

## PALEOBOTANY

**Plant Fossils Hunted  
In Chinese Shell Holes**

**I**T'S AN ILL SHELL that blows nobody any good.

Shell holes blasted into China's ancient soil are being taken advantage of as happy hunting ground for fossils by missionary priests at the request of a scientific colleague, Rev. Gregory B. Mathews, professor of biology at the Catholic University of Peiping, now on his way back to China after two years of graduate study in the United States.

Father Mathews is interested in fossil plants of Coal Age date. Some of the toughest fighting between Japs and Chinese has been over terrain underlain with fossil-bearing Coal Age shale and slate deposits, into which the heavy shells blew nice, big holes, exposing ancient imprints of leaves and stems.

So as the missionaries go about the country in their efforts to relieve some of the miseries of the war, they take a little time out occasionally to drop into a shell hole and do a little fossil-hunting.

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## CHEMISTRY

**Preparations for War  
Boom German Chemistry**

**P**REPARATIONS for the war boomed German chemistry which, since before the World War, has been one of the nation's most powerful industries.

German chemical companies are paying dividends as high as 15 per cent. according to the latest survey prepared by the U. S. Bureau of Foreign and Domestic Commerce in Washington from data gathered by vice-consul C. M. Gerrity, Frankfort-on-Main.

I. G. Farbenindustrie A. G., largest and best known of the chemical combines (controlling 40 per cent. of the output) paid 8 per cent. on its common stock.

Some 582,000 people are employed by Germany's chemical industry in its broadest sense, including mineral oil, rubber and synthetic rubber plants. The average working day for chemical employees is 7.89 hours.

Figures now complete for 1938 show that the United States exported to Germany 28,000,000 marks' worth of chemical materials, an increase over 1937.

In contrast Germany's chemical exports to the United States dropped to 40,000,000 marks from 62,000,000 marks in 1937.

The newest chemical research discoveries and developments of Germany listed by the Bureau of Foreign and Domestic Commerce include:

Substitutes for linseed oil, tung oil, copal and natural resins.

Collapsible tubes (for toothpaste and the like) made of plastic materials instead of metal.

Food containers made of acetyl-cellulose.

A new acid iron smelting process using soda ash.

The precipitation of casein from milk by the use of pectin.

A new fertilizer containing 20 per cent. nitrogen and 28 per cent lime.

Colored asphalt roads whose surface can be made red, green and yellow permanently.

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## ARCHAEOLOGY

**Find Indian Buried  
Under 400 Arrows**

**A** PREHISTORIC Indian buried under 400 arrows, and honored by hundreds of offerings piled into his tomb, has been discovered by archaeologists exploring a small pueblo 20 miles east of Flagstaff, Arizona.

The burial, which occurred seven hundred years ago, is pronounced an important archaeological discovery by Dr. Harold S. Colton, director of the Museum of Northern Arizona, reporting the find.

Articles bestowed on this unknown figure of American prehistory include: 25 undamaged jars and bowls; a round basket covered with turquoise inlay made of more than 1,500 stones; two turquoise earrings inlaid with shell; a wand with inlaid turquoise end; thousands of shell and stone beads; rattles; shell tinklers; red, green, and blue paints; sticks carved with human hands and hoofs of deer; abalone shell brought from the Pacific coast. Many objects are damaged by moisture.

As a tomb for this Indian, a chamber had been excavated under the floor of an abandoned room. After the gifts were placed with the body, Indians had thrown 400 arrows on top and roofed the chamber with juniper poles and a covering of trash.

The tomb was discovered by an expedition of the Museum of Northern Arizona led by J. C. McGregor of the Museum, in cooperation with WPA. Finding the burial is credited to Milton A. Wetherill, assistant archaeologist.

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**IN SCIENCE**

## CHEMISTRY

**American Chemists Receive  
Invitations to Warsaw**

**A**S WARSAW was being bombed by German airplanes, American chemists were receiving by mail beautifully printed invitations for the 19th Congress of Industrial Chemistry scheduled to be held in Polish capital, Sept. 24 to Oct. 1.

Ironic words: "The organizing committee wishes the foreign representation to be particularly distinguished . . . To aid this, there will be no dues to be paid by members of the Congress . . . Visas will be granted free of charge by the Polish government."

The first principal scientific paper of the Congress was to be delivered by Prof. Max Bodenstein of the University of Berlin.

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## VETERINARY MEDICINE

**Hydrogen Peroxide Rids  
Dogs of Parasitic Worms**

**D**OGS can be rid of parasitic worms by treatment with hydrogen peroxide, common household chemical used for varied purposes from hair bleach to mild antiseptic. Discovery of the chemical's new usefulness was made at Alabama Polytechnic Institute by Leon F. Whitney, research student in the department of veterinary medicine. (*Veterinary Medicine*, September)

Mr. Whitney introduced the peroxide solution into the animals' intestine by means of a tube. It was usually given warm, in dilutions as weak as one and one-half per cent, after the dogs had been kept without food for from four to 36 hours.

In practically every case, a single treatment resulted in a 100 per cent clearance of all parasitic worms, even including the hard-to-kill tapeworm. Postmortem examination of dogs from the public pound showed no living worms left in their intestines, and also gave no indication of harm to the dogs' own tissues. The treatment has now been used on a number of valuable dogs, with highly favorable results.

