

## HORTICULTURE

# Plastics for the Garden

Household plastic sheeting makes rooting of woody plants easy, inexpensive and successful for the home gardener. "Air-layering" brings soil to branches high in the plant.

By HORACE LOFTIN

► HIDDEN IN a grove of pine trees at the U. S. Department of Agriculture's research station at Glenn Dale, Md., is a most unusual group of azalea bushes.

How are they unusual? They are neither taller nor shorter than any others, nor are their leaves, trunks or flowers different from other azaleas.

But on their new spring branches they wear what looks at a distance like small white sacks, lending them a far-fetched resemblance to Christmas trees.

When you examine these "sacks" closely, you discover that each is about the size of a boy's fist, and like a fist encircles a section of the branch. The whole is tightly covered with a piece of plastic sheeting—the same kind you use in your refrigerator to keep vegetables from drying out.

Intent on your investigation, you untie the plastic-covered wire that binds each end of the sheeting and open it up. Inside, the "sack" is found to be filled with damp sphagnum moss; probing into the moss, you discover fine white roots in it, sprouting from the moss-covered branch.

## Theory Is Old

What you have seen is an application of one of the newest—and, in a sense, one of the oldest—techniques for successfully rooting branches of woody plants, air-layering.

The most elementary and easiest way of rooting woody plants gives the least consistent results; that is, by simply cutting off a shoot, placing it in water or moist soil and hoping it will sprout roots. Some woody plants respond well enough to this kind of treatment, but the vast majority do not.

Another method, called "layering," often shows much better results. In this kind of rooting, a branch is bent over and part of it is buried in the soil. Roots may then sprout from the buried part of the branch. The obvious advantage of layering over trying to root a severed shoot is that the layered branch receives normal supplies of water, nutrients and gases from the intact plant's root system and foliage.

But what if the branch you want to root is high on the bush or will not bend without injury or breakage? Then just bring the soil to the branch!

This is the idea behind "air-layering." As done in the Far East for over a thousand years, a clump of soil mixed with straw is put about a wounded piece of branch, covered with straw matting and bound with

raffia. If kept properly moist, roots will soon sprout from the branch into the layer. The difficulty with this system is that the soil dries out rapidly unless water is constantly added to it.

And this is where the modern touch comes.

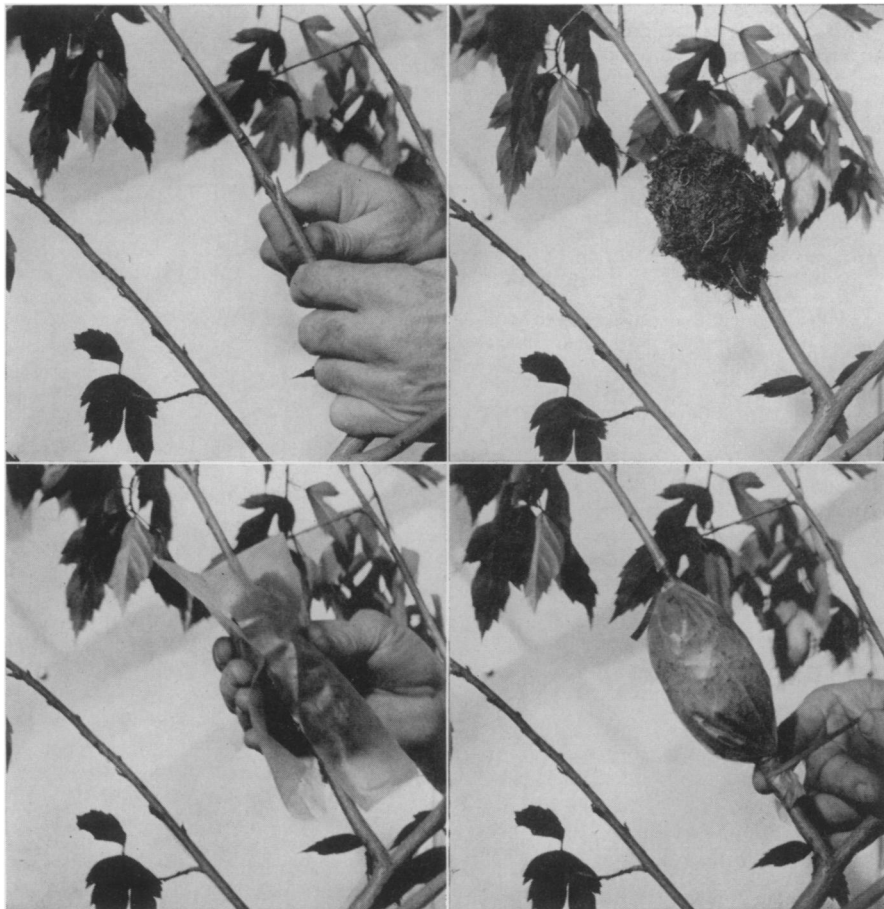
The late Col. William R. Grove of Laurel, Fla., had become familiar with the ancient air-layering technique in the course of propagating the oriental lichee nut tree in Florida. In 1947, reasoning that the new waterproof, gas-permeable plastics should hold moisture within air-layered soil while

letting oxygen and carbon dioxide pass through, Col. Grove air-layered several lichee branches and covered the soil with plastic sheeting.

The results were astounding. Although the air-layers were not watered and were left exposed to the weather for several weeks, the plastic-wrapped soil maintained its moisture and the branches began to put out healthy roots. And so air-layering with plastics was born.

