

## ENGINEERING

**Gas Alarm Like Fire Alarm Recommended for Schools**

**T**HE EQUIPPING of gas-heated schools with a gas alarm that would ring a bell and allow the pupils to troop out as in a fire drill is recommended by Dr. David J. Price, U. S. Department of Agriculture explosives expert, in a report just transmitted to the Governor of Texas by Secretary Wallace. He investigated the recent Texas explosion.

Dr. Price's first recommendation was that law require the use of an effective malodorant in natural gas so that the nose could detect a leak of natural gas that in its natural state is practically odorless.

*Science News Letter, April 10, 1937*

## ORNITHOLOGY

**Who Are Your Bird Tenants? Census of Nests Planned**

**B**IRDS are building nests again. How many, and what kinds, are nesting in your neighborhood? Science wants to know.

The first nation-wide census of nesting birds, to be taken by cooperating bird students everywhere, is announced by William Vogt, editor of *Bird Lore*, official magazine of the National Association of Audubon Societies. During the spring and early summer the volunteer census-takers will do their work, and in the October issue of the magazine the results will be published.

Methods of taking the census, as outlined by Mr. Vogt, indicate that it is a job only for the thorough and patient student of nature. The enumerator must select a definite area, from 15 to 150 acres in extent, and make a freehand sketch map indicating its principal features, vegetation type, and so on, and he must spot in every nest of every kind of bird in it. Where nests are too well hidden to be actually discovered, certain other criteria are accepted.

At least five times during the breeding season, at five-day intervals, the territory has to be gone over carefully, and every change in status of nests, bird pairs, unmated males, and other details noted. An abbreviation summary method prevents the records from becoming too bulky.

It is anticipated that the census will be repeated every year, so that study areas are to be chosen with this in mind.

In addition to the magazine publica-

tion of the census summary, the individual record maps are to be made available photographically in microfilm form by the system inaugurated by Science Service. They will thus be collected and kept on file in one central place, and copies can be made quickly and at low cost for anyone, anywhere in the world, who wishes to study the detailed records.

*Science News Letter, April 10, 1937*

## PHYSICS

**New Clue to Atom's Heart From Artificial Element**

**A** STARTLING new clue to the puzzling structure of the nucleus of the atom was revealed to scientists at Harvard University's Croft Laboratory by Dr. J. D. Cockcroft, distinguished British physicist.

The clue was contained in an experiment Dr. Cockcroft and his associates recently completed at the Cavendish Laboratory, Cambridge, England, the first ever conducted in which the emission of heavy particles has been detected from an artificially produced radioactive substance.

Particularly impressive was Dr. Cockcroft's unexpected finding that these heavy particles possessed a continuous energy distribution, something never previously discovered in reactions of this type.

Dr. Cockcroft's experiments concerned the disintegration of radio-lithium, an artificially radioactive substance produced by bombarding a lithium isotope of mass seven with nuclei of heavy hydrogen atoms, an accepted experimental procedure in science's attempts to unravel the secrets of the atom.

Not expected, however, was Dr. Cockcroft's finding that "this radio-lithium breaks up apparently not into stable beryllium of mass eight but in general into a beryllium with a surplus of energy—an excited beryllium eight nucleus.

"This nucleus," he declared, "subsequently breaks up into two beryllium nuclei which may each have as much as six million volts energy but in general have less." These are the unexpected heavy particles.

The implications or theoretical explanations of the discovery are not yet clear, although it is expected eventually to be of considerable significance. Dr. Cockcroft believes "it may be necessary to assume that the beryllium nucleus of mass eight can exist in one or another of such excited states."

*Science News Letter, April 10, 1937*

**IN SCIENCE**

## ORNITHOLOGY

**Hawk-Eagle of Africa Sought by Falconry Expert**

**H**UNTING birds such as medieval knight never dreamed of will be the objective of an expedition into Africa to be made by the English falconer, Capt. C. W. R. Knight, under the auspices of the National Geographic Society.

The birds are the crowned hawk-eagles, large birds of the South African forest. They are big, heavy, ferocious; their very appearance inspires terror. A favorite prey is monkeys; simian skulls frequently litter the ground beneath their nests. They kill with a sudden blow of their large feet.

Perched within a blind in a lofty tree opposite the nest of one of these birds, Capt. Knight will study them from egg to adult, and will use up many feet of motion picture film in obtaining a graphic supplement for his notes.

*Science News Letter, April 10, 1937*

## MARINE BIOLOGY

**Last of Square-Riggers Hunts Crabs for Science**

**L**AST of the famous old square-rigged ships, the *Joseph Conrad*, G. Huntington Hartford, owner, is sailing the Spanish Main in search of—crabs.

But it is no comedown from a romantic past for the *Joseph Conrad*; the cargo of crustacea with which she will return will never see any prosaic market or commonplace kitchen. These rare forms of pincer-clawed, many-legged life are sought for scientific museums. In charge of the scientific personnel of the expedition is Dr. Waldo L. Schmitt of the Smithsonian Institution, with G. Robert Lunz, Jr., of the Charleston, S. C., Museum, as associate.

Mr. Hartford, who recently purchased and completely refitted the old ship, has a special interest in sailing ships and in the history of piracy in the West Indian waters. By a fortunate coincidence, pirate-hunting and crustacean-collecting are both excellent in the shoaler waters of the West Indies. The expedition expects to be out about two months.

