



“De la Vina Mystery”
*(Probable Hybrid Perpetual Roes, Found, Santa Barbara, CA,
by Hetty Shurtleff)*

What Rose Is This?

— by *Ethelyn Emery Keays*

*Being An Introduction To
The Identification Of Found Roses*



“Legacy Of The Richardson Family”/“George Washington Richardson”
A Found Rose, Collected in a Northern California Cemetery

*“What Rose Is This” is Reproduced From
The American Rose Society American Rose Annual, 1938*

What Old Rose is This?

Editors' Note. — Readers of the American Rose Society need no introduction to Mrs. Keays, whose kindly persistence has brought into knowledge very many of the lovely old roses that came with our ancestors to America, and that have, by their continuance, proved their ability to persist. Her delightful book "*Old Roses*," published in 1935 by The Macmillan Co., is the real American authority on the subject. In successive Annuals she has advanced our knowledge. At the Roanoke meeting of the American Rose Society, her illustrated presentation of her cherished old friends (as reported in the American Rose Magazine for January-February, 1938) gave great pleasure.

Now Mrs. Keays adds to our advantages through the following succinct and accurate condensation of the botanical characters by which the varieties may be recognized, at least to the species relation. The illustrations used are adapted from Miss Willmott's monumental work, "The Genus Rosa."

Dr. L.H. Bailey, of "*Standard Cyclopedia of Horticulture*" fame, writes: "The article is very interesting . . . I should find it useful!" "Should be of real value," writes Dr. E.D. Merrill, of the Arnold Arboretum.

BEFORE we proceed toward details in the identification of our old garden roses, we need a few definitions of the terms necessarily used. Such knowledge will be helpful in referring to the great authorities upon whose works in roses this scheme of identification is based.

Roses are generally classified as woody shrubs, and as such are largely deciduous, although a few are evergreen in favorable climates. We decide, as a first move, whether our rose is a bush or a Climber; whether, if a bush, it is *erect* in growth or *arching*, *tall* to 5 feet or more, *medium*, 3 to 5 or *low*, 1 to 3, when we call it *dwarf*; whether, if a Climber, it grows *upright* without support, or *trails* after reaching a foot or two in height, and whether it goes to 10 to 20 feet or more, as the Banksia rose does.

We notice, too, where the plant blooms. Roses may bloom from the *tips of basal shoots*, as Tea roses do; from *laterals* (side shoots from the main stalk) as climbing roses do; or from a third growth breaking out from the laterals, as the brier roses do. Many roses will be found blooming from both the tips and the laterals.

Roses are usually armed with *thorns*, the largest of which are spoken about as *prickles*. They may be:

Straight or hooked, falcate if hooked like a sickle (see illustration next page); *strong or weak* (easily pushed off); placed *singly* or in *pairs*;

Other useful books are:

Bailey: *The Standard Cyclopedia of Horticulture*. (Rosa and Rose.)
 Bean: *Trees and Shrubs of the British Isles*. (Rosa.)
 Bunyard: *Old Garden Roses*. (1936.) With black and white plates.
 Jekyll and Mawley: *Roses for English Gardens*. (1902.) With black and white plates.
 Keays: *Old Roses*. (1935.) Black and white plates.
 Pemberton: *Roses*. (1902.) With black and white drawings.
 Rehder: *Cultivated Trees and Shrubs*. (Rosa.)
 Rivers: *The Rose Amateur's Guide*. (1837 and later.) No plates.

The books of Dean Hole, Mrs. Gore, Canon Ellacombe, Bright, Hibberd, Hoffman, Weathers, Darlington, Cochet, the *Botanical Register* and *Botanical Magazine* of England, *Journal des Roses* of France, *Rosen-Zeitung* of Germany are all helpful—if you can find them!

