

THE BOOK OF
THE PEONY
MRS. EDWARD HARDING

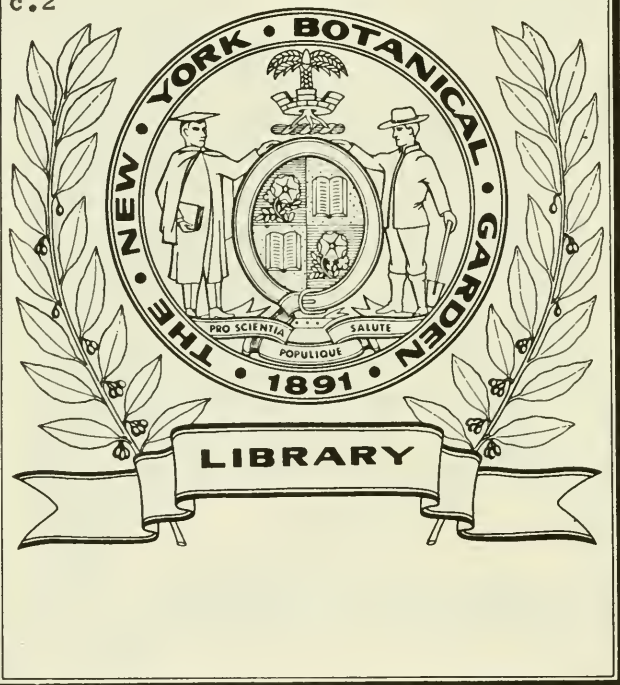


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MODELE DE PERFECTION
(Crousse, 1875)

Rose type. One of the fine pinks of unusual form. Has strong stems, beautiful foliage and is a free bloomer

THE BOOK OF THE PEONY

BY *Alice Howard*
(MRS. EDWARD) HARDING

WITH 20 ILLUSTRATIONS IN FULL COLOUR
22 IN DOUBLETONE AND A MAP



PHILADELPHIA AND LONDON
J. B. LIPPINCOTT COMPANY

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PREFACE

ALTHOUGH the peony has been a favourite in gardens for very many years, and although experts and hybridisers have been developing and improving the flower for over half a century, no book has yet been published containing the widely scattered facts as to its history and cultivation.

In France and England both amateur and professional horticulturists lavished time and devotion on its improvement. The marked success attained by them in producing incredibly beautiful types caused the greater appreciation of the peony to extend to this country. In America such men as Richardson, Hollis and Terry have done work along similar lines to that of the foreign experts.

The peony—at present extensively grown—is constantly and rapidly increasing in popularity. Certain enthusiastic commercial growers have made peonies their specialty—sometimes peonies alone and sometimes peonies together with a few other perennials. Their judgment in specialis-

PREFACE

ing has been proved sound by events: on the lists of some of these growers there are more than ten thousand names of active customers. Hundreds of acres are planted to peonies to supply the demand.

The annual exhibition and the publications of the American Peony Society have done much to awaken the interest of those who have had but a slight acquaintance with this flower. Many persons, vastly surprised on seeing the improved varieties for the first time, complain at not having been sooner shown the sources of pleasure that the peony holds.

Because of the lack of easily accessible information, until now the knowledge of a finer cultivation of the peony has remained the property of the comparatively small number who have made its growing either a hobby or a business. Fortunately the peony is a very hardy and friendly flower that does its cheerful best to bloom even though neglected. When attention such as is ungrudgingly expended upon less responsive flowers is bestowed upon the peony, its gratitude finds expression in an increased loveliness which is more than sufficient reward.

PREFACE

With the hope of bringing the modern peony before those who do not know it, this book has been planned. The ever-widening interest in gardening and the serious and thorough work of amateurs to-day encourage me to believe that what I have written, because I love the peony, will be of interest and help to others.

To Mr. B. H. Farr of Wyomissing, Pennsylvania, my thanks are due for the autochrome of the rare and beautiful *P. lutea*. To Mr. A. H. Fewkes of Newton Highlands, to Mr. Theodore Hobby of the Metropolitan Museum of Fine Arts and to Mr. Morris Earle of Williams, Brown and Earle, Philadelphia, my deep appreciation of their interest and kindness is expressed.

I especially wish to acknowledge my indebtedness to Mr. George H. Peterson of Fair Lawn, New Jersey. As typical blooms from my own recently transplanted beds were unobtainable, the illustrations in this book, with a few exceptions, were secured through Mr. Peterson's generous courtesy.

The carefully prepared Bulletins on the Classification, etc., of the Peony—the work of Dr. J.

PREFACE

Eliot Coit and Mr. Leon D. Batchelor—have been of great assistance to me.

I also desire to extend my thanks to Dr. H. H. Whetzel for permission to reprint his Bulletin on the Diseases of the Peony.

Alice Harding

BURNLEY FARM

February, 1917

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AN APPRECIATION OF
THE PEONY

THE BOOK OF THE PEONY

CHAPTER I

AN APPRECIATION OF THE PEONY¹

“ Full of set flowers,
Full is my chamber ;
Thou art most stately,
White peony.”

—*Hakku.*

THE peony of to-day—too little known and too seldom sung—the brilliant result of years of steadfast devotion and untiring effort on the part of peony lovers and hybridisers, is the most superb and commanding flower which the garden holds. The iris, Oriental poppy, fox-glove, hollyhock, lily, dahlia and chrysanthemum each has its own special radiance, yet each is surpassed by the peony with its magnificence of mass and per-

¹ I have adopted the spelling generally used in this country and approved by the Century Dictionary. In England “pæony” is the customary spelling. The botanical name is *Pæonia*.

THE BOOK OF THE PEONY

fection of detail. The rose, fine, exquisite and fragrant as it is, must yield first rank to the modern peony, which by reason of its sheer wealth of splendour and majesty of presence is now entitled to be called the Queen of Flowers.

The compelling charm of the improved types of peony lies not only in their grace and comeliness, but in the infinite variety of both flowers and foliage. Starting with single blooms, like huge anemones, through semi-double flowers, resembling water-lilies, and various enchanting forms of doubling up to the solid mass of petals, as in *Avalanche*, the peony holds one spell-bound in admiration. The wide diversity of foliage and habit of growth makes the plants an object of alluring interest. The leaves of certain sorts of peony are much divided and fern-like; of others, broad and strong with leathery quality. Usually varnished and lustrous, they run in colour range through many shades of green—often tinged with copper or with red. Some kinds are dwarf and bushy; some of medium height and spreading growth, and others tall with a bold outline. All, however, have an air of sturdy character and self-reliance.



SOLFATARE
(Calot, 1861)

Bomb type. A peony of exquisite beauty and distinction

AN APPRECIATION OF THE PEONY

Fondly as I esteem the rose—heretofore the accepted standard of loveliness—I feel that the peony has the advantage over it, not only in superiority of flowers, but in other important points. The peony has no thorns to surprise or cause dismay. After the peony blooms its foliage remains an adornment—a contrast to the small and scanty leaves of the rose, which are often disfigured and unsightly. All through the garden season the peony has a landscape value which the rose lacks. And, last but not least, the peony requires neither spraying nor pruning: to the conscientious owner, burdened with the numberless details of spring garden-keeping, this is a welcome relief.

Fifty years ago the word peony meant one thing: it referred to the red “piney” of unfragrant memory, which, though highly prized and desirable at that date, suffers when compared with the beauties of to-day. Now the word peony conjures up a large variety of shapely flowers packed with glossy silken petals in a hundred shades, tints, and combinations of white, pink, yellow and red. One who sees for the first time typical specimens of the modern peony is thrilled

THE BOOK OF THE PEONY

with their breath-taking loveliness: even those who know well all the fascinations of the flower are stirred by it to new wonder and delight each recurring year.

Lest I be thought too loud in my praises of the peony, I will quote from one of many enthusiastic authorities—a book, too, which is not essentially a horticultural work. No one, I venture, will consider the *Encyclopædia Britannica* given to exaggeration in its statements, yet this is what it says about the peony:

“*PEONY* (botanically *Pæonia*; Nat. ord. *Ranunculacææ* q. v.), a genus of plants remarkable for their large and gorgeous flowers. There are two distinct sorts, one of the strong-growing herbaceous kind, with fleshy roots and annual stems, derived mainly from *Pæonia albiflora* and *P. officinalis*; the other, called the tree peony, stiff-growing plants with half-woody permanent stems, which have sprung from the Chinese *P. moutan*.

“The herbaceous pæonies usually grow from 2 to 3 ft. in height, and have large, much-divided leaves, and ample flowers of varied and attractive colors, and of a globular form in the double varieties, which are those most prized in gardens. They usually blossom in May and June, and as ornaments for large beds in pleasure grounds, and for the front parts of shrubberies, few flowers equal them in gorgeous effect. . . .

“The older varieties of *P. albiflora* include *candida*,



ADOLPHE ROUSSEAU
(Dessert and Mechin, 1890)

Semi-double type. One of the finest reds. Blooms freely

AN APPRECIATION OF THE PEONY

Humei, Whitleyi, etc.; those of *P. officinalis* embrace *albicans*, *anemoniflora*, *sabini*, etc. The garden varieties of modern times are, however, still more beautiful, the flowers being in many instances delicately tinted with more than one color, such as buff with bronzy centre, carmine with yellowish centre, rose with orange centre, white tinted with rose, etc. . . .

“The moutans, or tree pæonies, are remarkable for their sub-shrubby habit, forming vigorous plants sometimes attaining a height of 6 to 8 ft., and producing in May, magnificent flowers which vary in color from white to lilac, purple magenta, violet and rose. . . .”

Even had one never seen the flower, such fervour from a mere encyclopædia would awaken instant interest.

For those who as yet know the peony only in a general way, I will set out in orderly array no less than seven distinct and excellent reasons for considering the peony the best of all perennials:

1. The slightly appearance of its blooms

The elegance of the flower, its different forms, the satiny texture of the petals and the numerous tints and shades of white, pink and red make its fairness a never-ending joy.

In many kinds there is also found fragrance equal to that of the rose.

THE BOOK OF THE PEONY

2. Its worth for both landscape and cutting

Both in mass and in detail, it answers many requirements. The substantial size of the plant and of the individual flowers makes it a useful and striking subject for the garden architect. The brightness, sweetness and lasting qualities of the blooms make it an ideal cut flower.

2. The freshness of its foliage throughout the summer

A number of perennials lose the freshness of their foliage after blooming and have to be cut back or hidden by other plants. Except in one or two instances, the shining foliage of the peony attracts attention from the time of its appearance above ground until it succumbs to the late frosts.

4. The ease of its culture

Any one can raise peonies successfully with far less trouble than it takes to grow roses.

5. Its practical freedom from insects and disease

While a number of diseases of the peony have been classified and described, the grower who reads and heeds directions is not likely to be troubled with diseased plants.

6. Its extreme hardiness

It thrives in very severe climates, and endures a degree of cold that is fatal to many other perennials.

AN APPRECIATION OF THE PEONY

7. Its permanence

Lifting and dividing the roots are not necessary for at least eight or ten years. Many varieties can be left undisturbed for fifteen years or more.

The peony has but two drawbacks—which can hardly be considered objections. (1) It increases slowly. (2) The stems of some varieties are not strong enough to bear the weight of the large flowers and must be supported.

As far back as 1629, peonies were so well liked and so much planted in gardens that John Parkinson in his quaint book on plants, “Paradisi in Sole, Paradisus Terrestris, or a Choice Garden of all Sorts of Rarest Flowers,” gives descriptions of six different kinds with four interesting pictures. Referring to “*Pæonia femina vulgaris flore plena rubra*,” which closely resembles and in all probability was *P. officinalis*, he says: “This double peony, as well as the former single (*Pæonia femina Byzantina*—the single red Peony of Constantinople) *is so frequent in every garden of note, through every country, that it is almost labour in vaine to describe it: but yet because I use not to pass over any plant so lightly I will set down the description briefly in regard it is*

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so common." A little further along he breaks through his scholarly reserve with true horticultural ardour, and expresses his real regard for the peony by exclaiming, "no flower that I know so faire, great and double." I wish that it were possible for Parkinson to see the peonies of to-day, but I doubt if he could phrase his admiration any more charmingly than he did for the less wonderful peony of 1629.

As the horses never trot so fast as around the fire in the Winter, so the peonies never bloom so large and perfectly as in one's vision of the season to come. After one's appreciation of and enthusiasm for the peony are fully awakened, there is not a week in the year when the flower is not a pleasure. At all times, night or day, Winter or Summer, one can in absorbing study be amongst the peonies and in imagination behold them again in all their sumptuousness.

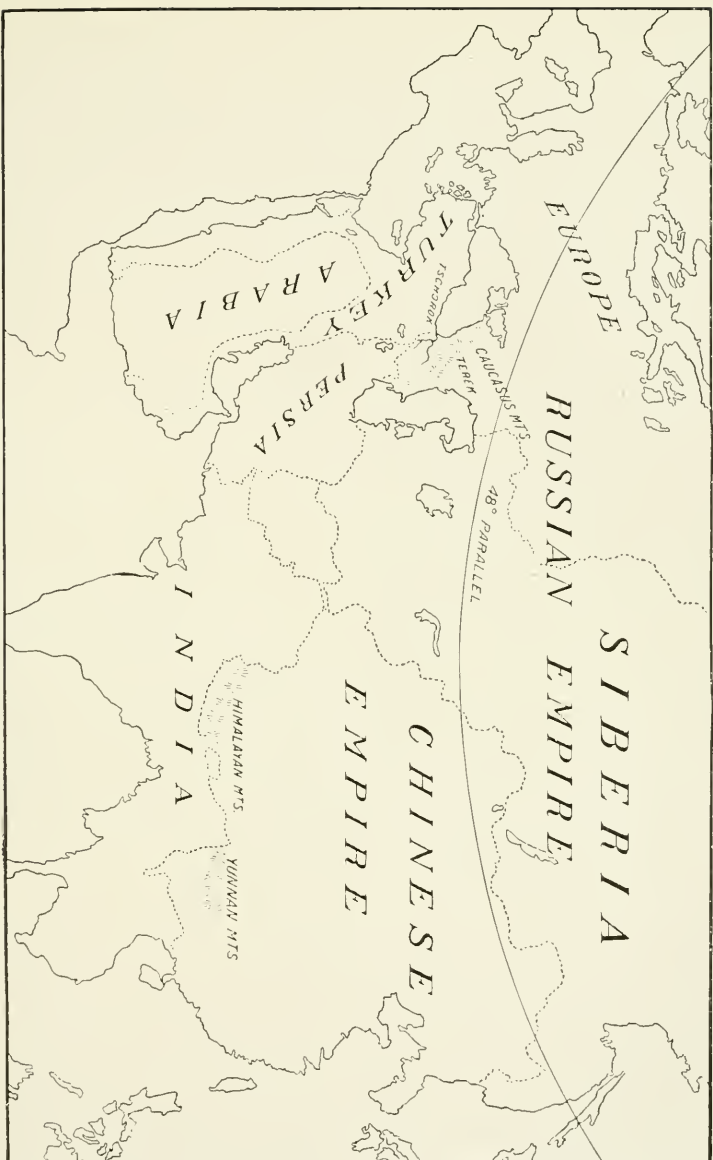
When the Spring is here at last, and the earth has its indescribable scent of warmth and sweetness, I hasten to my peony garden to see if the first coral tips have broken through the ground. After a few days, becoming impatient, I loosen the soil and dig quietly and gently, until I find the little red points that will soon grow into sharp

AN APPRECIATION OF THE PEONY

red spears. Then, reassured that they are really coming, in spite of the long time Winter has held them on the way, I cover them up and go away content. On that day, for me, the garden season begins.

I know of no plant that is so satisfyingly beautiful in every stage of its development. The changing of the shades of red, green, copper and bronze of the young stems and foliage, the slow unfolding of the leaves of fine design are exquisite in themselves—and yet they are but a prelude to the burst of glory in the flowers. When the blossoms appear, it is indeed hard to leave the garden: no matter how many times a day one gazes at them, there is something newly entrancing on each successive glance. There is one peony lover, bewitched by their spell, who, loath to leave them for even a few hours, makes the rounds of her garden every night with a lantern. This mistress of a much-cherished garden often rises to listen to the birds and see her peonies at dawn. The piercing tenderness of the wood-thrush's song, the dream-like purity of the peonies, the inspiration of the summer morning, bring a happiness that is poignant, a thankfulness for life that is ecstasy itself.

THE MYTHOLOGY, AND
ANCIENT AND MODERN
HISTORY OF THE PEONY



MAP SHOWING LOCALITIES IN WHICH THE MOST IMPORTANT PEONIES ARE NATIVE

- P. Albiflora: Central China and Siberia. (There is no exact information as to just how far north P. albiflora grows.)
P. Emodi: Himalayan Mountains, India.
P. Lutca: Yunnan Mountains, Southern China.
P. Montana: Central part of Western China.
P. Officinalis: Europe, south of 48th parallel.
P. Tenifolia: Terk Region, Caucasus.
P. Wittmanniana: Tschorok River Region, Caucasus.
Note: The only peony native to America is P. Brownii, which is found in California and the Northwest.

CHAPTER II

THE MYTHOLOGY, AND ANCIENT AND MODERN HISTORY OF THE PEONY

THE peony has been such a familiar flower in humble gardens in this country that many persons are not aware of its aristocratic and extended genealogy. The descent of the peony can be traced through numerous periods of history even into mythology; indeed in Greece, the Roman Empire, China, Japan, France, England and America, its relation to mankind has been considerable.

In medicine, art, commerce and science, the peony has played a part which not only entitles it to general recognition, but which is also absorbing in detail. At different times in the past, it has been the object of many journeys and voyages, the subject of years of painstaking study, and to its improvement men have lovingly devoted a large portion of their lives. From Leto, mother of Apollo, who appears to have been the original "introducer" of the peony, down to M. Dessert, the great French grower, who in 1915

THE BOOK OF THE PEONY

sent out his latest peony under the name of "Victoire de la Marne," we have a long and entertaining story, of both horticultural and human interest.

For greater convenience and clearness I have set out in tabular form some of the facts one should have in mind in order to read without confusion the complete history of the "peony"—which generic name includes several species, each with a separate record.

TABULATION OF PRINCIPAL SPECIES OF PEONIES

I. Herbaceous Peonies

These are bushy plants two to four and one-half feet high that die down to the ground in the Autumn. When the word "peonies" is used reference generally is made to herbaceous peonies (in distinction to tree peonies).

1. P. OFFICINALIS (*of the apothecaries' offices or shops—used for medicinal purposes*)—see colour plate—the red single or double peony of old-fashioned gardens. White single and double varieties have also been known for over three hundred years.

This species is a native of southern Europe and is the peony of mythology and of Greek and Latin literature. It is grown to some extent in gardens now. This species gave the genus its name.



REINE HORTENSE
(Calot, 1857)

Semi-rose type. Considered by many the finest pink peony. It has form, fragrance, strong stems and free-blooming qualities

MYTHOLOGY, AND HISTORY OF THE PEONY

2. *P. ALBIFLORA* (*white flowered*)—Improved type—
(see frontispiece and numerous other colour plates and half-tones), with red, pink, white, mauve or yellowish flowers of several forms, single, semi-double, crown, bomb, rose, etc., and many of them fragrant. This is the most important and interesting species of the herbaceous group and is the principal one grown to-day. It is sometimes called *P. sinensis* or Chinese peony.

The primitive type of *P. albiflora*—from its name, presumably white—is a native of a vast range of territory from the central regions of Siberia to central China. Its early history is entirely in China and Japan: it was not known in Europe prior to 1656.

The improved type was obtained:

- (a) By importation into Europe from Siberia or China about 1850.
- (b) By crossing *P. albiflora* (either the imported primitive type or the imported improved type) and certain little-known species, *e.g.*, *P. peregrina* (*foreign*), *P. arietina* (*ram's horn fruited*), etc.
- (c) By crossing *P. albiflora* (either the imported primitive type or the imported improved type) and *P. officinalis*. This crossing, done chiefly since 1850, is probably the origin of

THE BOOK OF THE PEONY

most of the beautiful double kinds of to-day with their varied forms and exquisite colourings.

3. *P. TENUIFOLIA* (*narrow-leaved*)—see colour plate—introduced into England in 1765 from the Caucasus.
4. *P. WITTMANIANA* (*Wittman's*)—A pale yellow peony. Discovered in the Caucasus about 1842. One of the parents of the desirable *Wittmaniana* hybrids.
5. *P. EMODI* (*Mt. Emodus*), the only peony native to India.
6. *P. ANOMALA* (*unusual*), *P. CORALLINA* (*coral red—referring to the seeds*), *P. DECORA* (*comely*), *P. PEREGRINA* (*foreign*), *P. BROWNI* (*Brown's*)—the only peony native to America—and others, are less important species from a gardening standpoint.¹

II. Tree Peonies

These have woody stems that do not die down to the ground in the Autumn. They have been much cultivated in China and Japan for many centuries.

1. *P. SUFFRUTICOSA* (*woody*) or *P. MOUTAN*—see colour plate—with large flowers (eight to ten inches across), of various shades of red, white, pink, salmon and purple.

A native of the central part of western China, it was first exported to Japan in 724; and first exported to England (and thence to France and the United States) in 1787.

¹ A list of these is given in Chapter XI.



COURONNE D'OR
(Calot, 1872)

Semi-rose type. A white peony of distinction and beauty which can be bought at a low cost

MYTHOLOGY, AND HISTORY OF THE PEONY

2. P. LUTEA (*yellow*)—see colour plate. Discovered in southern China in 1882.

The main portion of this book is devoted to herbaceous peonies. Two chapters (IX and X) cover tree peonies exclusively—their description, history, planting, cultivation, propagation and best varieties.

THE PEONY IN MYTHOLOGY AND IN THE CLASSICS

Zeus and Leto were the parents of Apollo, god of healing, who was the father of Æsculapius, god of medicine. According to the ancient writers, Pæon, pupil of Æsculapius and physician of the gods, first received the peony on Mt. Olympus from the hands of Leto. With it he cured Pluto of a wound inflicted by Hercules during the Trojan war. To quote from Homer's Iliad with its stirring action: "Pluto also endured a swift shaft when the same hero (Hercules) the son of Ægis-bearing Jove, afflicted him with pains at Pylos amongst the dead. But he went to the palace of Jove on lofty Olympus, grieving in his heart and transfixed with pain; for the shaft had pierced into his huge shoulder and tortured his soul. But

THE BOOK OF THE PEONY

Pæon healed him, applying pain-assuaging remedies.”²

This cure caused so much envy in the breast of Æsculapius that he secretly plotted the death of Pæon: probably the first recorded instance of professional jealousy. But the wicked plotter was destined to be foiled. Pluto, in gratitude for what Pæon had done, saved the physician from the fate of mortals by changing him into the plant that had been used in the cure. This plant has ever since borne Pæon’s name.³

The history of the cognate word pæan is interesting as showing some of the possibilities of etymology. After the time of Homer, the name of healer and the office of healing were transferred from Pæon to Apollo, who was thence-

² Iliad, 5, 401, etc. Another apparent instance of the peony’s efficacy as a cure for wounds is also given in the Iliad (5, 899, etc.). “So spake he (Jove) and bade Pæon heal him (Mars). And Pæon laid assuaging drugs upon the wounds and healed him seeing he was in no wise of mortal mould. Even as fig juice rapidly thickens white milk that is liquid before but curdleth while one stirreth it, even so swiftly healed he impetuous Mars.”

³ The Latin name Pæonia is the feminine of Pæonius —“belonging to Pæon.”

MYTHOLOGY, AND HISTORY OF THE PEONY

forth invoked by the cry “Io Pæan” (Ἰο Παιάν) sometimes made to him as physician and at other times made to him irrespective of his healing art. Subsequently, a pæan was a choral song to Apollo or Artemis, his twin-sister (the burden being “Io Pæan”), in thanksgiving for deliverance from evil. Later it was addressed to other gods on similar occasions,⁴ and then to mortals. Now it is a “loud and joyous song”: witness this book.

The peony was known to Greek writers under the name *pæonia* and also under the name *glucoside*—“having sugar qualities”—evidently referring to the honey secretion of the flower buds. It is mentioned in the works of a number of early authors, among whom are Pliny, Theophrastus, Dioscorides and Galen.

Pliny, in his *Natural History* (about 77 A.D.) gives the first detailed description of a peony plant and seeds, but does not mention the flower. He says: “The plant known as *pæonia* is the most ancient of them all. It still retains the name of him who was the first to discover it, being known also as the ‘*pentorobus*’ (from its five seeds

⁴ Liddell & Scott, *Greek-English Lexicon* (1888), p. 1106.

THE BOOK OF THE PEONY

which resemble vetches), by some and the ' glucuside ' by others. . . . It grows in umbrageous mountain localities and puts forth a stem amid the leaves, some four fingers in height, at the summit of which are four or five heads resembling Greek nuts in appearance; enclosed in which there is a considerable quantity of seed of a red or black colour. This plant is a preservative against delusions practised by the Fauni in sleep (nightmare). . . ." ⁵

Pliny devotes one chapter to a fuller description of the plant and sets out twenty ills or diseases of the human body which it will cure. Among these are jaundice, gnawing pains in the stomach and certain affections of the trachea. He says it acts as an astringent and then adds: " It is eaten also by beasts of burden, but when wanted for remedial purposes four drachmæ are sufficient." ⁶

Dioscorides, a medical man who flourished in the first century of the Christian Era, describes about five hundred plants in his *Materia Medica*. The peony is included in this work. The famous

⁵ Natural History: Book XXV, Ch. 10.

⁶ Natural History: Book XXV, Ch. 60.



MRS. MCKINLEY
(Terry)

Japanese type. A distinct and effective flower

MYTHOLOGY, AND HISTORY OF THE PEONY

Viennese Manuscript of Dioscorides, painted and written in Byzantium for the Princess Anicia Juliana in the early part of the Sixth Century, contains a number of brush drawings of plants and flowers, some of which closely resemble our specimens of to-day. Unfortunately, the illustrations of the two peonies mentioned in the text—*Pæonia arren* [*P. corallina*] and *Pæonia theleia* [*P. officinalis*] are missing. The lifelike representation of his favourite flower was evidently too great a temptation for some peony lover to resist.

HERBACEOUS PEONY HISTORY

IN CHINA AND JAPAN

In China and Japan the popularity of the herbaceous peony was somewhat overshadowed by that of the tree peony, but the former kind has long had a distinct recognition in both countries. In China it was called “Sho Yo” meaning “most beautiful,” which bespoke a considerable appreciation on its own account, even though the tree peony was ranked as the King of Flowers. It served as a sort of Forget-me-not which one friend bestowed upon another on separation. A Sho Yo plant was also presented for a friendly

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remembrance after separation. These customs are referred to in a Chinese song:

“If anyone will give his friend a present
He hands a gift ‘most beautiful’ of all.”

In 536, A.D., the herbaceous peony was fairly well distributed over the country and was used for medicinal purposes and in a number of places even for food for human beings. The appreciation of its dietary value was another instance of the advanced character of the civilisation of China, for the peony as a source of nourishment was surely but the prototype of some of our modern breakfast foods. Hung King writing at this time, distinguished two sorts, the red and the white, which is the first mention we find anywhere of a white peony.

In 968, Mas Ze, an author on natural history and natural philosophy, discoursed learnedly at considerable length on the herbaceous peony. In the early part of the Eleventh Century, according to another Chinese historian of the period, the herbaceous peony was grown in all parts of China but the most valuable roots came from the district of Huni Gan Foo—wherever that was.

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By 1086, as a literary botanist of that date tells us, gardeners realised the possibilities of the plant for ornamental purposes and began, by the application of strong fertilisers and great diligence in cultivation, to produce flowers of large size. As a result of these efforts and the extensive propagation by planting of seeds, new and better varieties were produced. In 1596, more than thirty improved kinds were listed in the catalogues of Chinese growers.

As to the subsequent history in China not much information is readily accessible. Loureiro in 1790 says that *P. officinalis* was grown over the entire Chinese Empire, but principally in the northern provinces, and that it had been imported to Cochin China. In the middle of the Nineteenth Century, a number of valuable peonies were shipped to France and formed the foundation of collections made by noted French amateurs. At the present time, while the peony is still grown extensively, few exportations to Europe or this country are made—due possibly to the quality of Chinese varieties as compared with the improved varieties of this side of the

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world, or else to the lack of initiative of the Chinese in distributing their horticultural products.⁷

Among the number of beautiful things for which Japan is indebted to China, few equal the peony. Early in the Eighth Century, the Japanese imported from China both the herbaceous and the tree peony. The herbaceous peony was called "Skakuyaku"—apparently a corruption of the Chinese Sho Yo—and has been highly thought of, although not accorded the honours given the tree peony, which is ranked as one of the three Royal Flowers.