*Science News Letter, April 10, 1937*

# E FIELDS

## GEOGRAPHY

## China's Famine Area Resembles Our Plains

CHINA'S appalling famine, that is claiming thousands of lives in Honan and Szechuen provinces, is caused by climatic and geographic factors very similar to those operating in western parts of the United States. These provinces of China, like the Great Plains area in our own country, are on the leeward side of great mountain barriers and the far end of a long journey of the prevailing winds. They are therefore regions of low rainfall in normal times, because most of the moisture has been squeezed out of the air masses before they reach this part of Asia. Even a slight decline in a season's precipitation brings the menace of drought.

To these conditions must be added a factor that is less important in the United States. Although these interior provinces are not so densely populated as the swarming areas nearer the coast, they are still far more thickly peopled than our own Plains region. Therefore a shortage following severe drought makes itself felt immediately. The people, so to speak, always have their mouths within an inch of the grass roots—there the "ever-normal granary" is one that is permanently almost empty. Furthermore, transportation lines such as in this country rush supplies into a drought-stricken area are almost lacking in China. Without a local food reserve, with no effective means for bringing in outside supplies, drought means immediate disaster.

*Science News Letter, April 10, 1937*

## MEDICINE

## Insulin Finds New Use In Relief of Asthma

INSULIN, life-saving remedy in diabetes, has been put to a new use in the treatment of asthma. Results of this treatment are reported by Dr. Jakob Wegierko, physician-in-chief of St. Stanislaus Hospital, Warsaw, in the Austrian medical journal, *Wiener Klinische Wochenschrift*.

By giving enough insulin to produce

insulin shock the shortness of breath of the asthmatic is quickly relieved in most cases. After several insulin-shock treatments, Dr. Wegierko reports, the nature of the asthmatic attacks is changed. They are less severe, occur less often, or disappear altogether.

Insulin shock occurs when so much insulin is given that the amount of sugar in the blood is rapidly reduced below normal. The patient becomes very weak, has an unsteady gait that may be mistaken for a sign of drunkenness, and rapidly reaches a critical condition unless the shock is counteracted by a dose of sugar.

In using insulin shock for the treatment of asthma, the dose is calculated so that the amount of blood sugar is only reduced to about half the normal amount. As soon as the treatment has begun to take effect and the breathlessness has been relieved, a dose of dextrose or grape sugar is given.

In mild cases, Dr. Wegierko gives the insulin-shock treatment every 3 or 5 days. In severe cases he gives it oftener, even as often as twice a day. In 96 per cent. of the patients weakness and sleepiness followed the treatment. In 40 per cent. there was perspiration and in 10 per cent. trembling and palpitation. In a few cases more serious symptoms followed the shock.

How insulin shock, which has recently been used also in the treatment of the mental disease, schizophrenia, acts to relieve asthma is not exactly known. Dr. Wegierko thinks it relieves the asthma by affecting the vegetative nervous system in such a way as to relieve the spasm of the bronchial muscles.

Dr. Wegierko plans to try the effect of insulin-shock in cases of gallstones, kidney colic and migraine headaches due to blood vessel spasm.

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## ICHTHYOLOGY

## Huge Shark Killed When Rammed by Steamer

KILLED when accidentally rammed by the Pacific steamer *Maunganui* a whale shark estimated as 55 feet long has been reported to Dr. E. W. Gudger of the American Museum of Natural History by Third Officer S. H. Crawford. Dr. Gudger has relayed the information to *Science* (Mar. 26).

The ship was steaming at 16 knots when it struck, and it was necessary to reverse the engines before the enormous carcass could be cleared of the bow.

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## PSYCHOLOGY

## Brain Changes Alone Won't Bring on Senility

WHEN old people have failing minds, changes have occurred in the brain itself. But these changes do not tell the whole story of the senility, Dr. D. Rothschild concluded from a study of old people at the Foxborough, Mass., State Hospital.

All cases of senile psychoses are accompanied by changes in the brain, but other old persons who are perfectly normal mentally also show the age-induced changes. No relation seems to exist between the extent of brain changes and the deterioration of the intellect.

Those who retain a clear mind seem to have a capacity to compensate for the changes of age which is lacked by those who become senile. Inability to meet personal problems such as financial losses, breaking up of home, or placing in old persons' home, may be the crucial factor that impairs this ability to compensate and leads to the development of a senile psychosis, Dr. Rothschild suggested in his report to the *American Journal of Psychiatry*. (January). *Science News Letter, April 10, 1937*

## GENERAL SCIENCE

## U. S. Executives to Visit European Laboratories

MORE than thirty leading European research laboratories, representing 18 major fields of industry, will be visited by touring industrialists and banking executives who will participate in the trip sponsored by the National Research Council's division of engineering and industrial research during the coming summer.

Cavendish Laboratory of Cambridge University and the National Physical Laboratories at Teddington are two high spots of the itinerary in Great Britain. In France the Institut Pasteur and the Institut du Radium will be visited, along with the laboratories of the Citroen motor car and the Gaumont motion picture industry.

Germany will open its laboratories of the Kaiser-Wilhelm Institutes in metal research and a variety of other industrial fields as well as the Junkers Diesel works and the famed I. G. Farben Laboratories in chemistry, states Maurice Holland, director of the tour.

Participation in the tour will be limited to 100 of America's leading industrialists and bankers.

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