

is a tetraploid (2n-76) and *M. heptapeta* is a hexaploid (2n-114), it was not surprising that No. 391 proved to be a pentaploid (2n-95). Great irregularities were observed during meiosis. Abnormal chromosome pairing often occurred during diakinesis, resulting in many univalents and bivalents. Lagging chromosomes were frequently present in anaphase I and II, which resulted in micronuclei. Pollen germination when tested in nutrient agar was only 5-10 per-

cent. Although these observations indicate that No. 391 is a sterile hybrid, repeated cross pollinations have produced one seed after crossing with a very fertile tetraploid and one seed has resulted from open pollination. More extensive cytological tests have to be performed.

Lola Koerting is a plant researcher at the Kitchawan Research Station.

West Virginia's Magnolias

by Maurice Brooks

West Virginia has three species of *Magnolia* among its native flora. These are the Cucumber tree or *Magnolia acuminata*, the Umbrella tree or *M. tripetala*, and the Mountain magnolia or *M. fraseri*.

Of the three the Cucumber tree is by far the commonest and most widely distributed. It occurs at all state elevations, from around 250 feet to well above 4,000 feet. Dr. Earl Core says it probably occurs in every one of the state's 55 counties, although it's most abundant in the rich coves on the western slopes of the Alleghenies. The Herbarium of West Virginia University has no specimens from a number of counties in the Shenandoah Valley and in the Ridge and Valley topographic province.

The Cucumber tree in favorable situations grows to respectable size, reaching heights of 25-27 meters and trunk diameters of around 18

decimeters. It makes its best development in soils that are rich and well watered. Although it occurs in other forest types, it is perhaps most at home among the cove hardwoods — tulip poplar, basswood, black walnut, black birch, and white oak among others.

Some years ago the Monongahela National Forest was so fortunate as to acquire a small virgin tract which contains a magnificent stand of red spruce (*Picea rubens*). This much-visited stand is on the eastern slope of Shavers Mountain in Pocahontas County, West Virginia, at elevations above 4,000 feet. At home among the towering spruces, some of them 125 feet high, are good numbers of small Cucumber trees. It's startling to find them in such boreal association.

The wood of the Cucumber tree is light and soft, not particularly desirable for ordinary con-

Special Offer for Despatch

Spring 1978

MAGNOLIA ashei

from indigenous native stand
strong 3 yr. seedlings

\$15.00 each

MAGNOLIA macrophylla

from selected native tree

\$12.50 each

Price inclusive of packing and air freight.

SEND IMMEDIATELY, WITH YOUR REMITTANCE, TO:

TRESEDEERS OF TRURO
The Nurseries, Moresk Road,
Truro, Cornwall TR1 LDQ
England



Unnamed hybrid of *M. × veitchii* × *M. heptapeta*.

struction purposes. It does, however, have a ready specialized market; it is in demand from the manufacturers of panel truck bodies. When state and national forest timber sales are made, Cucumber trees are likely to be marked for this particular use.

The Umbrella magnolia is much more restricted in its West Virginia distribution than is its Cucumber relative. Most state stations are in southern and western portions of the state, although it has been collected in Monongalia County just a few miles southward from the Pennsylvania border. It is local and widely scattered where it occurs, although there are a few stations where the tree is relatively common.

The presence of the Umbrella tree in West Virginia is often ascribed to the influence of the ancient Teays River, a stream that arose in the mountains of western North Carolina in the Blue Ridge and flowed northwestward across the Appalachian Valley, cut through all the Allegheny ridges, and followed roughly the course of the present Hocking River to northwestern Ohio and Indiana. In time the Pleistocene glaciers created the present Ohio River and captured the ancient Teays through the New River — Great Kanawha drainage system.

There are many plants and numerous animal

species that show the influence of this ancient stream. Often associated with the Umbrella tree are Catawba rhododendron (*Rhododendron catawbiense*), Sweet Gum (*Liquidambar styraciflua*), Silverbell (*Halesia carolina*), Fringetree (*Chionanthus virginicus*) and many others.

Umbrella magnolias are valued ornamentals for home plantings. Modern architecture, with its taste for bungalow and split-level structures, demands shade and lawn trees of lower growth habits than the traditional maples and elms that enjoyed so long a vogue. Smaller trees are likely to include ornamental crabapples, flowering dogwood, and, happily, occasional Umbrella trees with their huge leaves, waxy white blossoms, and showy fruits.

The third of West Virginia's native magnolias is the Mountain magnolia, one of the plants which bears the name of an early exploring botanist, John Fraser. It is most at home in the Southern Appalachians, and in western North Carolina it occurs at elevations of 4,000 feet or more.

West Virginia distribution of this southern highland species is largely in our southern mountain counties, although like *M. tripetala* it has been found in Monongalia County, near the Mason and Dixon line. It thrives best in rich coves on the western slopes of the mountains, usually at higher elevations than those which shelter Umbrella trees. Strausbaugh and Core list 16 counties where it is known to occur.

The Mountain magnolia opens its large creamy white flowers before its leaves are fully developed; hence it is most frequently seen and appreciated by automobile travelers through elevated sections in late April or early May. On slopes in association with yellow birch, red maple, and hemlock, it presents a pleasing early season display.

One section of a Forest Service road comes strongly to mind when I think about the Mountain magnolia. It's on the Middle Mountain Trail, in the Monongahela National Forest between West Virginia State Highway 28 on the south, and U. S. Route 33 on the north. Where this forest road descends toward Beaverdam Run there is a stretch that's particularly rich in Mountain and Cucumber magnolias in a pleasing mixture. Some of the trees here are extra large and in proper season are showy in flower