

# The Botanical Legacy of Joseph Rock

*Jeffrey Wagner*

**Joseph Rock not only collected some remarkable plants but also took some remarkable photographs.**

Joseph Rock's rich botanical legacy is especially impressive considering he was a self-taught botanist and already thirty-six years old at the time of his first expedition to Asia. He established his name in botanical circles through his work on the flora of the Hawaiian islands between 1910 and 1920. During his years there, he explored extensively and wrote several landmark works on Hawaiian plants. He almost single-handedly established Hawaii's first official herbarium collection with over twenty-nine thousand specimens, most of which he collected himself. This work prepared him well and set the stage for his next career as a botanical explorer and plant hunter in Asia.

The United States Department of Agriculture was Rock's first employer in this new role and, in 1919, sent him to India and Burma to locate and collect seed of the Chaulmoogra tree (*Taraktogenos kurzii* and related species), which provided a substance proven effective in the treatment of leprosy. Rock's expedition was a success, and the seed he collected resulted in a plantation of several thousand trees in Hawaii.

The National Geographic Society and the Smithsonian Institution were his first sponsors in China. From 1922 to 1924, Rock was based in Yunnan province and, as had the plant explorers before him, he began to discover the incredible diversity of China's montane deciduous and evergreen forests. This is a unique temperate flora, unusually rich in species and habitat diversity because of the particular circumstances of southwest China's

geography and geological past. The only other area of the world remotely similar is eastern North America, with its extensive yet comparatively homogeneous forests dominated by oaks, hickories, ashes, maples, and a few other species. In western China, however, with some of the world's highest mountains and deepest river valleys, as well as close proximity to tropical and subtropical evergreen forests and expanses of desolate uplands, the flora is correspondingly diverse. It is no surprise that Rock and his explorer colleagues collected and sent shipment after shipment of plants that held both botanists and horticulturists in wonder.

Rock was a latecomer to the field, and since many before him had made their reputations on the discovery of countless plants new to science and horticulture, he was destined to follow in their footsteps and collect the discoveries of others. He did this with care and acumen, but never published a single book or article on China's flora. On the first Chinese expedition, Rock collected nearly eighty thousand plant specimens for the Smithsonian's herbarium and seed of innumerable plants from the high alpine meadows of the Yulong Xueshan range and the immense montane forest covering the slopes and valleys of the Sino-Tibetan borderlands. Among these plants were several horticulturally valuable forms of rhododendrons, from the fifty-foot *Rhododendron sinogrande* tree to the smaller alpine species that carpet the mountain meadows with blue, violet, pink, white, or yellow flowers. Many of Rock's exceptionally handsome,

hardy, floriferous forms still grace the public and private botanical collections of Scotland, Wales, southern England, northern continental Europe, and America's Pacific Northwest.

After this first expedition, Rock became known for his meticulous, thorough collecting and well-prepared specimens in many duplicate sheets; these enabled herbaria to trade or distribute the extra sheets to allow other institutions ample material for their own studies. Another valuable aspect of Rock's collecting was his passion for plant photography, illustrating a particular plant's habit and habitat, and supplementing the pressed material and his field notes to make an invaluable botanical record of the rugged areas through which he traveled. He is remembered as well for the quantity, quality, and purity of the seed he sent back from China.

On two more expeditions, one for Harvard University's Arnold Arboretum and another for the National Geographic Society, Rock explored areas farther to the north, all the way to the Minshan range, the upper reaches of the Yellow River, the Kokonor Lake, and beyond. These regions yielded fewer yet hardier plants, several of which are still in cultivation and production as ornamentals.

One incomparable contribution by Rock was a stunningly beautiful copper birch (*Betula albo-sinensis* var. *septentrionalis*). This tree has a shimmering, dark, coppery-red trunk, the result of a silky smooth, paper-thin bark that peels away to reveal a waxy bloom underneath. Previously known to grow well in cooler climates such as that of northern Europe, Rock's find was an exceptional, horticulturally superior form.