## Many Successful Experiments

University, state and federal experimental stations have since experimented with air-layering with plastics, and enthusiastically turn in the same kind of report: successful air-layering of the majority of woody plants



**ROOTING WOODY PLANTS**—Air-layering is easy, as these U. S. Department of Agriculture pictures show: 1. (upper left) notch or girdle a section of the stem and dust with root-inducing powder; 2. (upper right) put ball of moist sphagnum moss about the wound; 3. (lower left) wrap sheet of moisture-proof plastic about the moss; and 4. (lower right) spiral the ends and tie with rubber band, or better, plastic-covered wire, to make a waterproof bag.

tested can be easily and cheaply done using plastic sheeting.

Here is how air-layering with plastics is done at the Glenn Dale experimental station; you can do it too:

Select branches for air-layering from new spring growth, picking well-shaped erect specimens. With a sharp knife remove a circle of bark one-inch wide from the stem where the layer is to be made. Dust the wound lightly with one of the standard root-inducing substances (such as Hormodin No. 3), available at nearly all nurseries.

### Nurseries Have Supplies

Sphagnum moss can be purchased at most nurseries, too. Preparing the moss properly is an important step. It must be moist, but not too wet. Pour water over it slowly while you mix the moss with your hands; then squeeze it tightly to get out surplus water. Just dropping the moss in water and trying to wring it out will not be good enough.

When the moss is ready, form it into a ball and place it around the wound in the stem. Cover this with a piece of six-by-nine-inch plastic sheeting, making sure it overlaps enough not to leave any moss exposed to air. Twist the ends into spirals and fasten with plastic-covered wire ("Twist-em"). Your air-layering is done.

The plastic used in most tests goes under the general name of polyethylene or polythene. Trade names for appropriate plastic sheeting are Alathon, Polyethylene, Howard-Seal, Pearlon and Tralon. The ordinary plastic sheeting and bags used in your ice-box are of this material and can be purchased in most kitchenware shops.

If you make air-layers in the spring, by fall there should be enough root development to allow you to cut off the newly rooted branches and pot them.

In the short time since air-layering with

plastics has come into being, there has not been the chance for enough experimentation to determine just which woody plants do and which do not respond readily to air-layering. But in general, you will find that most of the woody plants in your garden will take kindly to air-layering. If you remember that you are performing a useful experiment when you air-layer an untried woody plant, the fun of the whole business should be doubled for you.

### Plastics Have Advantage

For those who like to buy their materials in a package, there is a commercial product now on the market, called "Air-wrap," which includes plastic sheeting treated with nutrients, hormones, insecticides and fungicides; sphagnum moss; and material for tying the plastic.

The use of moisture-resistance plastics in air-layering has led to their being tried out on other gardening problems. Dr. W. E. Whitehouse, horticulturist of the U. S. Department of Agriculture's Bureau of Plant Industry, has successfully used Polythene sheeting and bags on budding and grafting of fruit trees.

Instead of the usual grafting wax or similar compound to protect the cut surfaces of cleft and whip grafts on apple trees from drying out, Dr. Whitehouse wrapped the cut areas with Polythene sheeting or covered them with Polythene bags—the very same plastic bags housewives use to keep vegetables in. The grafts took successfully. When the plastic was removed, he applied a coating of shellac to the cut areas as simple protection.

The great advantage of using plastics in grafting is in the ease with which it may be done, in comparison with the rather laborious process of melting and applying grafting wax in the field.

Science News Letter, June 20, 1953

### TECHNOLOGY

## Subscription TV System

➤ HIGH-QUALITY television shows uninterrupted by commercials may be just around the corner if the Federal Communications Commission stamps its approval on a new system of subscription television that was shown to 10,000 persons in New York recently.

The system promises to permit video set owners to see first-run movies, Broadway plays, grand operas, educational and cultural programs and sports events at a "nominal cost." Persons who do not subscribe to the service would not be able to pick up the programs on their TV sets.

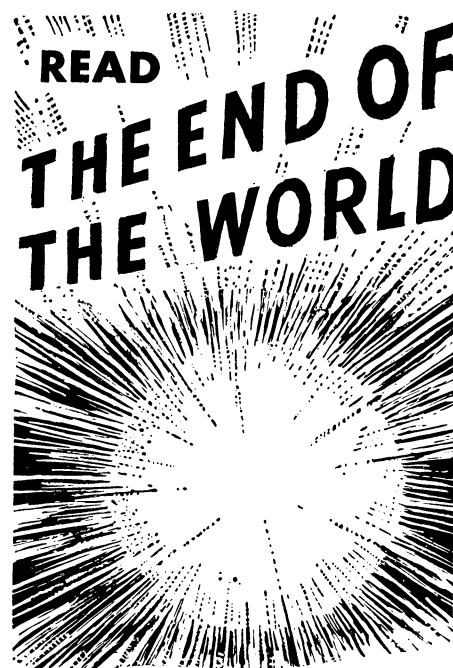
Developed by the Skiatron Electronics and Television Corporation, the system is not designed to replace ordinary commercial television. Company engineers report the system will supplement it instead, and

will enlarge the video viewer's scope of programs. This is particularly true in the educational field where many programs now cannot be aired because of financial difficulties.

Subscribing TV stations, according to the system, would send out both picture and sound in code. The scrambled signals would produce a blur on the screens of TV sets not equipped with a decoder, and the sound would be unintelligible. Subscribers would have a decoder for their sets and could insert a program card into the device.

The decoder is so constructed that it indicates what programs the subscriber tunes in on. These are the only programs the subscriber must pay for, company engineers said.

Science News Letter, June 20, 1953



### A Scientific Inquiry

## By KENNETH HEUER

Illustrated by CHESLEY BONESTELL

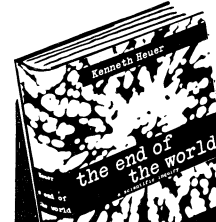
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KENNETH HEUER is a fellow of the Royal Astronomical Society, former lecturer at the Hayden Planetarium, author of *Men of Other Planets*.



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