

## METEOROLOGY

**Storms That Harmed South Brought Good to North**

**T**HE TWO tropical storms that struck the Gulf Coast and the Southeast in mid-August, spreading destruction and distress, proved blessings in disguise to the country farther north. As they worked up the map they dissipated most of their violence but kept their load of moisture. Contacting colder air masses of polar origin, they poured out abundant rain, effectually ending the drought that had been troubling the Corn Belt.

In places, to be sure, the rains were excessive. Des Moines, Iowa, tried to put on an imitation of Pago Pago, with 3.24 inches of precipitation in one 24-hour period. However, for the most part the rains were merely heavy to moderate, not cloudbursts.

Even out toward the Great Plains there was drought-relieving rain. Some of the corn was already past help when the relief came, but a great deal of good was done to what remained, as well as in refreshing pastures and filling depleted wells and ponds.

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## INDUSTRY

**Glass Replaces Tin in German Food Industries**

**W**ITH their tin supply cut off by blockade, German manufacturers have had to turn to many substitutes for tin cans. Glass is being widely used; so extensively, in fact, that the glass container industry is unable to supply all of the demand even though working at full capacity. This information has reached the Bureau of Foreign and Domestic Commerce of the Department of Commerce, from the American Consulate General at Frankfort-on-Main.

Even prior to the outbreak of war, the Bureau is advised, "it was necessary to institute extensive measures of economy and substitution in the use of packaging materials and during the war these measures have become greatly intensified. Germany's packaging-material problem arises from the fact that, to a high degree, the nation is dependent upon foreign sources for the requisite raw materials—wood, wood pulp, tin plate, jute and other fibers, etc. The leading packaging materials obtainable from domestic sources are glass and plastics, and so great is the demand for substitute containers made of these ma-

terials that the producing companies are now taxed to the utmost capacity."

In addition to glass for tin plate, other substitutes are of paper for jute sacks, paper for wood, and impregnated cardboard for metal sheet. Old containers are being carefully salvaged and used again, but this is made difficult by the shortage of railroad rolling stock, and the restrictions on automobiles, so that transport charges for empty containers are high.

Another substitute for tin plate is sheet metal covered by a film of synthetic resin. Collapsible tubes are being made of plastics, at the rate of a million monthly. Additional savings have been effected by dispensing altogether with packing for some materials, such as soap; by using cheaper rather than more expensive type of paper and by prohibiting the use of cartons and outside containers for products already in paper wrappers.

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## BOTANY—CHEMISTRY

**War May Stimulate Birch Oil Industry**

**W**AR may bring new prosperity to one of the oldest and most picturesque of America's woodland industries, now languishing in the trough of low prices. This is the distilling of birch oil, which smells like wintergreen and is used in disinfectants, drugs, insect powders, candies and chewing gum. It sells at \$2.25 to \$2.75 a pound nowadays, but during the first World War it brought as much as \$10 to \$15 a pound.

As described by Edward Ritter of the U. S. Forest Service, a birch oil still consists of a box-like vat, about six feet on a side, tightly built of wood, lined (or at least floored) with copper sheeting. It sits on a brick firebox roofed over with iron.

It is filled up with bundles of sweet-birch twigs once a day, and the bottom then covered with about a foot of water. The steam carries the birch oil out of the bark, and is condensed by means of a copper worm running through a trough of cold water. The oil is heavier than water, and sinks to the bottom of the collecting jars.

It takes two men to run a still, and at present prices just about returns a living wage. "Rev'nooers" do not mind this kind of still, but forestry men don't like to have them about, because of the fire risk.

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**IN SCIEN**

## ENTOMOLOGY

**More Than 5000 Spiders Collected for Museum**

**S**PIDERS—more than 5,000 of them—constitute the unusual collection brought back to the American Museum of Natural History by one of its curators, Dr. W. J. Gertsch, who recently returned from a 3,000-mile trip through Utah and Arizona. Much of the collecting was done on mountain heights above 8,000 feet.

"There is every reason to believe," said Dr. Gertsch, "that the collection will reveal many new species and several genera of spiders heretofore found only in Mexico."

Although the much-feared black widow spider is supposed to be abundant in part of the territory traversed, Dr. Gertsch found relatively few of them. He had better luck with tarantulas, capturing quantities of them. Tarantula reputations, he declares, are worse than their bites.

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## ARCHAEOLOGY

**Early American Implements Resemble Old World Work**

**D**ISCOVERY of 7,000 crude stone tools made by unidentified American aborigines, who used the same techniques as Europe's Stone Age people of half a million years ago, is reported by Dr. E. B. Renaud of the University of Denver.

Dr. Renaud found the rough chopping and scraping implements during his archaeological survey of the High Plains in Wyoming. European archaeologists, to whom he has sent samples of the American stone work, agree that the work is strikingly like early stone industry of Europe's Old Stone Age. Dr. Renaud emphasizes that he has no evidence yet as to age of the American finds, and no reason to think they are as old as Europe's Old Stone Age. The bulk of the collection was obtained on the surface at three sites in a terraced river valley.