Many of the books mentioned may be purchased, inexpensively, by keeping in touch with the offerings of English and American dealers in second-hand books. Others which are rare and highly priced may be consulted in libraries. The New York Public Library has all of these and many more. The Congressional Library in Washington has Andrews, Lindley, Redouté, Willmott, and about 20 others. The libraries of the horticultural societies, the botanical gardens and the state colleges have representative collections. Other libraries that are well supplied are the Department of Agriculture in Washington and the Public Library of Portland, Ore. A very complete bibliography of rose literature, listed as to libraries where it may be consulted, may be found in "How to Grow Roses," 1930 edition, by Pyle, McFarland, and Stevens.

The door to the fascinating study of old rose knowledge has been set ajar. Let those enter who are worthy to enjoy an enlarging study! Let it also be here observed that collections of old roses are being made by the intelligentsia of the rose, and that eventually the hoped-for National Rosarium will include the old roses.

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mous development of varieties created by countless crossings has served to confuse the whole group. What we look for is dull green, rough foliage, often much wrinkled; stiff, upright growth; large flowers of all sorts—white and all colors but yellow; and the characteristics of Gallica, Centifolia, Damascena and the Chinese groups.

The Hybrid Tea rose scarcely enters into our consideration of old garden roses, although the earliest ones may be found in old gardens. Crossing the Tea rose into the above group brought foliage of a somewhat smoother, deeper green, with less wrinkling, as well as a different type of bloom, growth generally more refined, and a range of colors into which yellow enters. This yellow, however, is not the sunshine yellow of modern roses, but the soft, not very dominating yellow of Tea roses.

This point brings the question, "What do we do next?" Having allocated our rose to its class, we must go to books. An article within the limits necessarily observed in the American Rose Annual may not include a complete list with descriptive notes about roses known to have been found in this country. It is part of the purpose of this paper to arouse interest and stimulate investigation. There is no easy road to rose knowledge.

Four books, however, tell what roses were grown and sold here about a half century ago:

- Buist, Robert: The Rose Manual.
 Ellwanger, H. B.: The Rose. (1882 and later.) (No plates, excellent list.)
 Parsons, S. B.: The Rose: Its History, Poetry, Culture, and Classification.
 Prince, William R.: Prince's Manual of Roses.

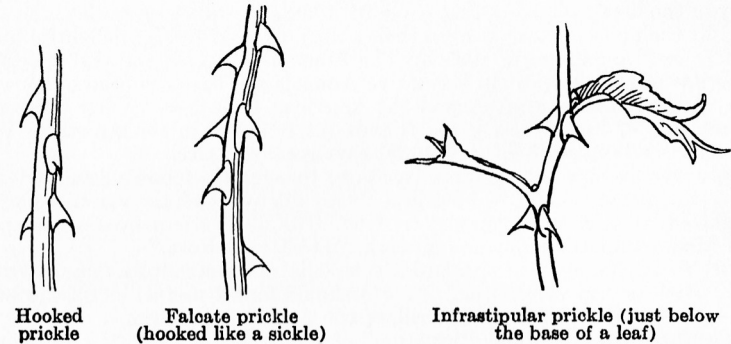
Books with colored plates and more or less botanical descriptions are:

- Andrews, H. C.: Roses, or a Monograph of the Genus Rosa. (1828.)
 Boitard: Manuel Complet de l'Amateur des Roses. (1836.)
 Curtis: Beauties of the Rose. (1853.)
 Jamain and Forney: Les Roses. (1873.)
 Kingsley, Rose G.: Roses and Rose Growing. (1908.)
 Lawrance, Mary: A Collection of Roses from Nature. (1799.)
 Lindley, Dr. John: Rosarum Monographia. (1820.)
 Paul, William: The Rose Garden. (1st Ed. 1848; 9th Ed. 1888.)
 Redouté, P. J.: Les Roses. Text by Thory (folio, 1824; 8 vo, 1835.)
 Willmott, Ellen: The Genus Rosa. (1914.)

Scattered or *infrastipular* (just below the base of a leaf), and may be both scattered and infrastipular on the same stalk, *broad* or *narrow* at the base.

