

Hybridizing Section Rytidospermum

by J.C. McDANIEL

Mr. Thompson, proprietor of a nursery at Mile End, near London, in the early eighteen hundreds, achieved by accident the first recorded interspecific hybrid magnolia, now known as *M. × thompsoniana*. It is a good one, though at times somewhat finicky, and like other intersectional hybrids of *M. tripetala* introduced to date, it has been sterile to further breeding. One can speculate that the impact of Thompson's magnolia upon horticulture might have been much larger, if it had, like the somewhat later introduced *M. × soulangiana*, been a hybrid that produced further seedlings. Such fertile hybrids now are a likely prospect, from crosses of *M. tripetala* and other species within its section Rytidospermum of subgenus *Magnolia*. The section has generally been neglected by breeders until recently, but it is varied enough that some quite distinctive hybrids are possibilities, particularly if we can grow F₂ seedlings and obtain recombinations. What might Thompson have started, for instance, if his *tripetala* had crossed on a flower of *pyramidata* or *macrophylla* instead of a species in another section, *M. virginiana*.

The other famous partly Rytidospermum hybrid is *M. × watsonii*, supposedly originated in Japan from a cross of *sieboldii* × *hypoleuca*. It also is intersectional, and has been considered sterile. At least it almost never produces seed, though experiments by Phil Savage indicate that it may act as a pollen parent when crossed on the 'Bloomfield' cultivar of *tripetala*. Other intersectional hybrids, so far sterile, include: *M. × 'Charles Coates'* (*sieboldii* × *tripetala*) introduced from the Royal Botanic Gardens at Kew, and William F. Kosar's interesting group of *hypoleuca* × *virginiana* crosses, from which the U.S. National Arboretum expects to make a cultivar introduction once propagation difficulties are solved.

Nine species are included in Rytidospermum. Six, I believe, have now crossed with others of the section. No hybrids are yet known involving the uncultivated Mexican *M. dealbata*, or the tender Himalayan *M. rostrata*, or the seldom-cultivated *M. pyramidata*. The six confirmed or strongly suspected intrasectional hybrids are as follows, with female parent not necessarily first.

Species crossed	Breeder
<i>tripetala</i> × <i>fraseri</i>	Savage
<i>tripetala</i> × <i>hypoleuca</i>	natural cross
<i>tripetala</i> × <i>officinalis biloba</i>	natural cross
<i>tripetala</i> × <i>macrophylla</i>	Savage
<i>hypoleuca</i> × <i>macrophylla</i>	Savage
<i>hypoleuca</i> × <i>fraseri</i>	Savage
<i>ashei</i> × <i>macrophylla</i> & reciprocal	Kosar and McDaniel

Only the *tripetala* × *hypoleuca*, or reciprocal hybrids are reported to have fruited as yet, and that was in Czechoslovakia (see Newsletter Vol. IX No. 1.).

The others that survive are young, and not yet flowered. It's not known that all of them will prove fertile, but they stand a greater likelihood of proving so than would hybrids between two different sections.

Our editor, Phil Savage, is credited with four of the seven hybrid combinations listed above. Kosar first crossed *ashei* with *macrophylla*, and I have made the same cross, which produces many seeds, in both directions.

Phil feels himself lucky in having a superior selection of *M. tripetala*, now named 'Bloomfield', which was more receptive to hybridization than some other clones at Urbana seem to be. The resulting seedlings from his *tripetala* crosses, and his *hypoleuca* × *fraseri* and *hypoleuca* × *macrophylla* seedlings, are still juvenile, but show vegetative signs of being real interspecific hybrids. My *ashei* × *macrophylla* seedlings are also still young, and the parents are so similar in vegetative characters, that I cannot yet exclude the possibility of apomictic (female only) inheritance. The apparent *officinalis biloba* × *tripetala* hybrid seedling is no longer at Gus Krossa's estate, which is now under new ownership. We hope it has been saved.

Surprisingly little breeding has been done with any of the *Rytidospermum* species. Most have been propagated, up to now, only as unselected seedlings. Only three cultivars are yet registered for *M. macrophylla*, and two of these, 'Sara Gladney' (white, unspotted tepals) and 'Whopper' (exceptionally large flowers with purple spots at base inside) only in 1974 were added to the lone Gresham cultivar 'Holy Grail' that was previously registered, but is not commercially available. *M. tripetala* was without named cultivars until 1974, when Phil's large leaved 'Bloomfield' (flower figured in Newsletter Vol 4, No. 2, pg. 3) and a larger fruited tree at Urbana, Ill. ('Woodlawn') were registered. Treseder's Nursery in England now offers two grafted clones of *M. hypoleuca*. Future breeding, so far as possible, should aim at combining superior cultivars as the primary parents.

Since *Rytidospermum* species vary in natural range from the tropical Mexican highlands (*dealbata*) to Siberia's Kurile islands (*hypoleuca*), and occur in both Eastern and Western hemispheres, there is much variation in habitat. Hybrids should produce cultivars more generally adapted to garden culture than some pure species of this section.

Except for its unpleasant flower odor, *M. tripetala* would be one of the more amenable magnolias in cultivation, and its previous hybrids (*thompsoniana* and 'Charles Coates') have largely corrected this problem. Hybrids of *hypoleuca* × *tripetala* have flowered in Europe, and are reported to have a milder and sweeter scent than pure *tripetala*. Such hybrids may flower at a younger age than *M. hypoleuca* usually does in this country, which would be in their favor. Crosses involving *M. macrophylla* are almost sure to have more wind resistant leaves than that species, and larger flowers than the other parent.

M. fraseri has proved dominant for auriculate leaf base shape when crossed on *hypoleuca* and *tripetala*. Perhaps a cross with the apically notched *M. officinalis* var. *biloba* might result (at least in the F2) in plants with "leaves forked at both ends," a feature that would be unique in Magnolias.

Perhaps the most colorful flowers might be expected from crosses between the pink stamened *M. hypoleuca* and the purple spotted forms of *M. macrophylla*. Pink color has been reported in flowers of a specimen of *M.*