HORTICULTURE

Breeding Easter Lilies

New varieties of Easter lilies are being bred. These hybrids are being custom-tailored to suit the tastes and fancies of florist and flower-buyer. Tips for caring for this year's lilies.

See Front Cover

By HOWARD SIMONS

➤ AN EASTER ITEM receiving more attention, more careful handling, and more custom-tailoring than even the latest hat creation is the Easter lily.

Soon, hybrid varieties specially designed to suit the tastes and fancies of florists and flower-buyers will be ready for market. These plants will represent years of cross-breeding, experimentation and selection.

The flower designers responsible for these tailor-made plants are Government scientists at the Department of Agriculture's plant industry station in Beltsville, Md., a short drive from the nation's capital.

Here, in their greenhouse-laboratories, these plant scientists have produced Easter and garden lilies that are almost a florist's dream.

They have rid the Easter lily of danger from disease. They have learned to breed the plants to proper height and number of buds. They have created a domestic industry. And they have devised a method for controlling the blooming of any given Easter lily plant.

Testing 40 Varieties

More than 40 varieties of these new lily hybrids are now being tested and evaluated by Drs. Samuel L. Emsweller and Neil W. Stuart, the horticulturists mainly responsible for the lily industry in the United States. One of the hybrids is shown in the photograph on the cover of this week's SCIENCE NEWS LETTER.

Some of these lily hybrids will become available to flower-buyers through their florists this year, others in the years to come.

"Flowers," Dr. Emsweller pointed out, "change in fashion as much as women's clothes."

Two or three of the plants, for both home and church, will be named this year, Dr. Emsweller said. One will be a dwarf variety, another a tall plant and the third an "in-between."

They will be the offspring of plants that have been cultivated and cross-bred at Beltsville since the beginning of World War II. Prior to that time, every bulb forced or grown in the United States was imported, mainly from Japan. It was even generally believed lily bulbs could not be grown in the United States.

Work done at Beltsville shattered this belief and today virtually every Easter lily sold during the holiday season is a home-grown plant, born and bred in the United States.

It is interesting to note that Easter lilies are not just in demand at Easter, but are wanted all the year round. Statistically, more lilies are sold during the year than are sold at Easter time.

What are the qualities a florist looks for in an Easter lily plant? Dr. Emsweller smiled at this question and remarked, "Ten florists look for ten different qualities."

But, he explained, the Easter lily must have just the right number of buds—not too many and not too few. Three to five seems ideal. It must also be just the right height—not too tall or too short. This is especially true for the home plant. From 12 to 18 inches seems to do the trick.

In any event, breeding "just the right" Easter lilies is not an overnight task. It takes years and years. Some day, the Beltsville researchers hope, a plant known only as 48-50-33, will be introduced. It shows fine promise today.

The numeral designation illustrates the time element attendant with breeding. The first set of numbers, 48, means that the first hybrid plant of this variety was obtained in 1948. The second set, 50, means that seeds were obtained in 1950. The third set, 33, indicates that this plant is the 33rd seedling. It now grows in one of the Beltsville greenhouses, still undergoing tests and evaluation.

Perhaps one of the most fascinating and important developments to come out of the Easter lily experiments at Beltsville is the technique for keeping Easter lilies in storage and controlling the blossoming time.

Flowering Can Be Regulated

Because Easter lilies are in demand every day of the year, it is necessary to store and remove them from storage so that they will flower at the time of sale. Dr. Stuart has developed cold storage schedules that now make it possible for florists to flower Easter lilies at any specified time. In addition, Dr. Stuart has shown for the first time that it is possible to store Easter lilies at temperatures just below freezing and keep them in storage

LILY AND LILY-MAKER—One of the new hybrid Easter lilies that will soon be released for market is checked by Dr. Samuel L. Emsweller, Easter lily expert. Newer and better Easter lilies are part of Dr. Emsweller's research at the greenhouse-laboratories of the U. S. Department of Agriculture's plant industry station, Beltsville, Md.

without harm for as long as a full year.

Another important development has been the increase in the number of chromosomes in plant hybrids through the use of chemicals and irradiation. In this manner, tetraploids have been produced and today are the basis for the new lily hybrids.

If fashions change in plant tastes, the methods of plant research also change. The Beltsville Easter lily experimenters are currently working with atomic radiation and the newer growth regulators in their continuing attempt to produce better Easter lilies.

