

The Work of Professor A.P. Saunders

Excerpt: Wister JC (ed),1962,The Peonies. 2nd Printing 1995, American Peony Society

It has already been pointed out that Professor Saunders was not the first to make crosses between peony species. He was, however, the first to bring together a large assemblage of species— the vast majority of which had never been used before in crossing. He was the first to systematically try to intercross each one of these species with every other one. He created more hybrid races and more new hybrid varieties than all other breeders, past and present, put together. His work in creating these new hybrid races is the greatest peony achievement of this, or any other, century.

Dr. Saunders was born in 1869, the son of the Director of the Central Experimental Farm at Ottawa, Canada. He grew up in a botanical and horticultural atmosphere. He was graduated from the University of Toronto and took post graduate work in chemistry in Berlin, Goettingen, and finally at Johns Hopkins where he received his doctorate's degree. In 1900 he was appointed professor of chemistry at Hamilton College in Clinton, New York. He continued his professorial duties until his retirement at the age of seventy in 1939. He lived in the same house, and worked with peonies until his death in 1953.

Professor Saunders [as most of his peony friends called him] joined the American Peony Society in 1906. He served as a Director of the Society from 1909 almost continuously until his death.

He was Secretary from 1910 to 1924. Editor from 1916 to 1924, Vice-President from 1928 to 1930, and again from 1936 to 1938, President from 1930 to 1932. He was a member of the Seedling Committee from 1925 until his death. In June 1928 he was awarded the American Peony Society's Gold Medal for his success in hybridizing peony species, and in 1947 received the Arthur Hoyt Scott Horticultural Award of Swarthmore College, one of the highest awards in horticulture.[p.41:]

He began to raise Chinese peony seedlings as early as 1905. By about 1915 he had secured plants of several authentic peony species, and began his work of the hybridization between species, exhibiting the first varieties of the Challenger Strain in 1928.

In addition to his profession and his peony hobby. Professor Saunders had many interests. He was deeply devoted to the College and attended all its functions, usually accompanied by his family. He set up a telescope near his home so that college boys might gaze at the stars. Ice skating was a favorite sport; birds were a constant delight. Chamber music was throughout his life a beloved occupation: he played an excellent first fiddle.

Through it all ran the supreme and engrossing occupation of the garden.

There was, to begin with, a constant supply of fruits and vegetables for the big family table. In the flower garden besides peonies, almost every other garden plant was at least given a try. Iris were hybridized—one variety, White Knight, received an Award of Merit from the Royal Horticultural Society at the Wisley Garden Trials. Roses there were too, but they were soon abandoned because they required too much coddling to survive Clinton winters. The tiny cyclamen species were grown, nurtured and loved. In the autumn, colchicums produced sheets of mauve bloom. The turnover was tremendous; always about fifty per cent. It had to be. Plants arrived to be tried out, and those that did not soon give a good account of themselves were discarded to make way for new or better ones. Already by 1905, besides seventy-five iris and thirty-nine phloxes [Professor Saunders later raised and named the fine white, Mary Louise, still considered a leading variety today] there were no less than two hundred forty-eight peonies!

Garden notebooks were started in 1900, the peony notebooks in 1903; both series were continued almost up to his death. The term "peony" of course referred in those early years, aside from two or three insignificant species

and perhaps a dozen or two fine Japanese tree peonies, to the albiflora race. New varieties came into the garden in a

steady stream every autumn, while the poorer sorts were as steadily culled out and thrown away every June. The early work with peonies was not hybridizing at all in its true sense for it was purely on these albifloras. A great many seedlings were raised and many were taken to the national peony shows, which were an annual June trek. "Staged in Cleveland in 1913," he writes, "thirtytwo varieties of Chinese peonies plus four-five undistinguished seedlings." Some of the best were eventually put on the market, and two now survive in

nursery lists: the deep red Matilda Lewis, and the lovely light pink semi-double named for his daughter, Silvia Saunders.

