

If you can't join 'em, read 'em

A Day in the Field

by Philip J. Savage, Jr.

Many years ago I accepted the fact that I would never hunt Magnolias in China. My "field" in the title is therefore not the Ta Pa Shan, of boyhood fantasy, but the very attainable Field Museum, in Chicago (now called the Chicago Museum of Natural History). Through the years I have spent adventurous afternoons in the fine herbarium of this institution, and although the specialty of the house leans toward neotropical plants, the Magnoliaceae of both the Old and New Worlds seem well represented.

A quick eye catcher is an interesting series, "Plants of Southern Korea," collected from the University of Michigan Botanical Garden by Mrs. R.K. Smith with Professor T.H. Chung and others. It makes me proud of my alma mater. Most of the collecting was done on the volcanic island of Cheju-Do, formerly called Quelpart, off the southern tip of Korea.

Specimen No. 181, collected August 30, 1947, near the village of In-Cho was determined to be *Magnolia kobus* var. *kobus* by J.E. Dandy in 1962. Leaves, buds, and twigs are very typical of *M. kobus* as we know it. Specimen No. 180 was determined by Dandy to be *M. sieboldii*, again very typical of the plants cultivated in the U.S. and Canada. Mrs. R.K. Smith also collected specimens of *M. sieboldii* in Whanghai province, and Professor

Chung collected this species near Taegi San, on Kanwan island.

One of my sons, while serving in the U.S. Army in Korea, brought back color photographs of Magnolias blooming in residential yards and in parks. These appear to me to be *M. denudata*, and one of the Japanese hybrids of the *Soulangiana* grex with clear purple flowers. Our enthusiastic fellow member and friend, C. Ferris Miller, had not yet started the Chollipo Arboretum in Korea at that time, or son Pete would have used all his film on it, I'm sure.

Through the years, botanical and zoological expeditions have received far less publicity than they deserve. Only when their objective was the capture or collection of a particular



Michelia × *alba* (photo Gerry Hetzer).

mammal, plant, or bird that happened to catch the interest of the general public has there been any real enthusiasm shown by large numbers of people and picked up by the media. The Kelly-Roosevelt-Field Museum Expedition that started out from Chicago in 1929 had just such a target. This expedition aimed to collect specimens of the giant panda, dead or alive, in the mountains of western China. The return trip was to follow the ranges from Yunnan southeast to North Viet Nam, collecting all the way. "Trailing the Giant Panda" is the story of the Chinese part of the expedition, well written by Kermit and Theodore Roosevelt Jr. Top men in all the natural sciences were represented, and their collections poured back to the fine facilities of the Field Museum for all of us to study and enjoy today.

Another delightful book resulting from the activities of Teddy Roosevelt's hyper-kinetic sons is "The Fire Ox and Other Years" written in 1940 by Suydam Cutting, a member of several expeditions. On these trips many specimens of the Magnoliaceae were collected by Frank Kingdon-Ward and are not only represented in the Chicago Museum of Natural History but in herbariums throughout the country.

In case you are beginning to wonder if I wrote this little article for the "American Giant Panda Society," let me say that the range of this fascinating animal generally coincides with the ranges of *Magnolia sargentiana* and its var. *robusta*, *M. dawsoniana* (if this is indeed a distinct species), the westernmost limits of *M. sprengeri*, as well as *M. biondii*, *M. wilsonii*, *M. sieboldii* var. *sinensis*, three or four *Michelias*, and a couple, at least, of 'Manglietias.' The types of bamboo that are the food of the panda bring it into the same ecosystem in which the above Magnolias evolved,

and they will both exist there until this badly battered biome is beyond repair.

In recent years a ray of hope has come out of China, hinting that at long last plans are afoot to maintain a small sample of this biome in its original state. Once again it's that cute clown, the giant panda, on which we must lean. Public interest is vital in China, just as in the United States, for such land use.

In 1964 several giant pandas were found to be living just inside the southern border of Shen-si province. The following year the Wang Lang Nature Reserve was dedicated by the Chinese government for the preservation of this rare and endangered mammal. This large reserve is in extreme northern Szechwan province, close to the Kan-su and Shen-si borders, among the southern spurs of the Min mountains. It is traversed by the Pai-ma river and may, one would hope, become an accessible national park, preserving the flora as well as fauna of that beautiful area, often referred to as Tebbu or Tepu Land by Joseph Rock. Fascinating pandas, magnificent Chinese Monal pheasants, white-lipped deer, and huge "snubnosed" monkeys may lead the way to save Magnolias, Rhododendrons, conifers, lilacs, tree peonies, and other flora and fauna. About 200 giant pandas are thought to range the mountain forests of this badly needed reserve.

Far to the east, in Anhwei province, there is action afoot to preserve the remaining forests around Hwang Shan, the misty yellow mountain on which Professor Ren-Chang Ching, in 1925, collected the undescribed *Magnolia* later named *M. cylindrica* by Rehder and Wilson. Ching also collected *M. denudata* and *M. sieboldii* for the Arnold Arboretum at that time.

