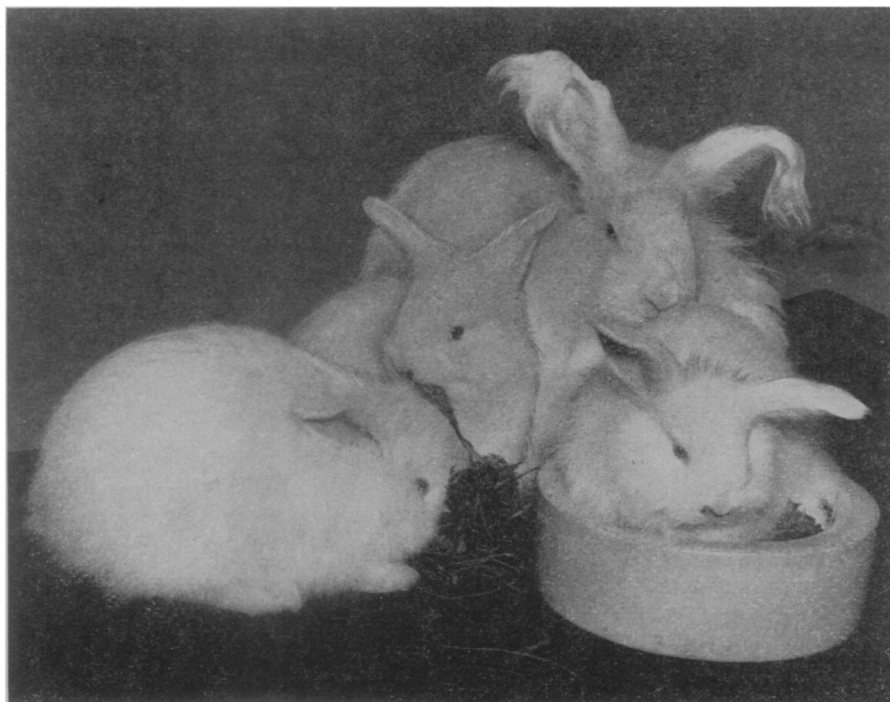


## GENERAL SCIENCE

# Joyous Easter Holiday

The date of Easter, the chief festival of the Christian year, is fixed according to rules adopted many centuries ago. Lilies, rabbits and eggs have become associated with Easter.



**EASTER BUNNIES**—Any of these four white angora rabbits would make a delightful Easter gift. An old legend says that colored eggs are left by rabbits on Easter Eve, but today the rabbit itself often serves as an Easter gift.

By ANN EWING

► **EASTER**, THE chief festival of the Christian year, falls this year on April 10 for Roman Catholics and Protestants, a week later for those attending the Eastern Orthodox Churches.

The dates for Easter, which is the festival celebrating the Resurrection of Jesus Christ, are fixed according to rules adopted many centuries ago. One reason they vary for the two great religious bodies is the 13-day difference between the Julian and Gregorian calendars.

Lilies, rabbits and eggs have, over the years, become associated with Easter.

Whatever Easter's date, a plentiful supply of lilies in bloom is assured by modern methods used by growers.

Florists have them in many varieties, big and small, fragile and hardy. Approximately 85% of the lilies grown in the United States are Easter lilies, *Lilium longiflorum*. Other commercially important species are the regal lily, the goldband lily, the Madonna lily and the pink-spotted lily.

Before the second World War, nearly all

lily bulbs used in the United States were imported. Now most are produced here.

Research by plant growers has led the way to new floral beauty for lilies. Dr. Samuel L. Emsweller and his co-workers at the U. S. Department of Agriculture's experimental station at Beltsville, Md., are leaders in research on lilies. (See SNL, Mar. 26, p. 198).

Perhaps the most dramatic work in lily breeding is the experimentation to double the normal number of hereditary units of the plant, resulting in superior flowers.

Easter lily blossoms are available 12 months of the year now, largely due to a schedule of preplanting cold storage worked out by the Agriculture scientists. They discovered that lilies could be stored at temperatures just below freezing and still give a high flower production as long as a year after storage. Previously it had been thought that temperatures below 35 degrees Fahrenheit would harm the lilies.

