment from one day to five years.

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## PHYSICS

**Electric Eye Helps Make Straight Stamps**

**A** POSTAGE stamp is just a stamp to most people—something that goes on a letter or parcel and nothing more—but to the great army of stamp collectors a postage stamp is a sort of work of art in which perfection is of tremendous importance.

The collectors, in their ardor for stamp perfection, have bombarded the U. S. Bureau of Printing and Engraving, which prints the Nation's stamps, with thousands of complaints, requests, and suggestions. They were not unheeded.

Alvin W. Hall, director of the bureau, has revealed that because of the

many complaints by collectors about stamps being out of alignment, Henry Holtzclaw, one of the bureau's engineers, has been assigned to the task of straightening the alignment of stamp perforations. In two years of work the engineer has achieved remarkable results with photoelectric cells.

These cells, acting on the opposite borders of stamps, serve as automatic eyes. The moment the perforator veers from center, the cells activate a series of compensating mechanisms which put the perforator back on the right line. Director Hall believes success is near.

These perforators during the last fiscal year, in helping to get out 12,000,000,000 United States postage stamps, punched 370,000,000,000,000 (370 trillion) holes along the borders of the stamps. The paper which fell from the holes weighed 35 tons.

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## SEISMOLOGY

**Earth Sent Own Messages On Recent Earthquakes**

**E**ARTH'S rigid rocks, and its iron core, proved faster messengers of the Chilean and Honduran earthquakes than did the wires man strings along the surface. The Honduran earthquake occurred on the night of Sunday, Dec. 2. Early on Monday morning telegrams began to arrive in Washington, informing the U. S. Coast and Geodetic Survey and Science Service of the records traced on seismographs of observatories all the way from Tucson, Ariz., to San Juan, P. R., and making possible the location of an epicenter in Honduras. Only on Tuesday, Dec. 4, did meager reports trickle through a patched-up communication system to tell the world of wreckage in the interior of the Central American country.

Similarly, instrumental reports of the Chilean earthquake were in the hands of scientists in Washington, D. C. some hours before telegraphic reports of damage in the northern mountain provinces came through.

The seismographs also brought news of a Thanksgiving evening earthquake centered in the seismically active Colima area on the west coast of Mexico.

The instrumental reporting of earthquakes is maintained through a cooperative arrangement of the U. S. Coast and Geodetic Survey, Science Service, the Jesuit Seismological Association and numerous universities.

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**IN SCIENCE**

## ICHTHYOLOGY

**Factory Wastes Made Harmless to Fish**

**W**HAT is believed to be the first adequate method of stopping sporadic fish killing in Michigan streams has been perfected and installed by the Chevrolet Motor Company, at Flint, through direct treatment of cyanide-bearing wastes before being discharged from the plant into the Flint river.

The automobile concern has installed the equipment in cooperation with the Michigan State Department of Conservation and the Michigan State Stream Control Commission.

Solutions containing cyanide are used in most metal-cleaning processes, and a number of fish killings have occurred in various parts of the state in the past five years as a result of discharge of the highly toxic waste.

The equipment consists of a rubber-lined steel tank forty feet in length, five feet wide and four feet high. Cyanide-bearing wastes on being received in the treatment tank are first neutralized with acid. The mixture is then aerated and the released gases are collected under a hood. They are finally discharged into the air under forced draft through a sixty-foot stack.

The waste water then may be dumped into the streams without harmful effect.

The installation is the result of a cooperative research effort conducted by agencies of the University of Michigan and the Michigan State College.

Dr. Carl L. Hubbs, director of the Institute for Fisheries Research at the University museum, undertook experiments in 1932 to arrive at the strength of cyanide solution that would prove non-toxic to fish. He also found that when such solutions are aerated they become much less toxic to fish.

The engineering experiment station at Michigan State College has published the results of the studies and conclusions of E. F. Eldridge, of the station, pointing to the method of treatment adopted by Chevrolet, which consists of neutralization and aeration.

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# CE FIELDS

## ARCHAEOLOGY

### Dunes at Rome Seaport Yield Gorgon Slayer Statue

**S**AND dunes along the coast of Ostia, ancient seaport of Rome, have given up a marble statue of Perseus, famed Gorgon slayer.

The statue shows the slayer of the Gorgon Medusa, not a bearded man with a horned helmet, as he has come to be well known through other sculpture, but a curly-headed youth holding the snaky Medusa head which he has chopped off. The marble is well preserved, only one forearm and the feet being missing.