In Japanese literature and folklore the peony is the subject of many poems and stories. It is not clear in each case from the translation whether the herbaceous or the tree peony is referred to, but it is evident that both kinds were cherished in the hearts of this flower-loving people. There is a little Japanese verse that shows that East

⁷ At the present time (1916) inasmuch as the Chinese Government has not complied with the regulations of the United States Department of Agriculture as to inspection, peonies cannot be imported from China to this country.



MARIE JACQUIN
(Verdier)

Semi-double type. A glossy white peony frequently called "Water Lily"

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and West meet in the kindred pleasures of the
garden if nowhere else:

“ When Spring is on the wane,
Then men are apt
To turn their thoughts
To peonies again.”

At the present time, there are several nurseries in Japan which grow both herbaceous and tree peonies. One of these, which does a large export business to England and America, maintains an office in each country. Twenty-nine varieties of the herbaceous peony are listed in the catalogue of this nursery, the names of some of which are delightfully quaint. Someganoko—painted fawn, Shishi-Odori—dancing lions, Kame-no-Kegoromo—turtle’s holiday attire, are among the most diverting. The present exportations from Japan of herbaceous peonies consist principally of a form of peonies of a distinct type known as the Japanese, which constitutes a separate class intermediate between the single and double types.

IN ENGLAND

The knowledge of flowers and plants in Saxon times (about 477–1017) and for several subsequent centuries, was chiefly based on the works

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of Pliny and Dioscorides. These two authors were largely drawn on by Apuleius, who lived about 150 A.D. His *Herbarius*, written in Latin, was later translated into Anglo-Saxon, and must have been one of the horticultural "best sellers" of the day, as there are no less than four MSS. extant.

Alexander Necham, born in 1157, was an early English writer on gardening. After some years spent as a student and professor in Paris, he became the abbot of the Augustine monks at Cirencester. In those days monasteries had gardens of considerable size and the monks "went in heavily" for raising herbs, vegetables and flowers. In Necham's *De Naturis Rerum*, he gives a description of what a "noble garden" should contain. "The garden," he writes, "should be adorned with roses and lillies, turnsole, violets and mandrake; there you should have . . . fennel, coriander . . . and peonies." It would seem that all these plants were cultivated in typical gardens of the time. The peony of this date was in all probability *P. officinalis*.

In the Fourteenth Century peonies were used for seasoning. In Langland's *Vision of Piers*

CI



PIONIA

Pionia calida & sicca in secundo gradu. Cuius radix in medicinis ponitur cum reperitur in receptis eligenda est illa quæ nigra existit continua non perforata. & in hyeme colligitur & per annum seruat. Virtutem habet occultam contra epilentiam & suspensionem collo præseruat ab epilentia: testante Galieno experto de quodam puero cuius collo talis radix appesa erat & non patiebat: radice. n. subtracta sta

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Plowman—a popular allegorical poem, written about 1375—a priest asks a poor woman:

“ ‘Hast thou ought in thy purs’, quod he
‘Any hote spices?’
‘I have peper and piones’ (peonies) quod
she,’ and a pounce garlike,
‘A ferthyngworth of fenel seed, for fastyng
dayes.’ ”

In another poem of the same century, entitled “The Pearl,” the flowers around an arbour are described:

“I entered in that arber grene
In augeoste in a high seysoun
* * * * *
Shadowed this wortes ful schyre (bright)
and schere
Gilofre (clove-pinks) gingure (tansy) and
groomylyon (gromwell)
And pyonys powdered ay betwene.”

It thus appears that at this early day the use of the peony in the hardy border had begun.

In 1484, about 300 years after Necham, the Herbarius credited to Arnoldus de Villanova was published on the Continent. This book contains probably the first printed picture of the peony—a wood-cut in which flowers, leaves and roots are

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completely conventionalised (see illustration, page 40). In addition to its historical interest, the quaint stiffness of the wood-cut has a charm of its own. The text, which is in terrific mediæval Latin, is mainly devoted to the use of the peony for medical purposes, and is based on Galen. Later English writers made use of this work freely.

In Tudor times (1485–1603), contemporary authors mention peonies together with other old favourites—jasmine, lavender, lilies, rosemary, rocket and snapdragon—as being grown in the knottes or beds that were then coming into fashion.

The many names under which the peony was known in England indicate that the flower was widely grown and was regarded with affection. Some of these names were: chesses, hundred-bladed rose, marmaritin, piny, pie nanny, nan pie, pianet, piano rose, posy, sheep shearing rose, rose royale.

In 1579, John Gerard, a physician and practical gardener of Holloway, near London, published his *Herbal*. In this book, which was founded on *A History of Plants* by Dodoëns, a Hollander (1554), four pages are devoted to

4 There is found another sort of the double Peonie not differing from the precedent in stalkes, leaues, or rootes: this plant bringeth fourth white flowers wherein consisteth the difference.

3 *Pæonia scemina multiplex.*
Double red Peonie.



4 *Pæonia scemina polyant hos flore albo.*
The double white Peonie.



* The description.

There is another kinde of Peonie (called of *Dozonasus* *Pæonia scemina altera*, but of *Pena* *Peonia Promiscua seu neutra*: in English *Maiden or Virgine Peonie*) that is like unto the common female Peonie, sauing that his leaues and flowers are much smaller, and the stalkes shorter, and beareth red flowers, and feede also like the former.

We haue likewise in our London gardens another sort bearing flowers of a pale whitish colour, very single, resembling the feuate wilde Peonie, in other respects like the double white Peonie.

* The place.

All the sorts of Peonies do grow in our London gardens, except that double Peonie with white flowers, which we do expect from the lowe countreies of Flaunders.

The male Peonie groweth wilde vpon a conic berrie in Betfome, being in the parish of Southfleet in Kent, two miles from Grauefend, and in the grounde sometimes belonging to a Farmer there called *John Bradley*.

* The time.

They flower in May, the seede is ripe in Iuly.

* The names.

The Peonie is called in Greeke *παιονία*; in Latine also *Pæonia*, and *Dulcisida*; in shops *Pionia*: in high Dutch *Peauca blumen*; in low Dutch *Wass bloemen*; in French *Pinoine*: in Spanish *Rosa del monte*: in English *Peonie*: it hath also many bastarde names, as *Rosa fatuina*, *Herba Casta*, of some *Lunaria*, or *Lunaria Pæonia*: because it cureth those that haue the falling sicknes, whom most men do call *Lunaticos*, or *Lunaticke*. It is called *Idem Dactylus*: which agreeth with the female Peonie,

PAGE FROM GERARD'S HERBAL, PUBLISHED IN ENGLAND IN 1597

The botanical names are somewhat primitive and are no longer used. "Female Peony" was a name for *P. officinalis*. "Male Peony" was a name for *P. corallina*

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peonies and eight illustrations are given. The text and pictures are so engaging that I have reproduced one of the pages (see illustration, page 42). Gerard speaks of the medicinal virtues of peonies: "The black graines (the seeds) to the number of fifteen take in wine or mead. . . . is a special remedy for those that are troubled in the night with the disease known as Ephialtes or night mare which is as though a heavy burthen were laid upon them, and they oppressed therewith, as if they were overcome by their enemies or overprest with some great weight; and they are also good against melancholick dreams."

In "The Taming of the Shrew" (1603), Shakespeare refers to peonies in the line: "Thy banks with peonied and liliated brims."

In 1629, John Parkinson, King's herbarist, apothecary and traveller, who possessed an excellent garden near London, published his "Paradisi in Sole, Paradisus Terrestris" (a play on his name, Park-in-Sun's Earthly Paradise) "or a Choice Garden of all sorts of Rarest Flowers with their Nature, place of Birth, time of flowering, Names of Vertues to each plant, useful in Physick or Admired for Beauty." In this book,

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after describing six kinds of peonies—two of which were double—Parkinson says, “ All these Peonies have been sent or brought from divers parts beyond the Seas; they are endenized in our gardens where we cherish them for the beauty and delight of their goodly flowers as well as for their physical vertues.” Of the two double peonies described by Parkinson, one was white and one red. It has been suggested that the double white had originated as a sport of the double red.

The first Botanical Garden in England was established at Oxford by the Earl of Danby, about 1621 “ for a nursery for simples.” In this garden, as appears by the catalogue, there were “ double and single Peony ” in company with twenty kinds of roses, including York and Lancaster. In the History of Plants at Oxford by Robert Morrison (1620–1683), who was noted for being one of the pioneers in the systematic botanical classification of plants, there is a description of several peonies including a flesh-coloured peony.

In the well-known Botanists’ and Gardeners’

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Directory of Philip Miller, Keeper of the Chelsea Botanic Garden of the Worshipful Company of Apothecaries, which work first appeared in 1731, seven kinds of peonies are set out as all the sorts the author had observed in English gardens. The seven are two varieties of *corallina* (both single), *officinalis* (single, large double and small double), a double white and *Lusitanica* or Portuguese peony. Of the last variety Miller says: "The Flowers of this kind are single, but do smell very sweet which renders it worthy of a Place in every good Garden." It is difficult to identify this variety with certainty at the present time although it is probably *Broteri*.

During the latter half of the Eighteenth Century, several additional kinds, including *tenuifolia*, *peregrina* and *anomala*, were cultivated in England.

In the early part of the Nineteenth Century some varieties of *albiflora* were imported from China that are still offered by growers. Among these are *Fragrans* (Sir Joseph Banks, 1805), *Whitleyi* (Whitley, 1808)—which the importer had been led to believe was a yellow tree peony—and *Humei* (Anderson, 1810). *Fragrans* was

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the earliest sweet scented double variety grown in England.

In 1837, the variety *Pottsii* was described as the most splendid of the five albifloras cultivated in English gardens. It had been introduced from China by John Potts—an intrepid plant-collector—in 1822, and named after him.

The first large collection of named peonies in England was made by Loddige in Hackney in 1845, and was sold eight years later. In 1850, Salter, a nurseryman, began a collection with the albifloras, *Edulis superba* (splendid, with edible roots), originated by Lemon in France in 1824—*Pottsii* and *Reevesii*, and some other varieties imported from Belgium. In his catalogue, of 1855, twenty-four double sorts are listed. At this time, peonies began to have such a large sale that Salter was unable to supply the demand for *P. Grandiflora nivea plena* (double large snow white)—originated by Lemon in 1824—*P. lutea plenissima* (very double, yellow)—originated by Buyck in Belgium in 1842—and several of the others that he offered.

In addition to the above-named varieties, the first hybridisers in England had three forms of



SOUVENIR DE L'EXPOSITION UNIVERSELLE
(Calot, 1867)

Rose type. Large flat flowers of rich deep pink. Brilliant and free-blooming variety

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P. officinalis—*rubra* (red—the common double red), *rosea* (rose) and *carnescens plena* (double flesh white)—with which to make a beginning.

In 1864, James Kelway, of Somersetsshire, made his first attempt in improving existing types. He commenced in a modest way with *P. officinalis* and *P. corallina*, but soon went into the growing of peonies on a very extensive scale. Twenty years later he catalogued two hundred and fifty varieties of which sixty-three were new single and forty-one new double varieties of his own raising. Through his energy in introducing and distributing improved forms Kelway did much to make the peony popular in England. Among his best productions are *Baroness Schroeder* (1889), *Miss Salway* (1905) and *Kelway's Glorious* (1909).

Peter Barr was a tireless collector of all species of the peony and was also much interested in hybridising. From his establishment have come *Wittmaniana rosea*, one of the *Wittmaniana* hybrids, and the *albifloras*, *Helena Leslie*, *Lord Rosebery* and *Celestine*.

In 1885, a First Class Certificate of the Royal Horticultural Society was granted to a peony

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named Snowflake—the first peony to receive this honour.

About 1890, after a period of many years, during which exotics and bedding plants were in great demand, the newer and better varieties of peony brought that flower into prominence again. The successful work of French growers who devoted much time to hybridising the peony was largely responsible for the revival of its fashion. Since then the peony has gone forward rapidly both in improvement and popularity.

At the Royal Gardens at Kew and Glasnevin and at Chiswick, there are large collections of peonies for the enjoyment and education of the public. At the Royal Horticultural Society's Gardens at Wisley, a comparative trial, held about 1896, is now (1916) being repeated with the newest forms raised since then. The reports will be published in the Journal of the Society.

IN FRANCE

The history of the peony in England is chiefly the history of its cultivation in gardens from the earliest time. In France the record of the improvement of the individual flower in recent years

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is the main thing that has come down to us. There is an account of one famous peony, *P. daurica* (brought from Siberia via England), which was introduced about 1810 as a rare plant at Malmaison for the Empress Josephine.⁸

France has given the world the most numerous and famous growers and hybridisers of the peony, whose efforts during the past century produced many of the finest varieties we see in the best collections at the present time. The work of improving the peony was begun earlier in France than in England and soon became of great interest to royal and aristocratic connoisseurs. Among the varieties we have to-day were some originated between 1830 and 1848 in the garden of King Louis Philippe at Neuilly under the care of his gardener, M. Jacques.

Before this, probably the first man in Europe to raise peonies from seeds and to offer the best of these as named sorts was M. Lemon of the Porte St. Denis, Paris. As far back as 1824

⁸ For a full account of this peony see *Description des Plantes Rares Cultivées a Malmaison et Navarre*. A. Bonpland, Paris, 1813. This species is also known as *P. corallina*, var. *triternata*.

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(about the time when hybrid perpetual roses began to be popular), he raised a lot of seedlings of *P. officinalis* from which came *P. anemoniflora alba* and *P. grandiflora nivea plena*. The last named of these—white, shaded with salmon,—though one of the oldest hybrids, even now ranks among the best. In the same year, *P. edulis superba*—a peony still much grown—was also produced by Lemon. In 1830, he originated *P. sulphurea*—white, tinted yellowish green—a kind sufficiently attractive to be cultivated to-day. Lemon achieved not only greatly desired modifications in colour and form, but also a pleasing fragrance which exists in most of his varieties and is very marked in some of them.

Modeste Guerin, starting in 1835, in Paris, with plants brought from China and Japan, made rapid advances in improving the peony. From then until 1866, he introduced more than forty new varieties: among them General Bertrand (1845), Modeste Guerin (1845), Duchesse d'Orleans (1846), Dr. Bretonneau (1850), Madame de Vatry (1853) and Alexandre Dumas (1862), are conspicuous for their excellence. It is interesting to note that Guerin succeeded in getting in sev-



DUCHESS DE NEMOURS
(Calot, 1856)

Crown type. This lovely cup-shaped bud is of a greenish tint, which fades to pure white as the flower develops

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eral of his peonies a touch of yellow, which up to this time was almost an unknown colour in this flower. Some of his varieties that had yellow in them were put out before the first yellow peony—*P. Wittmaniana*—was discovered. Three instances of what he accomplished in this regard are *Grandiflora lutescens* (1840), with fleshy white guard petals and a yellow centre, *Reine des Français* (1842), with fleshy pink guard petals and white centre shaded yellow, and *Triomphe de Paris* (1850), white with yellowish centre. Guerin also produced some red peonies—chiefly with magenta tints—which owed their dark colour to *P. Pottsii*.

By 1840, the Prince de Salm Dyck, an amateur horticulturist who was a native of Cologne but who resided for many years in Paris, had imported a number of valuable plants direct from the Orient. These apparently passed to the House of Solange Bodin near Paris. From 1845 on, some fine new double varieties were sent out by this establishment: none of these, however, are capable of identification at the present time.

The collection raised by M. Jacques was inherited by his nephew, M. Victor Verdier, pre-

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sumably after the revolution of 1848 and the dethronement of Louis Philippe. Verdier had produced some new varieties prior to this date, but sixteen of his best kinds—still offered by growers to-day—were put out between 1855 and 1861. One of Verdier's most noted peonies is the incomparable Marie Jacquin.

Comte de Cussy was an enthusiastic amateur who started with importations from China and raised from them a number of distinctive varieties. It was from his large collection in other hands that a very high development of the peony was subsequently reached. About 1850, M. Calot, of Douai, acquired the collection of the Comte. From then until 1872, with rare imagination and diligence he originated over twenty new kinds, many of which are greatly prized in gardens now. Among them are Philomele (1861), Solfatare (1861)—until the introduction of Primevere, the nearest approach in a hybrid to a yellow peony; the exquisite Duchesse de Nemours (1856), Madame Lemonier (1860), Eugenie Verdier (1864), Madame Crousse (1866), Couronne d'Or (1872), La Tulipe (1872), Monsieur Dupont (1872).

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In 1872 the collection of J. Calot passed into the hands of M. Crousse, of Nancy, who continued to send out selections from the Calot seedlings until 1879 and who later, from 1882 to 1898, introduced a large number (over seventy-five) of seedlings of his own. Under Crousse the peony was bred up to such a point that it seems almost impossible to improve upon his work. The name Crousse attached to any peony can always be taken as indicating merit. Among the varieties of Crousse are: *Modele de Perfection* (1875), *Livingston* (1879), *Madame Emile Galle* (1881), *Felix Crousse* (1881), *Madame de Galhau* (1883), *Madame de Verneville* (1885), *Avalanche* (1886), *Asa Gray* (1886) *Mademoiselle Rousseau* (1888), *Monsieur Jules Elie* (1888), *Marguerite Gerard* (1892).

Contemporary with Guerin, Verdier, Calot and Crousse was Etienne Mechin, an ardent amateur who, tutored by the celebrated horticulturist, Bretonneau, began to collect peonies as early as 1840. By 1860, he had acquired a famous collection comprising importations from China and Japan, and seedlings of his own raising. *Madame Ducl* (1880) and *Raphael* (1882)—a valuable

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early red—are two of his best products. With his grandson, Auguste Dessert, Mechin put out a number of new sorts among which were Adolphe Rousseau (1890) and Suzanne Dessert (1890). Mechin was succeeded by Dessert who has added many noteworthy varieties and is still actively engaged in this work at Chanonceaux. Dessert is considered one of the greatest living experts on peonies. He has produced Madame D. Treyeran (1889), Marcelle Dessert (1899), Monsieur Martin Cahuzac (1899), Germaine Bigot (1902), Aurore (1904). The Mechin-Dessert group is one of the most important in the history of the peony in France.

Within the past twenty years, Victor Lemoine of Nancy, who occupies the old establishment of Crousse,⁹ has become one of the world's greatest

⁹ Tabulation showing successive owners of noted French collections of peonies:

1. Etienne Mechin (1815–1895)
collection started 1840
Dessert and Mechin, 1882–1893
Auguste Dessert, 1888–
now extant at Chanonceaux.
2. Comte de Cussy
Calot, 1850–1872



AUORE
(Dessert, 1904)

Semi-rose type. An exquisite peony of delicate pale pink with prominent golden stamens.
Excellent for cutting

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hybridisers in peonies as well as in other plants. His varieties—the most recent of the French introductions—are notable for their distinction of form and colouring in addition to their rare beauty. Among the best of his productions are *La Fiancée* (1898), *Madame Emile Lemoine* (1899), *Alsace-Lorraine* (1906), *Sarah Bernhardt* (1906), *Le Cygne* (1907), *Primevere* (1907), *Lamartine* (1908).

Other names closely identified with the development of the peony in France are Mieliez (who originated *Festiva Maxima* [1851]), Pele, Delache, Gombault, Foulard, Seneclauze, Paillet, Millet, Brochet and Croux.

Crousse, 1875–1898

Victor Lemoine, 1898–

now extant at Nancy.

3. M. Jacques, gardener to Louis Philippe, 1830–1848

Victor Verdier, 1848–1866.

Eugene Verdier, 1866–?

Part of this collection was acquired by Dessert.

4. Modeste Guerin, 1835–1866

A large part of this collection was bought by Mechin. The ground in Paris occupied by this collection and by that of Eugene Verdier was sold for building purposes, and the collections were dispersed.

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IN AMERICA

The fact that the peony does not appear in horticultural literature in this country before 1800 may be accounted for more by the absence of the literature than the absence of the peony. Not till the beginning of the Nineteenth Century did horticulture as distinct from agriculture attain some individuality. The literature arose with the art.

Bernard McMahon in his *American Gardeners' Chronicle*—an ambitious work published in 1806—gives a list of perennials suited to the open ground in the Middle and Eastern States. He includes five kinds of peonies: “*P. officinalis*: common peony; *albiflora*: white flowered peony; *laciniata*: jagged-leaved peony; *hybrida*: mule peony, and *tenuifolia*: slender-leaved peony.” Presumably all these existed in America when the book was printed, although it has been cruelly suggested by one critic that McMahon's lists were compiled from English sources.

As might be expected, the peony appears in the *Catalogue of John Bartram & Son of their “Foreign Plants Collected from Various Parts of the Globe”* and cultivated at their Botanic

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Garden at Kingsessing, near Philadelphia (1807). The reference, as in all cases in the catalogue, is merely the name—"Pæonia officinalis"—without description or comment. In the Catalogue of Bartram's Garden published in 1828 (five years after John Bartram's death), we find six herbaceous peonies in addition to some tree peonies:

"Pæonia officinalis.....	crimson officinal pæony	.25
" albicans	double white	" .25
" rosea	rose coloured	" .25
" rubra	double red	" .25
" carnescens	flesh coloured	" 1.00
" albiflora simplex..	single white	" 1.00"

In Green's Treatise on Ornamental Flowers, published in Boston in 1828, peonies are included among the "leading plants" of the day. And in the same year there is a record of the elder Thomas Hogg exhibiting a single white *P. officinalis* at an exhibition of the New York Horticultural Society.

William Prince, of Flushing, Long Island, in 1829, in his annual Catalog of Trees and Plants cultivated at his famous Linnæan Botanic Garden, says: "No class of flowers has recently at-

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tracted more attention in Europe than the peonies. . . . Most of the varieties are extremely splendid and others possess striking peculiarities. Anticipating that a similar taste would be evinced in this country, the proprietor has, by a great exertion, obtained every variety possible from Europe and also a number from China." He lists forty kinds containing a great diversity of shades and colours. The prices range from fifty cents to twenty dollars, but most of the plants are quoted under two dollars.

An elaborate botanical work published in 1846-1850—The American Flora, by Dr. A. B. Strong—contains coloured plates and descriptions of *P. officinalis*, *P. peregrina*, *P. edulis* *Reevesiana* and *P. Russi*, all of varying degrees of red and magenta. I say "of varying degrees" advisedly: the plates were coloured by hand and I am credibly informed no two of them were alike!

The introduction of a number of varieties of the species of *P. albiflora*, which occurred about 1850, caused an increase in the popularity of the peony in this country. The merits of this type—fragrance, great hardiness, erect habit of growth,



STEPHANIA
(Terry, 1891)

Semi-double type. A cup-shaped peony of deep cream. The reflections from golden stamens intensify the colour and light up the flower

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variability as to colour and form of flowers—all combined to create a demand for this new “Chinese peony,” the name by which it began to be called. As reproduction by division of the roots was extremely slow on account of the limited quantity of the several kinds, propagation by seeds was resorted to. Cross pollination, either accidental or directed by hybridisers, in time gave rise to scores of novel forms of flowers.

In 1858, H. A. Terry of Crescent, Iowa, one of the pioneers among peony experts of this country, obtained from William Robert Prince, who had inherited the Linnæan Botanic Garden, at Flushing, thirty varieties of *P. albiflora*, including Humei, Pottsii, Reevesii, Comte de Paris, fragrans, festiva maxima, lutetiana, edulis superba, plenissima rosea and Queen Victoria. Many of these freely produced seeds from which Terry soon had thousands of seedlings growing. He selected the best for further propagation but found that generally not five—often not one—in a thousand were worth cultivating. During a long life time—longevity and peony growing seem to go hand in hand—Terry produced over a hundred new varieties among which are a few

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very beautiful ones—Stephania (note colour plate), Grover Cleveland, dark crimson, and Mrs. McKinley (note colour plate). Shortly before his death, Terry sold most of his collection for twenty-five hundred dollars.

John Richardson, an enthusiastic lover of ornamental plants, raised in his small garden in Dorchester, Massachusetts, a number of important new varieties of peony. Some fragrant flowers of his growing are noted as far back as 1857, about thirty years after the first fragrant peonies were produced in France. From that year until his death in 1887 he was actively engaged in growing seedlings. He had only a few mature plants—some forty albiflora peonies—but in addition he carefully tended their descendants, “candidates for fame” as he called them. He originated about eighteen double varieties distinguished by their fine form, colour, vigorous upright habit, large size and uniformly high quality. Many of them were awarded certificates of merit by the Massachusetts Horticultural Society. The chief stock from which his seedlings came probably was: *Festiva Maxima*, *Festiva* and *Pottsii*

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plena, and a double white seedling originated by Mr. Carter of the Harvard Botanic Garden.

A good example of Richardson's work is Walton Faxon, conspicuous for its pure and beautiful rose-colour. Others are Milton Hill, another of the finest pink peonies, Perfection, Dorchester, Charles Sedgwick Minot and Grandiflora. Most of his varieties are light in colour and late flowering. Richardson's seedlings were not offered for sale until after his death, at which time all of his productions were named by his friends, John C. Hovey and Prof. Robert Tracy Jackson, of Cambridge, Massachusetts.

Richardson's success in producing new varieties of great worth and beauty is an inspiration. He showed how even a small garden may prove large enough to bring enduring fame to its devoted owner.

George Hollis, of South Weymouth, Massachusetts, during the "nineties" originated about one hundred new varieties. All of his productions are very scarce and many high-priced at the present time. Among the best are Standard Bearer (1906), Adelaide E. Hollis (1907), George Hollis (1907), Loveliness (1907) and

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Maud L. Richardson, which is among the tallest peonies, often growing five feet high.

T. C. Thurlow, of West Newbury, Massachusetts, was one of the early growers in this country. Starting in 1875, after some years' work he got together a large collection which included most of the varieties which had been introduced. James Hartshorn of Chicago, on looking over Mr. Thurlow's grounds, examining the labels and taking note of the different kinds, asked that a price be named for the whole lot of peonies. On all of his peonies, except two plants each of a hundred varieties, Mr. Thurlow fixed nine thousand dollars, which figure was forthwith accepted. The collection filled two freight cars. After the plants had been shipped, Mr. Thurlow started to get up a new collection, better than the one he had sold.

Recently the seedlings of Brand—notably Martha Bulloch (1907), and Frances Willard (1907)—have aroused much admiration. The beautiful productions of Shaylor, among which are Frances Shaylor (1909), Jessie Shaylor (1909), and Mary Woodbury Shaylor (1910), show what is being accomplished in this country by careful hand pollination.



FELIX CROUSSE
(Crousse, 1881)

Bomb type. A brilliant flower of good form which blooms freely

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Other persons who, as hybridisers or growers, have been closely connected with peony history in this country since 1850 are: Mrs. Sarah E. Pleas, now over eighty-five years of age, who originated Jubilee and Opal No. 2, Rosenfield (Floral Treasure, 1900, and Karl Rosenfield, 1908), Fewkes, Ellwanger, Peterson, Ward, Barry and Harrison.

The admiration in this country for the peony, which started about 1850, has continued to wax—with occasional wanings—until the present time. But the growth in favour has had disadvantages as well as advantages: about 1900, the number of different varieties introduced from seeds and from importations of plants (chiefly from England and the Continent) had grown to such a size that considerable confusion in nomenclature was caused. The difficulty a purchaser had in getting the kind ordered became so great that it seriously affected the peony trade as well as the dispositions of many peony buyers. Unscrupulous growers—some, alas, are always with us—put on the market hundreds of new seedlings which they christened with good old names. One expert feelingly described the condition of the

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peony business at this time as "utterly chaotic."