Aciculi are lesser prickles on a small spreading base, needle-like in sharpness.

Bristles or *setae* (stiff or weak) are sharp needle-like prickles, and a rose beset with bristles is said to be setose. Bristles are often tipped with *glands*—little globes of fragrant liquid, as in Moss roses.



We speak of *pubescence*, meaning the presence of hairs. Like bristles, hairs may be present on branches, leaflets, *peduncle* (stem of a rose bloom), *calyx-tube* (seed envelop on which the rose petals are based), and *sepals* (the green envelop about the petals in bud). Pubescence has several forms, and is quite important in making an examination. One of our authorities holds that pubescence on branches, peduncles, and calyx-tube is a fixed feature, not variable, while on leaflets it may be variable. We use the words:

Pubescent when hairs are short, soft, thinly covering the surface; *pilose* when long and straight; *tomentose* when soft and woolly; *villous* when long, soft and curving; *hirsute* when long, harsh and stiff or hispid.

Leaves of garden roses are made up of *leaflets*, three to many, the number always odd, in pairs along a *petiole* (stem) with an odd leaflet called the *terminal* at the end, which is often larger than the others, as in Chinese roses, but not always so. This petiole is subject to scrutiny. It may be smooth, have pubescence, have glands, have aciculi; may be stout or *filiform* (thread-like). Leaflets may be *sessile* (sitting very closely upon the petiole) as the leaflets of Gallica roses seem to do, or may be set away on little stems (*petiolules*), as in Damascena roses.

Leaflets are the objects of much examination. They vary greatly in *form*, *color*, *texture*, *surface covering*, *snipping at the edges*, and the manner in which they are held on the stalk. For

instance the texture of Gallica roses is *coriaceous* (leathery). *Rugose* in texture indicates a wrinkled surface due to the network of veins enclosing rough spaces. Gallica leaflets are somewhat rugose; *Rugosa* roses are typically so. While the leaflets of *Damascena* roses show the network of veins, they are neither leathery nor rugose, being quite soft. As to the manner in which leaflets are held, *Centifolia* leaflets are inclined to hang down; Gallica leaflets are held somewhat flatter; and *Alba* leaflets flatter still.

Before we go further in description of leaflets, it seems necessary to speak of two other leaf-forms—*stipules* and *bracts*, so we may be more comprehensive in applying terms which describe certain features of all three forms.

At the base of the leaf, where it adjoins the stalk, is a small leaf-like appendage to both sides of the petiole, called a *stipule*, a leaf-form of much importance. Most garden roses have this stipule, adhering for a half an inch to an inch along the petiole, as an *adnate* stipule. However, we have three kinds among our roses which have a *free* (not adnate) stipule, adhering at the base of the petiole only. This peculiar feature sets apart *Banksia*, *Bracteata*, and *Lævigata* (Cherokee) roses.

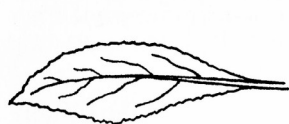
The *bract* is usually a small linear leaf-form showing up in the inflorescence of clustering sorts where a peduncle breaks away from the flowering shoot or within the cluster itself, where the *pedicels* (lesser flower-stems) carry their bloom away from the main stem.



Stipule, adnate-entire

In describing the leaf-forms of our roses, their leaves, leaflets, stipules, and bracts, we again use authoritative language.

The forms of leaflets are not strange. We know the meaning of *oblong*, *oval*, *round*, *ovate*, *linear*, *lanceolate*, but when we put an *ob-* before a word to qualify it, we have to remember that the shape is by it inverted in the leaflet; as *obovate* is ovate attached at the narrow end. When we put *sub-* before a term, the qualification means almost or somewhat; as we say *sub-acute*, meaning almost but not quite acute; or *sub-globose*, meaning not quite round yet not oval.



Acute



Acuminate



Cuspidate

Three good words, selected as most useful among many, describe the outside end of a leaflet. They are used, also, to describe the ends of stipules, bracts and sepals.