The statue bears some resemblance to the Hermes of Praxiteles, and is thought to be from the Greco-Roman period.

To house discoveries being made at Ostia in various excavations, a museum of antiquities is shortly to be opened.

Recent finds include fragments of inscriptions of the Chronicles of the City of Rome, dating from A.D. 152. The fragments tell of amphitheater shows in Rome, a victory of Emperor Antoninus Pius over the Parthians, and the lavish gift of a citizen of Ostia towards the building of the basilica there.

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## PHYSIOLOGY

### Normal Stature Depends On Balance of Two Glands

**D**OES normal stature depend on proper balance between the big thymus gland in the chests of growing children and the tiny pineal gland in their heads?

Evidence that it does was presented by Dr. Leonard G. Rowntree of the Philadelphia Institute for Medical Research before a group of physicians. He is the leader of a research team which has done most to solve the mystery of what these two little-understood glands are good for.

Dr. Rowntree and associates have produced a dwarf race of rats by treatment with pineal gland extract. Last

spring they demonstrated that treatment with thymus gland extract speeded up growth and development in rats at an amazing rate, although it did not produce giants, Dr. Rowntree said at that time. (See *SNL*, Apr. 7, May 12, Oct. 13)

"These glands are concerned in the growth of the young and have hitherto not received the consideration in biology and medicine that seems warranted."

Dr. Rowntree showed a picture of Alice-in-Wonderland with a magic mushroom. If she ate from one side of the mushroom she became a giantess. If she ate from the other side she became a dwarf. The action of the thymus and pineal glands Dr. Rowntree likened to this fable.

Associated with Dr. Rowntree are Dr. A. M. Hanson of Faribault, Minn., who made the thymus extract used in the research on that gland, and Dr. J. H. Clark of the Philadelphia Institute for Medical Research.

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## PHYSICS

### Oxygen Squeezed From Air By Cooling With Liquid Air

**A**PPARATUS for making oxygen squeeze itself out of the air at temperatures of 297 degrees below zero Fahrenheit was demonstrated before the meeting of the American Physical Society by Prof. Charles T. Knipp of the University of Illinois.

By cooling one spot of a glass container of colorless oxygen gas with liquid air at a temperature of minus 310 degrees Fahrenheit, Prof. Knipp was able to turn the gas into its liquid form and obtained a pale blue oxygen fluid. Liquid air is cold enough to liquefy oxygen, Prof. Knipp pointed out, because four-fifths of air consists of nitrogen which liquefies at minus 319° F.

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## MECHANICS

### Birth of New Mechanics Journal Expected in March

**B**IRTH announcements of the expected appearance next March of a new quarterly engineering publication, *The Journal of Applied Mechanics*, are being circularized by the American Society of Mechanical Engineers. It will be devoted to the engineering fields of mechanics, elasticity and dynamics. J. M. Lessells will be technical editor.

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## GEOLOGY

### Automobile Radio Finds Geologic Structures

**W**HEN you park your car in a lonely but rustic spot along a road for a picnic or otherwise, and are unable to tune in on your favorite radio station with your automobile radio, get out and study the geology of the region, for you may discover an explanation there. Dr. Ernst Cloos, geologist of the Johns Hopkins University, has found that an ordinary automobile radio set may be an aid in geologic mapping by locating such "dead spots." (*American Journal of Science*.)

The phenomenon of fading of certain frequencies has been often observed by motorists driving along a road with the radio tuned to a certain wavelength. It can usually be explained by overhead electrical wires, railroad crossings, overhanging and wet trees. But when these outside influences can be eliminated, and the "dead spot" continues to exist after repeated observations, geologic irregularities at the surface and beneath may be suspected.

Dr. Cloos has found, after numerous observations, that a fault which has brought two different rock masses against each other, or a rock boundary between different formations, or steeply dipping geologic structures, offer the most favorable conditions to produce "dead spots."

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## PHYSICS

### Iodine and Bromine Made Radioactive Artificially

**U**SING super-penetrating X-rays with energies equivalent to 1,500,000 to 2,000,000 volts, neutrons have been obtained from the element beryllium, Prof. F. L. Hopwood, of famous St. Bartholomew's Hospital, London, announced on behalf of himself and six collaborators in London and Berlin (*Nature*, Dec. 8).

With these neutrons as bombarding particles, both iodine and bromine have been made radioactive by the artificial means. The half period of the radioactive iodine—its rapidity of decay—is thirty minutes, Prof. Hopwood reports.

Two types of radioactive bromine were produced, one with a half period of thirty minutes and another with a half period of six hours.

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