Easter lilies are tough plants. A potted lily can be kept fresh by watering it moderately so the soil is always moist. It needs as much light as possible, but this does not necessarily mean it must be kept in the south window.

The plant should stay in bloom for from ten days to two weeks and then can easily be transplanted to the garden.

When the plant has finished blossoming, set it out in the ground. It might bloom again in the fall. If it does not, it can be re-potted and brought into a greenhouse at Christmas time or left in the ground where it will come up again the following year—in the South by Easter time, and in the North by July or August.

Cut Easter lilies do not last very long. To keep them looking their best, the following is recommended:

As the flower opens, pinch off the part of the flower where the pollen is produced. This keeps the yellow pollen from sprinkling on the white flower. This can be done with thumb and forefinger or with a pincers.

It is not necessary to water the cut flowers or change the water. To keep their appearance good, remove the petals as they age. Easter lilies blossom from the lowest flower upwards.

One fact about Easter lilies that should remain unchanged is their color, which Dr. Emsweller says will stay white. There are from 80 to 90 varieties of lilies, including garden plants, Dr. Emsweller says, and they come in every color except blue.

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PEDIATRICS

Offer Oral Medicine For Diaper Rash

➤ A MEDICINE BABIES can take in their orange juice to cure diaper rash was shown doctors attending the American Academy of Pediatrics meeting in Washington.

The drug is called Pedameth and is marketed in measured amounts in a pink and blue capsule. The contents of the capsule are emptied into the baby's formula or juice to treat cases of diaper rash resulting from ammonia contained in the urine.

Pedameth, which contains dl-methionine, is 99% effective, claims its developer, S. F. Durst & Co., Inc., of Philadelphia, who report that it restores the body's nitrogen balance so the urine becomes ammonia-free.

Science News Letter, April 13, 1957

CHEMISTRY

Chemistry of Epilepsy

➤ EPILEPSY, a disease that affects 1,500,000 Americans, was linked to faulty chemistry in the brain by Dr. Donald B. Tower of the National Institute of Neurological Diseases and Blindness, National Institutes of Health in Bethesda, Md. He reported on its importance to an international group of epilepsy specialists meeting at the National Institutes of Health.

Since there is nothing consistent about the appearance of brain tissue giving rise to epileptic seizures, a biochemical basis for the disease is indicated, he said.

In the brain tissue of many epileptics, there is no observable difference between normal areas and those that give rise to seizures. In fact, in a great many cases, no pathological or diseased brain tissue can be found by observation, he added.

But changes have been found in the chemistry of the nerve cells in the suspected areas. The problem is whether these changes are a cause or an effect, he reported.

Three normal chemicals that are interfered with in some way are glutamic acid, acetylcholine and potassium.

Glutamic acid is an amino acid found in the body that makes possible many other chemical reactions in the brain. Acetylcholine is a chemical transmitter of nerve impulses, and the element potassium helps nerve cells conduct impulses along their fibers, he explained.

All of these substances are altered in epileptic brain tissue.

Partial proof of the biochemical basis of epilepsy has been given by the results of treatment with asparagine, a chemical that steps up the body's production of glutamic acid. In a small trial on patients at the National Institutes of Health the drug proved beneficial in reducing seizures although it did produce some bad side effects.

This type of treatment is far from being the final cure for epilepsy, but it does point to the fact that we are looking in the right direction, Dr. Tower said.

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ENGINEERING

Electronic Device to Help Polio Victims Breathe

➤ AN ELECTRONIC DEVICE that lets iron lung victims breathe for themselves instead of having their respiration forced by machinery was reported by Dr. L. H. Montgomery, Vanderbilt University School of Medicine, to the Institute of Radio Engineers meeting in New York.

The system, although still in the experimental stage, makes use of the few active chest muscles which continue to contract when the patient tries to breathe, Dr. Montgomery said. Even in the severest cases of paralysis, there are always a few of these active muscles left, he added.

When they do contract they are not strong enough to accomplish the breathing job, but they generate minute voltages which can be detected by sensitive electrodes placed on the skin. These voltages are fed to an electronic system which amplifies them and then uses them to control the flow of air to and from the iron lung or other respiratory device as the patient needs, Dr. Montgomery reported.

Aside from the greater comfort the system is a tremendous boost to patient morale. In presently used respirators the patient is compelled to eat, drink and even talk in rhythm with the monotonous push and pull of a motor driven air pump.

The electronic control now enables the patient to control his own breathing to suit himself.

The equipment is still in the experimental stage, Dr. Montgomery emphasized.

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