Acute, meaning a short ending in a point.

Acuminate, meaning a long ending in a point.

Cuspidate, meaning an abrupt point from a rounded end.

Scotch roses have black hips while the Austrians have red hips. Scotch roses in the past were small, double, flat, in white, pink shades, yellow, red and purple, but few survive of the old varieties. The Austrian Briers we have are single, Austrian Yellow and Austrian Copper, bicolor, copper and yellow; and Persian Yellow, double, of a rich yellow.

Here we place Harison's Yellow rose, probably a cross of Scotch and Austrian, with pale yellow, double, fragrant blooms, and black hips.

Here we may note that *R. Hugonis* has single, solitary, yellow blooms on a flowering branch without bristles and has a red hip.

Here we place, also, Stanwell's Perpetual Scotch, a cross with *R. damascena*, having the physical characteristics of the Scotch and a quite double, pale pink, larger bloom, fragrant and blooming all season—a very lovely rose.

The Sweetbrier is a vigorous, hardy, wicked bush, erect at 4 feet, arching to 6 feet or more, with stout, scattered, hooked prickles, intermingled with aciculi and setæ. The leaflets, 5 to 7 small, doubly serrate, dull green, nearly smooth above, are on the under surface densely glandular with scented glands which on occasion give forth a delicious scent. The single pink blooms, quite small, come in little corymbs and are followed by beautiful bright crimson ovoid hips, bearing seeds which are very easy to grow.

Penzance Briers are hybrids of Sweetbrier, crossed with different old large-flowered varieties and other Briers. They have a charming range of color and many have fragrant foliage.

R. rugosa is to be distinguished by its dense armament of slender, straight, very unequal prickles; by its large, thick, rugose, dull green foliage of 7 to 11 leaflets with very prominent veins; by its very broad stipules and large bracts. The semi-double blooms of the old forms, in red, pink, and white, are followed by remarkable hips, depressed-globose, bright red, large and pulpy, bearing the dried sepals with their leafy tips.

When we speak of Hybrid Perpetual roses, we must go back somewhat to discuss their creation. Mention has been made of Hybrid China roses; also of Damask Perpetual roses. Hybrid Perpetual roses were made by crossing the Damask Perpetuals with Hybrid Chinas (Hybrid Chinas, Hybrid Bourbons, and Hybrid Noisettes). The results were decidedly various in habits, blooms, foliage, prickles, and remontance. In one group it seems that the Damask Perpetual ancestor dominates, often forming a head of foliage and bloom atop tall stalks—Anna de Diesbach, American Beauty. Another group has the foliage and the more dwarf, compact habit of the Bourbon, with a tendency to quarter in the compact, clustering bloom, the Baronne Prévost type.

Gloire des Rosomanes, an everblooming Hybrid China (the "Ragged Robin" of California), gave a red line of blooms, with bushes often growing tall but not forming a head at the top—as Giant of Battles, Général Jacqueminot, Bardou Job. The Noisette type of Hybrid Perpetual roses clusters less than the Noisettes do—as Coquette des Blancches.

While these general lines, with their differences in growth and flowering, help in identifying Hybrid Perpetual roses, the enor-



ROSA GALLICA OFFICINALIS relates to Mrs. Keays' "What Old Rose Is This?"
(See page 3.)

Surfaces of leaf-forms may or may not have clothing. We now speak of *pubescence*, a most important character.

Glabrous refers to a surface with no hairs.

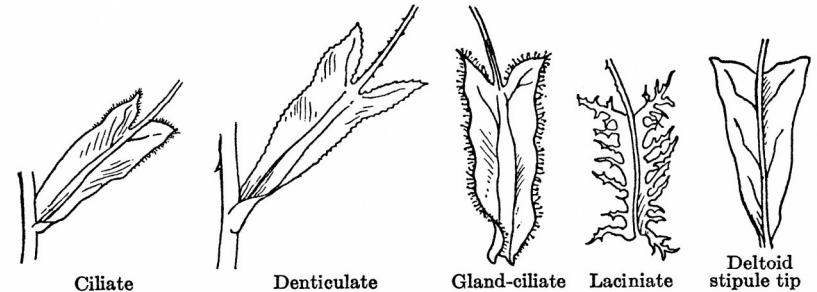
Sub-glabrous refers to a surface with few hairs.

