GEOPHYSICS

Aurora Filling Whole Sky Observed in Vermont

MAGNIFICENT auroral displays covering the sky were observed in Vermont during the recent great magnetic storm, Prof. Arthur D. Butterfield of the University of Vermont, informed Science Service.

The streamers of pale light, plainly visible even though a full moon was shining, rose from the whole horizon, even due south. Overhead they merged with a sort of luminous mist, which pulsed from nothing to full glow in fractions of a second.

"I have had many opportunities to observe auroras from the University of Vermont campus," said Prof. Butterfield, "but I have never seen anything like this one."

Science News Letter, May 15, 1937

RADIO

Movies of Sun Show Relation Between Eruptions and Radio

TWO THOUSAND feet of 35 mm motion pictures have been taken at the Mount Wilson Observatory, home of the world's largest telescope, in the study of explosions on the sun and the effect of these eruptions upon short-wave radio broadcasts.

Dr. R. S. Richardson of Mount Wilson has secured considerable evidence to indicate a strong relation exists between the eruptions and radio fadeouts.

Use of the motion picture camera in this research is comparatively new, and speeds up study. The interval between exposures is ordinarily about four minutes, with the exposures requiring 50 seconds.

The instrument is started soon after sunrise and operates continuously with very little attention until shut off an hour before sunset. As a result, a nearly complete record of the appearance of the sun has been obtained since May, 1936.

In discussing 15 eruptions, Dr. Richardson reported that in five cases the time the eruption was first seen agrees to a minute or less with the time when the radio fadeout began. Solar observations were made shortly before the fadeout occurred, the longest interval being 11 minutes.

Six of the eruptions apparently preceded the fade-out by from 2 to 12 minutes. For the four remaining fade-outs, the observations were made from 10 to 30 minutes after the radio disturbance began.

No fadeout, said Dr. Richardson, is definitely known to have preceded an eruption with which it was obviously connected.

The radiation producing the fadeouts seems to come from the outbursts that show conspicuously hydrogen and calcium spectroheliograms.

Science News Letter, May 15, 1937

ARCHAEOLOGY

Prehistoric Mayan Throne May be Seen, Not Touched

TOURISTS who visit the ruined Mayan city of Chichen Itza in Yucatan are allowed to see—but not sit in—the polka-dotted red Jaguar Throne recently discovered by archaeologists.

The Carnegie Institution of Washington, which conducted the excavations, calls this throne, and objects with it, "the most spectacular discovery of archaeological specimens in original position ever made in the New World."

Mexican authorities, says the Carnegie Institution, have wisely decided not to remove the throne from the place in the temple, exactly where Indian officials placed it centuries ago. Glass protects the throne, and lights have been installed so that the fresh colors and snarling face of the stone jaguar may be seen and appreciated.

The animal is painted red, with large apple-green spots of jade inlaid, and green jade eyes. Its flat back forms a throne seat, in the opinion of Dr. Sylvanus G. Morley of the Carnegie staff.

The jaguar discovery was made in the famous temple called El Castillo, or the Castle, a ruined building perched on a lofty pyramid. Recent excavations have revealed that temple and pyramid were enlarged and built over by ambitious Indians. The visible ruins thus encase an earlier temple on its pyramid base. It was within the hidden temple, in an inner chamber, that the red stone jaguar was found well preserved.

A tunnel enables visitors to go to the inner stairway and climb the buried pyramid to the throne-room where warrior cults of Yucatan probably held barbaric rites.

Association of the Jaguar Throne with the warriors is deduced from the fact that this large and fierce American wildcat was the symbolic animal of the warrior class, in the centuries just before Spanish Conquest. This is the era to which the temple belongs.

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IN SCIENC

ENTOMOLOGY

Epsom Salt Effective As A Grasshopper Poison

EPSOM salt may find large-scale use this summer if the expected outbreak of grasshoppers reaches its predicted magnitude. For this chemical, a bitter medicine to reluctant human palates, is even worse for grasshoppers—it kills them.

Discovery of the usefulness of epsom salt as a grasshopper poison is reported (*Science,* April 30) by Hubert W. Frings and Mable S. Frings of the University of Oklahoma. They have compared the standard arsenic-poisoned bran bait with a bran bait prepared with epsom salt, and find the latter to be quite as effective, cheaper to make, and safer to prepare and use.

Their fromula is: bran, 60-65 per cent., molasses, 15 per cent., magnesium sulphate (Epsom salt), 20-25 per cent., and enough water to moisten.

Spread on the ground where the young grasshoppers are crawling—and watch them turn up their toes.

Science News Letter, May 15, 1937

GENETICS

Natural Selection Theory Defended by Scientist

DARWIN'S original theory of natural selection still remains the only general explanation of the process of evolution, Prof. David S. M. Watson of the University of London declared in a lecture at Yale University, "although," he conceded, "it is clear that other and probably quite dissimilar factors must play a part."

For the apparently meaningless suppression or magnification of some parts of an animal, which has always been a riddle and a stumbling-block to evolutionists, Prof. Watson offered a tentative explanation from the field of genetics. It is possible, he pointed out, for a gene or a gene-combination that benefits the animal in one way to act also toward the modification of structures or characters that do not have any discernible benefit in the struggle for survival.