To replace confusion with order a few peony enthusiasts and growers in the summer of 1902 started the movement which resulted in the following year in the incorporation of the American Peony Society, of which C. W. Ward was the first President, and A. H. Fewkes the first Secretary. The original purpose of the Society was "to advance public interest in the peony and especially to straighten out peony nomenclature." In 1904, the Society agreed to co-operate with the Horticultural Department of the Experiment Station at Cornell University for the purpose of making a study of all the varieties of peonies which it was possible to obtain. To an appeal for plants of different kinds, a liberal response was made by those having large collections. Nearly every prominent grower in this country sent samples from his stock: in addition contributions were made from the finest collections in Europe, including two hundred plants from A. Dessert at Chanonceaux.

The first plantings at Cornell in 1904 soon increased to thousands of specimens having upwards of twenty-six hundred names—practically

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all the varieties in commerce. Within three or four years most of the plants were well established and had begun to yield characteristic blooms. For five years the Nomenclature Committee of the Society, Bertrand H. Farr and Joseph Dauphin, together with an expert horticulturist at Cornell, Dr. Leon C. Batchelor, worked over this collection and compared their observations with studies carried on by them at several of the large nurseries in the eastern part of the country. With painstaking and disinterested labour, nearly all distinct varieties usually grown were identified and described as to form, colour and fragrance of flower and vigour, habit and floriferous qualities of the plant. After eliminating the numerous synonyms and the kinds wrongly named—in a number of instances the same variety appeared under as many as twenty different designations—the twenty-six hundred names contained in the complete list were sifted down to five hundred separate meritorious varieties. These five hundred—which were mostly varieties of *P. albiflora*—comprise nearly all of the peonies of value to be found in the entire

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collection. The description in detail, a check list of peonies and numerous data in reference to the peony, have been published in four Bulletins by Cornell University, 1907-1911. The Peony Society has thus rendered a service of incalculable benefit to the peony growers not only in America, but everywhere. The amateur is thankful for its efforts whenever he places an order, or wants assistance in identifying some plant in his garden.

The American Peony Society has also done valuable work in other lines. It has held large and successful exhibitions at New York, Chicago, Philadelphia, Boston and Ithaca. The splendid display of flowers shown has attracted attention and aroused enthusiasm, which has rapidly increased in the past few years. In 1911, at the exhibition held in Philadelphia, the sum of two hundred and thirty-two dollars was offered in prizes. In 1916, at the New York exhibition the aggregate of the premium list was six hundred dollars, divided among twenty-six classes. At this exhibition there were over fifteen hundred blooms staged, and more than sixteen thousand

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persons attended. The American Peony Society has issued reports from time to time and has recently started the publication of a bulletin containing items and articles of interest in reference to the peony called "Bulletin of Peony News" which appears twice a year.

In 1916, The Northwestern Peony and Iris Society was formed in Minneapolis.

**BEST VARIETIES AND
THEIR CHARACTERISTICS**

CHAPTER III

BEST VARIETIES AND THEIR CHARACTERISTICS

THE selection of any flowers for the garden is largely a matter of taste and therefore an expression of personality. In order to make a choice, however, one must have a clear idea of existing varieties and which of these are obtainable. As we have seen, hundreds of varieties of *P. albiflora* have been listed; but as many have proved to be the same as others, with different names, and many are so inferior as to be not worth cultivating, the number of available kinds that are desirable is not so overwhelming as might at first appear. Broadly speaking there are about five hundred varieties which are admirable in gardens: this list of five hundred might advantageously be restricted to a much smaller number containing only those of distinction and value.

A MAIN LIST

I give a Main List of one hundred and twenty-five varieties selected on their merits. It includes

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desirable peonies of all prices, from a few of the new and costly seedlings down to some of the most charming of the inexpensive sorts. As several of the loveliest peonies fortunately increase with comparative rapidity they may be bought at reasonable prices: a number of attractive kinds may be purchased as low as fifty and seventy-five cents apiece. One of the delights of a peony garden is that it is possible to lay the foundation of a satisfying collection by starting with the standard varieties of moderate price, and adding the more rare and costly roots from time to time as one's experience and taste direct, and one's garden bank account permits.

SHORT LISTS

Immediately preceding the Main List will be found six Short Lists which are intended to assist those who are unacquainted with the different varieties of peonies or whose preferences may be for white, or pink, or red peonies. In each of these colours, I have made a selection of kinds which are considered among the best. A list of peonies of distinction and beauty at a low cost, and another list of rare and exquisite



FESTIVA MAXIMA
(Mieliez, 1851)

Rose type. One of the finest white varieties. An early and reliable bloomer. This inexpensive peony should be in every garden

VARIETIES AND THEIR CHARACTERISTICS

peonies for the enthusiastic collector are added. These Short Lists are lettered A, B, C, D, E and F, and are referred to in column 4 of the Main List.

The varieties of *P. albiflora* which I give in the Main List, together with the species described in Chapter IV, are the most striking and beautiful peonies for our gardens. Species such as *P. arietina*, *P. corallina*, *P. decora* and others are best left for ardent collectors to study and experiment with: for while extremely interesting as members of the peony family and possibly useful for hybridisation, they lack size, charm and variety of colour. Although the herbaceous peonies of Japan have much merit and are well worth a place in our gardens, it is impossible to give an extended list of their names that would be dependable. As the peonies ordered from Japan seldom come true to description or even twice alike, the direct importation of these peonies must be undertaken as a pleasing game of chance. One or two growers in this country and in France have propagated from imported Japanese stock, and from these growers a few, but only a few, good ones can be obtained with assurance of getting what is ordered.

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In preparing the Main List, which is intended to be a guide and not an exhaustive study of each flower, the descriptions have been made as simple and untechnical as is practical. Brief explanations as to a few botanical terms, "types," colours and fragrance will, nevertheless, be necessary.

TYPES

In the process of development from the original single type, the herbaceous peony has acquired certain forms or types which have been classified and named "bomb," "crown," "rose," etc., the full descriptions of which I set out below. The stamens—the fertilising organs of flowering plants, consisting of (a) filaments or supports, and (b) anthers or double sacs filled with pollen—have in some types of the peony broadened and thickened into additional petals called *staminodes*. Likewise the carpels—the seed-bearing organs—have developed into petals called *carpelodes*. For brevity and convenience staminodes and carpelodes are usually called *petaloids*. The words staminodes, carpelodes and petaloids are all used in describing types. When the word

VARIETIES AND THEIR CHARACTERISTICS

“guards” is employed it means the outside or primary petals. When the word “differentiated” occurs reference is made to the degree of difference in appearance between the outside petals or guards and the petaloids within.

The names of the types and their descriptions follow:

DETAILS OF TYPES

1. SINGLE



Single.

Peonies of this class are composed of a few broad petals, a single row of which surrounds a mass of pollen-bearing stamens and seed-bearing carpels.

Example: Le Printemps.
(Note illustration.)

2. JAPANESE



Japanese.

In this class the doubling process has just begun. The filaments of the stamens have broadened and the anthers have become extremely large. The guard petals remain the same as in the single type.

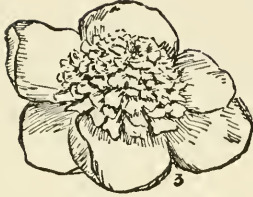
Example: Mrs. McKinley.
(Note colour-plate.)

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3. ANEMONE

This is the next development in the process of doubling. The filaments of the stamens are still broader than in the Japanese type, having become narrow petals which fill the centre of the bloom. While the anthers have completely disappeared, the centre petals are still narrow and short. There are few high-class varieties of this type.

Example: Anemoniflora rubra.



Anemone.

4. SEMI-DOUBLE

Flowers of this type contain filaments which have widened irregularly, making petaloids of varying widths throughout which stamens are mixed. The guard petals may or may not be clearly differentiated.

Example: Stephania. (Note colour-plate.)

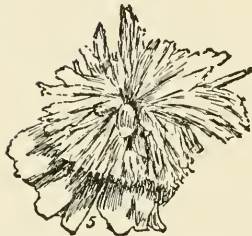


Semi-double.

5. CROWN

In this class the petaloids originating from the carpels differ from the petaloids, developing from the stamens as well as from the guard petals.

Example: Madame de Vatry. (Note colour-plate.)



Crown.

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6. BOMB

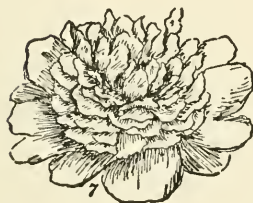


Bomb.

In this type the petaloids derived from both carpels and stamens have become much broader, without any crown, but still are clearly differentiated from the guard petals.

Example: Felix Crousse.
(Note colour-plate.)

7. SEMI-ROSE



Semi-rose.

In flowers of this class all the petals are uniformly wide, differing from the full rose type in the presence of a few stamens.

Example: Asa Gray. (Note colour-plate.)

8. ROSE (FULL-DOUBLE)



Rose.

This type completes the process of doubling. All the stamens and carpels have developed into petals resembling the guard petals.

Example: Mme. Lemonier.
(Note illustration.)

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COLOURS

In the Main List, I have given in ordinary terms the details of shadings and combinations immediately under the name of each variety and have placed the colour of the general effect in a separate column. I have avoided the use of such expressions as Tyrian rose, Solferino red and purple-garnet (which as a matter of fact contains less purple than other shades bearing no mention of purple). The colour terminology used by the professional growers is confusing and misleading to a beginner. For the information of those who care to compare the trade terms with actual samples of colour, I would state that the chart used by the American Peony Society is the "Répertoire des Couleurs pour aider a la détermination des Couleurs des Fleurs, des Feuilles et des Fruits." This elaborate work, published by the Société Française des Chrysanthémistes in Lyons in 1905, comes in three volumes, or rather portfolios, and contains over fourteen hundred shades. There has been some discussion as to the respective merits of this chart and Ridgeway's "Colour Standards and Nomen-



SUZANNE DESSERT
(Dessert and Meehin, 1890)

Semi-rose type. Deep pink peonies of merit are not numerous. Suzanne Dessert, while it has a distinct mauve tint, possesses great beauty, which is accentuated by golden stamens and silver-tipped petals

VARIETIES AND THEIR CHARACTERISTICS

clature.”¹ Much is to be said in favour of each chart. However, as there are many garden owners who do not possess either, or do not feel the need of one, I have not employed the cryptic colour terms used in both.

It is to be noted that the colours of all peonies vary somewhat in accordance with the age and strength of the plants and the constituents of the soil. There may be an intensification of colours in different years due to the vagaries of the weather. This year, 1916, *Avalanche* had such a strong tinge of yellow throughout as to appear almost another flower. Allowance should also be made for the fact that peonies fade in strong sunlight.

SIZE AND SEASON

Size is also a comparative matter. The actual dimensions in inches vary in each case with the degree of cultivation. The descriptions, “very large,” “large,” “medium” and “small,” which I have used in column 6, refer to the size of the peony in question compared to other varieties of peonies grown under the same conditions.

The different varieties of *albiflora* have a

¹ Published by Mr. Ridgeway, Washington, D. C., 1912.

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season of bloom which lasts from three to four weeks. Reference to their comparative time of bloom within this season is made in column 7. In the vicinity of New York the earliest varieties begin to flower during the last week in May.

FRAGRANCE

Fragrance is so largely a matter of personal preference that I hesitate to mention it in my list. The American Peony Society has adopted a plan of marking fragrance as follows: pleasant odour, single, double or triple X; unpleasant odour, single, double or triple X. I have found these descriptions misleading and, as the sense of smell is extremely variable, I fear others may likewise be disappointed. For example, Madame D. Treyeran is marked by the Society: "Fragrance, pleasant, XXX." In my opinion this flower has merely the suggestion of a pleasant odour. In my Main List I have simply marked those that are fragrant with an X. This runs the entire gamut from a pleasant freshness of odour up to intoxicating fragrance. The degree of sweetness had best be decided by the prospective purchaser according to his own keenness of perception of perfume values. When scent



SARAH BERNHARDT
(Lemoine, 1906)

Semi-rose type. Moderately deep pink peony of fine form

VARIETIES AND THEIR CHARACTERISTICS

is lacking I have made no note. I have not included any positively ill-smelling varieties except Marie Jacquin, and there are some people who consider it a fragrant peony, which brings us back to where we started.

Single varieties are usually lacking in perfume and frequently have a disagreeable odour. Mr. A. H. Fewkes has made some very careful observations and drawn some interesting conclusions in this matter of fragrance in the peony. He notes that sweet odour follows closely upon the development in breeding of the stamens into petals, and that the full double (rose type) is the most fragrant. In the single and semi-double varieties the pungence of the pollen overcomes the fragrance of such few petals as there are. Mr. Fewkes also calls attention to the fact that colour has some mysterious influence upon perfume, and that the full double rose-pink varieties are the most fragrant, while the single or semi-double reds are inclined to be ill smelling, and the full double reds, in most instances, lack odour entirely.²

² See Bulletin of Peony News, No. 2, published by American Peony Society, May, 1916.

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SIX SHORT LISTS

LIST A

TWELVE FINE WHITE PEONIES

Avalanche	Madame Crousse
Baroness Schroeder	Marie Jacquin
Duchesse de Nemours	Marie Lemoine
Festiva Maxima	Mireille
James Kelway	Monsieur Dupont
La Tendresse	Stephania

LIST B

TWELVE FINE PALE PINK PEONIES

Aurore	Marguerite Gerard
Eugenie Verdier	Milton Hill
Germaine Bigot	Reine Hortense
Livingstone	Simonne Chevalier
Madame Lemonier	Tourangelle
Marie Crousse	Venus

LIST C

EIGHT FINE DEEP PINK PEONIES

Alexandre Dumas	Monsieur Jules Elie
Auguste Villaume	Souvenir de l'Exposition
Claire Dubois	Universelle
Madame Geissler	Suzanne Dessert
Modele de Perfection	

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LIST D

TWELVE FINE RED PEONIES

Adolphe Rousseau	Madame Bucquet
Delachei	Madame Mechin
Felix Crousse	Monsieur Martin Cahuzac
General de Boisdeffre	Pierre Dessert
Grover Cleveland	Raphael
Karl Rosenfield	Rubens

LIST E

TWELVE PEONIES OF DISTINCTION AND BEAUTY AT LOW COST

Asa Gray	Madame Calot
Couronne d'Or	Madame de Galhau
Duc de Wellington	Madame de Vatry
Grandiflora Nivea Plena	Madame de Verneville
Lamartine (Calot)	Mathilde de Roseneck
La Rosière	Solfatare

LIST F

TWELVE RARE AND EXQUISITE PEONIES

Alsace-Lorraine	Mary Woodbury Shaylor
Gismonda	Primevere
Kelway's Glorious	Sarah Bernhardt (Lemoine)
Le Cygne	Solange
Madame Jules Dessert	Thérèse
Martha Bulloch	Walter Faxon

MAIN LIST OF PEONIES

1 Name of variety and notes thereon	2 Introducer and year	3 Type	4 List	5 Colour effect	6 Size of bloom	7 Season	8 Fra- grance	9 Habit of growth	10 Special value
ADOLPHE ROUSSEAU One of the darkest peonies. Beautiful shade of garnet, very glossy petals of which re- fect light. Note colour plate.	Desert & Meehin, 1890	Semi- double	D	Garnet	Very large	Early	..	Very tall, vigorous grower, long strong stem, dark foliage, veins in leaves red. Fine bloomers.	Garden.
AGNES MARY KELWAY Light pink guards surround a thick cream white collar of narrow petaloids. Crown same colour as guards.	Kelway	Crown	..	Light pink	Large	Early mid- season	X	Tall, vigorous, erect. Free bloomer	Garden and cut- ting.
ALBERT CROUSSE Large full blooms of light salmon pink. Petals small and closely packed.	Crousse, 1893	Bomb	..	Light pink	Very large	Late	X	Tall, erect, free bloomer	Garden and cut- ting.
ALEXANDRE DUMAS Guards and crown bright pink. Collar of deep cream or chamois colour.	Guerin, 1862	Crown	C	Bright pink	Large and full	Mid- season	X	Medium height, free and reliable bloomer	Cutting.
ALFRED DE MUSSET Well-formed flower of pale flesh pink and salmon. One of the pinks without a hint of mauve.	Crousse, 1885	Rose	..	Flesh pink	Large	Mid- season	..	Medium height, rather spreading habit	Garden and cut- ting.
ALICE DE JULVECOURT (Syn. Triumphans (Gaudavensis)) Well-built full flower. Guards and crown light pink with red streaks. Collar creamy white. Note colour plate.	Pele, 1857	Crown	..	Pink and cream	Medium	Mid- season	X	Medium height, rather spreading habit. Fairly free bloomer	Garden and cut- ting.
ALSACE-LORRAINE Pointed petals arranged like a water-lily. Flower rather flat. Colouring of cream to brownish yellow is very un- usual and beautiful.	Lemoine, 1906	Semi- rose	F	Cream white deep- ening to yel- low	Very large	Late	..	Tall, vigorous, free bloomer	Garden and cut- ting.

ASA GRAY..... Extremely full flower of pale flesh colour, with tiny dots and splashes of a deeper tint of flesh sprinkled evenly all over petals. Very striking and effective. Note colour plate.	Crousse, 1886	Semi- rose	E	Light pink	Very large	Mid- season	X	Tall, vigorous and up- right. Profuse and sure bloomer	Garden and cut- ting.
AUGUSTE VILLAUME..... Globular flower, very com- pact, even shade of deep pink.	Crousse, 1895	Rose	C	Deep pink	Very large	Late	..	Tall, strong grower. Buds occasionally, re- fuse to open.	Garden.
AUGUSTIN D'HOUG (Syn. Mar- chal MacMahon)..... Guard petals broad. Centre petals narrow, built up close and high, forming a large ball.	Calot, 1867	Bomb	..	Deep rich red	Very large	Late	..	Medium tall strong stiff stems, dark glossy foliage. Fairly free bloomer	Garden.
AVRORE..... Cup-shaped flower of lovely pale pink, which fades rapidly. Stamens prominent. Note illustration.	Dessert, 1904	Semi- rose	B	Pale pink	Large	Late mid- season	..	Medium tall, strong stems. Good bloomer	Cutting.
AVALANCHE..... Perfectly formed flower, large thick milk-white petals edged with a hair line of red, and packed solidly together. Fra- grant. There is a difference of opinion among growers as to whether Avalanche and Albatre are identical. Des- sert, the greatest living au- thority on the peony, claims that they are one and the same flower.	Crousse, 1886	Crown	A	White	Large and solid	Late	X	Tall, strong grower. Free bloomer	Garden and cut- ting.
AVANT-GARDE..... Pale rose petals veined plum colour. Bright golden sta- mens. One of the Wittmani- ana hybrids. See Chapter IV.	Lemoine	Single	..	Pale pink	Medium	Very early	..	Vigorous, erect. stiff stems. Very luxuriant foliage	Cutting.

MAIN LIST OF PEONIES (Continued)

1 Name of variety and notes thereon	2 Introducer and year	3 Type	4 List	5 Colour effect	6 Size of bloom	7 Season	8 Fragrance	9 Habit of growth	10 Special value
BARONESS SCHROEDER..... Globose flower of large white petals tinged faintly with pale pink. Petals not of great substance.	Kelway, 1889	Rose	A	White	Very large	Late	X	Tall, strong, vigorous. Free bloomer	Garden and cutting.
BEAUTE DE VILLECANTE..... Guards and crown pale rose. Collar pale silvery pink.	Gombault, 1856	Crown	..	Pale pink	Medium	Mid-season	X	Medium height, strong and free bloomer	Garden and cutting.
BOULE DE NEIGE..... Full ball of white petals tinged with sulphur colour. Guards and centre have large splashes of crimson. Stamens show throughout flower.	Calot, 1862	Semi-rose	..	White	Large	Early mid-season	X	Tall, erect, vigorous grower, free bloomer. Handsome dark foliage	Garden and cutting.
BRIDESMAID (Syns. Marie Jacquelin and Water Lily) See Marie Jacquelin.									
CLAIRE DUBOIS..... Fine flower of deep pink tinged with mauve throughout. Large petals. Tips silvered. Note illustration.	Crousse, 1886	Rose	C	Deep pink	Large	Late	..	Tall, erect, strong grower	Garden and cutting.
COPRONE D'OR..... Very full flower, with a ring of yellow stamens around tuft of petals in the centre. Petals in tuft edged with red. Note illustration.	Calot, 1872	Semi-rose	E	White	Large	Late	X	Medium height, strong grower, free bloomer	Garden and cutting.
DE CANDOLLE..... Bright red with purplish tinge. Striking and vivid in effect.	Crousse, 1880	Rose	..	Red	Large	Mid-season	..	Medium height, strong erect grower, free bloomer	Good for massing.
DELACHEL..... Full and large flower. Fine shade of red.	Delache, 1856	Rose	D	Red	Large	Late	X	Medium height, strong, erect. Free bloomer	Garden for massing.

DB. BERTONNEAU (Syn. Lady Leonora Bramwell). Soft pink with cream white petals in centre. Sometimes splashed with crimson.	Verdier, 1854	Bomb	..	Pink	Medium	Early	X	Vigorous grower and free bloomer	Garden and cutting.
DR. BERTONNEAU. Very full flower. Pale pink guards surround cream white petals tinted amber.	Guerin, 1850	Rose	..	Pink and cream	Large	Mid-season	X	Tall strong grower. Free bloomer	Garden and cutting.
DOUGLASS (Syn. Geo. W. Douglas)	Richardson 1870	Rose	..	Pink and cream	Medium	Mid-season to late	X	Medium tall, strong, erect. Free bloomer	Garden and cutting.
D. LIGHT (ear pink, cream and yellow centre). D. CALOT (Mrs. W. ELBERTON). Full flower. Guard petals white and broad. Centre petals narrower, sulphur white.	Calot, 1859	Bomb	E	White	Large	Late	X	Tall, vigorous. Strong stems. Free bloomer	Garden and cutting.
D. DUCHESSE DE NAMOURS (Syn. Mrs. Cwyn Lewis). Guard petals white, centre greenish yellow when the cup-shaped flower first opens. Develops into a large full flower which fades to white. Note illustration.	Calot, 1856	Crown	A	White	Medium	Early	X	Tall, strong grower and free bloomer	Garden and cutting.
D. DUCHESSE D'ORLEANS. Guards deep bright pink. Centre pale pink and salmon.	Guerin, 1846	Bomb	..	Pink	Medium to large	Mid-season	X	Tall, strong. Free bloomer	Garden and massing.
EMILIA SUPERBA. Bright mauve pink. An old garden favourite because of its fragrance and earliness.	Lemon, 1824	Crown	..	Deep pink	Large	Early	X	Strong, upright. Free bloomer	Garden and massing.
EUGENIE VERDIER. Enormous flower with loose petals of flesh colour. Creamy pink shading to white in centre.	Calot, 1864	Semi-rose	B	Pale pink to white	Large	Mid-season	X	Long stems, somewhat drooping in habit, free bloomer	Garden and cutting.
FELIX CROUSSE (Syn. Victor Hugo)	Crousse, 1881	Bomb	D	Red	Medium	Mid-season	X	Medium height, strong vigorous grower, free bloomer	Garden.

MAIN LIST OF PEONIES (Continued)

1 Name of variety and notes thereon	2 Introducer and year	3 Type	4 List	5 Colour effect	6 Size of bloom	7 Season	8 Fragrance	9 Habit of growth	10 Special value
FESTIVA MAXIMA..... Finely formed flower of large white petals. Centre petals splashed with red. Have grown Festiva Maxima in my garden with blooms 9 inches across. Note illustration.	Miellez, 1851	Rose	A	White	Very large	Early	X	Tall, strong, vigorous. Free bloomer. Foliage massive	Garden and cutting.
FLAG OF WAR..... Beautiful clear shade of dark red entirely without bluish tinge. Mass of gold stamens in centre. Keeps unusually well for a single.	Kelway	Single	..	Red	Medium	Early	..	Medium height, strong and erect. Stems reddish. Free bloomer	Garden and cutting.
FLORAL TREASURE..... Full ball-shaped flower of pale pink with salmon tints.	Rosenfield, 1900	Rose	..	Pink	Very large	Mid-season	X	Tall, strong, erect. Free foliage bloomer. Pale green	Garden and cutting.
FRANCES SHAYLOR..... High-built bloom the colour of rich Jersey cream. Centre petals edged with deep gold.	Shaylor, 1909	Rose	..	Cream	Medium	Late	..	Medium height, extra stiff stems. Very free bloomer	Cutting and garden.
A beautiful new variety.	Brand, 1907	Semi-rose	..	White	Large	Mid-season to late	X	Medium height, strong grower. Extremely free bloomer	Garden and cutting.
FRANCES WILLARD..... Large striking flower of good same tint as Marie Lemoine. Has faint tinge of pink on first opening.	Brand, 1907	Semi-rose	..	White	Large	Mid-season to late	X	Medium height, strong grower. Extremely free bloomer	Garden and cutting.
GENERAL DE BOISDEFERRE..... Very large flower of bright red. Compact, round.	Crousse, 1896	Bomb	D	Red	Large	Late	X	Strong, erect, vigorous	Garden and cutting.
GEO. W. TRAYON (Syn. Dorchester—which see.)									
GERMAINE BLOOT..... Exquisite shade of flesh pink with centre petals splashed with red.	Dessert, 1902	Crown	B	Pale pink	Very large	Mid-season	..	Medium height, strong and erect. Free bloomer	Garden and cutting.

GIGANTEA (Syn. Lamartine- Chlot—which see.)	Crosse, 1895	Rose	F	Pink	Very large	Late	X	Tall, strong, erect. Fine foliage. Free bloomer	Garden and cut- ting.
GISMONTA..... A most unusual and beautiful peony. Petals of great sub- stance. Upper half of flower deep flesh pink. Lower half palest rose. The two colours are so clearly divided that the blown seems composed of two flowers. Exceedingly fragrant.	Gombault, 1866	Crown	..	Pink and yellow	Small to me- dium	Mid- season	..	Very tall, fairly strong stems. Free bloomer	Garden and cut- ting.
GIROU DE CHAS, GOMBAULT..... Rather small flower, extra full. Guards and crown pale rose. Collar of narrow short petals bright yellow fading to deep cream. Note colour plate.	Richard- son, 1885	Rose	..	Pink	Very large	Late	X	Very tall. Stems some- what weak	Cutting.
GRANDIFLORA..... Flat flower of even light rose pink. Eight or nine inches in diameter when established and well cultivated. Flowers bend over on stems.	Lemon, 1824	Rose	E	White	Large	Early	X	Medium height. Strong grower. Free bloomer	Garden and cut- ting.
GRANDIFLORA NIVEA PLENA..... Full creamy flower tinged sul- phur and salmon. Touches of red in centre. An old favour- ite in gardens.	Terry	Rose	D	Red	Large	Late	..	Medium height. Fairly strong grower. Un- certain bloomer	Cutting.
GROVER CLEVELAND..... Large compact dark red flower.	Barr	Crown	..	White and yellow	Large	Mid- season	X	Tall, free bloomer. Strong grower	Garden and cut- ting.
HELENE LESLIE..... Large white guard petals. Centre sulphur yellow. Odour of a rose.	Kelway	Semi- rose	A	White	Very large	Mid- season	X	Medium to tall, vigor- ous grower	Cutting.
JAMES KELWAY..... Beautiful broad petals, tinged with palest rose. Base of petals yellow. Golden sta- mens show in centre.									

MAIN LIST OF PEONIES (Continued)

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JESSIE SHAYLOR..... Very evenly formed flower. Delicate flesh changing to light cream. Exquisite fragrance. A lovely new peony, first placed on the market in 1916.	Shaylor, 1909	Rose	..	White	Large	Mid-season	X	Tall, strong, erect. Free bloomer	Cutting and garden.
KARL ROSENFELD..... Rich velvety crimson, brilliant and striking. One of the very best reds.	Rosenfeld, 1908	Semi-rose	D	Red	Very large	Early	..	Very tall, strong, erect grower. Free bloomer	Garden and cutting.
KELWAY'S GLORIOUS..... Enormous glistening white flower. Touch of pink on outer petals. Flower has fairy-like appearance. Petals not of great substance.	Kelway, 1909	Rose	F	White	Very large	Early mid-season	X	Medium height to tall. Strong grower, free bloomer. Fine foliage.	Cutting
LADY ALEXANDRA DUFF..... Loosely built bloom. Central petals touched red. Lateral flowers are semi-double, showing stamens prominently. Pale blush pink on opening. It fades rapidly to white.	Kelway, 1902	Rose	..	White	Large	Early mid-season	X	Tall, strong, free bloomer	Garden and cutting.
LADY LEONORA BRAMWELL (Syn. Dr. Bretonneau-Verdier—which see.) Unusual flower of mauve, rose and white, with extra large petals. Extremely fragrant. One of the tallest peonies grown, easily measuring 4 feet 6 inches or more.	Lemoine, 1906	Crown	..	Pink	Very large	Early	X	Extremely tall. Often between 4 and 5 feet. Free bloomer	Garden and cutting.