Glaucous refers to a dull surface that is dusty and powdery.

Glandular refers to the glands on the surface which may be either sessile or stalked.

Gland-ciliate refers to a surface or an edge on which the glands are stalked on hairs.

The margins of leaf-forms are often quite lovely, especially if seen under a magnifying glass. Leaf edges may be singly or doubly cut, and an edge may be wholly or partly *entire*, having no cuts, as in many stipules and bracts.



Crenate refers to an edge on which the snips are rounded in form.

Toothed or *dentate* refers to an edge cut like a saw at right angle to the edge.

Denticulate refers to an edge when such teeth are small and fine.

Serrate refers to an edge when the saw-like teeth are pointed forward.

Ciliate refers to leaf-forms with fine hairs on the edges like miniature eyelashes.

Gland-ciliate refers to leaf-forms with glands on the edges.

Laciniate refers to a stipule or bract in which the edge is cut into long, narrow, irregular segments.

Fimbriate refers to a fringed edge.

Pectinate refers to an edge in which the long, incised, firm teeth are like a comb.

The points or tips of stipules, the *auricles* or ears, are usually divergent. They often have leafy ends or slim points, or are ovate, *spatulate* (in shape of a spoon or paddle) or they may make a triangle when they are said to be *deltoid*.

Inflorescence is the habit a rose has of producing its bloom. Roses may be *solitary* or in two's or three's, or even more.

Umbel refers to a form in which all flowers break from one place, as with *R. Banksiæ*.

Panicle refers to a form in which the flowers break from a central axis with branching clusters arranged along it, as with the Multiflora and Wichuraiana types.

Corymb refers to a form in which the blooms are born on peduncles, branching away from the central axis, the stems growing shorter toward the top, so blooms come out at about the same level. This is the clustering form most frequently seen.

Encasing the petals of a rose are the *sepals*, five in number, based upon the calyx-tube, the future seed *hip*. Sepals are exceedingly interesting.

They may be plain with no decoration on sides or tips, ending in a cuspidate or a long slim point; or may be ovate, spatulate or leaf-pointed. Often the sides of the sepals are decorated with little segments, when they are *pinnatifid*, having *pinnules*. Again, sepals may have these pinnules and points much compounded, expanded and winged with prettiness, when they are termed *foliaceous*. These ramifications may be smothered with glands, as are the Moss roses, wherein lies the beauty and charm of a Moss rose-bud. Sepals may remain close to the back of the petals of an open flower, as in Centifolia roses, or may reflex against the calyx-tube, away from the petals, as in Damascena and the Chinese roses then *reflexing*.



Leaf-pointed sepal

The *shape* of the calyx-tube enters into the problem of identification. All of the following forms appear in garden roses. While there may be distortions in shapes, they will be found generally to approximate the accredited shape. They may be:

Globose (round), *sub-globose*.

Depressed-globose (wider than deep, as in Tea roses at times).

Ovoid, *obovoid*.

Pyriform when pear-shaped.

Turbinate when top or turnip-shaped.

Urceolate when urn-shaped.

In many books in which roses are described very definitely, mention is made of the *hip* or *fruit*. Miss Willmott elaborates in showing and describing fruits, emphasizing such features as shape, *skin*, *color*, clothing, and noting whether they drop the dried sepals (sepals *caducous* or deciduous), or do not (sepals *persistent*). Skins may be *thick* or *thin*; smooth, setose, hispid, prickly, glandular. The hip may be pulpy like that of the Rugosa or Damascena roses, or it may be dry and hard, as most are. As the green color goes out, hips may become orange, red, maroon, and some become black—brown-black as in Harison's Yellow—or blue-black.

