

## CHEMISTRY

**Powerful Antiseptics Made from Oat Hulls**

**O**AT HULLS and other farm wastes may in future yield powerful antiseptics for use in medicine and for combating plant diseases, as they already supply industry with materials for making plastic products such as steering wheels, radio panels, and electric insulators.

Drs. N. M. Phatak and C. D. Leake, of the University of California Medical School, have combined furan, an oat-hull derivative, with mercury in various ways, producing a number of promising germ-killing compounds. In dilutions one part of antiseptic in from 15,000 to 30,000 parts of water, they killed test cultures of colon bacilli and the yellow germs that cause boils.

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## PSYCHOLOGY

**Children Laugh at Unusual Or Because They are Happy**

**A** BUTTON is pulled loose from its place on a coat. That may be just an annoyance when it happens to you. But it is the signal for hilarious laughter in the kindergarten.

Children laugh at what is incongruous or unexpected, Dr. Grace E. Bird, professor of educational psychology at the Rhode Island College of Education, told the meeting of the American Psychological Association. They also laugh when they are happy.

Infants laugh, Dr. Bird said, when they are comfortable physically. The well baby is a happy baby and the happy baby laughs. At kindergarten age, laughter indicates not only physical but mental satisfaction. It is also a defense against the mental upset caused by the unusual occurrence.

Paint spilled for the first time caused amusement. Upsetting a chair is funny in the kindergarten unless it happens too often. Then it becomes commonplace. Children who had never before seen a dog chase its tail were hilarious over the performance.

Children laugh alone, although adults very seldom do. That is because laughing is not a social act with the young; it is with adults, Dr. Bird said.

"Often the mere fact that individual adults find themselves in one another's society is apt to create laughter, although their conversation may be commonplace

to the extent of dullness, with no attempt at wit or humor," she commented.

"In some cases this behavior may be a defense against inadequacy in conversation or social adjustment, just as a child's laughter may be a defense against the realization of a baffling or confusing situation which presents a problem to be solved. In most cases, however, this type of adult social laughter probably registers satisfaction or well-being."

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## PHYSICS-MUSIC

**Success Seen for Broadcast of Standard Pitch Note**

**T**HE broadcasting, by short wave radio, of a standard "A" 440 cycle musical note by the National Bureau of Standards has met with nation-wide interest, Dr. J. H. Dellinger, chief of the Bureau's Radio Division, told Science Service. (See SNL, Aug 15.)

One suggestion, governing future practice, points to the replacement of the musical gongs in broadcasting studios in giving time signals by this standard "A." Thus all interested persons would receive—without special short or all-wave radio receivers—the standard musical pitch.

While emphasizing that the idea was still merely a suggestion, Dr. Dellinger explained that the technical details of the plan did not appear to offer serious difficulties.

A simple way to solve the problem would be to have the National Bureau of Standards generate continuously the standard 440 cycle note in its radio laboratories and transfer it by wire to the Washington studios of the two nationwide broadcasting chains.

The standard "A" would then be always available over the nation-wide wire circuits of the broadcasting companies. When time signals would be given on a radio program the announcer would merely press a button and give the standard "A" instead of striking a gong as is now done.

Commendation for the standard pitch service from musical instrument manufacturers and piano tuners' associations, plus the praise of orchestra leaders and individual artists, has already been received, Dr. Dellinger indicated.

The experimental standard "A" service was transmitted by the Bureau on the three short wave frequencies of 5,000, 10,000 and 15,000 kilocycles.

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**IN SCIENCE**

## ETHNOLOGY

**Peruvians Had Prayers Like Those in Psalms**

**P**ERUVIAN Indians of the ancient empire of the Incas recognized among their many deities at least one god who was all-knowing, all-powerful, all-ruling—a concept much like the white man's God, believed in and worshipped before the coming of the white man and his religious teachers.

Such appears to be a legitimate inference from two pre-Columbian prayers in the ancient Peruvian language, newly translated by Prof. Hermann Trimborn of the University of Madrid. Prof. Trimborn sent a brief report to the German scientific journal *Forschungen und Fortschritte* (June 10) shortly before the present civil war broke out in Spain.

The god was called Coniraya-Huirakocha, the double name apparently representing separate origins of belief in two distinct but parallel cults, just as the Hebrew Jehovah and the Mohammedan Allah are looked upon as the same God.

The two prayers addressed to this powerful deity have about them some suggestion of the tone of the Hebrew Psalms. One of them is a simple plea for assistance, before the undertaking of a hard task, like the weaving of a difficult pattern in cloth: "Inspire thou me in this: give thou me knowledge hereof!"

The other is longer, and more definitely theological: "Coniraya-Huirakocha, creator of mankind, creator of the earth; whatever is, is thine. Thine are thy fields, and for thee is thy mankind here!"

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## HORTICULTURE

**Gladioli, Once Scentless, Now Given Perfume**

**G**LADIOLI, which add to their familiar beauty the charm of fragrant perfume, were introduced to the public at the flower show at Cornell University. A new double-flowered type of this flower was also exhibited for the first time.