An interesting series at the Field

Museum is titled "Contributions for the Biological Lab. of the Science Society of China, Vol. II, No. 1: Preliminary Notes on the Vegetation and Flora of Hwang-Shan," by S.S. Chien, Nanking, 1927.

Among the notations of particular interest to Magnoliaphiles:

"... Southeast of the Lion Ridge from Ping Tien Kan at 4000 ft. down to Yuen Kou Sze at 2700 ft. are many trees of *Magnolia denudata*." Also: "On the north slope, explored by Ren Chang Ching in 1925 are found *Magnolia cylindrica* and *Magnolia parviflora* (sieboldii)." Also:

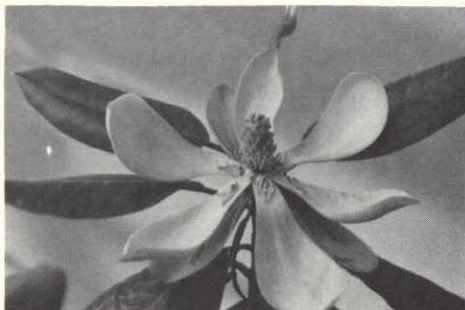
"Deciduous forest extends from Sung Kou An on the north slope up to Lion Ridge, the northern margin of this mountain plateau, at an elevation of 5000 ft. On the south slope, a similar natural forest occurs in the upper part of the Chen Shiang Yuan valley. Trees of the family Theaceae dominate the forest on the eastern cliffs of Sung Kou An. Mixed with them are a few trees of *Manglietia fordiana*. These are trees of large size with whitish gray bark and a girth of three to four feet." Well prepared specimens determined by Handel Mazzetti are at the Field, and also the Harvard Herbarium. *Michelia fallax* is reputed to range in the same area, but I have not found specimens so marked.

What a splendid national park could be preserved around Hwang Shan to preserve the flora and fauna of this delightful mountain!

A Chinese province little visited by plant hunters is Kweichow, south and east of Szechwan. This high, rocky plateau is not famous as a food producer and has far less than its share of tillable land. Books on the fauna of China usually note that "Kweichow produces the greatest number of leopard skins of any of the provinces." One would think that these areas of

lesser population would attract naturalists, but such has not been the case. I was therefore pleased to come across a large folder entitled "Plants of Kweichow Province," dated September 13, 1931. These specimens were collected in cooperation between the Arnold Arboretum, the New York Botanical Garden, and the University of Nanking. Although Kweichow seems quite rich in laurels and oaks, the Magnoliaceae would appear somewhat sparse in distribution. *M. officinalis* in the unlobed form, *Manglietia fordiana*, *Manglietia insignis*, *Michelia bodineri*, and *Michelia martini* appear to be native. *Michelia cavaleriei* collected in the Fan Ching Shan is outstanding. Determined by Dandy in 1962, this specimen (#637) has particularly beautiful leaves, 8 to 10 inches long by only 1½ inches wide. The fruit collected with the leaves is about the size of that of *Michelia doltsopa*, so perhaps the flowers are as spectacular as those of this better known species.

As mentioned previously, plants of the tropics of the New World have been the particular forte of the Chicago Museum of Natural History, and in these studies two great field botanists have done a magnificent job. Paul C. Standley and Dr. Julian A. Steyermark have been tireless plant hunters "south



Magnolia guatemalensis, completely open flower.

of the border" and have not neglected the Magnoliaceae.

There are several folders at the Field of *Magnolia guatemalensis* from the country of its name, showing surprising variation in shape and size of leaves. A good photo of a mature tree, plus a close-up of a flower, accompany one specimen. The caption reads: "Tree 25-50 feet. Leaves coriaceous or firmly chartaceous. Flower creamy-white with odor of apple blossoms. Tree shown in flower 2-20-42 in large swamp just east of Tactic. J. Steyermark."

Two other Guatemalan specimens collected by Steyermark in the Department of Zacapa on the "upper slopes along the Rio Repollal to summit of mountain," have glossy leaves a foot long by 4 inches wide, with a question mark after "determination."

Specimens of *Magnolia poasana* from the slopes of Poas volcano in Costa Rica show very small leaves and small flowers in contrast to the foregoing.

There are several Mexican and Guatemalan specimens of *Magnolia sharpii* collected by D.E. Breedlove on November 3, 1965. Leaves are 9 by 4 inches with very pubescent undersides. A typical specimen, #14064, is described as a tree 40 feet tall in the "Parage of Banabil, Municipio de Tanejapa, elevation 9100 feet." I have not located Tanejapa on my map.