At last we have come to the consideration of the lovely rose itself. While we always look with pleasure at the petals of a rose, frequently they are of the least importance in deciding where we are to classify our plant.

We make notes as to whether our bloom is *small* (1 to 2 inches in diameter), *medium* (2 to 3 inches), *large*, (3 to 4 inches), *very large* (4 to 5 inches), or *very small* (less than an inch); of its color and shadings, if any; whether it is *single* (5 petals), *semi-double* (5 to 10 rows of petals), *double* (10 to 20 rows), *very double* (more than 20 rows, but still showing some stamens), *full* (petals closely packed, stamens imbedded in petals and not showing).

a ring. Stalks and foliage of *R. gallica* character. York and Lancaster: Bush 6 feet and more. Bloom smaller, pink and white, much less striking in coloring; stamens irregular. Foliage and stalks of *R. damascena* character. See Bunyard, Old Garden Roses, Plate 11, opposite page 63, for comparison of foliage; Plate 23, opposite page 104, for comparison of blooms. Rosa Mundi has been called York and Lancaster. Mr. Bunyard bases his distinction on the authority of Parkinson and the early writers.

R. alba also grows tall (even to 10 feet) but is more arching, its green stalks having scattered, hooked prickles, all about the same size. The bluish green oval to round leaflets are smooth above, pubescent beneath, with stipules broad, gland-ciliated, with triangular tips. Flowers of the type are white and pinkish, fragrant, flat in shape, with a longer calyx-tube than Gallica or Centifolia and sepals quite compound and decorative. Inflorescence is a few in a corymb. Varieties run into shades of pink. *R. alba flore-pleno*, "Rose of the House of York," is in many old gardens.

The remaining bush roses having low-set stigmas and included styles may be distinguished by their prickles. Thus—Prickles infrastipular in pairs—*R. microphylla* and *R. cinnamomea flore-pleno*, the Cinnamon rose.

Prickles many, scattered, unequal—*R. spinosissima* (Scotch) and *R. lutea fætida* (Austrian briers).

Prickles scattered, uniform—*R. rubiginosa* or *Eglanteria* (Sweetbrier).

Prickles dense, sharp, straight, unequal—*R. rugosa*.

R. microphylla has its large infrastipular prickles in pairs, ascending on stalks with grayish bark and on young green shoots, below 11 to 15 small, smooth leaflets with narrow stipules. The very flat pink blooms have a densely aciculate calyx-tube and compound sepals. The hip is a peculiar, depressed-globose, large fruit having a thick skin covered with real prickles and crowned with the leathery, deeply toothed dried sepals; often called the "Burr rose."

Cinnamon rose, Rose de Mai, has its infrastipular prickles in pairs on brown stalks, growing 5 to 6 feet high, arching and very hardy. Leaflets are usually 5, softly pubescent on both sides with a stipule having very wide-spreading open tips. The irregularly full, pale red blooms come in small clusters; have leafy sepals, short stems, and large bracts.

Either here or under Gallicæ is placed *R. francofurtana*, the Frankfort rose, a cross of Cinnamomea and Gallica, called *R. turbinata* because of its top-shaped calyx-tube which is covered with red hairs, or called *R. inermis* because there are no prickles (or very few) on its flowering shoots. The pedicels of the blooms in a corymb, are densely hispid, with red hairs. Leaflets in the type are 5 to 7 but in some varieties are 7 to 9, thin, pubescent, especially beneath. The bush is tall and arching. Flowers are suggestive of Gallica roses, double or full, quite large, in shades of pink and are often fragrant.