Another excellent plant that Rock collected is a tree peony that bears his name, *Paeonia suffruticosa* subsp. *rockii*. He found it growing inside Choni Monastery in Gansu province and, although he had never encountered it in the wild, thought sufficiently highly of this specimen to photograph it and collect seed. It is a remarkable hardy and attractive shrub, some four feet tall, with large white flowers, each with a single layer of

petals, and each petal stained deep purple at the inside base. It is a favored plant in both Europe and America and with age becomes increasingly impressive, covering itself each spring with more and more blossoms. The original plant was destroyed in 1928 when Muslim soldiers attacked and burned Choni to the ground. No other example of the subspecies has been found since in China.

Farther to the north, the country was very barren, as a result of climatic extremes, but again at a lamasery—this time the famous Kumbum Monastery—in the Yellow River's desolate loess plain, Rock collected seed from a venerable old lilac (*Syringa oblata*). It was, he claimed, the very tree that inspired Tsongkhapa, founder of Tibetan Buddhism's Gelugpa school. The fourteenth-century lama reputedly saw a thousand shining images of the Buddha in the leaves of this lilac.

The expedition conducted for the Arnold Arboretum was a botanical and horticultural success. In addition to the birch, peony, and lilac, Rock collected species of fir, spruce, juniper, rowan, linden, maple, poplar, rose, rhododendron, mock orange, and many other trees, shrubs, and alpine species. These valuable herbarium specimens and propagation materials were sent back to the Arboretum and further distributed to other institutions in North America and Europe. His contributions today provide an excellent record of the flora of western China, now under great pressure from exploitation.

Rock's last expedition, sponsored by the National Geographic Society, to the Minya Konka region in Sechuan provided such a great volume of material that it has not yet been worked over completely by botanists. One of his best-known yet least-documented finds comes from this area, and there is irony in the fact that this plant, one of obvious ornamental quality, cannot be unequivocally attributed to Rock. It is an attractive rowan whose outstanding qualities include its emerald-green, finely sculpted, and divided leaves that in autumn turn a fiery red in colorful contrast to its amber-yellow fruit. It appeared as a chance seedling among Rock's



*The people of Chingshui, Kansu, are gathered in front of the inn where Joseph Rock stayed, listening to his phonograph playing the sextet from Donizetti's Lucia di Lammermoor. Soldiers are guarding the entrances to the inn. Photographed 11 April 1925.*

collections at the Royal Botanic Garden in Edinburgh. No record could be found of an herbarium specimen or field note, and some even believe it to be a hybrid. It is variously classified either as a hybrid or as a species form of other Chinese rowans. It goes by the name *Sorbus* 'Joseph Rock' and most likely will never be classified with absolute certainty.

Although Rock continued to do some collecting during his final years in China, mostly for the American Rhododendron Society, he did not return to botany with real zeal until the last years of his life in Hawaii. During this time, while in his seventies, he would often dash up a volcano to collect a specimen of some nearly extinct plant for the botanic gardens of Kew, Edinburgh, or elsewhere. Rock reported to botanists at Kew that he was

appalled at the besieged state of native Hawaiian plants. He was among the last botanists to see several now-extinct plant species growing in their native habitats.