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# E FIELDS

## PHYSICS

### Cosmic Ray Research Leader Comes to United States

THE procession of intellectual refugees whose brains enrich America lengthens. This time it is Dr. Bruno Rossi, a leader in cosmic ray research, who becomes research associate in physics at the University of Chicago.

For almost a thousand years his family had been in Italy, but the Italian governmental decree of September, 1938, (Mussolini aping Hitler's "race" antagonism) forced him from Padua's new institute for atomic and nuclear physics, which he planned and supervised. His wife is the granddaughter of Cesare Lombroso, famous anthropologist.

Now Dr. Rossi's brilliant research will blend with that of Chicago's Nobelist Arthur Compton.

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## PSYCHIATRY

### Lessons in Happiness From Mental Disorder

INSTEAD of worrying fruitlessly about war alarms, crises, threats of dictators and economic ills, Americans would do well to encourage psychiatric research and to learn the lessons it teaches. This suggestion was made by Dr. Adolf Meyer, professor of psychiatry at the Johns Hopkins Medical School, at the dedication of the new Psychiatric Clinic building named in his honor at the Rhode Island State Hospital for Mental Diseases.

Mental illness or disturbance might, Dr. Meyer pointed out, be called "the undeclared war of persons and social forces of mental nature."

Many of these forces, he said, are transient and pass by. Others are deep and long-continuing. For the most obvious ones we have such carefully planned agencies for health and happiness as hospitals and clinics for mental sickness. But none of these mental disturbances should be considered as exceptional, mere side issues to be hidden away, Dr. Meyer warned. We should think of them in "terms of real life and not only in terms of microscopes and test tubes, but in

terms of strain and stress, which we have to recognize in the life of every day.

"Few people see life as it is and fewer see the deeper hazards at work," he pointed out.

Even without the threat of war, Americans need much knowledge of human nature and its capacities in seeking to reestablish economic and social conditions and they need understanding for self-help and joint efforts.

"Humanity has to meet serious problems and difficulties. If we want to create a safe ground for democracy and for a 'fair deal' and not merely just a 'new deal' kind of life and government," Dr. Meyer said, "we have to learn much from the revulsion of nature seen in what costs us thousands and thousands in money and much more in anxiety and derangement of mind and happiness."

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## RADIO

### Hot-Cold Air Boundaries Cause Radio Reflection

THE HOME of the world's weather—the zone of atmosphere just above the surface of the earth where warm and cold air masses intermingle to produce rain, clouds, and hot and cool spells—has now been shown to act as a mirror for radio waves.

Two American scientists, Prof. R. C. Colwell and A. W. Friend of the University of West Virginia, describe their studies of radio reflections at the sharp boundaries between hot and cold air layers. (*Nature*, July 1)

The radio mirrors are not at extreme heights of scores of miles in the ionosphere at the place where radio reflections are commonly known to occur. Rather they appear to come in the troposphere at altitudes no greater than a mile and a half or about 9,000 feet. Some seem to occur as low as 6,000 feet.

Three years ago such reflections were suggested by the scientists from radio measurements alone. Now they give, side by side, a comparison of the radio reflections and the existing height of the layers of temperature inversion in the troposphere.

Airplane flights directly over the experimental radio transmitter used in the tests during the times of the experiment furnished accurate, conclusive proof of the equal heights of the sharp temperature boundaries and the place of radio reflection.

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## LANGUAGE

### Those Polish Names! They Can be Pronounced

POLISH names in the news are a challenge to the tongue, but even names ending in "szcz" can be spoken. Try it.

Danzig, for an easy start in Polish, is "don-tsik."

Accent all Polish names on the syllable preceding the final one.

The capital Warszawa, is "var-sha-va." Krakow, ancient Polish capital, is "kra-kuf."

Cz is pronounced like "ch" in chain. Dz at the end of a name is like "ts." Rz is like "zh." Sz is like "sh." C generally has a "ts" sound. Final w gets an "f" sound, and w elsewhere in a word sounds like "v."

Now try a harder name: Bydgoszcz, a city not far south of the Polish Corridor, pronounced "bid-goshch."

The name for the Corridor is Pomorze. You can now figure out the pronunciation yourself.

Here are pronunciations of Polish towns in news reports of bombings and German attack:

In line of German advance from East Prussia are Mlawa (mwa-vah), Dzialdow (jya-wof), Ciechanow (tsyeh-kanoff; guttural k).

In line of attack in direction of upper Silesia in southwest Poland are Katowice (kat-o-vee-tseh), Czestochowa (chen-stow-kho-vah).

In line of attack from west in Corridor is Chojnice (koi-nee-tseh; guttural k).

Targets for air raiding have been Gdynia (g'din-ya), Tczew (tchef), Grudziadz (grooh-jyonts; with nasal ending), Katowice and Czestochowa.

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## METEOROLOGY

### War Kills International Weather Service from Europe

ONE of the first scientific casualties of the war has been the international weather news, which used to be assembled from all the countries of Europe. The practice was to make a compilation of this in England, transmit it to Canada, and thence to the United States. Even after the outbreak of hostilities on the Polish border this was kept up for a day or two. Now it has stopped altogether. Not even news of weather in neutral countries is coming through.

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