LA. FLANCEE.....	Lemoine, 1898	Crown	..	White	Large	Mid- season	..	Tall, strong, vigorous grower. Not very free bloomer	Garden and cut- ting.
Creamy white. Yellow reflec- tion at base of petals. Centre petals touched with red. Sta- mens show in high crown.									
LA. FRANCE.....	Lemoine, 1901	Rose	..	Pink	Very large	Late	X	Tall, strong, erect. Free bloomer	Garden and cut- ting.
Extremely large, full, rather flat flower of great substance. Petals of pale pink, guard petals splashed with red.									
LA. MARNE (Syn. Gigantes).....	Calot, 1860	Rose	E	Pale pink	Very large	Mid- season	X	Tall, strong grower. Free bloomer	Cutting.
Full flower of pale silvery pink. Petals very large. Un- usual and refreshing fragrance, well described as "spicy."									
LA. MARNE.....	Lemoine, 1908	Rose	..	Pink	Very large	Late	X	Tall, strong, erect grower. Fairly free bloomer	Garden and cut- ting.
Compact flower of deep rose colour. Flower so large that it bends on the strong stems.									
LA. PERLE.....	Crousse, 1885	Rose	..	Pink	Large	Mid- season	X	Tall, vigorous grower. Free bloomer	Garden and cut- ting.
Globular pale, pink flowers. Petals vary in depth of colour.									
LA. ROSIERE.....	Crousse, 1888	Semi- double	E	White	Medium	Mid- season	..	Medium height, rather spreading habit, fairly free bloomer	Garden and cut- ting.
Cup-shaped flower of creamy white, stamens showing in centre. Quite distinct in appearance.									
LA. TEXDRESSE.....	Crousse, 1890	Rose	A	White	Large	Early	X	Tall, strong. Free bloomer	Garden and cut- ting.
Full milk white flower. Petals of great substance. Touches of red on guard and centre petals									
LA. TULPE (Syn. Multicolore).....	Calot, 1872	Semi- rose	..	White	Large	Mid- season	X	Tall, strong grower. Very stiff stems	Garden and cut- ting.
Pinkish white petals fading rapidly to ivory white. Guard and centre petals striped with red. With cultivation reaches enormous size. Note illustra- tion.									

MAIN LIST OF PEONIES (Continued)

1 Name of variety and notes thereon	2 Introducer and year	3 Type	4 List	5 Colour effect	6 Size of bloom	7 Season	8 Fragrance	9 Habit of growth	10 Special value
LE CYGNE..... Enormous ivory white flower of great beauty. Stamens occasionally visible. Petals incurved and strikingly arranged like feathers on a swan's wing. Judged by connoisseurs the finest white in the world.	Lemoine, 1907	Semi-rose	F	White	Large	Mid-season	X	Medium tall, erect, strong. Very dark green foliage. Very free bloomer	Garden and cutting.
LE PRINTEMPS..... One of the Wittmaniana hybrids. Large flowers. A single row of thick, smooth petals pale yellow in colour. Stamens prominent. An exquisite flower. Keeps well when cut. See Chap. IV. Note illustration.	Lemoine	Single	..	Pale yellow	Large	Early May	..	Medium height. Vigorous growth. Foliage large, distinct and beautiful in outline and colour, which is a light green	Cutting.
LIVINGSTONE..... Compact flower. Soft rose pink petals with silvery edges. Keeps well when cut.	Crousse, 1879	Rose	B	Pink	Very large	Late	..	Medium height. Vigorous and erect. Free bloomer	Garden and cutting.
MADAME AUGUST DESSERT..... Glossy flesh colour. Centre petals lightly touched with red.	Dessert, 1899	Semi-rose	..	Creamy pink	Large	Mid-season	..	Medium height, erect. Free bloomer	Garden and cutting.
MADAME BARILET DESCHAMPS Flat flower. Large petals of pale silvery pink. Stamens show throughout flower.	Calot, 1868	Semi-rose	..	Pink	Large	Early	X	Tall, strong grower. Has large broad leaves	Garden and cutting.
MADAME BUCQUET..... Clear dark red. Considered the darkest red next to M. Martin Cahuzac. A few specimens show throughout flower. Note colour plate.	Dessert, 1888	Semi-rose	D	Red	Medium	Mid-season	X	Medium height, strong, erect. Reddish stems. Fine foliage. Free bloomer	Garden and cutting.

MADAME CALOT.....	Miellez, 1856	Rose	E	White	Very large	Early	X	Tall, strong grower. Free bloomer	Garden and cutting.
Guard petals flesh pink. Centre bluish and pale rose, surrounded with narrow cream white petals. On well-established plants the flowers are exquisite. Note illustration.									
MADAME CROUSSE.....	Calot, 1866	Crown	A	White	Large	Late	X	Dwarf growth. Strong, erect. Free bloomer	Garden and cutting.
Globular flower of clear white, centre petals edged with red.									
MADAME DE GALHAU.....	Crousse, 1883	Rose	E	Pink	Medium to large	Late	X	Tall, strong, erect. Free bloomer	Garden and cutting.
Soft pink and salmon colouring.									
MADAME D. TREYERAN.....	Dessert, 1889	Semi-rose	..	White	Medium to large	Early	X	Dwarf, erect. Free bloomer	Garden and cutting.
Full flower of rosy white, freely splashed with red. Note illustration.									
MADAME DE VARRY.....	Guerin, 1853	Crown	E	White and pink	Large	Mid-season	X	Medium height. Fairly strong stems. Free bloomer	Garden and cutting.
Guards and crown white tinged with pale pink. Collar of wide, white petals tinged with sulphur. Centre petals splashed red. Note colour plate.									
MADAME DE VERNEVILLE.....	Crousse, 1885	Bomb	E	White	Large	Early	X	Medium height. Somewhat spreading. Very free bloomer	Garden and cutting.
Guard petals creamy white. Centre white with bluish tinge when flower first opens. Centre petals sometimes edged with red.									
MADAME DRUEL.....	Mechin, 1880	Bomb	..	Pink	Large	Early	X	Medium height. Strong grower, with fine dark green foliage. Free bloomer	Garden and cutting.
Broad guard petals, centre solid compact ball. Even shade of silvery rose pink throughout.									
MADAME EMILE GALLE.....	Crousse, 1881	Rose	..	Pink	Large	Late	..	Tall, strong, erect. Foliage beautiful soft green. Free bloomer	Garden and cutting.
Flat flower. Large pale pink petals changing to white in centre. Delicate and lovely colour which fades rapidly.									

MAIN LIST OF PEONIES (Continued)

1 Name of variety and notes thereon	2 Introducer and year	3 Type	4 List	5 Colour effect	6 Size of bloom	7 Season	8 Fra- grance	9 Habit of growth	10 Special value
MADAME EMILE LEMOINE..... Large full round flower, petals closely overlapping. Glossy white tinged pale pink and covered with tiny dots of a deeper shade. The pink colouring fades rapidly and when the flower is fully open it is white.	Lemoine, 1899	Semi- rose	..	White	Very large	Mid- season	..	Medium height to tall. Strong grower and good bloomer	Cutting.
MADAME GEISLER..... Massive flower of mauve pink with silvery sheen. Keeps unusually well when cut. An imposing flower. One of the largest of all peonies.	Crousse, 1880	Rose	C	Pink	Very large	Mid- season	X	Medium height. Spreading habit, as stems are not strong enough to support the enormous flowers. Free bloomer	Cutting.
MADAME JULES DESSERT..... Large flower of fine form. White petals tinged straw and flesh colour. Centre petals waved, and touched with red. Golden stamens show throughout, giving a soft glow to flower. Pointed buds. This flower should be opened in the house to secure its full beauty. Note illustration.	Dessert, 1909	Rose	F	White	Large	Late	..	Medium height to tall. Strong grower. Free bloomer	Cutting.
MADAME LEMOINE..... Large compact Guards and crown white, tinged with pink. Collar milk white.	Calot, 1864	Crown	..	White	Large	Mid- season	X	Tall, strong, erect. Free bloomer	Cutting.

MADAME LEMONIER.	Calot, 1860	Rose	B	Pink	Large	Mid-season	..	Very tall, strong and erect. Free bloomer	Garden and cutting.
Very full flower of exquisite pale rose pink. Petals very large and glossy. The size of this peony, its great height, robust habit and fine colour make it a most striking garden subject. Note illustration.									
MADAME MECHIN.	Mechin, 1880	Semi-rose	D	Red	Medium	Mid-season	..	Medium height and strength. Uncertain bloomer	Garden.
Compact flower of deep glossy garnet. One of the good reds.									
MADMOISELLE ROUSSEAU.	Crousse, 1888	Semi-rose	..	White	Large	Mid-season	..	Medium height. Strong and erect. Free bloomer	Garden and cutting.
Guard petals milk white. Centre petals sulphur white with faint tinge of pink. Centre petals have occasional splashes of red.									
MAR FLEUR.	Lemoine	Single	..	White	Large	Early May	..	Medium height. Fine strong foliage of bronze green	Cutting.
One of the Wittmaniana hybrids. Large white flowers, tinted salmon pink, and veined at base of petals with dark violet. See Chap. IV.									
MARCELLE DESSERT.	Dessert, 1899	Crown	..	White	Large	Mid-season	X	Medium height. Free bloomer	Garden and cutting.
Creamy white with pale pink spots and some red in the centre. A fresh and delicate flower, with delightful perfume.									
MARCHEAL MACMAHON (SYD. AUGUSTIN d'Hour—which see.)	Crousse, 1892	Semi-rose	B	Pale pink or white	Large	Late	..	Medium height. Strong erect. Free bloomer	Garden and cutting.
Palest rose pink fading rapidly to white. Centre petals flecked with dark red. Some stamens showing.									
MARIE CROUSSE.	Crousse, 1892	Bomb	B	Pink	Large	Mid-season	..	Tall, strong, erect grower. Free bloomer	Garden and cutting.
Full, perfect flower of soft salmon pink, a rare and wonderful shade. A most lovely peony to which no mere description can do justice.									

MAIN LIST OF PEONIES (Continued)

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<p>MARIE JACQUIN (Syn. Bridesmaid, Kelsey, and Water Lily, Barr.) Cup-shaped flowers which retain this shape. The glossy white petals curve in over a centre packed with yellow stamens. On newly set plants the flowers are often single, and on well-established plants the blooms are frequently full double. Note illustration.</p>	Verdier	Semi-double	A	White	Large	Mid-season	..	Medium habit. Strong, erect. Free bloomer	Garden.
<p>MARIE LEMOINE..... Massive ball-shaped flower of ivory white. Some petals edged with thread of red.</p>	Caldot, 1869	Rose	A	White	Large	Late	..	Medium height. Erect and strong. Not a free bloomer	Garden and cutting.
<p>MARINA BULLOCH..... Extremely large flower. Centre deep rose pink. Outer petals shell pink. One of the fine new peonies.</p>	Brand, 1907	Rose	F	Deep pink	Very large	Late	X	Tall, strong and erect. Moderate bloomer	Garden. Especially good for cutting.
<p>MARY WOODBURY SHAYLOR..... Guard petals clear pink. Centre petals cream, deepening to canary yellow at heart. One of the fine new peonies.</p>	Shaylor, 1910	Rose	F	White	Medium	Mid-season	X	Dwarf. Stiff stems. Free bloomer. Broad handsome foliage	Garden and cutting.
<p>MATHILDE DE ROSENECK..... Soft rose pink—centre deeper shade of rose. Very full flower.</p>	Crousse, 1883	Rose	E	Pink	Large	Late	X	Very tall. Strong grower and free bloomer. Buds tight and slow to open	Garden and cutting.
<p>MESSAGE..... One of the Wittmaniana hybrids. Single row of white petals tinted cream. Stamens prominent. Flower cup-shaped.</p>	Lemoine	Single	..	White	Medium large	Early May	..	Tall growth, strong dark green foliage	Cutting.

MILTON HILL..... Large compact flower of soft clear, flesh colour. Fades rapidly in the sun. Form very beautiful. Centre petals ar- ranged like those of a rose.	Richard- son	Rose	B	Pink	Large	Late	..	Medium to tall. Strong grower. Free bloomer	Cutting.
MIRVILLE..... Massive compact flower of pure white. Extremely fra- grant. Impressive in appear- ance, and of value because of its extreme lateness.	Crousse, 1894	Rose	A	White	Very large	Late	..	Tall, strong grower. Free bloomer	Garden and cut- ting.
MISS SALWAY..... Very large, globular compact flower. Guards and crown pale tint of rose white, collar paler. Fades rapidly to white. Fragrant.	Kelway, 1905	Crown	..	White	Very large	Mid- season	X	Tall, strong grower. Free bloomer	Garden and cut- ting.
MOEULE DE PERFECTION..... Very large well-formed flower. On opening flower is cup- shaped, then develops a high pointed centre. Rose pink somewhat deeper in the cen- tre. Note colour plate.	Crousse, 1875	Rose	C	Pink	Very large	Late	X	Medium height. Strong erect grower. Free bloomer	Garden and cut- ting.
MODESTE GUERIN..... Large compact flower. Deep bright pink, solid colour throughout.	Guerin, 1845	Bomb	..	Deep pink	Large	Mid- season	X	Medium height. Strong, erect. Free bloomer. Fine foliage	Garden and cut- ting.
MONSIEUR DUPONT..... Creamy white cup-shaped flower. Centre petals sur- rounded with ring of stamens. A few centre petals tipped with red.	Calot, 1872	Semi- rose	A	White	Large	Mid- season	X	Tall erect. Strong grower. Free bloomer	Cutting.
MONSIEUR JULES ELIE..... Very large compact flower of deep pink with silvery sheen over entire flower. Very large petals which are a more in- tense pink at the base.	Crousse, 1888	Crown	C	Pink	Very large	Early mid- season	X	Medium height. Strong grower. Glossy light green foliage	Cutting.

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MONSIEUR MARTIN CAHUZAC. This is the darkest red peony. A deep dark garnet in colour. Petals so glossy as to appear varnished.	Dessert, 1899	Semi- rose	D	Dark red	Small to medium	Early mid- season	..	Medium height. Strong erect grower. Dark green leaves edged with red. Reddish stems. Fairly free bloomer	Garden and cut- ting.
Mrs. GWYN LEWIS (Syn. Duch- esse de Nemours—which see.)	Terry	Japanese	..	Pink and yellow	Large	Mid- season	X	Medium height, erect, strong growth	Garden and cut- ting.
Mrs. MCKIMLEY..... Nauve pink guard petals. Narrow centre petals yellow tinged pink. Note colour plate.									
Multicolore (Syn. La Tulipe —which see.)	Calot, 1867	Crown	..	Pink	Very large	Early	X	Dwarf, erect, strong. Free bloomer	Cutting.
OCTAVIE DEMAY..... Very large full flower. Rose pink. Fades very rapidly un- less cut in bud. Valuable because early.	Riviere, 1911	Rose	..	Red	Medium	Mid- season	X	Tall, stiff stems. Shy bloomer	Garden and cut- ting.
PHILIPPE RIVOIRE..... Very dark crimson flowers of good form. Extremely fra- grant.	Calot, 1861	Japanese or crown	..	Pink and yellow	Small to medium	Mid- season	X	Tall, strong, erect. Free bloomer	Garden.
PHILOMELE..... Guards and crown rose pink. Wide collar of narrow bright yellow petals. Crown is edged with red. Crown does not appear when flower first opens, and does not appear at all on weak blooms. Note colour plate.									

PIERRE DESSERT..... Rather loosely built flower of dark garnet.	Dessert and Mechin, 1890	Semi-rose	D	Red	Large	Early	..	Medium tall and strong. Uncertain bloomer	Garden.
PIERRE DUCHARTRE..... Large cup-shaped flower, closely packed with petals. Flesh pink with silvery sheen.	Crousse, 1895	Rose	..	Pink	Large	Late	..	Medium height. Erect strong grower	Garden and cutting.
PRESIDENT TAFT..... Cup-shaped flower of soft pale pink.	Blaauw & Co., 1909	Rose	..	Pink	Medium to large	Mid-season	..	Tall, strong, erect. Free bloomer	Cutting.
PRIMEVERE..... One of the few yellow peonies. Guards cream colour, with touches of red. Centre sulphur yellow.	Lemoine, 1907	Bomb	F	Yellow	Large	Mid-season	X	Tall, strong, erect grower. Free bloomer	Garden and cutting.
PRINCESS MAY (Syn. Venus— which see.)..... Clear dark red. One of the few fine reds in the long list of peonies. Valuable because it blooms so early in the season.	Meebin, 1882	Semi-rose	D	Red	Medium	Early	..	Dwarf, strong, erect grower. Shy bloomer	Garden.
REINE HORTENSE..... Full, well-torned flower. Even shade of pale rose pink. Strikingly beautiful. Note colour plate.	Calot, 1857	Semi-rose	B	Pink	Very large	Mid-season	X	Very tall, strong and erect. Free and reliable bloomer	Garden and cutting.
ROSA BONHEUR..... Large flat flower with petals overlapping. Delicate flesh pink. Guards splashed red.	Dessert	Rose	..	Pink	Very large	Mid-season	..	Tall, erect, strong grower	Garden and cutting.
ROSE n'AMOUR..... Large full flower—soft flesh pink. Very beautiful colour.	Calot, 1857	Bomb	..	Pale pink	Large	Mid-season	X	Tall, rather spreading. Shy bloomer	Cutting.
RUBACHE..... Clear dark red. Similar in form to Marie Jacquin.	Delache, 1851	Semi-double	D	Red	Medium	Early	X	Medium height. Fairly strong grower. Uncertain bloomer	Garden.

MAIN LIST OF PEONIES (Continued)

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RUBRA SUPERBA Clear dark red without any purple tinge. Good colour. Valuable because of its lateness.	Richardson, 1871	Rose	..	Red	Large	Very late	X	Tall, erect strong grower, but not a free bloomer	Especially good for cutting.
RUBRA TRIUMPHANS Brilliant dark red.	Delache, 1854	Semi-double	..	Red	Large	Mid-late	..	Medium tall, strong grower. Foliage very dark green, stems reddish. Inexpensive and excellent for mass planting	Landscape and garden.
SARAH BERNHARDT Flower of very beautiful form, with large overlapping petals. Colour a moderately deep pink. Note illustration.	Lemoine, 1906	Semi-rose	F	Pink	Large	Late	X	Tall, erect strong grower. Free bloomer	Garden and cutting.
SIMONNE CHEVALER Large, globular, compact bloom. Soft salmon pink.	Dessert, 1902	Crown	B	Light pink	Large	Early	X	Very tall strong grower. Free bloomer. Beautiful foliage	Cutting.
SOLANGE Wonderfully beautiful and unusual flower. Thick overlapping petals of deep cream with amber tinge. Heart of bloom has salmon shading.	Lemoine, 1907	Crown	F	Pale amber and pink	Very large	Late	..	Medium height, strong erect grower. Usually a free bloomer. Occasionally and extremely solid bud refuses to open	Cutting.
SOLETAIRE Guard petals deep cream. Centre, on first opening sulphur yellow. Fades rapidly. Well worth having in spite of its capricious habit of blooming. Note colour plate.	Calot, 1861	Bomb	E	Yellow, fading to white	Large	Mid-season	..	Medium height. Spreading habit. Uncertain bloomer	Cutting. Should be cut in bud or immediately upon opening.

SOUVENIR DE L'EXPOSITION UNIVERSELLE.....	C a l o t , 1867	R o s e s	C	D e e p pink	V e r y large	L a t e	X	M e d i u m height, Spread- ing habit. Free bloomer	C u t t i n g .
Very large brilliant pink flower of fine form. Petals tipped with silver. Note colour plate.	Kelway	Single	..	Red	Large	Mid-season	..	Tall, erect, very free bloomer. Stems red	Garden and massing.
STANLEY..... Do not confuse with Stanley (Grousse).	Terry, 1891	Semi-double	A	Deep cream	Large	Mid-season	X	Tall, erect, strong grower. Free bloomer	Garden and cutting.
STEPHANIA..... Full cup-shaped flower, deep cream petals. Stamens show throughout, giving a golden light to flower. Note colour plate.	Dessert and Me- chin, 1890	Semi-rose	C	Mauve pink	Very large	Mid-season		Tall, strong, erect grower. Good bloomer	Garden
SUZANNE DESSERT..... Large full flower, broad glossy petals tipped with silver. Note colour plate.	Terry	Bomb	..	White	Medium	Mid-season	..	Medium height, strong grower, rather spreading habit. Very free bloomer	Especially good for landscape.
THE BRIDE..... Guard petals have pink tinge. Centre milk white.	Dessert, 1904	Rose	F	Pink	Very large	Mid-season	..	Tall, strong, erect. Free bloomer	Garden and cutting.
THERESE..... Full double flower of glossy flesh colour, somewhat paler in the centre. One of the very finest peonies.	Dessert, 1910	Rose	B	Pink	Large	Late	..	Medium height, Strong grower. Free bloomer	Cutting.
TOURANGELLE..... Delicate rose pink.									
TRIUMPHANS..... (SYD. Alice de Julvecourt— which see.)									
TRUMPHE DE L'EXPOSITION DE LILLE..... Full flower of fine form. Soft, flesh pink with tiny splashes of deep rose. One of the best inexpensive pinks.	C a l o t , 1865	Semi-rose	..	Pale pink	Very large	Mid-season	..	Medium height, Strong grower and free bloomer	Cutting.

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UMBELLATA ROSEA (Formerly known as Sarah Bernhardt). Large guard petals pale rose pink. Centre straw white. Roots increase rapidly and plant blooms very young.	Dessert	Rose	..	White	Medium	Early	X	Medium height. Strong grower. Very free bloomer	Massing, garden and cutting.
VENTUS (Syn. Princess May). Collar palest pink. Centre warm flesh pink.	Kelway	Crown	B	P a l e pink	Large	Mid-season	X	Tall, strong, free bloomer	Garden and cutting.
VICTOR HUGO (Syn. Felix Crousse—which see.) WATER LILY (Syns. Marie Jacquin and Bridesmaid). See Marie Jacquin.	Richardson	S e m i - rose	F	Pink	Small to medium	Mid-season	..	Medium height. Strong free bloomer	Cutting.
WALTER FAXON Clear bright pure pink. Outer edge of flower somewhat paler. Very double, with a few stamens showing in centre.									

**EXTENDING THE PERIOD
OF BLOOM**

CHAPTER IV

EXTENDING THE PERIOD OF BLOOM

THE peony is sometimes criticised on the ground that its period of bloom is not sufficiently long. The peony does not have the characteristic of other perennials such as the larkspur, which, after being cut down, blossoms again the same season; nor does it bloom as continuously as the hybrid tea rose does under favourable conditions. But the dazzling gorgeousness of the flower is more than compensation for its comparatively short life.

While it is true that the flowers of an individual variety of peony will last only a number of days, it is also true that by making a judicious choice of different species and varieties it is easily possible to have the joy of peonies in one's garden for a period of six or seven weeks. Moreover, as the peony has in recent years become the subject of so much horticultural and commercial interest, it is undoubtedly only a matter of time before the scientific plant breeders, by the employment of methods of selection successfully

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used with other plants, will increase the sum of our happiness by lengthening the period of bloom still further.

In addition to flowering at the desired time all of the varieties suggested in this chapter for the purpose of extending the season have distinct and attractive qualities of their own.

The following list gives the approximate order of bloom of the different kinds of peonies desirable for the garden.¹ The order, of course, will vary somewhat on account of different conditions of soil, exposure and weather.

- (1) *P. tenuifolia*—with fern-like foliage.
- (2) *P. Wittmaniana* and *Wittmaniana* hybrids—
little known but very beautiful.
- (3) *P. officinalis* (*rubra* and other varieties)—the
peony of our grandmothers' gardens.
- (4) *P. suffruticosa* or *P. moutan*—the tree peony.
- (5) *P. lutea*—a pure yellow species.
- (6) *P. albiflora* or *sinensis*—Chinese peonies.
Early varieties.
Midseason varieties.
Late varieties.

(1) First to bloom in the old-fashioned gardens was *P. tenuifolia*, known in England as the

¹ See colour plates and illustrations in this and the next chapter for the six species in the list.



P. TENUIFOLIA

The earliest species of peony to bloom

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Adonis peony. With its fragrant flowers of bright blood-red, and its deeply cut fern-like leaves, resembling somewhat those of giant fennel, it is thoroughly in harmony with the other delicate tracteries of early Spring. This graceful little plant which attains only sixteen or eighteen inches in height, still has a strong appeal, but is not planted in the modern garden as frequently as it deserves to be. A few weeks after blooming *P. tenuifolia* dies down to the ground and disappears until the following Spring, differing in this respect from the other species, whose foliage remains and helps to furnish the garden all Summer. There are both single and double flowered varieties: it is difficult to decide which is the more attractive.

This peony is a native of the Ukraine, Russia, a region that lies north of the Black Sea. It grows in profusion there and on the hilly grounds and steep banks of the Terek District in the Caucasus. The first mention of it was in a European catalogue published in 1757. It is thought to have been introduced into England by William Malcolm in 1765.

(2) The season of *P. tenuifolia* is closely fol-

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lowed by that of the Wittmaniana hybrids which bloom early in May, nearly a month ahead of the Chinese varieties. The original Wittmaniana species was probably named after Wittman, a botanist who travelled in the Caucasus. The details of its introduction are shrouded in mystery, a fact which is the more remarkable because of the novel colour of the flower—yellow. It is first mentioned in the *Journal of Botany* (London), for 1842, where a letter is quoted which shows that, together with other rare plants, it had been received in a garden in the Crimea, from Count Worontzoff in Adsharia, not far from Erzerum. Subsequently this species was lost for a number of years, but was rediscovered about 1880 in an obscure Irish garden. The suggestion has been made that the American Peony Society commission some horticultural Arsene Lupin to unravel the mysteries of Wittmaniana's appearance, disappearance and re-appearance.

The flower is single with large firm petals of a colour well described as "light primrose with a dash of lemon." The seeds are a bright coral red. This type species is not grown here very successfully; for some inexplicable reason it often dies out.



LE PRINTEMPS

(Wittmaniana Hybrid—Lemoine, 1907)

Single type. Pale creamy yellow. Blooms early in May. Excellent for cutting

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The Wittmaniana hybrids, however, are very hardy. M. Lemoine, the French hybridist, by making crosses of various Chinese varieties on *P. Wittmaniana* has produced these valuable extra early-flowering sorts. They have large fragrant single flowers of great beauty, in delicate tints of white, yellow, rose and salmon, and have thick leaves of vigorous and luxuriant growth. Avante Garde, palest rose; Le Printemps, yellowish cream; Mai Fleuri, salmon white, and Messagere, sulphur white, are all most attractive.

P. Wittmaniana has also been crossed with *P. Russi* by Lemoine, thereby producing *Russi major* which, while very early-flowering, has a mauve colouring not always acceptable.

A seedling of *P. Wittmaniana* put out by Barr, in England, bears a single flower of soft rose and yellow tints (*P. Wittmaniana rosea*).

(3) The bloom of the Wittmaniana hybrids is succeeded by that of *P. officinalis*, so named because in the early days its roots were used for medicinal purposes. The variety *rubra plena* (double red) is the peony so common in the old-time gardens: in fact, up to about 1850 this was the only peony grown to any great extent in this

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country. Its large size and persistent growth, the vivid red colour of its blooms and its noticeably unpleasant odour all serve to impress its personality on the observer. For sentimental reasons and because it is one of the parents of some of the wonderfully beautiful peonies of to-day, this peony is entitled to a place in every garden.

Besides this old red " piney " there are several other fine kinds of the *officinalis* species that are deserving of selection. Four particularly striking varieties are easily obtainable and share with the *rubra plena* the merit of blooming in May. They are:

- P. *OFFICINALIS ALBA PLENA*, which has double white flowers. The buds are pink when they appear, but fade to white as the flower opens.
- P. *OFFICINALIS ROSEA PLENA*, which has full flowers of bright rose.
- P. *OFFICINALIS LOBATA*.² This peony has single flowers of an unusual colour—a glorious orange scarlet.
- P. *OFFICINALIS LA NEGRESSE*, which has full, double, rich, dark maroon blooms.