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# E FIELDS

## ZOOLOGY

## Bounty on Coyote Pelts Found Racket in Montana

**L**AMPBLACK and grease turn harmless ground squirrels into "coyotes" for the purpose of collecting bounty, it has been reported to the U. S. Bureau of Biological Survey. The fake pelts, colored to collect reward, were detected by Montana officials assisted by R. E. Bateman, of Miles City, Mont., district agent for the Survey.

Collecting bounty has become quite a racket, Survey officials report. Those engaged in it will purposely release female coyotes from traps to insure a future "bounty crop."

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## METEOROLOGY

## Hurricane Weather to be Studied in Caribbean

**W**HAT is believed to be the first organized attempt to record meteorological conditions in the upper atmosphere during violent tropical hurricanes over the Caribbean Sea and southern states will be undertaken shortly by Massachusetts Institute of Technology scientists.

The storms are expected between the middle of August and late October and M.I.T.'s hurricane hunters have left Cambridge to find them.

With them they took 80 sounding balloons and specially constructed meteorographs which the balloons will carry miles into the air to record temperature, atmospheric pressure and humidity. Thirty will be equipped with tiny radio transmitters which will automatically send their readings to a base station at frequent intervals. The others will make their records on pieces of smoked glass and their data will not be known until the balloons burst in the rarefied air and fall to earth.

The expedition will be divided into two sections, one to operate in Cuba and the other in southern states in order to record the rapid changes in atmospheric conditions when the tropical storms curve inland from the Gulf of Mexico.

Delbar P. Keily and Douglas MacKiernan, Jr., will comprise the Cuban section. They will release only radio balloons, for instruments sent aloft here are not expected to be recovered. Christian Harmantas will operate in southern states releasing the smoked glass type balloons at Augusta, Ga., Montgomery, Ala., Jackson, Miss., and other southern points.

These balloons are expected to reach altitudes of from ten to fifteen miles before they burst and drop the shock-proofed instruments to earth. Each will carry an identification tag offering a reward for return to Technology, a system proved very successful in previous studies in other parts of the country.

The Cuban section, working with Father Eugolio Varquez of Belen College, will use two types of radio meteorographs: the Vaisala type developed by the head of Finland's weather service and the instrument developed by Charles F. Brooks and Karl O. Lange of Harvard's Blue Hill Observatory.

The receiving station for these miniature transmitters will automatically record the data of the hurricane swept skies.

Through the cooperation of the U. S. Weather Bureau and the special hurricane forecasting station at Jacksonville, Fla., the scientists will attempt to release the balloons before the storm, not only to record the changes when it strikes but to be sure they reach the upper air before being beaten to earth.

From the research meteorologists hope to extend present scanty knowledge on weather conditions, not so much during the fury of the storm but when it is approaching, to facilitate forecasting.

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## CHEMISTRY

## New German Enamel Has Valuable Properties

**A** NEW cellulose enamel is on the market in Germany under the tradename of "Emailliola" which is said to be insoluble in water, benzine, benzol, alcohol, turpentine and acetone according to the report of Trade Commissioner R. M. Stephenson at Berlin to the U. S. Department of Commerce. The material is highly resistant to weathering, acids, alkalies and mechanical rubbing. It is non-inflammable and can be applied to wood, paper, pulp, cellulose, metals, tile, stone, plaster and glass.

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## PSYCHOLOGY

## Boy Retains Impression of Words He Heard in Infancy

**A** MOTHER whispering loving nonsense to her baby may now feel sure that she is making a lasting impression on the infant's mind. Scientific evidence now confirms her belief that the lullabies and nursery rhymes heard by the infant make an impression on him that lasts until he is of high school age, even though he does not once hear them in the meantime.

Psychologists gathered at the meeting of the American Psychological Association heard the results of the tests on 14-year-old Benjamin P. Burt's ability to re-learn Greek poetry read to him when he was less than a year and a half old.

When Benjamin was just 15 months old, 3 twenty-line selections from Sophocles' "Oedipus Tyrannus," in the original Greek, were read to him once a day for three months. This material was the same to the baby as nonsense verse, his psychologist-father, Prof. Harold E. Burt, of Ohio State University, told the psychologists, just as it would be "all Greek" to most people, too. When Benjamin was 18 months old these selections were discontinued and three others read daily for another three months. This procedure was kept up with new selections each 3 months until Benjamin was 3 years old and he had heard 21 selections. Then the matter of Greek poetry was dropped until he was 8 years old.

Tests at that time of his ability to memorize these and other new selections revealed that the lines he had heard as a baby were much easier for him. Although the boy had no information as to which were the new selections and which the ones he had heard before, it was found that the relearning required 30 per cent fewer repetitions in the case of the familiar lines.

Now Benjamin is 14, and the tests of relearning have been repeated on selections not used in the tests when he was 8. The impression of these meaningless words heard in babyhood seems to have faded considerably now that the boy is approaching manhood, but it is still there. He learned the verses of his infancy in 8 per cent fewer repetitions than were required for the new material.

Benjamin is a very bright boy. His "I.Q." is 130 which puts him in the genius class, his intelligence being as high as that estimated for Balzac.

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