

CLIMATOLOGY

**Scrolls Without Writing
Tell of Floods and Sun**

See Front Cover

Scrolls without writing, yet eloquent in protest against outrage done to the land, and in warning of doom to come unless we presently mend our ways, can be found on any flatland after inundation, when the sun has had time to bake the thin layer of glutinous mud and crack it and curl the edges. For every flooding a new layer is added, until they are piled like the leaves of a book, as shown on the front cover of this week's SCIENCE NEWS LETTER. All the bottomlands of the country have whole libraries of such warning volumes.

This particular one was read and pictured by a high school student, Clarence Tripp of Corsicana, Texas.

Science News Letter, July 24, 1937

PHARMACY

**Drugs Must Keep Potency
As Well as Be Made Right**

Making drugs right, so they meet standards of purity and potency, is only half the pharmacist's or manufacturer's job. The other half is to make drugs which will keep their potency. The importance and some of the difficulties of the problem can be illustrated by the following research.

Digitalis tinctures, on which many heart disease patients depend for their very lives, lost from 10 per cent. to 50 per cent. of their strength within a year, tests on frogs showed. Yet many of these same tinctures when tested on cats showed no loss of strength, Dr. H. H. Haag, professor of pharmacology at the Medical College of Virginia, has found.

Further data on this important problem of the deterioration of digitalis has been obtained by Dr. James C. Munch for the American Pharmaceutical Association. Fifty gallons of a tincture were made and bottled under commercial conditions for this research. Tests every 3 months for 2 years and then once a year for 7 years were made. For 3 years the tincture lost from 10 per cent. to 15 per cent. of its potency every year. Then the potency stood still for several years, followed by an increase in strength. This "old" tincture of digitalis was found useful when given to patients needing the drug to save their lives.

Ragweed and timothy pollen extracts are used in testing for hay fever and asthma and also for treating these conditions. Dr. Herbert M. Cobe, of Temple

University, found that strong pollen extracts lose their strength within 6 months to a year when stored at ice-box temperature. When stored at room temperature for a year or two the material is apt to be worthless.

These and similar problems were discussed at a recent symposium of the Pennsylvania Pharmaceutical Association.

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PHYSIOLOGY

**Balance of Hormones
Times "Blessed Events"**

IMITATION pregnancies produced in experimental animals by small pellets of paraffin are yielding new light on the delicate balance of the animal body during the growth of the embryo. In addition, the roles played by the two hormones—progesterin and oestrin—receive new significance in view of a report by Dr. S. R. M. Reynolds of the Long Island College of Medicine to the biological symposium at Cold Spring Harbor, N. Y.

Dr. Reynolds attacked one of the basic problems of embryology in a unique manner. Tiny cylinders of paraffin were anchored in the uterus of a rabbit whose ovaries had been removed. Suspecting that these paraffin pellets might have a stimulating, or irritating effect on the walls of the uterus the rate of growth of the walls was carefully measured.

When the pellets of paraffin were too small no growth occurred. There was no stimulation to growth. When the pellets were too large, also, there was no growth. In this latter case it is believed that excessive stretching of the walls cut off some of the blood supply and thus limited the available food to the tissues.

For the special and rather critical size of pellet, however, a growth of the walls of the uterus occurred just as it would during real pregnancy.

In a rabbit undergoing this imitation pregnancy, Dr. Reynolds found that injections of the so-called female sex hormone stopped the growth of the walls of the uterus. In contrast, progesterin, given off by the follicles which have liberated eggs seemed greatly to sensitize the tissues and promote their growth.

Thus nature seems to provide within the mother, during the development of the embryonic rabbits, a device that at first will allow growth to meet the increase of size and then finally will stop the growth of the uterus so that it no longer is able to retain its contents. In real life birth then follows.

*Science News Letter, July 24, 1937***IN SCIENCE**

PSYCHOLOGY

**"Psychic Inertia" Makes
You Like Old Ways Best**

THE evening was hot. Fifteen girls were seated about a table copying sentences from books to the accompaniment of the monotonous beat of a metronome. Tick, tick, tick, the seconds were tolled off; one tick a second.

Fourteen of the girls were dressed warmly in smocks over their dresses, a living perspiring demonstration of what a psychologist has termed "psychic inertia." For ten evenings they had sat at their warm tasks. They had been required to wear the smocks despite complaints. Now, on the tenth evening, they were told that the smock might come off. But, so strong is the tie that binds us to the familiar, only one girl removed the extra garment.

Psychic inertia, Dr. A. H. Maslow, of Teachers College, Columbia University, the experimenter, tells us, is not at all the same as laziness. In fact, it might almost be thought of as the opposite. Often people will go to a great deal of trouble because of their preference for the familiar.

Used to working with pens, these girls would scorn proffered pencils even though writing on sponge-like mimeograph paper. They would laboriously copy whole sentences because they had been doing so, even though told that single words would serve the required purpose as well.

Ostensibly, they were participating in the measurement of effects of distraction. Hence the metronome beat, other noises and frequent changes of work. None of the subjects knew the actual purpose of the experiment.

Striking was the preference for the familiar. Old seats, accustomed kinds of paper, even the presence of the metronome's annoying beat were desired. Familiar pictures were rated more beautiful; familiar names more euphonious.

And the subjects used in this experiment were not old men, not court justices, they were young college students.