² At the present time an animated controversy is going on in England as to the proper classification of *lobata*. There is no controversy as to the beauty of the flower.



P. OFFICINALIS

The old red "pincy" of our grandmothers' gardens

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(4) Next in point of flowering come the tree peonies. These have as ancestors a primitive Chinese species, *P. suffruticosa* or *P. moutan*, and are distinguished from the herbaceous peony in having a shrub-like habit and a permanent woody growth that does not die down to the ground in the Autumn. This type has been cherished and cultivated in China and Japan for hundreds of years, and has, since 1787, received much attention in Europe—particularly in England. In many places in England, however, it is grown with but indifferent success, which is due possibly to the climate or to local conditions. It does better in eastern America, where the climate—especially of the Atlantic Coast slope of the United States—is similar to that of interior China, its original habitat. The tree peony usually reaches a height of three or four feet. There is an instance of one in England twelve feet high and thirty-six feet in circumference which never failed for twenty-five years to produce annually several hundred blooms. The flowers of *P. moutan* are remarkable for their beauty of form, texture and colour combined; they are also very large—often measuring from seven to ten inches across—and

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have a satisfactory way of lasting long on the plants. One is surprised that this species is not more appreciated and frequently planted. The history of the tree peony and some of the points to be remembered in its culture are set out in Chapters IX and X. Among the many fine varieties grown to-day there are at least four so exquisite that they should be in every peony lover's garden:

CAROLINE D'ITALIE, which has finely formed flowers of silvery flesh colour, with a reflex of salmon.

MME. STUART-LOW, which has cup-shaped flowers of bright salmon red with broad silvery border and golden stamens. The flowers are of exceptional brilliance and the plant blooms luxuriantly.

BLANCHE DE CHATEAU FUTU, which has flowers of pure white with carmine spots. This is also a free bloomer.

REINE ELIZABETH is considered the finest of all the tree peonies. The flowers are massive—salmon pink with brilliant copper tints. The plant is a vigorous grower and free bloomer.

(5) After *P. moutan* comes the bloom of *P.*



P. SUPERBOSA OR MOUTAN, "CAROLINE DITALE"

The tree peony, beloved of the Chinese and Japanese, and famous in Oriental art and literature

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lutea. This species, usually classed among the tree peonies on account of its woody stems, has thick, deeply lobed dark-green leaves and cup-shaped single flowers, measuring about three and one-half inches across, with waxy fleshy petals of a wonderful golden yellow, strong and pure. In some of the blooms the lower half of the filaments is red, giving the effect of a red ring in the centre of the flower. Curiously the leaves are of the same outline and habit of growth as those of the tree peony, while the buds are of the same shape as those of the herbaceous peony. In addition to its beauty this little peony is gifted with fragrance, somewhat like that of a lily.

Thirty years ago Abbé Delavay—a missionary—discovered *P. lutea* in the Yunnan Mountains in southern China, and sent twenty-six seeds marked “Seed of an Alpine plant” to the Jardin des Plantes in Paris. Only three of the twenty-six seeds lived, but from them are descended all the *P. lutea* now in cultivation. From France this peony was introduced into England and thence to this country.

Two recent hybrids of *P. lutea* and *P. moutan* offer much of interest and beauty, though not

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as early flowering as either parent. *P. L'Esperance*, introduced in 1909 by Lemoine, is similar to *P. moutan* in foliage and habit, and has single flowers eight inches across with eight or ten broad-fringed petals, in colour soft yellow tinged with buff and splashed at the base with red. *P. La Lorraine*, sent out in 1912, also by Lemoine, has a very full globular bloom, about six inches across, regular in outline and of a buff tone passing to golden yellow. It gained high honours in France and was awarded the First Class Certificate—a recognition of great merit—by the English Royal Horticultural Society in 1912. It was one of the most startling novelties introduced into England in that year. This variety is not offered as yet in this country.

(6) The last to bloom and most glorious of all the peonies is *P. albiflora*. It is this peony to which reference is usually made to-day under the generic term “peony.” Nearly all of the five hundred or more named double varieties of *albiflora* have been obtained by crossing *P. albiflora* (mostly single) with *P. officinalis*, *peregrina* and other species. This crossing which produced a wide range of colour and form has been the means



P. LUTEA

A small shrubby peony which suggests a plorified buttercup. It has a delicious fragrance

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of lengthening the blooming season for the improved species, the result of the union. Many of the best varieties of *P. albiflora* have been given in Chapter III. In order to complete the plan of having peonies in flower in the garden for the longest possible time, a few of the earliest, mid-season and latest varieties are here named again.

<i>Early</i>	{	Umbellata Rosea	white
		Festiva Maxima	white
		Madame Ducl	pink
		Mons. Jules Elie	pink
		Adolphe Rousseau	red
<i>Midseason</i> . .	{	Avalanche	white
		Marie Jacquin	white
		Madame Lemonier	pink
		Gloire de Chas. Gombault	pink and yellow
		Mons. Martin Cahuzac	red
<i>Late</i>	{	Marie Lemoine	white
		Baroness Schroeder	white
		Pierre Duchartre	pink
		Livingstone	pink
		Rubra Superba	red

PURCHASING

CHAPTER V

PURCHASING

UNLESS the admirer of peonies, who longs impatiently for exquisite flowers of his own, has the good fortune to be tutored by a disinterested authority, he is on the road to enrollment in the expensive school of experience—expensive to a varying degree in money, and expensive to a certain degree in time and results. Many varieties of the peonies take two to four or even in some cases five years to become so well established as to give the most typical blooms. The owner inevitably feels resentment on ultimately finding, after an extended period of care and anticipation, that the flower is of inferior quality, that it is different from what was ordered, or that possibly the plant is a shy bloomer or does not bloom at all. For months and years to slip by without bringing the development one has a right to expect is both disappointing and disheartening. As I look back to my early unguided efforts to have “lots of lovely peonies,” the memory of time-consuming mistakes I made, which might have been avoided had I but had advice, encourages me to try to help others.

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Successful purchasing of peonies, as of most things, resolves itself into three factors—knowing quality and prices, knowing where to get the best and knowing what one wants. In other words, the buyer of peonies who desires the satisfaction of feeling that he has used good judgment, must study (1) the difference between good and bad stock; (2) the individuals and firms in the peony business and what they offer, and (3) his own taste and requirements.

CATALOGUES

While it is often enthralling and always enlightening to secure catalogues from a number of growers and dealers and to compare the lists, both of varieties and prices, it must be remembered that the beauty of the printed matter does not always necessarily correspond with the quality of the plants offered. Advertising is a branch of any business which is artistically or carelessly done, as its importance is or is not recognised by the advertiser. But neither the beauty nor the simplicity of the printed matter affects the varying margin between euphemism and accuracy. The general reputation for integrity of the

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grower or dealer putting out the catalogue is an all-important matter about which inquiry should be made.

Peony growers' booklets contain much valuable information, but they are sometimes misleading. The fascination of the printed word seems never to be so strong as in flower catalogues. The ingenuousness with which one peruses and accepts all of these that come to hand each year is undeniable proof of the vernal and eternal characteristic of hope. While catalogue reading is practically unexcelled as a form of indoor agricultural and horticultural diversion, I fear that it is somewhat dangerous to the happiness if not to the life or liberty of the novice. The extravagant use of "the best," "superb," "splendid," "magnificent," "indispensable" and other ecstatic adjectives at times thrills even a hardened buyer, but to the beginner, sensitive to suggestion, it is often positively hypnotic. I would not for a moment intimate that this is wilful misrepresentation: it does not seem, however, always to be the whole truth. A peony may be veraciously described as so appealingly beautiful that one's hand at once reaches for the order form. But before indulging

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the impulse and filling in the blanks, important questions should be asked and satisfactorily answered:

1. Is the coveted peony a free bloomer?
2. Are the stems strong?
3. Is its odour agreeable?
4. Is it better for cutting or for landscape?
5. Is it the proper height for the place where it is to be planted?

And after all these points are disposed of, others arise:

6. Will the stock described in the catalogue be as represented?
7. Will the roots be strong and healthy?
8. Will they be true to name?
9. What is the grower's or dealer's reputation as to reliability?

FIRST HAND INFORMATION AND DISINTERESTED ADVICE

The ideal way to choose peonies is to visit several nurseries and make selections of plants when in bloom. Of the hundreds of varieties of peonies, the average general nursery carries in stock only a comparatively small number. The growers of peonies exclusively, or of peonies in connection with a few other perennials, usually put out long lists of the finest kinds. In



GLOIRE DE CHAS. GOMBAULT
(Gombault, 1866)

Crown type. Colouring and form of great charm. A moderate sized peony which blooms freely



MADAME LEMONIER
(Calot, 1860)

Rose type. Full flower of pale pink. The petals are unusually large and glossy

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order to make comparisons of the habit of growth and the quality of stock, as well as to enlarge one's acquaintance with the flowers of the different varieties, it will be of advantage for one to visit a number of nurseries, whether the lists of peonies offered for sale are large or small.

A convincing reason for seeing the flowers in bloom before ordering is the fact that probably no words in the English language convey so many shades of meaning as those expressing shades of colour. When one reads in a catalogue that a certain flower is "Tyrian rose" or "Bengal rose" or "Solferino red," unless one possesses a colour chart, or is familiar with the terminology of the peony trade, or has perhaps the good fortune to have lived in Tyre, Bengal or Solferino, as the case may be, the description will probably be unintelligible. How many beginners go to the dictionary to find that "amaranth" is "a name given to mixtures of colouring matters of which the chief constituent is magenta"? Most of us, I fear, learn the definition through experience when the flower appears. One may, of course, like magenta: but if a bluish pink, or purplish red bring tears to the eyes of others as they do to mine, it is no laughing matter to own an amaranth peony.

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Visits to peony exhibitions will also prove invaluable in giving the opportunity to compare colours and to determine those one likes best. Furthermore, at exhibitions one can readily and delightfully become acquainted with names of varieties and types of form.

In addition to seeing the nurseries of commercial growers and studying exhibitions, still another important source of aid lies in viewing private collections. The gardening spirit usually prompts the owners to extend assistance to other flower lovers, so that disinterested information is easily available. Even in a small garden containing a few cherished peonies, much help may be obtained. I give here a list of questions to ask of one's indulgent friends, the answers to which it will be of benefit to have and consider before buying.

1. Where and when were the roots purchased?
2. How old were they when they were bought?
3. How large were they, and did they have fat eyes?
4. Did they bloom the first year after planting?
5. If not, how many years passed before they bloomed?
6. Have they been transplanted?
7. Have they been divided?
8. Was the stock clean and healthy?



MADAME CALOT
(Mieliez, 1856)

Rose type. A high-class and inexpensive light pink peony. It is strong-growing, free-blooming and fragrant

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One should always note under what conditions of soil and location the peonies are planted, and in drawing conclusions one should be fair to both grower and owner.

In the Autumn, in the digging and shipping season, visits to nurseries are also instructive. One then finds out in a general way what each grower gives in return for the prices asked in his catalogue. The size and quality of roots sent out by growers vary greatly: the blooms from the roots will show a corresponding difference. Some growers list and advertise one-, two- and three-year roots. Others quote a single price and say nothing about the age or size of the roots. In the latter case one buys in ignorance and on faith: in addition, one's mind is so occupied with pictures of the glorious flower described that little thought is given the roots except as to the number required.

PRICES

In buying peonies, low prices alone should not influence the purchaser. A root of some standard variety such as *Festiva maxima* may be bought from some growers as low as thirty-five cents, whereas the same variety, listed as being the same

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age, bought from others will cost as much as sixty cents. The plants listed may both be true to name, but there are probably differences in the quality of the root which determine the price. X's root at sixty cents will begin to bloom possibly the first season, and surely the second season after planting, whereas Y's cheaper root may and probably will not be vigorous enough to bloom until the third or fourth year. And there is no certainty that it will be a fine strong flower when it does appear at last.

Three experiences recounted from notes in my garden book may be of interest from several angles.

1. Some years ago I bought from a general nurseryman and seedsman a dozen peony roots of standard varieties. As his roses and seeds had been most satisfactory, I ordered peonies from his catalogue without further thought. Two years after planting only one flower bloomed on each of two of the plants. At the end of three years these same two plants bore several flowers apiece. At the end of four years the remaining ten roots, which had not produced a solitary bloom in all this time, were pulled up, examined and destroyed.

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The roots were not diseased but were small and weak: in fact during the four years that they had been in my garden they had not noticeably increased in size. Evidently the stock had been divided too often and into too small pieces, and the roots had not been able to recover their strength.

2. On another purchase of fourteen roots, which was made from a grower of peonies, I had a most disappointing experience. As this grower strongly advocated mulching with manure, I conscientiously proceeded to mulch as directed. This caused two of the roots to rot away during the first winter. At the end of one year only one flower appeared on the remaining twelve plants. At the end of two years, four plants, supposedly of one variety, bloomed well, but one of the four was not true to name. The other plants had one flower apiece, but have refused to bloom even thus luxuriantly since then. At the end of three years three more plants decided to blossom in a half-hearted way, and two others did creditably. In other words, after four years' waiting only five plants out of fourteen proved to be satisfactory.

3. The third experience makes more cheerful

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reading. From another grower of peonies, I secured a shipment of exceptionally fine roots. The first year after planting seventy-five per cent. of these bloomed: some of the plants bore six or eight flowers. The second year all except one bloomed freely and had sturdy flowers and strong lustrous foliage. The prices for these roots were higher than those of certain other growers and nurserymen, but the results warranted the added expense. I have just come in from the garden this warm May morning after having counted with a miser's thrills of joy the many large, vigorous buds on plants furnished only last year by the same man. May he live long and prosper!

The newest and scarcest peonies command a fancy price. The wise beginner will leave the buying of these varieties until he has had either ample experience or specific expert advice. Some of them are wonderfully beautiful and desirable, and others are expensive because there are only a small number on the market, not necessarily because they are greatly superior to the well-known kinds which should be in every peony garden.



ALICE DE JULVECOURT
(Pele, 1857)

Crown type. A well-built full flower of delicate rose blush and cream

PURCHASING

Quality is more important than quantity. It is far cheaper in the end to purchase roots of finest quality and after several years propagate them than to buy cheap roots which may be poor stock and possibly not true to name. In the first instance one has roots of ever-increasing value: in the second, after a few years of disappointment the roots will probably be thrown away, entailing a loss of time which, in peony growing, is of even more importance than money.

The ever-widening interest in the peony, and a consequently large demand for it, together with the fact that the peony increases slowly, will probably cause the inevitable law of supply and demand to keep up the prices of the standard varieties.

POINTS TO BE DECIDED

The decision as to where to buy may be arrived at in one of several ways. It may be the result of observation during visits to various nurseries and gardens, or it may be made on the advice of experienced friends, or, in the event that observation and advice are not available, a conclusion may be reached by doing a little experimental buying. Roots can be obtained from each of sev-

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eral nurseries, and comparisons of their quality carefully made. In Chapter VIII on Propagation and in Appendix B, will be found pictures and descriptions of both healthy and sick roots, which will be of assistance in forming a judgment on the quality and condition of stock.

Having decided where the roots are to be bought, the next step in purchasing is to determine for what use the peonies are wanted. If they are to be planted for landscape effects the best for the purpose are the varieties in white, strong pink and red, which colours have the advantage of fading less in the sun. If the peonies are for the garden, varieties in any colours may be chosen. If the flowers are to be used largely for cutting, those that are best suited for that purpose should be selected. For planting in mixed borders the colours of the other perennials in bloom at the same time should be remembered. *Eduhis superba*—pink—and scarlet Oriental poppies make a clash which can be heard for miles! All these considerations enable one to make a choice not to be regretted or reversed, a procedure which is usually disturbing to one's mind and purse as well as to the peonies themselves.

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The number of peonies required should receive careful attention from the novice. For one's first purchase, the smallest number with which one can possibly manage to exist is best. Make haste slowly in collecting: it is likely to be less expensive and it is a good deal more amusing. Two or three years' experience will bless one with an amazing amount of wisdom, and there will probably be a warm feeling of self-gratulation later at the restraint exercised.

As orders are filed and filled in the sequence in which they are received at the nursery, the earlier the order is completed and sent the better. When the order is forwarded it is well to ask whether the varieties specified can be furnished in the quantities and ages desired. If some varieties cannot be supplied, the plan of planting may be rearranged or the order for them placed elsewhere. State in the order the date on which shipment is to go forward, and request a notice of the shipment before it is dispatched, so that arrangements can be made for being at home at the time of planting: even the most trusted gardeners sometimes make mistakes. If one cares at all for peonies their arrival, unpacking and planting will be both a rite and a festival.

**WHERE TO PLANT AND
HOW TO PREPARE THE
SOIL**

CHAPTER VI

WHERE TO PLANT AND HOW TO PREPARE THE SOIL

THE PEONY IN LANDSCAPE WORK

FROM the appreciation of the beauty of the peony as an individual flower it is but a step to the realisation of its value in landscape work. The whole effect of peonies may be described as enlivening: their natural "air of gaiety," as one writer aptly calls it, is a charm quite by itself, distinctly in addition to their artistic appearance and is present whether they are arranged in large groups or in small plantings.

A striking picture can be obtained by massing peonies in lawns or open fields, or at a distance with a background of trees. As an example of the first method of treatment, the peonies in broad curving beds at Highland Park, Rochester, make an admirable composition. Another instance of this plan is on the estate of Miss Morris (near Philadelphia), where a gleaming ribbon of peonies separated by a strip of turf follows the outlines of a long bed of shrubbery.

Peonies are well planted in front of but a little

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way from shrubs or evergreens such as yews or cedars, which not only bring out the bright colourings of the blooms but also serve as a shelter. At the Royal Gardens, Kew, England, peonies have been successfully used as a setting for the smaller flowers in the rock garden. Unless one's purpose is to make a collection of peonies for comparison or exhibition, a limited space should not include a large number of varieties differing in colour or time of bloom.

Peonies placed in lines at the edge of walks or drives give a pleasing finish. In the border they are valuable both for their ornamental foliage and for their brilliancy when in flower. In a formal garden they are a great aid in accenting the plan: even a few specimens may be used with marked results. In my own garden, the planting of individual peonies at all intersections of the brick walks emphasises the design not only when the plants are in bloom, but, because of the boldness of the leaves, throughout the entire season. And the contrast of the stately white *Festiva maxima* against the deep green of Chinese cedars gives me a picture eagerly awaited every year and long remembered with delight.



PEONIES IN LANDSCAPE PLANTING ON MISS MORRIS'S ESTATE NEAR PHILADELPHIA

WHERE TO PLANT

A garden devoted exclusively to peonies, or to peonies and some other early summer perennials, is the height of simplicity and beauty. Such a garden also has the advantages of being easily planned and of being at its best when most proud garden owners are at home. A planting of peonies, both herbaceous and tree (selected for a succession of bloom), combined with iris (also selected for succession), lilies of the valley and lilacs, gives flowers that need little care and provides both perfume and splendour in soul-satisfying quantities.

The requirements for peonies for mass effects are white or strong colours so as to fade the least, and low price so as not to bankrupt the purchaser. *Umbellata rosea* and *Duchesse de Nemours*, both white, *Rubra triumphans* and *De Candolle*, both red, and *Edulis superba*, deep pink, fill these needs and are readily obtainable in quantities. For wild planting, *P. officinalis*—red and reasonable—lends itself gracefully: after becoming established it takes care of itself for many years. A group placed beyond, but visible from, the confines of the garden, makes a dazzling effect.

“ Outside ” planting, so successfully employed

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in connection with many noted gardens, always adds greatly to the picture. A faultless garden should have an enticing view as well looking out from as looking into it. This can be obtained in several ways—for example, by planting shrubs and trees in the distance to secure a good skyline or by growing large fields of bright-coloured flowers to create the impression that the world is all flowers if one cares to go on and on. To stand within a well-kept garden and to see beyond, the work that nature will do for us if we will but start it, a meadow with naturalised yellow daffodils, an apple orchard in fairy bloom, a hillside covered with sheets of white anemones, groups of brilliant red *P. officinalis* bordering a brook, masses of blue iris fringing a pond,—is to behold the necessarily smaller garden enlarged and perfected.

SELECTION OF PLACE FOR PLANTING

In selecting the location for planting peonies it is important to keep a few fundamental principles in mind.

Good drainage is vital: while the peony demands a plentiful supply of water just before



PHILOMELE
(Calot, 1861)

Japanese or crown type. The collar of deep yellow gives this flower a most striking appearance

WHERE TO PLANT

and during the blooming season, excessive moisture at any time is most injurious to it. To obtain the best results it is desirable that ample watering facilities should be easily available.

In some cases where perfectly sound peonies have been planted in poorly drained soil, they have been attacked and damaged by a destructive worm or grub; when the roots were lifted, freed of the worms, divided and replanted in well drained soil the plants regained health. In many instances of standing water the roots have rotted away entirely: "disappeared" as one surprised and indignant gardener said. At the other extreme, a hard dry soil is almost equally undesirable.

The planting of peonies very near trees or building foundations is not a good practice. Under trees the shade is frequently dense and the tree roots, accurately described as voracious, rob the peonies of both food and water. Close to building foundations not only is the ground dry, but the roots are subject to roof drippings and snow drifts. To expect peonies, even with their hardy constitutions, to bloom under such conditions is really asking too much of them.

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Peonies do well in full sun, in light shade, or in a position where they are shaded a part of each day. If sheltered from the wind by shrubs, hedges, walls or buildings at a short distance it will be a distinct advantage. Such a protection is especially valuable in the case of the single varieties, the blooms of which are somewhat fragile.

Peonies are indeed "gross-feeders." To put forth strong stems, heavy foliage and masses of large flowers all within ten or twelve weeks, it is only natural that they must have food and drink in abundance. Peonies thrive best in a rich, heavy loam. A clay loam which has been made friable or a good vegetable garden soil makes an excellent soil for them. Rows of peonies along the path edges give a finish to the garden and furnish quantities of flowers for cutting from a place where they can best be spared.

The person who has only a few peonies can put them in the flower border. If small roots are thus placed, they should not be crowded or shaded by other plants, as this causes the leaves to shrivel or wither and retards the development of the root

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buds for the following year. Large, strong clumps, or the smaller roots planted in groups are not so apt to meet with this misfortune. As the foliage of the peony is admirable in itself, plenty of space for the plant can be left without injuring the appearance of the border.

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The peony probably asks less of its owner in the way of care than any other perennial except the iris. One often reads in catalogues the statement in reference to the peony that "once planted all is done," and if the word "properly" is inserted between "once" and "planted" this may be said to be almost literally true. Even the most neglected peony, if healthy, will manage to make its own living, and bloom in some manner under adverse circumstances. But in peonies, as in other things, there is a price to pay for perfection. Part of the price is careful attention to the details of planting.

A deeply spaded place should always be prepared for peonies. In borders, holes two and one-half feet in depth and three feet in diameter can be made, and filled with rich top soil carefully mixed with well-rotted manure. A good

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proportion is one part by bulk of manure (or compost) to nine parts of top soil—as noted in directions for preparing a trench. In very fertile ground, when the top soil is not shallow and the subsoil is not a hard clay, a deep and thorough spading and the addition of the requisite amount of manure will give excellent results.

If the flowers are not merely an effective incident in the border but are the chief object of one's endeavours, peonies should be placed in a bed by themselves, where they will make better growth than when crowded in with other plants. In planting peonies in a bed considerable space should be left between them to allow for the full growth of the massive roots which develop in the ten or twelve years during which the peonies should be undisturbed. The minimum distance apart at which they should ever be planted is two and a half feet each way. A distance of three and a half or four feet each way is much to be preferred.

The ideal way to grow peonies, and one which by the expenditure of some time, patience and money can be made real, is to plant them in ground that has been trenched to the depth of two and a

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half or three feet and filled with top soil enriched with well-rotted manure or compost.

“Top soil,” strange though it may seem to one struggling with numerous bewildering technicalities, means exactly what it says: it is the soil lying on top of the earth. It usually contains decayed vegetable matter, some of which has come down to us from the Palæozoic and other polysyllabic ages. As might be supposed, the “decayed vegetable matter” is quite well decayed. The top soil on account of its difference in colour and texture can readily be distinguished from the subsoil. The depth of top soil varies from two inches to four feet: the usual depth on the level in the middle Atlantic States is about six inches.

Top soil in which peonies have not been grown before is best. It has been proved by much experience that peonies do not thrive in a soil in which peonies have previously been grown. There is also the possibility of the soil having been infected by some peony root that was diseased.

The operations necessary to prepare the trench are extremely simple and extremely laborious. After the length and width of the trench are de-

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terminated, the dimensions should be staked out or marked off. The top soil of the trench should be removed and placed alongside. The use of a plough, if the trench is sufficiently long and wide to permit it, will save much labour. The top soil can thus be thoroughly loosened and more easily and quickly shovelled out. The subsoil should then be removed to the proper depth.

A little calculation and planning before actual operations are commenced will prevent a waste of time and money, and I would say patience, except that patience in garden lovers is supposedly inexhaustible. It is well to figure out in advance the cubical contents of the trench and decide where all the subsoil is to be disposed and where all the new top soil is to be obtained. The handling either in carts or wheelbarrows should be so arranged that soil is moved both ways in one operation; that is—the loads of discarded subsoil taken from the trench, should, when dumped, be replaced by the top soil to be taken to the trench. Obviously the less number of trips, and the shorter the haul, the less the expense.

The mixing of the top soil with the well-rotted manure or compost can be done either



CLAIRE DUBOIS
(Crousse, 1886)

Rose type. Strong fine flower of deep pink tinged with mauve

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where the top soil is obtained or at the trench itself, whichever may be more convenient. But it must be *thoroughly* mixed; not put in the trench in layers. A proportion of one part by bulk of manure or compost to nine parts of top soil will be satisfactory in most instances.

The trench should be more than filled. It should be heaped up and rounded over above the level of the adjoining ground, for it will settle and sink to a surprising degree. For this reason it is best to prepare the beds or trenches some time in advance of planting: two or three months is not too long. The ground can be used for annuals or seedlings until it is time to put in the peonies. In case the trench shall have settled below the level of the garden, additional top soil should be added.

Although the result of planting peonies in this way justifies the trouble required, the construction of such a trench is not to be lightly undertaken. Should the trench be of generous proportions, the handling of many tons of soil is involved. As a rough standard of comparison which may be useful to the prospective trench maker, I will give the data on one of the trenches I have

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made in my garden. The dimensions are one hundred feet long by sixteen feet wide by two feet nine inches deep. As the top soil averaged nine inches in depth, one hundred and eighteen cubic yards of subsoil had to be removed and replaced by new top soil and compost. The length of haul to the place where the subsoil was exchanged for top soil and compost was sixty yards by barrow and eighty-six yards by cart. The subsoil was a solid hard pan and had to be loosened by pick, as dynamite could not be used for fear of disturbing existing tile drains. This trench required the labour of four men for twenty-six working days.

WELL-ROTTED MANURE AND COMPOST:

PREPARATION AND USE

Manure is undoubtedly the best single fertiliser for peonies, but it should always be applied with judgment. I make a few practical suggestions in regard to it:

1. Use only well-rotted manure or compost—a mixture of manure and soil. Probably the quickest and most satisfactory way of preparing compost is to follow the method used by many market gardeners. A pile of new manure (pref-

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erably horse and cow manure mixed) about six feet wide at the bottom and four feet high, and of any length desired, is made with sloping sides, so that the top of the pile is about three feet wide. About an inch of top soil is then thrown loosely over the entire pile. Thus covered the manure heats and in a week or ten days produces steam, which rises when the pile is opened for inspection. The pile, earth and all, is then turned with a six-tined fork, all lumps are thoroughly broken, and a new pile is made. The new pile is covered with earth as before and allowed to stand about ten days or until it heats again, when the process is repeated. Every ten days, as often as the pile heats, which it usually does four or five times, it is turned and covered. When it ceases to heat it is left to stand until used. The turning of the pile supplies the required air to the bacteria in the manure. Without air they die, the manure fire-fangs and becomes almost worthless.