Scotch roses and the Austrian Briers both have copious, scattered slender, straight prickles, with more aciculi of unequal length in the Scotch. Scotch roses have 7 to 9 leaflets, small, glabrous, simply serrate, often tinted with rose-red. Austrian Briers have 5 to 7 small leaflets, doubly serrate, pubescent beneath. Stipules differ. Scotch roses have ovate free tips on a stipule without glands, while the Austrian roses have lanceolate free tips on gland-ciliated stipules.

are such good seed-bearers that many varieties in pink, red, purple, striped, spotted, marbled, double, very double and full, may be found.

R. gallica versicolor, called Rosa Mundi, is striped rose-red and flesh-white, varying to the point of being solid in either color.

R. gallica Agathe, or *Agatha*, has in the type, smaller, purple, very double blooms, outer petals spreading, inner petals concave. (Agatha has had several varieties.)

R. centifolia has unequal prickles, much stronger than those of *R. gallica*. The longer leaflets, 5 to 7, are less rugose, less leathery, and are glandular on the serrate edges, with stipules quite gland-ciliated. Stalks grow to 6 feet, sometimes arching. Sepals are often very decorative, being pinnatifid, leafy at the tips, glandular on backs and edges. Flowers are cupped, full, "cabbaged," very fragrant, usually in shades of pink, on long stems, densely glandular, often cernuous (nodding), solitary or a few.

R. muscosa, the Moss rose, belongs here with its excess of glands on very foliaceous sepals, on calyx-tube, peduncle and often on foliage. *R. centifolia cristata*, the Crested Provence, belongs here also. The glands are suppressed and the copious decoration is a compound system of bristles, like little round hat-brushes. *R. centifolia, pomponia* (Rose de Meaux) is a small form of Centifolia with blooms 1 to 1½ inches in diameter, very fragrant, with paler guard petals and bright pink centers. *R. centifolia parvifolia*, the Burgundian rose, has characteristics more nearly related to the Gallica, with full, small blooms, of a rosy red.

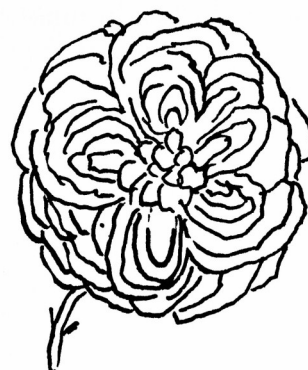
Miss Willmott includes here, as do many of the older authorities, a class made up of roses with extremely variable physical characteristics, but not such as to exclude them from the Gallicæ group, and probably not from relationship with the two above. This class is called *R. provincialis*. Other authorities make no separate class of these variables which are so difficult to place, but put them under *R. gallica* or *R. centifolia*, according to their dominant characteristics. Others, like William Paul, set them apart as hybrids of Gallica or Centifolia.

The second division within Gallicæ has more uniform prickles and leaflets not glandular-serrate—Damascena and Alba roses.

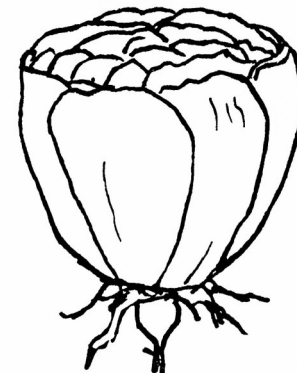
R. damascena, the Damask rose, grows tall, has green stalks with a copious mixture of stout hooked prickles (and unequal smaller ones), bearing ovate-oblong leaflets, not at all leathery, with fine veins, softly pubescent beneath, with gland-ciliate stipules. Lanceolate bracts, also gland-ciliated, are found in the corymb of clustering blooms. Damascena roses are very fragrant, usually in pink shades, with sepals having a leafy point, long and reflexing during flowering. The fruit is ovoid, red, and pulpy.

Damask Perpetual roses are Damask roses which bloom in the autumn or "monthly," with prickles and foliage of the class.