Such is psychic inertia.

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E FIELDS

MEDICINE

Warn Against Castor Oil For Children With Bad Pain

MOTHERS, don't give the baby castor oil when he has a severe abdominal pain without the advice of a physician. If he happens to have appendicitis, the cathartic will increase and hasten the progress of the disease.

This oft-mentioned warning receives new emphasis from a study of 612 children with appendicitis treated at the Children's Surgical Service at Bellevue Hospital during the ten years from 1926 to 1935 inclusive, and just reported to the American Medical Association by Dr. Philip D. Allen, of New York.

More than half the children (57 per cent.) in the group in which perforation of the appendix had occurred, had received cathartics. In the unperforated group, 42 per cent. had also been given such medicine. Most of these children were found lying with their thighs flexed on the painful abdomen.

Acute appendicitis is comparatively infrequent in children under five years of age and increases in frequency with each year of age. The death rate is very high for the infants, however, due to the fact that appendicitis is so difficult to diagnose in babies and because infants have very little resistance to the infection.

The death rate is greatly increased by delay in operation, Dr. Allen found.

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HYGIENE

Heat, Soap and Water Are Disinfectants

STANDING between man and his deadly enemy, the disease germ, are the chemicals and other agents known as disinfectants, antiseptics and germicides. These substances have the power to destroy the germs that cause disease.

"Their value is hard to overemphasize," declared chief chemist William F. Reindollar of the Maryland State Department of Health in a recent talk.

Father of chemical antiseptics is carbolic acid, also called phenol. This powerful and dangerous chemical was used

by Lister to keep germs out of wounds during operations and it is still the standby of modern operating rooms.

Scientific disinfection or germ destruction began with Pasteur and Lister, but attempts at disinfection were made long before that. Burning aromatic substances in the sick room was once thought to be a means of checking disease spread, and fourteenth century physicians advised vinegar as an antiseptic to combat the plague.

One very effective germ killer is heat. Simplest method to disinfect water is to boil it and this measure is always recommended by health authorities if there is any suspicion that drinking water may be polluted with germs. Milk is disinfected or freed of dangerous germs by pasteurization, a heat process in which the milk is kept at a temperature of 142 degrees Fahrenheit for 30 minutes.

Soap and water generously applied with plenty of elbow grease is a homely process with much germ-killing power. By this method disease may be checked prosaically at the kitchen sink. More dramatic is its use by nurses and surgeons who scrub to the elbow before a surgical operation.

Chlorine is an excellent disinfectant, used to purify drinking water in many communities. Chloride of lime and carbolic acid are valuable for disinfecting sickroom utensils, drains and sinks. These substances are poisons which should be handled carefully and kept beyond the reach of children.

Simple home disinfectants are boric acid for eye washes, antiseptic solutions for gargles, and tincture of iodine for small cuts and scratches.

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SEISMOLOGY

Earthquake Center Found Off Mexican Coast

THE CENTER of a moderately severe earthquake on Sunday, July 11, was located about 200 miles off the west coast of Mexico. Seismological reports to Science Service from Weston College Observatory, Weston, Mass., Georgetown University Observatory, Washington, D. C., and Coast and Geodetic stations at Tucson, Ariz., and Honolulu, T. H., analyzed by the U. S. Coast and Geodetic Survey, put science's finger upon this shock. (Location of epicenter: Probably 21 N; 109 W. Time: July 11, 12:19.4 p. m. EST.)

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ASTRONOMY

Changes in Moon Mountain Suggest Presence of Haze

WHILE astronomical findings indicate that the moon is lifeless and, indeed, probably without an atmosphere, there are some matters of lunar topography that need more explanation. Appearing in *Popular Astronomy*, published by Goodell Observatory of Carleton College, are drawings made of mountains on the moon which show changed markings from time to time that must be attributed to something—haze, melting snow, or jets of steam.

Pico, an 8,000 foot peak on the moon, was the mountain chosen for study by G. O. Rawstron, amateur astronomer of Liverpool, England. Some 48 drawings of the mountain, made with a four-inch diameter telescope, show that light and dark areas on the lunar mountain vary from time to time.

"It cannot be over-emphasized," states Mr. Rawstron, "that it is practically impossible to reconcile these changes with the effect of the varying angle of illumination. There are certain markings which actually darken as the lunar mid-day approaches; certain others vary considerably in shape and size during the course of a lunation (the interval between consecutive new moons).

"Most striking of all, however," adds Mr. Rawstron, "are those areas which undergo an irregular change in appearance from one lunation to the next—that is to say, which do not present the same aspect at similar colongitudes."

The most conspicuous marking observed is a white area which spreads out from the northeast corner of the mountain and extends over a great plain, known as the Mare Imbrium, for about 22 miles. Whether this is a haze or a jet of steam of perhaps volcanic origin is unknown, reports Mr. Rawstron.

Prof. W. H. Pickering, emeritus professor of astronomy at Harvard College Observatory who now, at 79, maintains a private observatory at Mandeville, Jamaica, has been one of the leading scientists who have noted such similar changes in the markings on the mountains of the moon.

The choice of the mountain Pico for study by Mr. Rawstron was, in fact, due to an earlier study of the same mountain by Prof. Pickering.

While the new drawings differ slightly in appearance from those made by Prof. Pickering, the major features of change are substantiated.

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