The pile of compost should be made at least four months before using; six months is a preferable period. By the time it is used, it will be found to be black, friable, and easily handled with a spade instead of a fork.

The distinct advantages in composting ma-

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nure as above described instead of simply turning it in the classical manner lie in: (a) the prevention of leaching—due to the absorption of liquid by the top soil used; (b) the desirable texture of the compost—due to the admixture of top soil; (c) the comparative shortness of time in which the compost becomes available.

2. In preparing a place—large or small—for planting, mix the manure (or compost) and the soil with great thoroughness. This point is of the utmost importance.

3. Do not put manure in layers in any part of the trench or hole. Solid manure is dangerous if in direct contact with roots, as it is apt to rot or burn them, or to produce fungi. Dessert, the French peony grower and authority, warns especially against this.

4. Do not mix too great a portion of manure with the soil. One of the most successful growers in this country has found, in his many years of experience, that it is possible to make the soil too rich to obtain the best results with peonies.

5. Do not mulch peonies with manure even although it is well rotted: they may not rot, and again they may. Mulching with manure is not necessary and is a distinct risk.

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CHAPTER VII

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DR. EDWARD B. VOORHEES, the expert on crops and soils, was accustomed to say that in the latitude of New Jersey the proper time for seeding alfalfa is August 15th at 8 A.M. The psychological effect on the hearers of such an unconventional statement was usually startling—incredulity, scorn or amazement, as the case might be, depending upon the wisdom of the individual—but nearly every one *remembered the date*.

I shall try the same method of firmly fixing in the mind of the peony lover the proper time to begin planting: it is September 15th, at 9 A.M. (I do not believe in hurrying through breakfast!) The planter of peonies is more fortunate than the sower of alfalfa in that he has a longer period of time in which to do his work: planting that will give entirely satisfactory results can be carried on for five or six weeks after the day for starting. This date is not chosen from a whim—it is based on sub-

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stantial reasons. Earlier than September 15th, moving checks the development of the unmaturred root buds which hold the leaves and flowers for the following year. But by the middle of September the root buds are usually fully formed and will not be injured by lifting. Planting in the early Autumn gives another advantage. If the soil has ample chance before frost to settle around the newly planted roots, they are less likely to "heave" during the winter.

Peonies can, of course, be put in the ground at any time until the ground is frozen; but the later the planting is done the poorer will be the growth made the following season. Spring planting is most inexpedient and usually means no flowers until the next year. Peonies start to grow the first warm days in the spring. If transplanted then it is almost impossible to avoid damaging the little white feeding rootlets at a time when they should be left untouched to give the plant the greatest amount of nourishment needed to prepare it for the blooming season so near at hand.

Iris is affected by transplanting the least of any perennial that I have ever grown. Peonies



MADAME DE VATRY
(Guerin, 1853)

Crown type. An inexpensive peony of great beauty

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and poppies object to it the most. Indeed, peonies go so far as to protest against being moved even when the moving is done at the right time under the most favourable conditions: they show their resentment by failing to give their best in foliage and blooms for at least one season. It is therefore important to plant them not in makeshift or temporary places, but in permanent locations where they can remain undisturbed for a number of years. In order to accomplish this end with a minimum of effort and to enjoy the process into the bargain, the knowing gardener will plant on paper a considerable time in advance of the actual planting. Paper planting gives a chance to change one's mind, rearrange colour combinations and improve the plan: on paper the roots may be shifted endless times without the slightest possibility of damage or set-back.

If the suggestions I have made are followed, by the time the roots arrive from the grower both the place and the plan of planting will be ready and each peony can be put in its appointed abode with little chance of error. It is advisable to plant promptly when the roots are received, so that they may have ample opportunity to get established.

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As the roots are usually well packed in dampened moss or peat, they may, if necessary, be left in the box for some time; but, unless the soil of the garden be lumpy or muddy from recent rain, there is nothing except convenience to be gained by delay.

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To open a case of fine peony roots is a pleasure; the roots themselves are beautiful things, strong, firm and fleshy, with their delicate little white rootlets and big crisp eyes that hold the future glory of the garden. A label is attached to every plant: as one joyfully reads over the names, visions of each perfect flower arise. One's delight in the peony garden to be begins perhaps with reading the catalogues: one's delight in the actual garden begins right here—at planting.

The roots and buds are as fragile as bits of old china and, lest pieces be broken off, must be handled as tenderly. After they are taken from the case they should be examined, checked and sorted. The general rule of keeping roots moist during the process of transplanting applies to the peony. A dampened burlap bag thrown

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over the plants will prevent the drying out of the feeding rootlets by the sun or wind. This covering should be put on at once on unpacking, and should not be removed until everything is ready to place the root in the hole.

The fleshy roots of an individual peony plant vary in length. It is important that the hole should be made large enough to receive them without the stubbing or cramping of a single root. As the roots of a plant receive their nourishment from the soil, and not from each other or from the air, they should be planted so as to present to contact with the soil the greatest possible area. It is a curious commentary on horticultural human nature, and a fact to bear in mind, that all gardeners seem to be passionately averse to digging holes of sufficient size to accommodate properly roots of any kind without crowding or bending.

The uppermost eyes of the roots are usually placed between two and three inches below the surface of the ground when levelled off. Three inches is a better depth than two. One grower of much experience advocates planting between three and four inches deep. He finds that at this depth the root is less susceptible to disease. It is

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my rule to come as near three inches as is humanly possible.

Too deep planting sometimes causes "blind" growth—that is, the stalks and leaves appear and grow but produce no flower. Too shallow planting makes greater the possibility of the root being displaced by frost during the winter or early spring. If the root of a peony is on, or too near, the surface, it will rot away in a year or two. Inasmuch as peonies are both expensive and valuable, and inasmuch as the care and labour of planting are considerable, it pays well to see that the work is properly done the first time they are planted.

Some of the large peony roots come with a hollow directly under the crown. In planting, this space should be conscientiously filled with soil without pressure on the roots, which are not only brittle in themselves, but are in such a position that the slightest pressure will cause a break.

As each plant is put in its appointed place—and not before—the nursery label should be removed and attached to a garden stake. Before soil is placed over the plant the garden stake should be carefully inserted between the roots.



MADAME BUCQUET
(Dessert, 1888)

Semi-rose type. A dark red peony of medium size, with fine foliage and reddish stems

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This prevents forcing the stake into the ground at a point where it may injure the peony. The plant should then be covered with fine soil, pressed down with the hands: tramping is too rough treatment for these roots. After the ground is firmed, I usually draw a circle around each plant in the soft dirt. This serves as a reminder of its exact position and warns one against treading upon that root in the pre-occupation of planting others.

RECORD OF PLANTING

Labels, even in the most carefully kept garden, easily become misplaced or blurred: a clearly prepared diagram is the only infallible method of which I have ever heard for keeping track of the roots. In addition to any "orientation" based on trees and fences, which may be moved or destroyed, a point of the compass should be indicated. After the planting is done the diagram, with date, names and condition of roots, and name of dealer from whom they were bought, should be copied into a permanent garden-book.

Without such a plan, should the labels be lost and the names forgotten, the peonies will grow just as lustily and flower just as freely as

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if a plan had been made. It will be found, however, that a full schedule of all plantings is invaluable for reference if not for blooming. The duplication of an order of some especially alluring kind, if one does not know its name, is usually difficult. Then, too, peonies have a pleasing way of increasing in monetary worth; often some rare variety is practically unobtainable except from an amateur's collection. Unless they have a name and are true to it, they lose all value except for decoration and sentiment. Whether the number of peonies planted be large or small it is well worth while to take the trouble of making a written record.

MULCHING

If the soil has been prepared for planting as suggested, it is not necessary to do anything further until winter comes. The first winter after planting, as the roots in all probability have not yet become firmly imbedded in the soil, and may heave easily when the frost comes out of the ground, a mulch or covering should be put over them. But beware of mulching with manure. Although this is advised by some persons it has

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resulted in many instances in the rotting away of the root. While the peony is a gross feeder, manure—always well-rotted—or compost should be applied to it with both discretion and restraint. I have mentioned this in Chapter VI on the preparation of the soil, and refer to it again here, because mulching many perennials with manure is a common and successful practice. In my observation and experience such mulching has in numerous cases proved harmful to peonies. In my own garden, the only peonies I have ever lost have rotted away from a manure mulch.

Straw or leaves make the best mulch, but should not be applied too heavily: three or four inches of loose material are sufficient. Last year, as a cover for a newly planted bed, I used corn stover with good results. Chicken wire stretched over the straw or leaves and staked at the edges keeps them from blowing away in the high winds of winter.

It has been suggested that the leaves of the peony plants be cut and thrown back on the roots for a mulch in the Autumn. This would be good practice were it not for the danger of spreading any fungoid diseases to which the peony is sub-

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ject. At one time I followed this method, but now, out of an abundance of caution, I cut down and burn the foliage of my peonies in the late fall.

After the first winter many successful gardeners do not cover peonies, and there are indeed instances of these plants flourishing as far north as Manitoba without being mulched. When it is remembered that the original habitat of *P. albiflora* is Siberia, the rule that they can be grown without protection wherever apples thrive would seem to be safe. In addition to latitude, the nature of the soil should be taken into account in this connection. In most instances I think one should be guided by local conditions: in latitudes where zero weather is prevalent and in soil which is heavy, a light cover can be used to advantage.

CULTIVATING AND WEEDING

During the first warm days of spring the mulch of straw or leaves should be promptly removed, for the peony shoots break through the ground early in the season. As soon as the soil is sufficiently dry, the beds should be thoroughly cultivated to a depth of two inches. Care must be used not to touch the crowns of the plants.

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After this first loosening of the soil, it should be worked and weeded regularly as the weeds appear. In spite of the point of view of the lazy man, weeds really perform a useful function in the world. Without the wish to be rid of their presence the soil would be apt to be neglected and we would lose the dust mulch and the beneficial bacterial activity brought about by stirring and aeration. So, faithful weeding must be added to the care of the beloved peony.

WATERING

While the peony will withstand dryness of the soil to the point of drought without succumbing, a reasonable amount of moisture is essential for the best development. As the ground becomes parched under the hot Spring sun an occasional watering will help to increase the size and improve the colour of the blooms. If the Spring season is unusually dry the plants should be drenched once a week in order to obtain the finest flowers. For this purpose plain water is best on newly prepared beds and liquid manure on older beds. In watering it is well to keep the buds, flowers and leaves dry and to moisten the roots alone.

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Should August and September be low in rainfall, it is also desirable to apply some moisture in those months. As an instance of peonies being dependent on water the season of 1911 in England is instructive. Peony flowers were almost a complete failure in that year: growers attributed this to the drought in April and May, 1911, and a drought in the summer and fall of 1910.

DISBUDDING

In many varieties of *P. albiflora*, three flower buds, two lateral and one terminal, appear on each stem. By pinching off the lateral buds as soon as it is possible to get hold of them, additional strength will be thrown into the remaining bud and an increase of the size and beauty of the flowers will result.

Disbudding entails considerable work when one has a large number of peonies: it is usually done when flowers for cutting or exhibition purposes are desired. Still the ardent gardener, who knows his every peony by name and watches each individual flower unfold day by day, finds the task far from irksome and would gladly do twice as much. Single peonies, because of the decora-



Stalk of *P. albiflora* showing terminal bud which should be left and lateral buds which should be removed or pinched off



Dormant healthy peony root

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tive effect of their clusters, are not usually disbudded.

Another method of obtaining large flowers is to pinch off several of the weaker shoots in the Spring soon after they appear above ground. The growth which would have gone into these shoots is thus diverted into the ones that are left, which will attain greater size and vigour.

FERTILISERS

Until Dr. Bose's wonderful invention, the crescograph, which determines in a quarter of an hour the exact action of fertiliser applied to plants, is readily available, I suppose we shall have to be content with somewhat haphazard conclusions on the effect of adding food to the soil.

If especially large blooms are desired, I find it well worth while to apply chemical fertilisers in addition to manure. While manure is the most valuable single fertiliser on account of its stimulating the bacteria in the soil, and can, in the form of weak manure water, be used safely in the cultivation of peonies, it needs to be balanced by the addition of phosphoric acid and potash. Without such balancing, the excess of nitrogen

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in the manure may produce too great leaf growth at the expense of flowers. A mixture consisting of two ounces of phosphoric acid and two ounces of muriate of potash placed around a plant in the Autumn in a circle of the same size as the circle formed by the outside leaves of the plant, will be of considerable benefit without incurring any danger of injury to the roots. This quantity is recommended for a clump four or five years old: the exact amount in each case depends upon the size and condition of the roots and the available general fertility of the soil. Since potash has become so scarce on account of the war, I have been using a mixture of bone meal (four ounces) and wood ashes (six ounces) with apparently excellent results. It is desirable to make the application during the Autumn just before a rain. The fertiliser should be lightly dug in with a small hand fork.

SUPPORTS

The original *P. albiflora* in Siberia was probably not beaten down by the rain. Some captious critics of the peony complain because the flower of to-day—bred solely for size and beauty—needs support. Every attainment is apt to have its

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corresponding drawback: in the case of the peony, the drawback can be obviated by a little initiative and some stout wire. The best method of supporting individual plants is probably that described by Prof. Jackson, in 1904, as follows: "Three iron rods three feet long are made of heavy wire one-quarter of an inch in diameter, an eyelet is bent in the top, and the rods are galvanized after they are cut and bent. A circular connecting wire of lighter weight, one-eighth of an inch in diameter and six feet six inches long, is passed through the eyelets and made secure by looping wire. Thus one can have the circular wire of full size, or reduced to any smaller diameter desired, and held in the reduced size by tying one end. Such supports are very inconspicuous, being practically invisible in a well-grown plant, and have given satisfaction to several peony growers who have tried them."

In gardens where expense is considered, I have seen practical and cheap supports of home production. A barrel hoop, either of wood or metal, was neatly secured to three wooden stakes and the whole painted grass green.

Probably every peony lover has his own special

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kind of support to fit his taste or purse; so long as it fulfils its purpose, who shall criticise? But supports the peonies must have, while in bloom, and the circular design in some rigid material which allows the leaves and stems freedom is best. Surely no gardener will be so cruel as to tie the entire plant to a stake, where it would give a pitiful resemblance to lovely Andromeda enchained and suffering.

CUTTING

Peonies as cut flowers are being more and more appreciated. Pale pink masses of Madame Lemonier in a big silver loving cup, or a crystal vase filled with blooms of Duchesse de Nemours with creamy chalices tinged with faint sea foam green, make a bewildering burst of beauty which one never forgets. In the house, too, one can observe the flowers at one's leisure and enjoy to the full every lovely tint or varying shade. This is particularly true of the light-coloured blooms which—unless protected—are apt to fade out in the strong sunlight of the garden. It is not often realised that the absorption of water in large quantities directly through the stem greatly increases the size of the flower over what it would have been if left on the plant.



MADAME D. TREYERAN
(Dessert, 1889)

Semi-rose type. The wire supports mentioned in Chapter VII are shown

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Gathered when in full bloom, peony flowers often last well for several days; but for them to keep their freshness for the longest time they should be cut when in the bud and allowed to begin to open in a dark, cool place. Treated in this way I have had flowers retain their splendour over a week. Unless one has many hours free to spend in the garden, one loses much of the enchanting opening of the peony—an additional reason for cutting rare and delicate varieties and allowing them to open in the house.

There is a certain point in the development of the bud which marks the proper time to cut it. In most varieties the right time is just as the outer petals unfold. If cut earlier, the buds may be so checked as to refuse to open at all. But peonies having tight, hard buds, naturally slow to open like *Mathilde de Roseneck*, should be allowed to expand well before cutting. As the stem is cut it should be plunged instantly into a pail of cool water: if this is not done, air enters the stem, the sap circulation is seriously interfered with and the bud wilts. The pail containing the buds should be put in a cool, dark place until desired to have the buds open. As with

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other cut flowers, the ends of the stems should be snipped and the water changed every day.

In cutting peonies, I always leave plenty of foliage on each plant, so that it will have enough leaves to sustain continued growth. The flower stalk should never be cut to the ground. Some stem and two or three leaves should always be left. Otherwise the root buds will be small and poor the following year.

ARTIFICIAL SHADE

If one wishes the peonies of pale and delicate colours to remain on the plants, an overhead screen will protect the blooms from the bleaching effects of the sun. When the plants are in beds or groups a movable cover can be used in the following way. A strip of cheese-cloth is arranged with little rings sewed at short intervals along each side. Through these rings are passed strong wires which, when pulled tight, are firmly fastened to stakes at each end of the planting. While the sun is strong, the cheese-cloth is left in place over the peonies. At night or on rainy days it is pushed to one end of the bed and tied out of the way.

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A recent device designed to protect individual blooms from sun and rain is ingenious and practical. It consists of a cone-shaped cover about seven inches broad at the base, made of oiled or waxed linen, attached to a metal rod and adjustable to the height of the peony over which it is placed.

DISEASES

Compared with other garden plants, the peony has a wonderful constitution and seems to lead a charmed life. It is not, however, entirely free from disease. Instead of with alarm, the earnest gardener will read with interest and profit the lecture on Diseases of the Peony, delivered by Professor H. H. Whetzel, of Cornell University, before the Massachusetts Horticultural Society. I have reprinted this as an appendix. Professor Whetzel makes several valuable suggestions as to the control of some of the diseases of the peony.

As preventive measures are also advisable, I tabulate briefly a few points which the beginner may find of assistance.

I. In purchasing, be careful in making a selection. Some varieties, although beautiful, are

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weak and susceptible to disease. A rigid inspection of every peony root before it is planted in one's garden soil is important.

II. Use great caution in applying manure.

III. In the fall, remove and burn all foliage.

IV. Do not plant peonies twice in the same soil.

ROSE-BUGS AND ANTS

In this country the only insect enemy of the peony that has come to my knowledge is the rose-bug or rose-chafer. Sandy soil is the usual breeding place of this energetic pest. Clay soil, unless in the vicinity of sandy soil, is seldom infested. As early as 1810, the pernicious activities of the rose-bug caused anxiety to gardeners: in recent years it has become more and more comprehensive in its tastes until now its diet includes not only roses, but many other garden plants, particularly those bearing white flowers. Rose-bugs take an especial gustatorial delight in the grape, but in seasons when they are numerous they devote their energies with striking impartiality to other fruits, to vegetables, and to field crops, such as corn and wheat. The rose-bug is now such a menace that it has become the subject of inves-



ASA GRAY
(Crousse, 1886)

Semi-rose type. A wonderful shade of pink, illumined by the glow of its golden stamens. A strong grower and a profuse bloomer

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tigation and study by the Federal Government and by State Experiment Stations.

The consensus of opinion is that no way of adequately controlling the rose-bug has yet been discovered. Poisonous sprays, which kill other insects, only stupefy the tenacious rose-bug. When this fact looms large, one is inclined to question, with James Russell Lowell, "whether Noah was justified in preserving this class of insects!"

To reduce its ravages, two practical suggestions are made:

1. Through May and up to the middle of June, the ground should be thoroughly stirred to the depth of at least two inches. The young of the rose-bug are very delicate and are easily killed in the second or pupal stage of their growth when developing underground. The slightest disturbance destroys them.

2. When once the beetles have appeared in the garden, hand picking is the only way in which to dispose of them. This slow and wearisome proceeding may be somewhat hastened if a few spiræas or white roses are planted to act as lures. The rose-bugs are fond of these plants and gather

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on them in great numbers. It is then comparatively easy to collect the beetles and drop them into a pan of death-dealing kerosene.

If the labour of hand picking is too arduous, peonies may be protected by frames covered with netting.

Fortunately for peony-lovers near New York, the early and many of the mid-season varieties are usually through blooming before the rose-bug makes its appearance.

Ants cause no direct injury to peonies. Although unpleasant, they are dangerous only as carriers of spores produced on sick plants. As plants other than the peony are also victims of various fungoid diseases, it is the part of wisdom to watch one's garden carefully, and to remove promptly and burn at once all infected foliage and roots. The industrious ant will then make less mischief. As a further precaution, the number of ants can be much reduced by the destruction of their nests with boiling water.

PROPAGATION

CHAPTER VIII

PROPAGATION

HERBACEOUS peonies are usually propagated in two ways: 1, by the division of roots, which method increases the number of plants of established varieties, and 2, by growing from seeds, which method, as the offspring never come true to either parent, produces new varieties.

DIVISION

Professional growers select stock one, two or three years old for dividing. Two-year-old stock is best. The use of young roots for division not only saves time in increasing stock, but also produces plants which flower more freely. Roots older than two years may also be successfully divided and grown: it is indeed such roots which ordinarily are divided in private gardens. As the amateur grower desires to have blooms he leaves his peonies undisturbed to flower. However, if they are left too many years before they are divided, the new stock thus secured may be dis-

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appointing. Divisions from old clumps sometimes fail to flower freely.

Young plants have straight and smooth roots and may be cut up easily and evenly; the older the plant the more difficult is the process of division. The peony root grows so large and strong that after a few years it often becomes a mass of interlaced fleshy roots. In dividing such roots there is necessarily much waste. Other kinds lend themselves to division much more easily. A few varieties have a way of growing in separate pieces, each piece with a small crown of its own, a characteristic which prevents the development of a fine large plant.

The condition and shape of the roots is influenced by the soil in which they have grown. A deep and friable soil will produce straighter roots than a shallow soil underlain with a hard subsoil. One grower of peonies in England states that he has found peony roots in his garden extending down to a distance of three feet. Exploring roots in their search for food are forced to turn and twist when they meet an unyielding subsoil.

Before lifting the roots which are to be divided,



LA TULIPE
(Calot, 1872)

Semi-rose type. This large ivory-white flower is flushed with pink. A strong-growing, desirable and inexpensive variety

PROPAGATION

the leaves and stems should be cut off to the ground. This prevents the rapid softening of the roots, a shock to the plant from which it must recover before it starts to grow again. The soil should be removed and the roots divided with a sharp knife into pieces containing from three to five strong buds or eyes, with a generous proportion of fleshy root. I find that a hunting knife with a six-inch blade is safe to use and has the requisite strength for the work.

Scarce and valuable kinds are cut into smaller pieces so that only one bud is allotted to each piece. If such a fine division is made the new plant should be placed in a cold frame for the first year, as much to keep track of the valuable root as to protect it: such procedure, however, is not an absolute necessity.

One should be warned against too minute or too frequent division. Roots so divided seem to lose their vitality: it may be a long time before they bloom, if they do not succumb entirely.

If in the work of dividing roots of fine varieties some of the fleshy pieces are broken off near the crown, it is well worth while to save them. The upper part of a fleshy root or "finger" will

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often develop buds and form a crown of its own. The chance of the lower part of a root finger making any growth is very small.

After the roots are cut up the divisions should be planted at once; ¹ but, if possible, not in the same soil in which peonies have already been grown. Emphasis should be laid upon this point. Such planting is often, although not invariably, the cause of failure and disappointment. As peonies require much nourishment, they exhaust to an unusual degree the soil in which they grow. If placed in exhausted soil, the new root, suffering from the shock of division and transplanting, is at a great disadvantage: many so planted have failed ever to bloom.

A peony should not be planted in ground that has been previously occupied by one that was diseased.

If it is necessary for the sake of garden design or effect to place a peony where one was growing

¹ One prominent grower has recently tried the method of placing the newly divided roots, lightly covered with paper, in a cool, dark place for a day or two and letting the cuts become somewhat callous before replanting. His object in doing this is to lessen the possible danger of rotting.

PROPAGATION

before, the soil can be entirely removed to a depth of two and a half feet and replaced with fresh soil.

RAISING PEONIES FROM SEED

The growing of peonies from seed is a most fascinating pursuit. As the seedlings are never the same as the parents the possibility of new and more beautiful varieties is a constant hope and a glowing enticement. This possibility appeals strongly to the wish to create which exists in every normal human being. The number of yellow peonies or peonies in which yellow is noticeable is very limited. A glorious yellow peony that will hold its colour for more than a few hours is one of the ambitions of a number of peony lovers. Many of the pink peonies would be lovelier had they less of a bluish tinge. Here are tasks for the enthusiastic amateur. And success in accomplishing them can be attained through seedlings alone.

Peony seeds harden rapidly after ripening and when they have once fully dried it is practically impossible to make them germinate in less than two years. Frequently they require even a longer time. In order to avoid the delay caused

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by this dryness and hardness the seeds must be gathered just as they are turning brown and must be planted immediately. They should be planted about two inches deep in friable loam. The tiny seedlings will usually appear the following Spring, although some of them may be more deliberate. The seeds may be planted successfully either in the open or in boxes which are about six inches deep and which are placed in cold frames. If planted in boxes they should have plenty of air and moisture, and should be given partial shade to prevent drying out. At the end of a year's growth in the box the seedlings should be transplanted. They may be grown in boxes another year if desired, but after the first transplanting they make more rapid growth if planted outdoors. When these new peonies are three or four years old the anxious gardener may reasonably expect them to bloom. Sad to relate, it is seldom that more than one in a thousand of the seedlings approaches the standards of the old and established varieties. The thrill of having grown them blots out this horrid realization for a while. But the cruel fact that seeds pollinated with the casual assistance of bees and other insects gener-



UNNAMED SEEDLING OF HERBACEOUS PEONY, SINGLE TYPE

PROPAGATION

ally produce peonies inferior to those which we already have, is becoming widely appreciated. There promises to be a more definite effort to raise only those seeds which are the result of a careful selection of the parents and of hand pollination.

HAND POLLINATION

Many beautiful peonies which have been developed within the last fifteen years are the result of careful cross-breeding. Although the breeding of plants is in itself a life study, there is no reason why the amateur may not, with a little knowledge, enjoy some of its delights and rewards.

The first thing for the novice to learn is the construction of the flower which he wishes to breed. A flower is usually composed of two sets of organs—the non-essential and the essential. The non-essential are (1) the calyx or green cup at the base of the flower, composed of sepals, and (2) the corolla, composed of petals. The essential organs are (3) the pistil and (4) the stamens. The pistil has three parts, the stigma, on which the pollen or fertilizing dust is placed, the ovary, which contains the seeds, and the style or slender

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tube which carries the pollen from the stigma to the ovary. The peony has a compound pistil, the component parts of which are called carpels. Each carpel is composed of a single cell containing many seeds, and the style or extension of the ovary. A groove runs along the inner side of the carpel. This groove contains tiny stigmatic nodules or protuberances.

Both pistil and stamens are to be found in the peony. The stamens, which are usually numerous, surround the pistil. In peonies which have entered into the process of doubling, the stamens may be found amongst the petals throughout the flower. The stamens are in two parts: (1) the anthers or cells full of yellowish powder or pollen, and (2) the filaments or slender stems supporting the anthers. The anthers are composed of two long, narrow cells which open when the pollen is ripe.

Cross-breeding or cross-pollination consists of securing the fertilisation of the seed cells of one peony by placing upon the nodule-covered groove of the carpels the pollen obtained from the anthers of another peony.

The two flowers which have been selected for cross-breeding should be carefully protected



MADAME JULES DESSERT
(Dessert, 1909)

Rose type. One of the newer peonies, white tinged with straw and flesh colour

PROPAGATION

to avoid other pollination than that desired. For this purpose oiled paper bags may be placed over the flowers and secured with wire or string. The anthers on the flower which is to be pollinated should be removed as soon as possible, in order to prevent self-fertilisation. Every care should be exercised in removing the anthers to avoid cutting or bruising the carpels. Some of the petals may be removed to facilitate the work. The stigmas should be watched to observe when they are ready to receive the pollen. When the stigmas present a waxy granulated surface they are ready. The pollen should then be taken from the anthers of the pollen parent flower and applied to the receptive stigmas. This may be done in a number of ways. The ripe anther may be crushed upon the thumb nail of the operator or upon a watch crystal or other small receptacle. By means of a tiny scalpel, camel's-hair brush or the operator's finger tips the pollen may then be placed upon the stigmas, which should be covered generously. Opinions differ as to whether the paper bag should or should not be replaced after the operation is finished. In case the bag is replaced, it should be left only until the stigmas have withered. A tag bearing the names of the parent varieties

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(the name of the ovule parent appearing first in order) should be securely fastened to the stem.

In crossing some varieties there often arises the difficulty of finding both stigmas and anthers ready for breeding at the same time. Ripe pollen may be kept in dry, air-tight paper bags for a week or more, but the fresher the pollen the more vitality it has. A peony may be forced by planting it in a frame, keeping from frost all Winter, and in the early Spring placing under sash. Forcing in a greenhouse may also be employed.