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# CE FIELDS

## BOTANY

### Seashore Plant May Yield Insect Poison

**D**EVIL'S shoestring, a seashore plant of the southern United States, is being investigated by U. S. Department of Agriculture scientists as a possible source of the insect-killing drug, rotenone. At present, about half of the necessary supply is imported from the war-menaced Netherlands East Indies, the rest from northern South America.

In the *American Journal of Botany*, a four-man research team in the Department report that they have found the rotenone content of devil's shoestring roots to be highest at the time of blossoming. They have also found that individual plants differ in their potency, indicating distinct possibilities in selecting and breeding for cultivation.

The research was conducted by Drs. A. F. Sievers, M. S. Lowman, G. A. Russell and W. N. Sullivan.

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## PUBLIC HEALTH

### 250,000 Child Cripples Recorded by States

**N**EARLY 250,000 crippled children—a pathetic army of victims of infantile paralysis, burns, rickets, and other crippling misfortunes—are now doing their bit toward helping themselves and other cripples by having their cases recorded on State registers, latest figures issued by the U. S. Children's Bureau reveal.

Over 99,000 crippled children were added to State registers last year, a rapid net gain of 77,000 toward the goal of recording facts about all crippled children of the country. The total of such children is believed to be about half a million. Among the young cripples removed from the registers last year as having reached 21 years, or for other reasons, were 7,000 reported cured.

While the State registers were established originally by State agencies helping crippled children under the Social Security Act, the recording of all crippled children, not merely those given

State aid, is urged. Medical diagnoses and other facts thus recorded, are pronounced by the Children's Bureau highly valuable in attacking this large problem.

Most numerous among child cripples are found to be infantile paralysis victims, analysis of 188,579 cases on the registers shows. Over 36,000, or 19%, owed crippling to infantile paralysis; 19,000 had spastic paralysis; 14,000, club-foot; 11,000, the bone infection known as osteomyelitis; while others suffered from burns, tuberculosis of bones or joints, harelip or cleft palate, rickets, and other troubles.

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## ENGINEERING

### Engineers Warn Against Schools That Advertise

**S**O-CALLED schools of refrigeration and air conditioning, which attract students with glowing promises of jobs in an uncrowded field, do not give proper training for this work. This is the consensus of a poll of opinion conducted among the profession by *Refrigerating Engineering* (August). Of 51 replies to a letter of inquiry, only five cases of actual hiring of such graduates were mentioned, and only two of these were successful.

A letter from Chicago says: "These abbreviated courses, I think, can only be helpful where the student already has employment in the industry and is already grounded in the fundamentals; but it is too bad to have clerks, barbers, chauffeurs, etc., lured by flowery and exaggerated claims and promises in the school's advertising into thinking a position with good pay awaits them upon receipt of their diploma."

From Canton, Ohio, comes the comment: "We could get all we wanted here to act as helpers without pay simply to get more experience. There have been enough graduates turned out today to double man the refrigeration and air conditioning industry throughout the country, yet the schools are still grinding away."

Another correspondent, in Boston, remarks: "In our opinion the various air conditioning schools may substantiate their claims, if a student has had enough practical field experience and desires to obtain the technical side, but when they agree to make a competent engineer of a novice in six easy lessons, their claims are grossly exaggerated."

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## ZOOLOGY

### Polar Bear Liver Made Museum Collectors Sick

**I**F YOU shoot a polar bear (it's nice to think of doing that, anyway, these August days) don't eat his liver. It's poisonous.

Kenneth Doust, zoologist of the Carnegie Museum, Pittsburgh, tells of the unpleasant experience he and a group of fellow scientists had after a feast of polar bear liver garnished with onions (*Journal of Mammalogy*, August).

One member of the party had shot two polar bears. It was suggested that a meal of polar bear steaks would be nice, but the bears had not yet been skinned. The party decided to compromise on fried liver. Everybody ate heartily, including the crew of the chartered boat. The meat tasted slightly soapy at first, but after that it seemed delicious.

Everything went well until about one o'clock in the morning, when Mr. Doust awoke, ill with a dull headache. Then he suddenly remembered reading explorers' tales of polar bear liver being poisonous.

He debated whether to awaken the rest of the party, but decided not to: "As I had never heard of a death from the effects of polar bear liver, I decided that to wake the others and tell them they had been poisoned might be worse than the poison itself."

Next morning, however, the entire party were sick, with violent headaches, nausea, dizziness and torpor. It was two or three days before everybody again felt normal.

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## PSYCHOLOGY

### Imaginary Weight Lifting Affects Muscle Potentials

**Y**OU MAY never see a dream—walking. But Dr. William A. Shaw has measured an imagination—lifting. He tells, in a new work, *Archives of Psychology*, of tapping, with electric oscillograph and amplifier, electric potentials in the arm (which accompany muscular activity) during the real and imagined lifting of weights. Not only is there muscular activity in your arm when you imagine lifting a weight, but the amount of activity keeps pace with the vividness of your imagination. And the lifting of a heavy weight, in your imagination, is accompanied by more activity than is the imaginary lifting of a lighter weight.

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