Other flowers besides Easter lilies will be carried into thousands of churches during the coming week. They will be arrayed upon the altars and banked against the pul-

pits in preparation for the feast celebrating the triumph of life over death.

Flowers in the churches are natural symbols of Resurrection and life everlasting.

Like many symbols used by Christians, the resurrection symbol of flowers was adopted and adapted out of pre-Christian usage that was practically universal. Many of the old pagan religions symbolized the passing of winter and the re-blossoming of the seemingly dead earth in spring with the flower-wreathed resurrection myths.

It was natural for early peoples, living in a pre-scientific age, to accept flowers as symbols of a resurrection of the dead. For so far as they could tell, the seeds and bulbs and other plant parts, buried in the cold earth like so many corpses, really were dead. For them, something supernatural occurred every time a seed germinated or a bulb threw up its sprout. Spring was a miracle. It still is.

## Origin of Easter Eggs

The association of eggs with Easter may also have arisen from pre-Christian spring rites. Spring festivals held about this time of year often included offerings to the pagan gods to insure a bountiful food supply during the forthcoming season.

Our custom of decorating Easter eggs may stem from an ancient desire to make them more appealing to the gods who got them as bribes.

Although hens' eggs have to be colored, most birds' eggs are tinted by nature. The robin's is a lovely blue. Others are protectively and beautifully speckled to blend with their environment.

An old legend relates that colored eggs are the gift of rabbits on Easter Eve. In modern days, the rabbit itself often serves as an Easter gift, especially for young children. Among the most valued are white angora rabbits, with their pure white fur and pink eyes.

## Date Changes Yearly

"The first Sunday after the first full moon on or after the twenty-first of March" is the general rule for fixing the date of Easter. If this, the Paschal full moon, should fall on a Sunday, then Easter falls on the next Sunday. The Paschal full moon, the fourteenth day of a lunar month, determined by rules for ecclesiastical computations, should not be confused with the real full moon.

Unlike Christmas, the Fourth of July and many other holidays that occupy fixed places on the calendar, the date of Easter changes from year to year according to certain involved calculations.

A fixed date for the observance of Easter, the first religious holiday ever celebrated by Christian people, has never been universally

accepted because of its historical relationship to the Jewish feast of the Passover.

The feast of the Passover celebrates the liberation of the Hebrews from Egyptian bondage. It was on the first day of this festival that Jesus and his disciples ate the Last Supper. The next day, Friday, was the day of the Crucifixion and the following Sunday the day on which he arose from the dead—the first Easter.

In time a serious controversy arose between the Jewish Christians and those of Gentile descent as to the correct day on which Easter should be observed. To the former, the relationship of Easter to the Feast of the Passover was all-important, and the day of the week was immaterial. The Gentile Christians, unfettered by Jewish traditions, insisted that the Resurrection should always be celebrated on Sunday and placed Good Friday, which commemorates the Crucifixion, on the preceding Friday.

The Council of Nicaea in 325 A.D. put an end to this controversy by deciding that Easter should always fall on a Sunday. The vernal equinox, the first day of spring, was fixed for March 21. This Council further ruled that if the Paschal full moon occurred on a Sunday, Easter would be celebrated on the following Sunday, so that Easter would always follow the Feast of the Passover and never coincide with it. This Jewish memorial feast was celebrated on the fourteenth of the month of Nisan, that is, the first full moon of spring.

The difficulty of having two dates for Easter can be blamed on the fact that the earth takes an uneven time to circle around the sun. The solar year consists of 365 days, 5 hours, 48 minutes and 45.51 seconds.

The moon takes 29.531 days, another odd interval, to finish its trip around the earth. The Egyptians, who calculated the solar year as 365 days, divided the year into 12 equal months each of 30 days, the remaining five days being devoted to festival holidays. Their weeks, however, were ten days long.

The Julian calendar as instituted by Julius Caesar did not include a seven-day week. This was an eastern invention, used both by the Babylonians and the Jews. Not until the fourth century was the week definitely established in Christendom and Sunday proclaimed as the day of worship.