The equipment for cross-breeding should include a strong magnifying glass, a pair of fine long-handled scissors, a scalpel or a camel's-hair brush and a small receptacle for holding the pollen. Some hybridisers use a jeweller's eyeglass.

Single and semi-double varieties of peonies produce seeds most freely. Full double varieties seldom bear any seeds. In cross-breeding peonies, those two varieties which present most nearly the desired characteristics should be chosen, for in cross-breeding between varieties lies the means of strengthening a type and producing variations. Breeding between individual flowers on the same plant generally produces nothing of value.

THE TREE PEONY—
DESCRIPTION AND HISTORY

CHAPTER IX

THE TREE PEONY—DESCRIPTION AND HISTORY

P. MOUTAN—the tree peony—differs from the herbaceous peony in having woody stems that do not die down to the ground in the Autumn. This is the most noticeable structural difference. The leaves are dissimilar in outline from and are usually of a paler shade of green than those of the herbaceous peony (*albiflora* type). The buds are much larger and flatter and are raised to a sharp point in the centre. They lack any honey secretion and are of the same colour as the leaves.

The tree peony is like the herbaceous in that its flowers have both single and double forms. The flowers of the tree peony, however, usually attain a larger size.

While the tree peony has much in common with the herbaceous peony, it has so much that is distinct that I have thought best to treat it separately. The tree peony has a more extended

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history and wider cultivation in the Orient than the herbaceous kinds: in Europe and America the reverse is the case.

THE TREE PEONY IN CHINA

In the Sixth Century, A.D., the Chinese distinguished two kinds of peonies—the Mow Tan,¹ or improved kind, the present *P. moutan*, and the Sho Yo, or common kind, the ancestors or one of the ancestors of the present *P. albiflora*. The Mow Tans, the more beautiful of the two, were called Hwa Wang—The King of Flowers—and the Sho Yo were called Hwa Leang—The Ministers of the King.

A Chinese author, writing in 536 A.D., says that the original native country of the moutan was the eastern part of the province of Sze-Chuan and the adjacent southern part of the province of Shen-Si (western China—centre—about the latitude of South Carolina). In 656, this state-

¹ Mow Tan means “male scarlet flower.” It was so called “because of its propagation being principally effected by dividing the root and because the scarlet flower was considered the principal one.” The moutan was also known as Muh Sho Yo—“tree-like most beautiful.”



PORCELAIN OF THE KANG HSI PERIOD (1662-1796)

The chief decoration of this vase is peonies. The green peony is so coloured through artistic license. The vase belongs to the Altman collection in the Metropolitan Museum of Art

THE TREE PEONY

ment was corroborated—or copied and accepted as true—by a Chinese writer on natural philosophy.

Prior to 600, the peony was used by the Chinese chiefly for medicinal purposes. About this date, during the reign of the Emperor Yang Te—connoisseur in many things—the tree peony was introduced into gardens as an ornamental plant. By 700, according to an old Chinese work on “The Origin of Things and Matters,” the number of sorts grown had greatly increased and the plant was found near the huts of the poor as well as around the houses of the rich. Soon after this, the growing of peonies had become so important that Gow Yang Sew established a genealogical register (Mow tan poo) in which to record the parentage and characteristics of the kinds that were grown from seed. The first botanical garden recorded in history goes back to the time of Queen Hatasu in Egypt, about 1500 B.C. (the Garden of Eden, though doubtless complete in the varieties of the time, did not, so far as we know, include any scheme of classification); but this Chinese pedigree book is the earliest instance I have found of a common or garden tree having a family tree of its own. Thirty differ-

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ent peonies were described under names that allude to their origin or colour or are the names of distinguished persons.

During the Tang Dynasty (618-906 A.D.) the peony acquired an extraordinary fashion and commanded extremely high prices. Poets began to write about it and emperors placed it under their protection. The fields where it was grown were consecrated by inscriptions of a religious enthusiasm. Its culture was the favourite amusement of the nobility, the literary and the rich. Some varieties were held far above the ordinary rates of barter: one kind, called Pe-Leang-Kin—one hundred ounces of gold—and sold for that amount, gives one an idea to what extent the passion for the peony went. Some were regarded as heirlooms; and not infrequently a prize plant was offered as a portion of the marriage dowry.

When the Emperor Yong-Lo of the Ming Dynasty moved the court to Peking at the end of the Fourteenth Century, he commanded that peonies be brought each year from How-Kow-ang. On their arrival a solemn presentation was held. This ceremony was continued for several centuries.

THE TREE PEONY

The tree peonies grown in China were white, pink, red, lilac and, it is stated by some writers, yellow. The wish for a yellow peony has been present in the heart of man for many hundred years. So great was the desire of the Chinese for this colour that they employed many schemes to procure it: dyes were poured on the roots and white flowers were wrapped in yellow paper with the hope that the petals would take up the colour.

Peonies were grown in the natural shape of bushes, or were trained on espaliers in various designs. Through careful retarding or forcing, they were made to bloom in summer and autumn as well as in the spring.

In the art and literature of China the tree peony has held a conspicuous place. In ceramics, textile and pictorial art and in poetry and prose the peony was an honoured motive or subject. The beauty of the colour and form of the flower has during many centuries made an irresistible appeal to the most cultured inhabitants of the Flowery Kingdom.

In Chinese art, each of the twelve months of the year was represented by a flower—plum for January, peach for February, tree peony for

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March, double cherry for April, magnolia for May, pomegranate for June, lotus for July, pear for August, mallow for September, chrysanthemum for October, gardenia for November and poppy for December. From the three flowers for the months of each season, one was selected as emblematical of the entire season—the tree peony for Spring, the lotus for Summer, the chrysanthemum for Autumn and the plum for Winter. These four appear as the favourite flowers in all the different forms of Chinese art. They are frequently used in ceramics, particularly in the decoration of the four faces of a quadrangular vase or the four side panels of a bowl. In the patterns of velvets, brocades and woven silks they occur again and again.

Phoenixes, pheasants and peacocks are often depicted with the peony as are storks with the pine, swallows with the willow and quail with millet. It was considered appropriate that the phoenix, the king of all the birds, should appear with the peony, the king of all the flowers. This combination was embroidered with exquisite skill on articles of the trousseaux of the imperial princesses.

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In some instances a cock is shown with the peony—the association being based on the fact that both had been held in high regard from the earliest times. The lion—a favourite subject of Chinese ceramic art—is usually pictured with elaborately curled and dressed mane, disporting joyously among peony flowers: apparently even the animals in those days appreciated peonies.

In the Han Period (206 B.C.—220 A.D.), when all the arts were still in their infancy, I find no decorations of peonies on pottery. In the crude bas-reliefs of the time, there are birds which are unmistakably phoenixes and trees or flowers which by a slight exercise of the imagination may be considered peonies. The bas-relief of the family of Wu at Shantung, 147 A.D., is an example.

In the Sung Period (960—1279 A.D.), among the molded designs used in ceramics were phoenixes flying among peonies. Brocaded patterns composed of interlacing sprays of tree peonies and lilies often occur. A spray of lotus or peony was sometimes engraved under the glaze of dishes.

In the Ming Period (1368—1644 A.D.), when Chinese pottery and porcelain reached a high

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period of development, the peony was well represented in numerous pieces which were decorated in colour.

In the advance in ceramic art which culminated in the Kang Hsi Period (1662–1796 A.D.), the peony was used more and more frequently as a theme and was portrayed with greater beauty and fidelity. To show the peony as it appears on what is generally considered to be the most wonderful porcelain the world has ever seen, I have reproduced in colour a vase of this period (see colour plate). The vase is one of the Altman collection and has a value of many thousand dollars.

THE TREE PEONY IN JAPAN

About the time of the establishing of the genealogical register in China, many tree peonies were taken to Japan. Under the name Botan (probably the same word as moutan), they at once became great favourites as ornamental plants—a popularity that has continued to the present time. The medicinal qualities of the plant were soon known to the Japanese and in time the culture of the tree peony for sale as a remedy grew

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into a considerable industry. The provinces of Yomato and Yamasiro (about the same latitude as, but much nearer the sea than, Shen-si—the moutan's original habitat) furnished the market with large quantities of bark and roots. The drug made from the peony apparently does not possess the same fascination as a dispeller of care or a producer of joy as opium or hasheesh: smoking or taking it has never become a national vice in either China or Japan.

The district of Nara in Yomato was famous for its magnificent flowering plants, some of which brought as much as fifty dollars apiece. The best specimens came from the districts near Tokio and Yokohama, where the colder climate produced flowers that had better colour and substance.

The tree peony was the subject of much patient care and clever experimenting. About 1700 A.D., Ito Ifui, a Japanese gardener, agile with both spade and pen, wrote detailed and extended instructions for the culture of the tree peony which included propagating from cuttings and some methods of grafting.

The Japanese take a pride in the tree peony that is second only to that taken in the chry-

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anthemum. On the eighty-eighth day after January first the Japanese farmer starts his agricultural operations for the year. Shortly after this important event the tree peony comes into bloom and flower shows for it are held over the entire country. In some of these exhibitions as many as five thousand plants of varying colours are arranged in tier upon tier of brilliancy.

The tree peony is classed with the iris, lotus and wistaria as the most important flowers of summer. The peony, the cherry and the lotus are the three flowers to which is attributed royal rank. The tree peony was often called the Flower of Prosperity and occasionally the Plant of Twenty Days, because of the long time during which the flowers preserved their beauty and freshness.

The tree peony and chrysanthemum are not used in the landscape garden proper. Their display is restricted to flower beds arranged in long sheltered areas which are usually placed near the apartments of the ladies. In the grounds of the palaces peonies adorn the open spaces facing the ladies' chambers from which the beauty of the flowers can be readily viewed.

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The peony was much cherished by the upper classes, who gave it “scrupulous care and nursing” in order to produce flowers of enormous size. This care included, according to Ito Ifui, the rubbing of the stems with camellia oil in order to free the bark of lichens and moss!

In Japanese art the plum blossom is inseparably connected with the nightingale. Similar combinations of bird and flower or beast and flower are found in the many designs of the country, as, for example, bamboo leaves and sparrows, deer and maple leaves, peonies and peafowl.

The “exuberant flower” of the peony, with its long, curling petals, was a favourite subject in art. With peacock or Shishi—a kind of conventional lion derived from the Chinese—the peony forms the constant decoration of temple and palace walls.

As the peony was given royal rank and was regarded as the queen of all flowering plants, it had to be used alone in any indoor flower arrangement and had to be placed in the position of honour in the room, that is, on the dais of the principal recess.

The peony has a place in the religion of the

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Japanese. In Shintoism, there is a festival called Bommatsuri, celebrated on July 13-15 in each year, which corresponds to our All Saints' Day. At this time departed spirits return for a brief earthly sojourn. Elaborate ceremonies are held in each house. Choice dishes are prepared and at night the way is lighted for the spirits by persons carrying "peony lanterns," which consist of candles fastened in the centre of artificial peonies made of paper or silk and swung by a fine wire bale on the end of a long pole.²

The affection of the Japanese people for the peony is shown by the numerous legends and bits of folk-lore concerning it, all of which are marked by a charming symbolism. In many of these the soul of the peony inhabits a body which is apparently human, but which suddenly disappears on sufficient provocation. In one legend, a Japanese scholar made the cultivation of peonies his sole recreation. On a sunny morning a beautiful woman clothed in purest white appeared at his door, and asked permission to become a member

² Lafcadio Hearn described another kind of peony lantern made by attaching to the top of a festival lantern artificial peonies of silk.

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of his household. On account of her loveliness the request was granted. For days, contented and happy, she joined in tending the treasured peonies. During a terrible storm, a dark, mysterious stranger sought shelter in the house. On seeing him the woman ran in fear. When the scholar followed her she fell to the ground, apparently in a swoon; he stooped to lift her, but she faded before his very eyes and vanished. She was the Spirit of the Peony. When next the scholar went into the garden he found that all his peonies had been destroyed by the rain.

THE TREE PEONY IN ENGLAND

Although known in England in 1669 nothing was done to import the tree peony into that country until the latter part of the Nineteenth Century. From Chinese drawings and from praises bestowed on the plant in books, an "ardent desire was excited in Sir Joseph Banks—the head of the Royal Botanical Gardens at Kew—and others to obtain some of the plants." In 1786 Sir Joseph commissioned Mr. Duncan—"a medical gentleman attached to the East India Company's service"—to procure a plant for Kew. This was

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done and the first tree peony in England was seen at the Royal Garden in 1787. The plant *P. Banksii*, which had flesh pink double flowers, and several others which were received from time to time, uniformly failed to thrive—due probably, as one English writer surmises, to being too rapidly forced as “stove” plants.

In 1794 a fresh supply of tree peonies was purchased in Canton and sent to England. Owing to the long voyage and improper packing, many of these died en route: only three plants survived the trip. On arrival at Kew, the three were successfully grown outdoors, propagated, and distributed in British collections. These peonies had deep pink flowers and were named *Rosea*. Later many other importations were made consisting of the above varieties and the *Papaveracea* or poppy-flowered peony. For a time high prices were paid for the plants.

In 1838, a monograph on the peony describes only the tree peonies I have mentioned, but in 1850 there were a dozen distinct kinds in cultivation in England. Some of these had probably been raised from seed obtained from the three original varieties imported. The Earl of Mount

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Morris and the Earl of Sandwich both took a great interest in the tree peony and produced several distinct sorts from the *Papaveracea*.

In 1860 the English gardens were chiefly supplied by French growers. In the English magazines of the eighties there are references to "Whitsun roses," which was the popular name by which the tree peony was then known to the trade.

For some time past, the English appear to have wanted a blue peony above all others. In about 1875 this colour is referred to as being the most highly desired. In 1880, Robert Fortune was commissioned by the Royal Horticultural Society to find a blue peony. After much searching in China, he succeeded in finding a moutan with lilac flowers—which seems to be the nearest to the ideal yet realized.

About 1870 an English nurseryman collected seeds of all the varieties in commerce and started propagation of tree peonies. These plants have gradually been grown by more and more persons. In 1890 it was said that the sorts offered could be counted by the hundreds. At the present time English growers list no less than one hundred and ten different kinds.

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Although there are numerous instances of tree peonies not thriving in England, they are cultivated successfully in many parts of that country. Failure to grow well has probably been due to local conditions.

I find the mention of one tree peony in England in 1835 that "perfected" 320 flowers in one season. There are statements here and there about occasional specimens noted for their huge size and their abundance of bloom. One plant in particular, grown in the garden of E. Taylor, Diss, Norfolk, is famous for its long life and sturdy growth. In 1904, when eighty years old, it was fifteen feet across and produced 400 flowers from eight to nine inches in diameter.

It is stated by one writer that the "re-introduction" of the tree peony in England was mainly due to T. S. Ware of Tottenham, whose display of the flowers was always a great feature.

THE TREE PEONY IN AMERICA

We have no exact knowledge as to the date when the tree peony was introduced into the United States. Hovey (writing in 1836) thinks it must have been about 1820. In 1826, a plant



P. MOTTAN (TREE PEONY)

This plant in a garden in Germantown, Pa., bore over seventy blooms

THE TREE PEONY

of *P. moutan*, var. *papavaracea*, was imported from England by William Lathe of Cambridgeport—probably a wise and public-spirited move, for if ever a place (from its present appearance) needed brightening up it must have been Cambridgeport.³

In 1828 the catalogue of John Bartram lists the same variety, adding “poppy flowered tree pæony,” but without price, and “*P. moutan rosea*, rose coloured,” at five dollars. William Prince’s catalogue for the following year for the Linnæan Botanic Garden at Flushing, Long Island, sets out these varieties and also *P. moutan Banksi* “Chinese purple tree pæony with magnificent fragrant flowers,” all at five dollars apiece. So even in the days when the high cost of living was not a vital issue tree peonies were not an inexpensive hobby.

In 1836 Colonel Perkins of Brookline, Massachusetts, imported direct from China a tree peony, which was thought to have been *P. moutan* Raw-

³ It is an historical fact that this peony was later moved from Cambridgeport to the place of J. P. Cushing, Watertown, Mass.

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sei. At the same date a Mr. Wilder of Dorchester is recorded as the owner of several of the latest seedlings which he had received from France.

In 1862, Prince, at great trouble and expense, obtained some twenty varieties of tree peonies from European gardens and introduced them at Flushing. He says, in that year: "I have also originated from seeds during the past fifteen years twenty-two most gorgeous varieties, whose flowers are of the largest size, and comprising white, roseate, crimson, lilac, purple and variegated shades."

At the present time there are a few gardens in this country in which the tree peony is made an important feature. It is not, however, grown in the United States nearly as widely as in England and France. Its charms are not well known to the gardener, it does not make the same sentimental appeal that the herbaceous peony does, and it is not offered so freely by the nurseries. Some houses do not list it at all, others sparingly. As an example two large growers of herbaceous peonies each catalogue less than a dozen varieties of *P. moutan*. As the plant has such wonderful

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beauty and such an interesting historical background, more discriminating amateurs will, as time goes on, probably come to include it among their cherished floral treasures.⁴

⁴ Since the above was written, Mr. B. H. Farr has imported a collection of over two thousand tree peonies, which will undoubtedly be the beginning here of a wider acquaintance with this beautiful plant.

**TREE PEONIES:
CULTIVATION, PROPAGATION
AND BEST VARIETIES**

CHAPTER X

TREE PEONIES: CULTIVATION, PROPAGATION AND BEST VARIETIES

LOCATION AND SOIL

IN growing tree peonies, location and soil are important. The tree peony should always be planted at a distance from trees or shrubs and sheltered from the north and east winds. A friable and rich vegetable garden soil, similar to that which should be provided for herbaceous peonies, is best. If the ground is poor it should be made fertile by the addition of well-rotted manure or compost. The suggestions given for herbaceous peonies in Chapter VI under the heading, "How to Prepare the Soil," apply with equal force to *P. moutan*. Observant gardeners have noticed that soils in which there is considerable iron are particularly suited to growing tree peonies. Where the iron is deficient, the application of a small quantity—preferably in the form of the sulphate—is of value in producing vigour in the plant and depth of colour in the blooms.

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In addition to proper location and good soil, drainage is most necessary: excessive moisture encourages the development of a white fungus to which the tree peony is susceptible.

PLANTING

Late September or early October is the best time for planting tree peonies. The roots should always be closely examined for white fungus. Any rotted parts should be cut off, and the roots given a soaking in a five per cent. solution of formalin. Unless the fungus is thoroughly removed it will spread and eventually cause the death of the peony. In planting, care should be taken that the roots do not cross each other, and that the tree is set at the same depth as it was in the nursery.

CULTIVATION

Tree peonies, unlike herbaceous peonies, should never be cut down. With the exception of an occasional shaping of the tree and the removal of the ends of the branches when they have died back a little, pruning is unnecessary.

For the first winter after planting the ground should be mulched with a light covering so that



REINE ELIZABETH
(P. Moutan)

One of the finest double tree peonies. The flowers are massive—salmon pink with brilliant copper tints

THE TREE PEONY

the roots will not heave as a result of frost. Each Autumn, in order to prevent the breaking of the branches by heavy snows and to help protect the trees from the unscrupulous appetites of hungry rabbits, I tie up my tree peonies with straw in a manner similar to that in which roses are generally prepared for Winter. After the first warm days of Spring have brought life into the buds of *P. moutan*, late frosts often do much damage. For this reason I never remove the straw in early Spring. The binding strings are cut and the straw is loosely woven through the branches or drawn up tent-wise and tied to a tall stake so as to keep off the cold sweeping winds of April and the sudden still frosts. If by any mischance the buds should be nipped, they should be shaded from the sun at once and allowed to thaw gradually. Such a misfortune has never occurred in my own garden: the use of the loose straw in the branches has always proved effective. Contrary to expectation, the straw covering does not hasten the Spring growth of the peonies, and so does no harm. A small frame covered with muslin or canvas has been suggested as another simple and practical method of protection from late frosts.

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The tree peony will, under favorable conditions, live a great many years. There are records of some ninety years old. When once established they should be left undisturbed indefinitely.

FERTILISING

The tree peony may be fertilised in the same manner as the herbaceous. In moderation, weak manure water, wood ashes and bone meal may all be safely used. The Japanese successfully employ a special mixture composed as follows:

Compost $1\frac{1}{2}$ - $1\frac{3}{4}$ lbs.
Superphosphate of lime $\frac{1}{2}$ oz.
Straw ash 2 - 3 oz.
Oil cake $\frac{1}{2}$ lb.
Saltpetre $\frac{1}{2}$ oz.

This formula was recently given to me by a larger grower of tree peonies in Japan, and as the culture of the tree peony receives especial care in that country, the information should be valuable. Like all other fertilisers, the mixture must be used with extreme caution.

Fertilisers may be applied to the best advantage at any one of the following times: one month after the flowering is over, in the Autumn after

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the leaves fall, in the Spring before the buds start forth, or just before the flowers open.

It would be of interest to know what methods the Chinese gardeners use in cultivating the famous tree peonies in the gardens of the Mandarins, where the plants frequently attain great size and produce as many as three or four hundred flowers every year. There is little material available on the subject of Chinese gardens and gardening, and the Chinese themselves seem indisposed to enlighten us. There are no exporting nurseries in China and the difficulties of obtaining either peonies or facts as to culture are almost insurmountable.

FORCING

Tree peonies lend themselves most willingly to the process of forcing, provided it is gentle and applied to good, strong plants. They should be taken first into a house that is slightly heated, say 40°–50° F. In about two weeks, or as soon as the buds begin to swell, the peonies may be removed to a temperature of about 55° F., where they will flower in five or six weeks. Frequent watering is necessary and if the atmosphere is dry

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the plants should be sprayed in addition to the watering. As soon as the flowers open, water should be applied to the roots only. The flowering season will be quite long if the tree is strong and has set many buds. After forcing, tree peonies require two or three years for recuperation. Because the blooms of double-flowered varieties last longer upon the plant, those varieties are best for forcing. *Reine Elizabeth*, *Lactea*, *Jules Pirlot* and *Lord Macartnay* are excellent for this purpose.

PROPAGATION

GRAFTING

The usual method of propagating tree peonies is by grafting. In China and in France they are grafted upon the fleshy roots of herbaceous peonies. In Japan the practice is to graft upon the wild moutan stock, but this is far from satisfactory. The wild moutan stock is so strong and persistent that a constant struggle is necessary to prevent the graft from being choked out. The graft sometimes makes roots of its own and thus becomes established, but it is at the price of eternal vigilance on the gardener's part. At the present time I know of but one grower who imports the

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Japanese varieties and who grafts them upon herbaceous roots.

The method of grafting known in China since about 1000 A.D., and followed there and in France, and also in this country by some enthusiasts who grow tree peonies, is the best. Seeds of herbaceous peonies—*P. albiflora*—are sown in large quantities to furnish roots. A good piece of root, about the size of one's middle finger, is selected and slit from the crown downwards for about two inches. The scion from the tree peony should have at least two eyes. It is cut in the shape of a wedge and after being fitted with exactness into the slit, is bound in the usual way. The grafted root is placed in a deep pot of soil, with one eye of the moutan scion below the surface. The pot is then placed in a frame.

The grafting should be done in August or September so that the stock will develop roots before the Winter. After a season's growth in the cold frame the peony may be planted out and cultivated the same as an established plant. In this way the tree peony in time develops its own roots, and does not cause annoyance by suckering.

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LAYERING

A number of other methods have been used for propagating tree peonies. Of these, layering is perhaps the simplest. Year-old shoots of a strong, healthy plant are firmly pegged down in the Autumn. The first year after pegging, roots are thrown out from each bud, and the second year the new little plants are removed from the parent tree.

DIVISION

Division of the roots to increase any especially desirable kinds has also been employed. This is done during the Autumn, at the usual planting time. In dividing the roots care is taken that each division retains some fibrous rootlets. I do not know to just what extent this method is practised. It would seem to have the serious drawback of destroying a well-established plant and taking great risks with the success of the divisions. Grafting upon herbaceous roots has proved to be the most practical and successful method of increasing the stock of existing varieties.

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SEEDS

The planting of the seeds of tree peonies, as is the case with herbaceous peonies, brings new varieties into existence. There is a constant surprise and delight in raising tree peonies from seed: beautiful and wonderful flowers reward the patient gardener. Patience is indeed necessary. The seeds, if planted as soon as they become ripe, take at least a year to germinate—and a much longer time if they have been allowed to become dry and hard before being planted. After the little plants appear, from five to seven years must pass before one can hope for flowers. But during the long wait when the plants are still too young to bloom they have a charm of their own in the diversity of their foliage. I know of two gardens where tree peony seeds are planted regularly each year, so that there are new ones blooming every season.

Tree peonies raised from seeds have the great advantage of being on their own roots from the start. Then, too, the seedlings, although differing from the parents in most instances, equal them in beauty. This is a point worthy of consideration: for the same difficulty exists in purchasing

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Japanese tree peonies true to name and description as is the case with the Japanese herbaceous varieties.

In Chapter VIII directions are given for the planting and cultivation of herbaceous peony seeds. The same directions may be followed in the care of the seeds and little plants of *P. moutan*.

BEST VARIETIES

The tree peony deserves a much wider appreciation and cultivation in this country than it now receives. While its requirements are more exacting than those of the herbaceous peony, it is far from being as fragile and difficult to grow as is often supposed, and is more worth while than other plants on which it is necessary to expend greater care.

In addition to the European varieties of tree peony mentioned in Chapter IV, and the varieties especially good for forcing mentioned above, I append a list of twelve beautiful tree peonies which also are European—not Japanese. Some of these varieties can be bought in this country. All can be obtained from French growers.

TREE PEONIES

FRAGRANS MAXIMA PLENA, flesh pink and salmon.

GLOBOSA, very full, white with red splashes.

GLORY OF SHANGHAI, anemone type. Glossy bright pink.

JEANNE D'ARC, very large, full flower. Salmon pink with yellow tints.

LAMBERTINÆ, white, shaded with pink and purple.

LOUISE MOUCHELET, very large, double, salmon flesh pink.

MADAME LAFFAY, large full bloom, violet, rose and white.

ROBERT FORTUNE, brilliant salmon red, fringed petals.

SAMARANG, semi-double, bright scarlet, black spots.

SOUVENIR DE DUCHER, full globular flowers, deep violet with reddish tinge.

SOUVENIR DE MADAME KNORR, large, double, pale flesh-pink splashed with purple.

VILLE DE SAINT DENIS, very large white flower, tinted purple.

**VARIOUS SPECIES OF
THE PEONY**

CHAPTER XI

VARIOUS SPECIES OF THE PEONY

THE peony belongs to the order Ranunculaceæ (from rana, a frog, because certain members of the family thrive in swampy places). The order—sometimes called Crowfoot—embraces twenty-seven genera of plants, including such familiar friends as Aconites, Anemones, Buttercups, Clematis, Columbines, Fennels, Hellebore and Larkspurs.

There are between eighteen and twenty-five species of the Genus *Pæonia*. Few botanists agree as to the exact number or as to the status of many of the varieties. This is not surprising, for in the herbarium different species are often almost indistinguishable and in the garden a certain number vary by characters of most unequal value.

A key to the species of the Genus *Pæonia* was worked out by Dr. Coit in 1907, based on earlier descriptions. While this key is not final it is a great assistance in making classifications. In view of recent information, I have made some changes in this table and reprint it on page 220.

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For the benefit of those who may wish to start collecting peonies of botanical or historical interest, or who may wish to use some of the wild species in hybridising, I give a few notes on a number of species and some of their varieties, which notes include the original habitat and a short description of the flower.¹

1. Albiflora (white flowered). Central China and Siberia.

Older Varieties:

Candida,

Festiva,

Fragrans,

the first named albiflora to be imported into England (1805),

Humei,

Pottsii,

introduced in 1821, from China, by John Potts, a collector who had been sent there by the Royal Horticultural Society. There are six peonies named Pottsii or a variety of the same. The famous Pottsii in John Richardson's garden was a rich deep crimson and double.

¹ For complete botanical descriptions of the principal varieties, see Bailey's Standard Cyclopedia of Horticulture, Vol. III, p. 2431 (1916).

VARIOUS SPECIES OF THE PEONY

Reevesii,

Introduced from China by John Reeves.