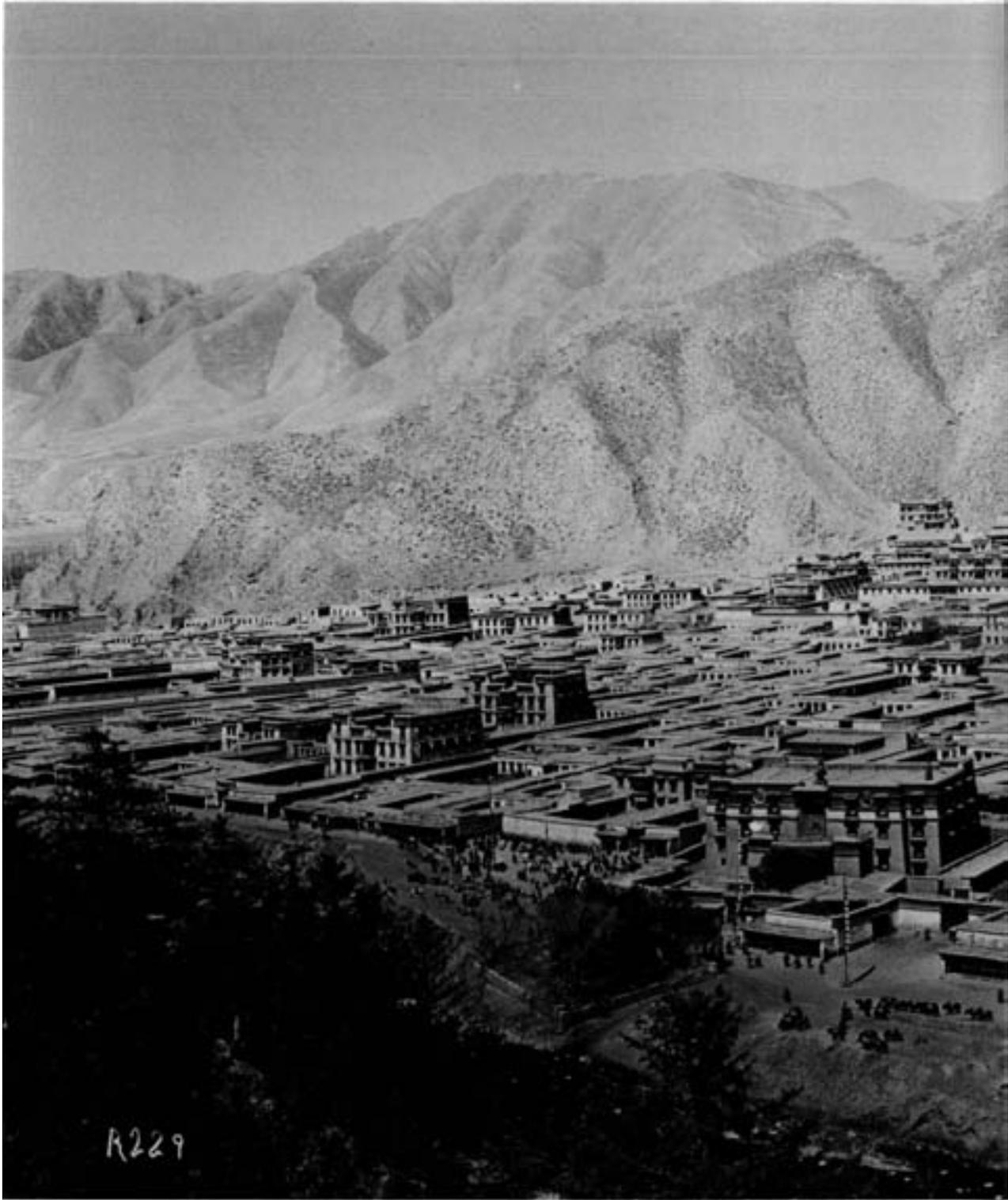
The solid achievements of this self-taught botanist in the rugged and spectacular world of plant hunting in western China will long outlast the eccentricities of character and scholarship for which he is otherwise remembered.