Upon the advice of the Alexandrian as-

tronomer Sosigenes, Julius Caesar adopted 365¼ days as the true length of the year and ordained that every fourth year should contain 366 days. The solar year is, however, 11 minutes 14 seconds shorter than this, so in the course of 1,000 years, the Julian calendar developed a lag of nearly eight days.

In 1582, Pope Gregory XIII, advised by the astronomer Clavius, ordered the calendar corrected by dropping ten days. To avoid further displacement of the beginning of spring, Gregory decreed that the rule of adding an extra day every fourth year should be followed except in the case of those century years whose number is not divisible by 400.

The Gregorian calendar has never been accepted by all Christian churches for calculating Easter or even for calculating other Holy days.

Science News Letter, April 2, 1955

#### MEDICINE

## Narcotic Drugs Unpleasant

➤ WHETHER MORPHINE, heroin or other narcotic drug causes a pleasant or unpleasant feeling depends a lot on the person getting it and the situation in which it is given.

Morphine and heroin, for example, do not give normal persons the "kick" and pleasant sensations they are supposed to give.

Amphetamine, or Benzedrine, known as "pep pills," on the other hand, is most likely to produce pleasant sensations in normal persons. This drug also may be useful for chronically ill persons because it seems to relieve pain and therefore give a pleasant feeling to such patients.

These are among findings reported by Drs. Louis Lasagna, John M. von Felsinger and Henry K. Beecher of Harvard Medical School and Massachusetts General Hospital, Boston, in the *Journal of the American Medical Association* (March 19).

The Boston doctors tested the effects of morphine, heroin, amphetamine, the sleeping medicine pentobarbital and as a control, sodium chloride, or salt.

The tests were made on normal students, chronically ill patients and "postaddicts" at the U. S. Public Health Service Hospital, Lexington, Ky. None of the persons getting the drugs knew what they were getting. Some of the "postaddicts" were able to guess correctly which drug was given, but some mistook one drug for another.

The effects of the drugs were determined by having the subjects answer questions designed to show whether the effect was pleasant or unpleasant or nothing at all.

In the normal persons and to a lesser extent in the chronically ill, amphetamine surpassed morphine, heroin, pentobarbital and the salt solution in its ability to produce a pleasurable state. The drug most likely to produce an unpleasant state was morphine.

#### MEDICINE

## Find and Make Key Life Stuff Building Block

➤ DISCOVERY AND synthesis of a key building block of living matter was announced by the American Cancer Society in New York.

The new chemical is carbamyl phosphate. It is involved in the building up of such key compounds in the body as urea and the nucleic acids of the cell nucleus.

Its existence was discovered through enzyme studies by Dr. Fritz Lipmann, Nobel Prize winner, and his associate, Dr. Mary Ellen Jones, both of the Massachusetts General Hospital, Boston.

Synthesis of the new chemical was achieved by Dr. Leonard Spector, also of Massachusetts General Hospital.

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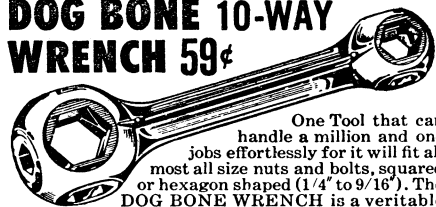
The majority of postaddicts considered the effects of morphine more pleasant than heroin, amphetamine or the placebo (salt). Amphetamine was most often described by them as unpleasant.

The results, the doctors stated, show there is no basis for "sweeping generalizations" as if drugs produced certain set effects in all persons at all times.

Much more research and a "more sophisticated and scientific approach" is needed, they said, on the usefulness of drugs and the likelihood of addiction. They particularly recommended fresh consideration to the advantages and disadvantages of heroin. They also advised careful distinction between law enforcement problems in illicit narcotic traffic and safeguards in the legitimate use of drugs.

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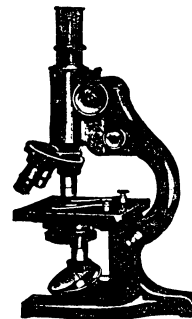
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