

## RADIO

## Radio Relay League Gets Ready for Spring Floods

THE END of winter brings the greatest hazard to the nation's communication channels. Floods, hurricanes, sleet storms and the other queer twists of the weather destroy wires and break the vital lines of communication during periods of greatest peril.

The disastrous Ohio River flood of last year has touched off the long-awaited spark needed to organize amateur radio on a nationwide basis, states the American Radio Relay League, at its headquarters in West Hartford, Conn. Already some sixty emergency coordinators of amateur radio have been appointed in sizable communities. The coordinators' job will be to organize their regions so that when floods or other catastrophes occur the amateur radio networks can go into effective action and carry the burden of communications traffic.

For two decades, notes the League's magazine QST editorially, the radio amateur has served emergency communication. Feats of personal heroism have been numerous. Occasionally small groups have joined forces. But there have been cases where delay, confusion, duplication of effort and all the other troubles have occurred. It is to prevent such happenings in the future that the present plans of the League are now being effected.

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## PHYSIOLOGY

## Vital Chemicals Made to Put Selves On the Spot

CERTAIN chemicals, among them phosphorus and the sodium of common table salt, are vitally needed by the body. Medical scientists have known this for some time from observing the disastrous results that occur when these chemicals are lacking from the diet which is the normal source of supply.

Knowledge of the part these chemicals play in the body—phosphorus as an aid in bone-building, for example—has been gained by examining and analyzing the bones and other body tissues after death, and correlating these observations of the amounts of each chemical in the various tissues with the observations of what happens when an animal is deprived of them.

Now scientists can get much more direct information about what happens

to some of these chemicals in the body and what they do there. The chemicals are made to put themselves on the spot and show where they are from the moment of entering the body until they leave it. This is done by adding to the substance under observation a bit of the same material, made artificially radioactive. That bit of material can be detected by the powerful rays it is constantly giving off, just as radium itself can be detected by its rays.

There is no danger from the artificial radioactive substances because they lose their radioactivity in a short time—14 hours in the case of radiosodium. In fact, this makes it necessary for very fast team work between the physicists who endow sodium or phosphorus with radioactivity and the medical scientists who use it for physiological studies.

Besides observing how substances such as phosphorus and sodium are used by the body, scientists, by tagging them with radioactive material, can learn how they are changed by disease and can check on radioactive treatment of cancer. Radioactive substances for such studies are now being produced in quantities by the University of California cyclotron under the direction of Prof. E. O. Lawrence.

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## ANIMAL HUSBANDRY

## Green Winter Fodder Grown Indoors in Trays

GREEN fodder for winter feeding to livestock is made from seeds in only six days in a device of British invention now being demonstrated at the New York Museum of Science and Industry at Rockefeller Center.

The "fodder factory" consists of an insulated cabinet containing a series of perforated trays. In these are placed quantities of grain, legumes, or other seed, after soaking for 24 hours. The trays are kept at constant temperature, and watered from the top.

At the end of six days, when the sprouts have reached a height of six inches, the entire contents of the trays—sprouts, soft seeds, and roots—are fed to the livestock, which relish the succulent fodder.

A larger cabinet than the one on display in New York is being tried out on a working scale at a large dairy farm in Connecticut. The "fodder factory" is an invention of Capt. H. H. B. Lund, of England.

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# IN SCIENCE

## EXPLORATION

## Famous Russian Chemist Suggested Ice-Breaker

THE LENINGRAD State University has prepared for publication a memorandum by Russia's world-famous nineteenth-century chemist, Dmitri Ivanovich Mendeleev, advocating the use of an ice-breaker in an attempt to reach India from Russia by sailing around the north of Asia, Tass states.

The memorandum was addressed to Count Serge Julievich Witte, Russian statesman who was finance minister from 1893 to 1903, and prime minister of the Czar's government after the 1905 revolution. It contains a history of attempts to reach India by the northern sea route and asks for an ice-breaker to be placed at Mendeleev's disposal or for permission for the scientist to build one. The manuscript is supplemented by a design of an ice-breaker with special devices for crushing ice, designed by Mendeleev himself.

Mendeleev is noted throughout the scientific world as the chemist who drew up the periodic arrangement of the 92 elements; his achievement is ranked as one of the outstanding in the history of science.

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## MEDICINE—PHYSICS

## Largest Cascading Transformer Assembled

ENGINEERS at the Los Angeles Institute of Radiology are assembling the world's largest cascading transformer to step up power obtained from local power supplies to 1,000,000 volts to produce penetrating X-rays.

Five separate transformers, each stepping up the current by 200,000 volts, will be linked in series to produce a current that will generate extremely "hard" or short X-rays, useful in treating cancer. Only the penetrating short rays are useful for cancer, and the higher the generating voltage, the greater the percentage of the desired radiation. The installation is being made by Westinghouse engineers.