Flowers dark red with slight magenta tint.

Rubescens,

Vestalis,

Whitleyi,

Introduced in 1808.

More Recent Varieties:

See Main List of Peonies, Chapter III.

2. *Anomala* (unusual—referring to the leaves, which are finely divided). Siberia.

Stated by some writers to be the same as *P. Emodi*, which it very evidently is not. First mentioned in *Flora Siberica* (St. Petersburg, 1747.) Flowers with irregular petals of a brilliant red and with clusters of yellow stamens. The roots grow to great size and are used by the Mongol Tartars for food.

Varieties:

Insignis (remarkable). A form of this is grown in gardens under the name of Peter Barr.

Flowers magenta.

Intermedia (intermediate). Flowers rosy crimson.

3. *Arietina* (ram's horn fruited). Levant and Crete.

It is a very early bloomer. *Index Kewensis* regards this as a form of *peregrina*. Flowers dark red; each leaf is divided into segments, each from one to two inches wide.

4. *Brownii* (Brown's). California and Northwest.

This is the only species native to the Western

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Hemisphere. It blooms in June and July, often near banks of melting snow. The flowers are dull red or brown and are not attractive.

5. *Cambessedesii* (Cambessedes's). Balearic Islands and Corsica.

Flowers deep rose pink with slight magenta tint. Introduced into England in 1896 by Miss F. Geoghegan.

6. *Corallina* (coral-red, referring to the seeds). Southern Europe to Asia Minor.

It is claimed that *Corallina* has grown wild on an island in the Severn. If this is true, it is the only peony native to England. Flowers, bright crimson. The segments of the leaves are quite distinct from one another at the base and nine in number in the fully developed lowest leaves.

Varieties:

Broteri (Brotero's). Spain and Portugal. Dwarf habit, flowers crimson, stems and leaf-stalks red. Fragrant. This variety is probably the *P. Lusitania* of Philip Miller.

Russi (Russ's). Corsica, Sardinia, Algeria. Flowers rose coloured.

Triternata (three times ternate, *i.e.*, with twenty-seven leaflets), rose and whitish flowers.

7. *Coriacea* (leathery). Spain, North Africa.

Flowers bright crimson, seeds dark purple. Leaves composed of nine to thirteen leaflets, which become leathery as they advance in age.

8. *Decora* (comely).

The first mention of this peony is that seeds came

VARIOUS SPECIES OF THE PEONY

from Constantinople. Flowers rather small, dark red, tinted magenta. Dwarf habit, very bushy.

Varieties:

Alba (white), satiny white, tinted pink.

Elatior (taller), large magenta coloured flowers.

Pallasii (Pallas's—originally Byzantina), deep crimson flowers.

9. Delavayi (Delavay's). China.

Woody stems, small flowers, red, tinted magenta.

Variety:

Angustiloba (narrow-leaved), finely divided leaves.

10. Emodi (Mount Emodus—not found in modern gazetteers).

This is the only peony native to India. It grows in the temperate zone in the Himalayan Mountains from Kumaon to Kashmir. Flowers single, four to six inches across, pure white with prominent yellow stamens. One of the most beautiful of the single flowers. The plant has a slender growth and a distinctive habit. Although more tender than any other herbaceous variety, it is one of the wild varieties worth growing in the garden. Index Kewensis considers this a form of *P. anomala*. Other authorities state that it is closely allied to *P. albiflora*, with which (and *Veitchii*) it shares the unusual characteristic of bearing more than one flower on a stem. Of the one to five flowers which grow on a stem rarely more than two are in bloom at the same time.

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11. *Lutea* (yellow)—see p. 103.

Variety:

Superba, large flowers.

12. *Mlokosewitschii*. Eastern part of the central Caucasus.

Discovered by Mlokosewitsch and only recently introduced. Single flowers of sulphur yellow. Leaves have red veins and margins. Probably closely related to *Wittmaniana*.

13. *Moutan*—see *Suffruticosa* below.

14. *Obovata* (obovate—referring to the petals). Siberia, Manchuria, China.

Introduced into England in 1900 by E. H. Wilson, who sent seeds collected in the Province of Hupek, central China. Flowers purplish red; seeds like berries, dark blue.

15. *Officinalis* (of the apothecary shops)—see p. 99.

Varieties:

Albicans, old double white, which opens a pale flesh and gradually changes to a pure white.

Anemoneflora, single and double crimson with magenta tint.

Blanda (alluring), pale purple—unlike its name, not desirable.

Carnescens, deep rose coloured, which grows paler after opening. Sometimes called variegated peony.

Lobata, a dwarf form.

Rubra, brilliant red—the common red peony.

Rosea, rose coloured.

Sabini, single red, yellow stamens and anthers.

VARIOUS SPECIES OF THE PEONY

16. *Paradoxa* (paradoxical). Levant.
First cultivated in Holland. One of the smallest peonies. Bright carmine pink flowers on very short stems. Lower leaves finely divided.
Variety:
 Fimbriata (fringed), semi-double flowers of bright crimson, inner ones narrow like a fringe
17. *Peregrina* (foreign). Southern Europe.
Flowers are deep red. Lower leaves finely divided.
Varieties:
 Humilis (dwarf), mountains of Spain. Bright red flowers, turning to magenta.
 Microcarpa (small fruited), even smaller than *Humilis*, to which it is closely allied.
18. *Suffruticosa* (woody) or Tree Peony. See p. 101.
19. *Tenuifolia* (slender leaved). See p. 96.
Varieties:
 Rubra plena (double red).
 Latifolia (broad leaved).
20. *Veitchii* (Veitch's). Western China.
Recently introduced by E. H. Wilson. Flowers purplish crimson; several blooms on one stem.
21. *Wittmaniana* (Wittman's). Caucasus. See p. 98.

APPENDIX

APPENDIX A

REFERENCES TO ARTICLES ON THE PEONY AND TO BOOKS ON SUBJECTS CONNECTED WITH THE PEONY

THE names of a few articles on the peony and a few books on collateral subjects are given below. This list is not intended to be complete, but is merely a starting point for anyone who wishes to pursue further the study of the peony in all its branches.

THE PEONY

Monograph of the Genus *Pæonia*,

George Anderson,

Transactions Linnæan Society, 1817.

Monograph of the Genus *Pæonia*,

J. G. Baker,

Gardener's Chronicle (1884), Vol. 21 N. S., pp.

732, 779, 780, 828, Vol. 22 N. S., pp. 9, 10.

Monograph of Herbaceous Peonies,

H. Correvon,

The Garden (1894), Vol. 46, p. 104.

Index Kewensis and References Therein.

Four Bulletins Published by Cornell University
(Agricultural Experiment Station);

THE BOOK OF THE PEONY

- The Peony Check-List,
J. Eliot Coit, 1907.
No. 259 The Peony,
J. Eliot Coit, 1908.
No. 278 Classification of the Peony,
Leon D. Batchelor, 1910.
No. 306 Classification of the Peony,
Leon D. Batchelor, 1911.
Pæonia—Article by K. C. Davis in *Cyclopedia of American Horticulture*, Vol. 3, p. 243. Macmillan Company, 1916.

THE SOIL

- Vegetable Mould and Earth Worms,
Charles Darwin,
D. Appleton & Co., 1900.
First Principles of Soil Fertility,
Alfred Vivian,
Orange Judd Co., 1913.
Soil Management,
F. H. King,
Orange Judd Co., 1914.

PLANT BREEDING

- The Effects of Cross and Self Fertilisation in the Vegetable Kingdom,
Charles Darwin, 1876.
Plant Breeding,
Hugo de Vries,
Open Court Publishing Co., Chicago, 1907.
Breeding and The Mendelian Discovery,
A. D. Darbishire,
Cassell & Co., 1913.

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Fundamentals of Plant Breeding,
John M. Coulter,
D. Appleton & Co., 1914.

Plant Breeding,
L. H. Bailey and A. W. Gilbert,
Macmillan Company, 1915.

THE PEONY IN CHINA AND JAPAN

Chinese Porcelain,
W. G. Gulland,
Chapman & Hall, 1902.

Oriental Ceramic Art,
Stephen W. Bushell,
D. Appleton & Co., 1899.

Chinese Art,
Stephen W. Bushell,
Victoria and Albert Museum, 1909.

Chinese Art Motive Interpretation,
W. R. Tredwell,
Putnam & Sons, 1915.

Chinese Pottery and Porcelain,
Robert L. Hobson,
Funk & Wagnalls, 1915.

Landscape Gardening in Japan,
Josiah Condon,
Kelly & Walsh, Ltd., 1893.

The Flowers and Gardens of Japan,
Ella du Cain,
A. and C. Black.

Ancient Tales and Folklore of Japan,
R. G. Smith,
A. and C. Black, 1908.

THE BOOK OF THE PEONY

MISCELLANEOUS

Bacteria in Relation to Country Life,

J. G. Lipman,

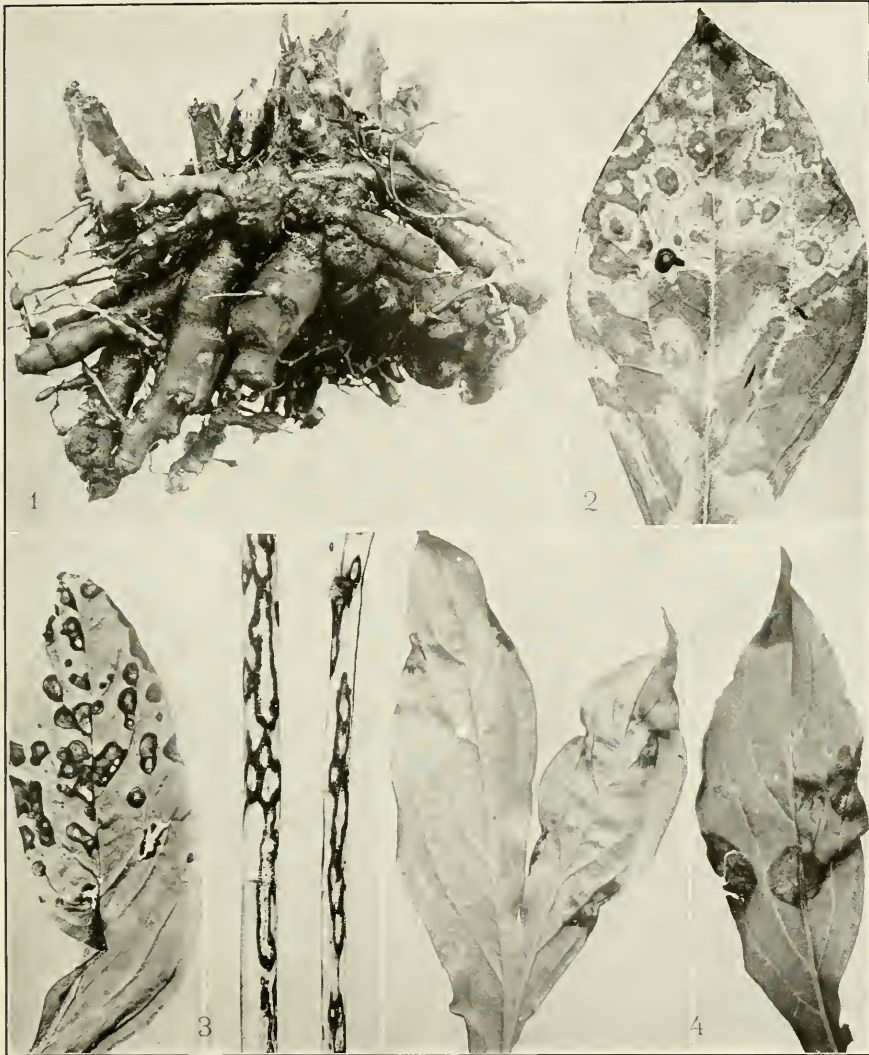
Macmillan Company, 1909.

Plant Autographs and Their Revelations,

Jagadis Chunder Bose,

Smithsonian Institution Publications No. 2339,
1915.

Contains a most interesting account of recent investigations in plant growth.



Whetzel—Diseases of the Peony (Mass. Hort. Soc., 1915)

PLATE 1

Fig. 1. Peony root long affected with root gall. The main roots are short and stubby. The small feeding roots are covered with young galls. Fig. 2. Leaf showing mosaic disease mottlings. Fig. 3. Leaves and stems badly affected with the anthracnose. Fig. 4. The leaf blotch lesions as they appear on both upper and lower surface of the leaf, purple above, dull brown below.



Whetzel—Diseases of the Peony (Mass. Hort. Soc., 1915)

PLATE 2

Fig. 1. Shoots wilting over from attack of *Botrytis* at the base. Fig. 2. Two *Botrytis* rotted buds and one healthy one from the same plant. Fig. 3. Young bud blighted, the pathogen extending into and attacking the stem. Fig. 4. *Botrytis* blighted leaves. Note the powdery spore masses on the leaf showing the lower surface. Fig. 5. An old diseased stalk covered with minute sclerotia of the *Botrytis*.

APPENDIX B

DISEASES OF THE PEONY*

BY PROF. H. H. WHETZEL, ITHACA, N. Y., THE
JOHN LEWIS RUSSELL LECTURE DELIVERED
BEFORE THE MASSACHUSETTS HORTICUL-
TURAL SOCIETY, MARCH 27, 1915.

IT is an old fable passed down from catalog to catalog that "The peony is free from diseases." Yet one has only to observe carefully for one season the peony plants in gardens, lawns, and nurseries to lose his childish faith in the story. Not less than seven distinct diseases of this beautiful perennial are now commonly to be met with in eastern United States. Doubtless there are others not yet recognized or reported. I now have these seven slated for further study and observation and expect to add others to my list this season. The less we know of the diseases of a plant the fewer and less important they appear. The reverse is equally true. Yet it is only through

*Reprinted from the TRANSACTIONS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY, 1915, Part 1.

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greater familiarity and more knowledge of them that we may hope to save our plants from their ravages.

The first step in our study of the diseases of the peony is to learn to recognise them, to distinguish them, the one from the others, to name them. This we may accomplish only by learning the characteristic symptoms of each. This will be my chief object in the present paper. The next step is to discover the cause of each different malady, to uncover the nature of the pathogen, be it fungus, bacterium, or what-not, that is chiefly responsible for the diseased condition. In this direction but little progress has as yet been made. This is largely the problem of the plant doctors, and I hope to be able to have shortly many more facts on this phase of the subject than we now possess.

Of the control of these different diseases least is naturally known, and only with fuller knowledge of the pathogens and their life habits will we be able to intelligently undertake experiments on control. What I may have to offer on this part of the subject must of necessity be only suggestions.

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DISEASES OF THE ROOT

The Root Gall.

The root gall disease appears to be rather widely distributed in eastern United States and is well known to the growers who make a specialty of this plant. Specimens have come to my hands from time to time during the last eight years. No special investigations on this disease appear to have been made, and aside from a short article in the *Florists' Exchange* of April 19, 1909, it appears to have been rarely written about. Whether it was first imported from Europe or is of American origin is not known. Certain imported French varieties are often very severely affected. It is regarded by peony specialists as a troublesome and by some as a dangerous malady.

Symptoms. — The above-ground symptoms are many weak, spindling shoots which remain short and give no blooms. The shoots often grow fewer and shorter from season to season, the plants gradually dying out. In other cases the plants appear to gradually recover, the shoots growing stronger from year to year and finally blooming. The latter appears to be the case

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when the roots are frequently divided and reset. The affected roots are short, stubby, and irregularly knotted or swollen. The crown on which the bud sets is often much swollen. The fine rootlets are often covered with galls. The lower ends of the galled roots seem to rot away.

Cause.—The nematode worm, *Heterodera radiculicola*, is probably responsible for some galls on peony roots. Bessey¹ reports it as very injurious to the roots of the peony. This microscopic worm affects the roots of no less than 480 different species of plants. It is most common and destructive in the South, but is frequent on greenhouse plants in northern United States and on the roots of certain perennials, like ginseng and peony, easily survives the Winter outside.

Control.—Until a fuller investigation of the disease has been made, suggestions as to control cannot be very definite. In general it will probably be most profitable to dig up and destroy all diseased plants. The experience of some growers indicates that with rare or expensive varieties it may be profitable to help the plant “outgrow”

¹ Bessey, E. A. Root Knot and its Control. U. S. Agr. Dept. Bur. Pl. Ind. Bul. 217: 18, 43.

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the trouble by frequently dividing and transplanting the roots. Where nematodes are the cause of the swellings, diseased roots should never be planted on land along with the healthy or on which it is expected to grow peonies continuously. Land on which galled plants have been grown should not be used again for peonies for three or four years. The worms will usually die out, especially here in the North, for want of a suitable host in which to survive.

Root Rots.

Rotting roots of normal size and shape have several times been sent to me by growers. What appears to have been a similar root rot has been reported by the botanists of the Connecticut and Massachusetts Experiment Stations. Some growers have reported it as very destructive.

Symptoms.—The rotting away of the crown and the larger roots seems to be a rather constant symptom. The top of the plants either fails to appear in the Spring or wilts and dies during the Summer.

Cause.—The cause of root rot is apparently unknown. Nothing more than a casual examination appears to have been made by those plant

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pathologists who have reported on the disease. It is very probable that we have under the name of root rot several different diseases. They are very likely due to fungi or bacteria, though Winter injury may sometimes be responsible.

Control.—Removal and destruction of diseased roots and the planting of peonies on other land are the only suggestions to be made with our present knowledge of root rots.

DISEASES OF THE STEM, LEAVES, AND FLOWERS The Mosaic Disease.

So far as I am aware this is the first record of this very peculiar and interesting malady of the peony leaf. I have observed this disease now for several seasons in the peony plantation at Cornell University. It has doubtless been observed by others, and is probably of wide distribution. It does not appear to be a serious malady.

Symptoms.—The symptoms are very striking. Usually only one or two stalks in a cluster are affected. The leaves show rings of concentric bands of alternating dark and light green color. The spots are sometimes large, with broad bands; in other cases small with narrow bands, the spots densely crowded over the leaf. I have

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observed no evidences of dwarfing or injury other than the peculiar markings above described.

Cause.—So far as I am aware no investigation of the cause of this disease has been undertaken. It looks much like the well-known mosaic disease of tobacco and other plants, the cause of which has long been sought but never certainly discovered. The mosaic disease of tobacco is known to be very infectious. Whether this of the peony is also capable of being transmitted from diseased to healthy plants, I have not determined as yet.

Control.—Nothing with respect to control can be suggested except destruction of diseased plants, until we know more of the nature and cause of the trouble.

The Anthracnose.

This is a name I am giving to a disease affecting the stems and leaves of the peony. So far as I can find this has never been recorded before, at least in this country. It appears, from my observations in the Cornell University peony plantation, to be a rather dangerous malady and deserving of the attention of peony growers and plant pathologists.

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Symptoms.—The disease shows first in the early summer as dark reddish bordered spots with almost white centres. Later the centres become a bit sunken and show minute black pimples under the dead epidermis, presumably the beginnings of the fungous fruit bodies. During the latter part of the summer the spotting of the stems becomes very severe and the leaves are often severely affected with what appears to be the same disease.

Cause.—This anthracnose is quite certainly a fungous disease, but up to the present I have not been able to discover mature fruit bodies of a fungus in the lesions and have not had the time to undertake a careful investigation of the malady.

Control.—Probably sanitary measures, involving removal and burning of diseased tops early in the Autumn, would be effective in getting rid of the pathogen which probably winters in the diseased stems and leaves.

The Leaf Blotch.

This disease appears to be one of the best and longest known diseases of peonies. It was first described from Europe, where it is to be observed in almost every peony planting to-day.

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It is also very common in America. It does not appear to be a serious disease, as it affects only the leaves and does not appear until the latter part of the season after the leaves have apparently begun to mature for Autumn.

Symptoms.—The symptoms are distinct and striking, large purple blotches on the upper surface, often an inch or two or three inches in diameter. The tissue does not become dead and dry as in the case of the Botrytis blight spots to be described later. The blotch on the underside of the leaf is a peculiar dull brown, as though the epidermis of the leaf had been scorched. In moist weather the centre of the spot below becomes covered with an olive green felt, the stalks and spores of the pathogen.

Cause.—The disease is doubtless due to a fungus which goes by the name of *Cladosporium pæoniæ*.

Control.—Where this disease gives trouble, early removal and destruction of all diseased tops will doubtless be found most satisfactory in preventing its appearance another season. The fungus most probably passes the Winter in the diseased and fallen leaves, from which in the Spring

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a new crop of spores find their way to the next crop of leaves.

The Sclerotinia Stem Rot.

This disease is probably more common than is suspected, but because its symptoms are so like those of the Botrytis disease has probably seldom been recognised. I have had diseased specimens from but one grower some years ago, but recent inoculation experiments which I have made with the pathogens show it capable of rapid destruction of young peony shoots.

Symptoms.—A sudden wilting of young or even nearly mature stalks, due to a rotting off at the base near the ground, is the first evidence of this disease. At this stage it cannot usually be distinguished from the more common Botrytis disease which affects the plants in the same way. Later the dead stalks on being split open will often show large black bodies, sclerotia, in the pith. These are never present in stalks killed by Botrytis.

Cause.—The disease is caused by a fungus, *Sclerotinia libertiana*, which is a most omnipresent parasite amongst cultivated plants, especially greenhouse and garden plants. It is not particu-

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lar as to the host plants it attacks, so it is not surprising that the peony, too, sometimes falls a victim to it. Wet weather greatly favors its destructiveness.

Control.—Prompt removal and destruction of wilting stalks, cutting close to the crown and the removal of the soil all about the crown is important. The fungous threads spread from stalk to stalk through the soil. Removed soil should be replaced with fresh, clean soil, preferably sand. Keep manure away from the crowns. The sclerotia carry the fungus through the Winter and therefore the burning of all diseased stalks is desirable.

The Botrytis Blight.

This is by far the most common and destructive disease of the peony so far as known at present. This disease is frequently epidemic, especially during wet Springs. It occurs wherever peonies are grown, apparently the world over. It is well known in Europe, especially in Holland and England. Much in the way of scattered notes and records of its occurrence has appeared in florists' papers and experiment station reports for the past twenty years. I published a short

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article on the symptoms and destructiveness of this disease in the *Florists' Exchange*, September 14, 1912.

Symptoms.—The disease affects stems, buds, and leaves, appearing on these organs in the Spring and Summer in the order given. The first appearance of the malady is almost always early in the Spring as the stalks are coming up. Shoots 4 to 8 inches tall, their leaves not yet expanded, will suddenly wilt and fall over. Examination shows them to be rotted at the base at or below the surface of the soil. The lesions begin usually at the base of the first leaf sheath and spread down to the crown and up often an inch or more above ground. The rotted portion soon becomes covered with a felty brown coat of spores and spore stalks of the fungus, thus distinguishing it from the similar stem rot caused by *Sclerotinia*. While it is generally the young stems that are affected, I have seen stalks with blossoms opening, suddenly wilt and fall over from *Botrytis* stem rot at the base.

The buds are the next to show injury from this disease. Sometimes the very small young buds are attacked, turn black and dry up. This is often spoken of as bud blast. Larger buds are

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later affected, turn brown and fail to open; the stalk for several inches below the bud is usually killed, turns brown and frequently shows alternating stripes or bands of dark and light brown color. When broken open, such buds present a dark brown rotten mass. This is the "bud rot" stage of the disease. In a wet season as high as 80 or 90 per cent. of the buds may thus be rotted before they can open. Opened flowers are also often affected, becoming discolored and rotten. The rotted buds and flowers soon become covered with the brown felt of the spore stalks and spores of the pathogen.

The leaves are usually the last to show symptoms of this disease, in the form of large irregular spots which spread rapidly usually from the apex or sinuses of the leaves. The tissue is killed, becoming brown and dry, so that it crumples readily. The underside of the spot is soon covered with the spore stalks of the fungus. The blighting of the leaves gives the plants a most untidy appearance. The leaf blight form is very common on peony plants everywhere during the latter part of the Summer, becoming very bad during rainy weather. In dry seasons the disease is but little in evidence.

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Cause.—The cause of this disease has long been attributed to the fungus, *Botrytis*, found constantly associated with the lesions on stem, bud, and leaf. There are many described species of *Botrytis*, some of which are very common on greenhouse and garden crops. The *Botrytis* forms found on peony have been referred usually to *Botrytis vulgaris* or *Botrytis cinerea*, and *Botrytis pæoniæ*, the last described by a Hollander as the cause of the disease in that country. My own studies indicate that there are at least two distinct species of *Botrytis* attacking and causing identical symptoms in the peonies both in this country and in Europe. The species while quite distinct in structure are very similar in their life habits and effects on the peony. One forms large sclerotia (resting bodies), while the other forms very minute ones. I have never seen the sclerotia of the large form except in my cultures, but the small ones are commonly formed in the diseased stalks just beneath the epidermis and appear as black pimples the size of a pin-head. Presumably they serve to carry the fungus through the Winter on the old stubble left by cutting away the tops. There in the Spring they probably give rise to a

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new crop of spores, in just the best position to infect the new shoots when they come up. I have not yet determined whether these pathogens ever attack crowns and roots or not.

Control.—The control of this disease is very difficult for several reasons. It is destructive only in wet seasons. One of the pathogens, the small sclerotial form, is very common and widely distributed. The other, the large sclerotial form, having a number of different hosts, may readily pass from one of them to the peony if it be near by. Spores are produced in great quantities and carried both by wind and insects. Ants seem to carry the spores from the base of diseased stalks to the buds of healthy plants. Here in the exuded sugary solution, so abundant upon unopened peony buds, the spores find both food and moisture and germinate much more promptly and vigorously than in water. The peony is very susceptible, there being apparently little difference in susceptibility of the different varieties. Spraying is in the first place undesirable, as it discolors foliage and buds, and in the second place our experiments indicate that the sugary exudate of the buds effectively neutralizes the copper in Bor-

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deaux so that the spores germinate and infect sprayed buds just as readily as unsprayed. Sulphur in its various forms appears to be equally ineffective in preventing the bud rot form of the malady.

Eradication measures offer the most promise of success in the control of the Botrytis blight. To be effective, however, they must begin with the careful removal of the old stubs in the Autumn or very early in the Spring and be prosecuted persistently throughout the season. To remove the old stubble carefully, remove the soil from the crown, so as not to injure the buds. Cut away the old stalks close to the crown and burn. These old stalks harbor the fungus. Replace the soil removed with fresh, clean soil, preferably sand, or at least top coat with sand. When the shoots begin to appear, inspect them daily and remove by cutting close to the crown any that show wilting. These should be burned. By promptly removing these wilting shoots, you prevent the crop of spores that always appears if the dead shoots are left and so greatly reduce the chance of infection of buds and leaves.

The daily inspection must now include the

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young growing buds and any that begin to turn brown or black and die must be removed and destroyed. As the buds grow older and approach the blooming time, the infection will usually be first evident at the base of the bud on one side as a brown lesion, which will gradually spread up, involving the entire bud, turning it brown. Spreading downward it gradually involves the entire circumference of the stem. It will be very important to detect these lesions in the early stages and remove the diseased buds, for spores are produced most abundantly on rotted buds and are also in the most favorable position for distribution by wind and insects to healthy buds. Spotted leaves should also be promptly picked off. However, if the early spring inspection and eradication operations have been thorough and there are no diseased peonies near by, the foliage will probably suffer but little. In wet seasons these inspections should be made daily. In dry weather less often will suffice. For the nurserymen or the grower of large numbers of peonies, this method of control may not be profitable, but for the small grower or in the private garden where a relatively small number of clusters are

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planted, it will be found entirely practicable and profitable. Even in a large area I believe the eradication measures I have outlined are worthy a thorough trial.

Conclusions.—The ultimate end and object of all plant disease investigations is control. It must be evident from what has preceded that our knowledge of the diseases of the peony is limited, indeed, that most of it is yet to be discovered. Naturally then our suggestions as to control cannot be specific. They must be general and they cannot be taken as positive recommendations, only suggestions based on limited knowledge as to the most likely lines along which success is to be expected. Spraying cannot of course get at the root troubles and our past experience and the ornamental character of the plant both discourage this as a means of protecting the parts of the plant above ground. Sanitary measures involving the prompt eradication of the diseased parts, as I have already suggested for the most of the diseases described, offer the most practicable and satisfactory methods for the control of the various maladies to which this beautiful ornamental is subject.

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