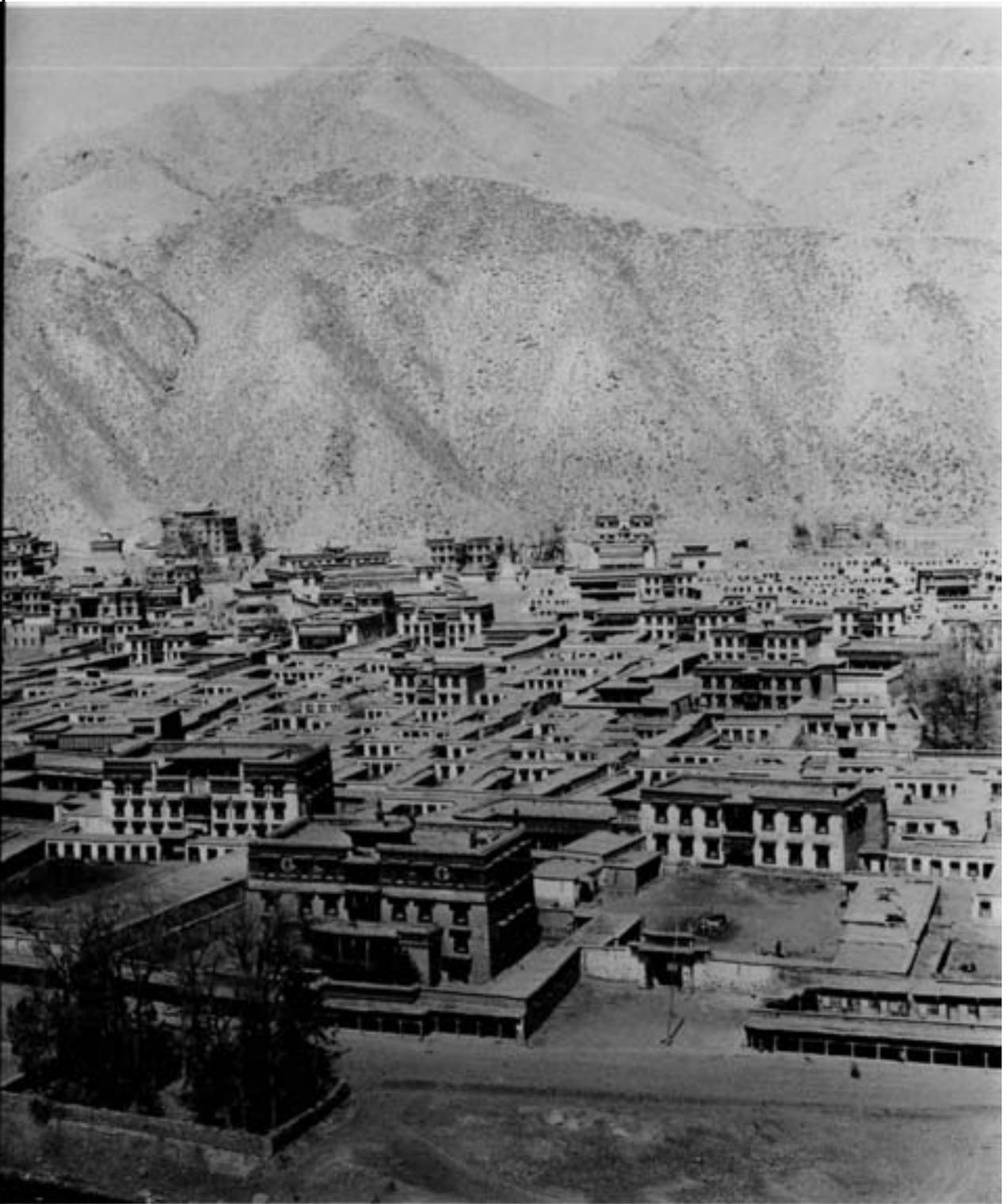
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Jeff Wagner, who holds a master's degree in forestry, did his research for this article at the Arnold Arboretum. This article was reprinted from Michael Aris, *Lamas, Princes, and Brigands: Joseph Rock's Photographs of the Tibetan Borderlands of China*, the catalogue of an exhibition at China Institute in America, New York, April 18 through July 31, 1992. The photographs are from the Archives of the Arnold Arboretum.

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*Overleaf: "The central portion of the Labrang Monastery, Kansu, China, showing the large buildings, either yellow or red, the market, and a crowd of people can be seen to the left near the trees. Spruces are in the left hand corner, while poplars are in the squares near the bottom of the picture." Caption written by Rock. Photographed 30 April 1926.*







*"Pale red sand stone mountains, absolutely bare and deeply eroded as if sculpted, in a valley back of Kansu, which is situated directly in the valley of the Yellow River, west of Shun Hoa." 24 November 1925.*



*"An alpine meadow at the summit of Tsarekika," Joseph Rock wrote, "the last pass across the Minshan to the valleys debauching into the Tas River. It was here that our party was attacked last year by Tebbu brigands and one of my men badly wounded. It is a rendezvous place of Upper Tebbu robbers as three trails converge there." Elevation 11,250 feet. Photographed 18 September 1926.*



*Populus simonii* growing at Choni, southwest Kansu, China. Note the large burl at the base of the tree and the smaller ones along the trunk. Elevation 8,300 feet. Photographed in January 1926.