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# E FIELDS

## MEDICINE

### \$10,000 For Prizes in Research on Diseases

**M**ORE than \$10,000 will be awarded in 1940, and similar prizes every seven years thereafter, by the American Academy of Arts and Sciences. The prize is to be awarded "for outstanding work with reference to the alleviation or cure of diseases affecting the human genital organs."

The award will be known as the Francis Amory Septennial Prize and is made in compliance with the requirements of a gift under the will of the late Francis Amory of Beverly, Mass.

No formal nominations, treatises or essays are required, but the Amory Fund Committee invites suggestions for the first award in 1940. It rests with this committee to decide whether the award shall be made at the end of any of the seven-year periods, and whether they shall be given to one or more individuals.

Further information may be obtained from the committee at 28 Newbury St., Boston.

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## ETHNOLOGY

### Irish Missionaries Spoke Own Language in Germany

**I**RISH missionaries who came to central Germany from the sixth to the eighth century, bringing the gospel that St. Patrick had carried to them still earlier, had no difficulty in making themselves understood. There were plenty of people in Germany at that time who spoke a Celtic language very similar to ancient Gaelic, is the belief of Prof. Emil Menke-Gluckert of the Dresden Technical College.

Evidence is scrappy and scattered, but in Prof. Menke-Gluckert's opinion sufficient. There are numerous place-names in central and western Germany that can be traced to a Celtic origin. A record of a notable sermon by a preacher named Gallus includes the statement that afterwards it was "interpreted" to a German-speaking audience at Constance by another priest; if Gallus had spoken Ger-

man, the services of an interpreter would not have been needed.

A telling point, the German scientist feels, is the total absence of any Celtic-German dictionaries or grammars dating from that period. Such bilingual aids are always among the first books developed in any foreign missionary effort. The only books of that date are Gospels and other devotional works in Latin, with glosses or marginal notes in Gaelic, never in German.

It is well known, of course, that the pre-German population of the Rhine and Danube valleys was Celtic. Prof. Menke-Gluckert's hypothesis is that when the conquering Germanic tribes moved in, they made themselves into an aristocratic class of masters, under whom the descendants of the original owners of the land lived as an inferior class, speaking their own language. Only after the rise of a dynasty of Frankish Christian kings who sought closer contact with Rome, he says, did the common use of the Celtic language, and with it the predominant influence of Irish missionaries, die out among the mass of the populace.

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## PHILOSOPHY

### Mental Expenditures Needed For Moral and Social Ends

**F**REEDOM of the human mind and the extension of its powers in the fields of religion, education, social institutions and personal relationships are urged as necessary to save civilization by Dr. Joseph K. Hart, of Teachers College, Columbia University.

The world today is half dogmatic and half experimental, Dr. Hart complains. The dogmatic half does not hesitate to make use of the machines, tools, and especially the weapons developed by the experimental half but fails to allow the extension of experimental methods into their own realm. The result, he foresees will be the use of the tools of research for the destruction of man and an eventual surrender of intellectual freedom in a world of stultifying despotism.

As a way out, he proposes matching the expenditures of mind for more than three centuries on natural theories, inventions and technologies, with an equal expenditure of mind in social and moral directions.

"In no other way," he says, "can social progress overtake material development and give to research technology the social direction that it has lacked these three hundred years."

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## DOCUMENTATION

### Documentation Conference To Be Held in Oxford

**W**ORLD problems in documentation will be discussed at an international conference to be held at Oxford next September, Dr. S. C. Bradford of the Science Museum Library has announced.

Sir William Bragg, president of Britain's Royal Society, will be the president of the conference, which will be the fourteenth international gathering under the International Federation for Documentation, the organization which binds together those national associations devoted to the organization of knowledge in its broad aspects.

Specialists from many countries are expected to attend to read papers and discuss classification of knowledge, microfilming, archives, bibliographies, and many other subjects.

The World Congress of Documentation held last August at Paris asked the International Federation for Documentation to widen its scope and this year reports on the present state of bibliographical work in such fields of learning as archaeology, economics, history, linguistics, in addition to the natural sciences, are expected.

The international conference will be held Sept. 21-26, just prior to the meeting of Britain's national documentation organization, the Association of Special Libraries and Information Bureaux.

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## ARCHAEOLOGY

### Greek Acropolis Found Near Port of Marseilles

**F**OUNDATIONS of a Greek acropolis have been discovered near Marseilles by Henri Roland, archaeologist, of Saint-Remy.

The acropolis consists of a fort, apparently built by the Greeks who founded Massila, later Marseilles. The fort would have served to defend the plateau from invasion, and to cut off passage towards the north.

Greek coins from the period between the sixth century B. C. to the Christian era have been unearthed at the ancient fort, and also many pieces of broken pottery.

Archaeologists attach special interest to the discoveries, since ruins of the time of Greek influence in southern France are rare.

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