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E FIELDS

ASTRONOMY

Comet Returns as Said; Rediscovered at Harvard

THE Grigg-Skjellerup comet is back in telescopic view again after five years of wandering away from the vicinity of the sun. This periodic comet, number four among the comets of 1937, was rediscovered on Friday morning, April 30, by L. E. Cunningham of Harvard College Observatory.

Too faint to be seen without the aid of a large telescope, it is located approximately halfway between the bright stars Betelgeuse in the constellation of Orion and Procyon in Canis Minor. Astronomers had predicted its return and computed accurately where the comet would be discovered. It is not expected to become visible to the unaided eye and it has no tail.

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ETHNOLOGY

Magic Does Nothing for Man But—It Does Things to Man

MAGIC! Millions of people in jungles, islands, and places not so remote believe in magic. What is it doing for them—and to them?

The answer is shown in Sir James Frazer's newest work. Sir James gained scientific fame with "The Golden Bough," in which he gathered impressive data on beliefs and customs of mankind. In "Aftermath," he offers more evidence. And the moral seems to be this:

Magic does nothing for man. But magic does terrible things to man.

Faith in magic is based on two fallacies, as Sir James analyzes it. One is that by imitating a desired effect, you can produce it. This is imitative magic. It is imitative magic to fashion a wax image, and destroy it, believing the person represented will be destroyed. The other fallacy is that things that have once been in contact can still influence each other when they are separated. This is contagious magic. Example: In treating a knife wound, the knife must be cleaned and treated to aid in healing the wound.

Amplifying these two principles, primitive tribes try to rid themselves of disease, bring rainfall, make fish bite, win wives and wars. They find themselves fighting magic with magic, in desperate battles of power.

It would be as harmless as shadow boxing, except for what magic does to the mind.

Many a natural death, in a magic-ridden community, is laid to wizardry, and avenged by murder of some innocent victim. And far-reaching is the effect on economics. South African Kafirs fear to raise too-bountiful crops lest they be accused of magic in their farming. A missionary tells of a native medicine woman who was so successful at treating certain diseases, that she was driven to stop. Natives argued that if she could cure so easily, she must first give the ailment to the patient. Under the spell of magic, communities fear what is strange. New articles of trade and new inventions get cold welcome.

Magic fights progress. It is a very real social problem for a considerable part of the world—as real as the sit-down strike or old age insurance.

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CHEMISTRY

American Chemical Society Awards $1,000 Prize

THE $1,000 prize of the American Chemical Society for 1937 has been awarded to Dr. E. Bright Wilson, Jr., assistant professor of chemistry in Harvard University, it is announced. The award, bestowed annually upon a scientist under thirty-one years of age and of unusual promise, goes to Dr. Wilson, who is twenty-nine, for his experimental work in physical chemistry.

Dr. Wilson was born in Gallatin, Tenn., attended New York City schools and Lawrenceville School, and in 1930 received the degree of Bachelor of Science from Princeton University with highest honors in chemistry.

At Princeton he received his M.A. in 1931; and at the California Institute of Technology received a Ph.D. in 1933.

The prize will be formally presented to Dr. Wilson at the ninety-fourth meeting of the Society to be held in Rochester, N. Y., September 6 to 10. Maintained by Dr. A. C. Langmuir of Hastings-on Hudson, N. Y., and his brother, Dr. Irving Langmuir, it provides "recognition of the accomplishment in North America of outstanding research in pure chemistry by a young man or woman, preferably working in a college or university."

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PSYCHOLOGY-PSYCHIATRY

Sane Are Unlike Abnormal In Attention to Trifles

THE human mind may be thought of as a series of nested boxes like those the baby likes to play with. Deep in the heart, in the innermost core, of the set lie those interests that are really vital to the individual, those things that are engrossing his interest, his enthusiasm, his love or his hate.

On the outer layer, the fringe of the mind, are those passing interests which gain your attention for the moment. The magazine you pick up while waiting for an appointment, the puzzle you work out and promptly forget, the small talk exchanged with a passing acquaintance, are matters occupying the periphery or fringe of your personality.

Such a conception of the mind is suggested by a psychiatrist, Dr. Maria Rickers-Ovsiankina, of the Worchester State Hospital and the Memorial Foundation for Neuro-Endocrine Research. Dr. Rickers-Ovsiankina recently observed some interesting differences between normal persons and those with the mental disease schizophrenia regarding the behavior of this outer circle of the mind.

Suppose you were waiting for an appointment. A trick matchbox, a kaleidoscope, some puzzles and little skill tricks lie on a convenient table. What would you do? What would an insane person do?

You may be surprised to learn that normal and schizophrenic persons are alike, on the average, in the time given to the objects. Individuals either well or ill vary from those who give them only a cursory glance to those who will devote most of a half-hour wait to one of the puzzles. But the schizophrenic's attention seems more superficial, the normal person's activity is purposeful.

If the normal person is interrupted while working out a jig-saw puzzle, he will return to it when he can. He feels the need to complete a task once started. The schizophrenic patient does not. He is willing to flit from task to task and thought to thought so long as the interest is peripheral.

But once let the task touch upon the core of his mental compartments, that "complex" at the center of his interests, then he can pursue the goal with as much enthusiasm as any man.

A normal man seems able to give better attention to the trivialities that do not concern him intimately.

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