The role played by the albifloras has been a dual one: not only were they favorite garden plants, but their many fine qualities have given them great importance as the mother plants in a large majority of the new hybrid races.

Other species, it was hoped, would provide extension of season of bloom, wider variation in foliage, and the possibility of new and beautiful flower colors, notably in the region of fine bright pinks, and perhaps even of yellows. So when several distinguished foreign botanical species began to arrive to take up their abode on College Hill in Clinton, they were given places of honor.

P. lutea, the wild yellow tree peony from China, was sent by Lemoine in 1913; *lobata* arrived the following year; and *macrophylla* and *mlokozewitschi* were procured from van Tubergen in 1915.

These new plants marked the opening of a new era. "My main purpose in all this work of cross-fertilization," Professor Saunders later wrote, "has been to strike out if possible into new lines that would produce early flowering types in greater variety and beauty than we have heretofore had." Few would deny that in his thirty years of hybridizing he succeeded admirably in this quest.

The season of bloom has been extended by two or three weeks. Formerly, the only early-blooming herbaceous kinds were the old familiar forms of *officinalis*, of *tenuifolia*, and of the Lemoine *wittmanniana* hybrids in pale tea rose shades. These plants were all lacking in some respect of beauty, variety, or vigor of growth. Only the *officinalis* varieties were at all widely grown. Now through the use of May-blooming species, and in particular those very early three, "Macro," "mloko," and "Tenui," that bloom May 12 to 15 in Clinton, hybrids have been created that flower throughout the second half of May and into the first week of June to overlap the albiflora race. But in the new brilliant range of colors an even greater improvement has occurred. There are new reds in vermilion, scarlet and cerise; new shades of true pale lilac; new waxy whites with striking flarings or edgings; new ivory and opalescent shades; but most important of all, an entirely new range of pinks, in salmon, coral, flamingo, and cherry — colors which had existed in the Japanese tree peonies, but never before in the herbaceous group.

To obtain these hybrids, Professor Saunders embarked on a campaign of crossing, the extent and intricacy of which he himself did not at first foresee. In the end, the total number of peony plants that either immigrated into the Clinton garden from the outer world, or were born here, was 17,224, this being the number of the last plant in Volume 23 of the Peony Notebooks. Allowing an ample thousand for all the pure albifloras, another thousand for the tree peonies and their hybrids, and five hundred for all the species plants, there remain over fourteen thousand, five hundred to cover the vast number of herbaceous hybrids. Of these, some one hundred sixty-five were selected as worthy to be named, propagated and put on the market—a little more than one per cent. Most of these bid fair to become permanent addition to American gardens.

It was not only as a garden plant that the peony held fascination for Professor Saunders. As he worked, he became more and more engrossed in the scientific aspects of the species, whose characteristics he was able to

observe not only in the plants themselves but in their hybrid offspring, and with the attempt to bring order and classifiable knowledge out of the chaos and disorder. The interesting new species that were beginning to sent him by plant collectors and botanical gardens in Europe, and particularly England, were the wild peonies from the borders of the Mediterranean, the Caucasus, the Himalayas, and China. Neither Professor Saunders, nor indeed any other American, had ever seen most of these plants. They were then, and many of them still are, unknown to American gardens.

A good many new kinds were in the ground in Clinton and showing their true colors by 1925 when Professor Saunders was asked to write the chapter on species in the Society's Manual. There existed at that time no complete or up-to-date study of the peony, and the Manual, published in 1928, stood as the authoritative work until about 1943 when the first parts of Sir Frederick Stern's *A Study of the Genus Paeonia* were published in England by the Royal Horticultural Society.

Professor Saunders, not always in complete agreement with Sir Frederick in matters relating to the classification of the species, had, as a hybridist, special opportunity to study compatibilities. He reached the opinion that the ability of two species to intercross, while not alone in itself proof of relationship between them, did serve to strengthen the supposition that they were related, *provided* there were other reasons to suppose so.