In "Plants of Honduras" collected there by the "Chicago Natural History Museum Expedition," some interesting Oriental immigrants appear. Specimen #3867 with glossy lanceolate-acuminate leaves 9 by 3 inches is *Michelia champaca*, "planted for ornament, Dept. of Morazan, vicinity of El Zamorano, altitude 780-900 meters, Paul Standley, February 17-March 8, 1947."

Another specimen of *Michelia champaca* collected June 13, 1945, by Juvenal Valerio Rodriguez in the same area at 800 meters is #3084.

A much later collection by Paul C. Standley preserves a flowering twig with the notation "Flowers cream, fragrant, cultivated on campus of La E.A.P., El Zamorano, Department Morazan, June 19, 1964.

Another of Standley's cultivated *Michelia champaca* specimens in fruit November 1, 1955, came from the "Drainage of Rio Yeguaré, Long. 87° W, Lat. 14° N, at altitude 800 meters."

It's interesting that the flowers of these specimens of *Michelia champaca* are described as "cream" in color, while flowers of typical trees in southeast Asia are usually described as "chrome yellow," "golden yellow," or even "orange." Perhaps these young trees at El Zamorano are *Michelia champaca alba*, which is widely cultivated from India to Viet Nam and propagated by grafting because it does not come true from seed.

The *Michelia* folders at the Field contain other specimens of *M. champaca* collected from cultivated trees in Brazil also, and for documentation of the correct determination, photos of specimens in the Linnaean Herbarium, London, are attached and signed by "S. Savage," longtime curator of this famous herbarium.

Although Standley and Steyermark have both collected *Talauma mexicana* in Chiapas, I didn't run across these at the Field. There are good specimens of *Talauma dodecapetala* from the island of Guadaloupe and of *Talauma ovata* collected in the Sierra do Goias of Brazil for the New York Botanical Garden in 1965, determined by G.T. Prance. The latter flowers are noted as

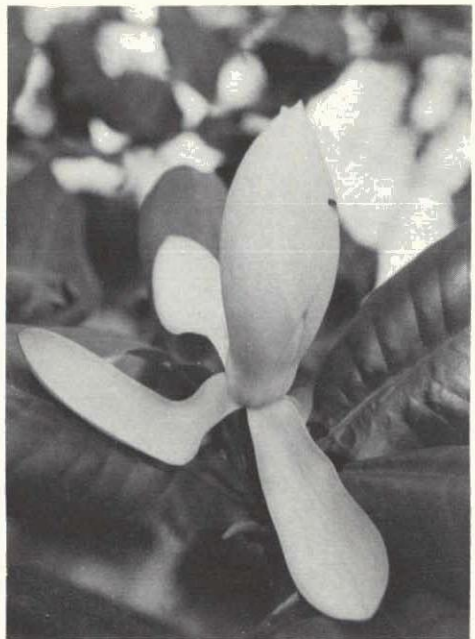
"yellow," from trees 25 meters high and 35 cm. in trunk diameter. Another Talauma species with larger leaves was collected from small trees that were "frequent" on the road to Sao Miguel in the State of Minas Geraes, Brazil, at about 20° S. Latitude.

Dr. Julian Steyermark has done a great deal of collecting on and around Mt. Roraima in the State of Bolivar in mountainous southeast Venezuela. Interesting specimens at the Field are *Magnolia roraimae*, from 2250 m. It has striking big broad leaves, heavy in texture. Twigs, buds, and leaves are very pubescent, actually woolly. *Magnolia plaritepuiana* from the same area is equally pubescent, which usually indicates a habitat with exposure to drying winds and desiccation rather than typical rain forest. Large areas of grassland savannah surround the base of the mountain. So perhaps dry seasons occur which cause moisture stress to the trees.

Compared to some of the more modern and specialized plant families, the Magnoliaceae earn poor grades for originality and innovation. The genus *Manglietia*, for example, is separable from *Magnolia* only by having four or more ovules, and thus seeds, per fruiting carpel. Just to blur this dividing line, a few species assigned to genus *Magnolia* produce four-seeded carpels in the basal rows of well-filled fruits. Joe McDaniel has reported finding carpels containing more than two seeds in fruits of *Magnolia virginiana*, the type species of its genus!

A look through "The Classification of Magnoliaceae" by the late J.E. Dandy, reprinted by the author's kind permission in *MAGNOLIA* Vol. 8, No. 1, reveals many generic intergrades. Dandy was forced to deal with these by placing them in small genera, three of

which contain only one species. Most of these connecting links were organized and published by Dandy in the *Kew Bulletin* during the year 1927. The monotypic genus *Tsoongiodendron*, described and published by Chun in 1963, has flowers that would place it solidly in *Michelia*, and fruits that are typical of *Talauma*, but with four or more ovules per carpel, like *Manglietia*. From its description it is a lofty and handsome tree of southeast China, with the attractive specific epithet *odorum*, Chun. To a taxonomist, *Tsoongiodendron odorum* must be a little like a policeman who wears a fireman's hat and carries a mailbag.



Magnolia guatemalensis not completely open.