To follow through a really complete and scientifically planned program, it was necessary to cross each species, or form of species, onto every other species, or form of species, and then all over [44:] again the other way round, for a given cross usually yields entirely different hybrids when made in the opposite way.

In addition to the many herbaceous species, there were the tree peonies, consisting of two important groups, the Japanese tree peonies and *P. lutea*, the wild yellow tree peony from western China. All these were crossed onto one another, even to the extent of crossing the trees onto the herbaceous and vice versa. For who shall say, until it has been tried, tried, and tried again, whether or not a hybrid between the tree and herbaceous can be made?

"In 1916," runs a notebook, "Mr. Bertrand H. Farr was kind enough to send me some blooms of *P. lutea*, whose pollen I put on blooms of many different peonies, both herbaceous and tree. In 1917 again, I made some two hundred fifty pollinations, many of which were hybrid crossings, and in 1918 I transplanted ninety-five seedlings, not a one of which, as it turned out later, was a hybrid; all were merely "selfed" seedlings and were consequently thrown out." Top place among the failures were: 1) the attempt to cross the trees with the herbaceous; and, 2) the great continued exasperation and frustration of trying "to induce the yellow peony "mloko" to cross with *albiflora*. "How long must you go on," Professor Saunders asked finally "until you feel justified in saying that a given cross cannot be made?" The answer given to him by Dr. A. B. Stout, famous botanist and plant breeder of the New York Botanical Gardens, was "Until your patience is exhausted."

Added to these were many small run-of-the-mill, acceptable, even expectable failures. Failures due to unviable [lifeless] pollens were eliminated by pollen-testing, begun soon after 1920. Failure through having tree peony seeds frozen in winter was overcome by the building in 1928 of a small frost-proof cellar set into the slope of the recently acquired strip of land up College Hill, named "The Ribbon" from its shape. "No one," wrote Professor Saunders, "should undertake the work of hybridization unless he feels within himself an unfathomable well of patience and a strong wall of persistence against which he may put his back when discouragement threatens to get the better of him.

One must take failure and disappointment as the order of the day, and regard every successful cross as a gift of the gods."

Attempts to classify "true" species have been made in a preceding section, but so wide are the differences of opinion, not only among botanists themselves, but between botanists on the one hand and horticulturists on the other, that the term "species" will be used in this section as it is found in Professor Saunders' notes. He often used the term to indicate botanical varieties, or forms of species, and he himself remarked: "The hybridist

has to remember that distinct varieties may give very different results even when botanically they are to be considered as merely forms of the same species."

Decora and peregrina, for example, are now considered to be at least closely allied to, it not actually forms of, officinalis. The name peregrina has in fact often been employed as a synonym for officinalis. Stern considers lobata and others synonyms of peregrina.

Dr. Saunders' notes will also be followed in the use of certain abbreviations, notably that of "mloko" for the unspellable, unpronounceable, though botanically approved, name of mlokosewitschi, honoring the Russian forester who discovered the plant. Many other beloved varieties were given, as a child or a pet puppy may be given, their own nicknames: "Albi" for albiflora, "Tenui" for tenuifolia, "Macro" for macrophylla.

The Japanese tree peonies were always referred to as "t. p's."

The most recent and complete article by Professor Saunders on his herbaceous hybrids was published in the American Peony Society Bulletin for September 1941. Even this account covers only those [46:] strains of which one parent was albiflora. Albiflora played a major role in the work of hybridists generally; in Clinton it served as parent to a full eighty per cent of the hybrids. Not only that, but included within this four-fifths are almost all the most important strains: the "Challengers," the outstanding "Lobata Hybrids," and the "Chalice" group, to mention but three. It seems suitable here again to allow first place to those groups, and to give later attention to the remaining strains, those made without benefit of albiflora.