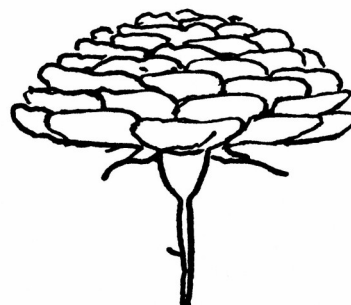
R. damascena versicolor, York and Lancaster, has double, white and pink striped and blotched blooms, sometimes solid white. In distinguishing *R. gallica*, Rosa Mundi from *R. damascena*, York and Lancaster, one notes the following differences: Rosa Mundi, upright bush to 3 feet. Bloom large, flat, open, blotched and striped flesh and carmine; stamens in



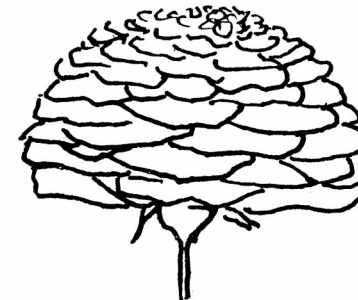
A quartered rose



A cupped rose



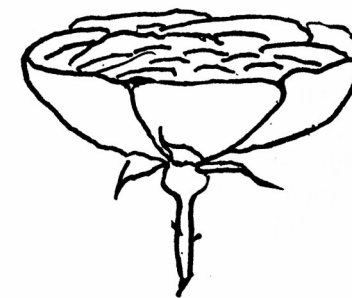
An imbricated or expanded rose



A reflexed rose



A globular rose



A compact rose

FORMS OF ROSES. Adapted from "The Amateur's Rose Book" by Shirley Hibberd, London, 1874

The *shape* of the bloom is to be noted.

Globular form has the guard or outside petals encircling closely until the rose is full blown.

Cupped has the outer petals erect or slightly incurved, the inner petals smaller, making a bloom somewhat hollow like a cup.

Compact has all petals stiff and upright but with a center level or higher, not depressed.

Expanded has the outer petals lying horizontal, making a flat rose. Petals in a double or full rose are often *imbricated* (overlapping regularly) or *quartered*, formed into a star shape, as some Bourbon and Tea roses are. Petals may be:

Round (globular).

Cordate (heart-shaped at the outer edge).

Truncate (cut off straight, making a triangular petal).

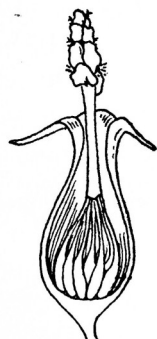
Emarginate (with a definite notch in the margin).

They may be thin in texture or thick; soft or quite stiff.

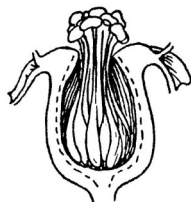
We are ready now to take our rose in hand, saying, "What kind of a rose is this?" Take it into the left hand, and with a sharp, small-bladed knife, split it in half, from the stem upward, injuring the delicate center as little as possible. If we strip off petals and sepals, we have left only the part that concerns us at this point—a part we rarely examine, but one of great interest. We have the profile of the calyx-tube with its *disc*, the circular process of the tube at its top which carries the stamens and closes around the pistils. This disc is usually flat. It may be *conical*, rising to a point from its circular outline with the aperture at the point. *Stamens* are the pollenizing



Profile of a split rose



Pistils protruding united in a column



Pistils free



Pistils included

agents, made up of *filaments* attached to the disc, bearing at the free ends, *anthers*, the little containers of the pollen. *Pollen* is the fertilizing grain. *Pistils* are the germinating agents, and roses have many pistils. A pistil consists of a *stigma* at the top onto which

lacinated stipules of Multiflora; rather they are edged with glands and have free spreading tips. Styles are slightly coherent; leaflets, 7 to 9, are quite glabrous. Inflorescence is many rose-red blooms in a corymb.

When the Tea rose was crossed into the smaller-flowered Noisette, noticeable differences occurred. Foliage is usually long and very beautiful, in quite a range of green, often copper shaded. The large fuller blooms are fragrant, and suggestive of Tea forms. Blooms occur in corymbs of 3 to 6, at the extremities of the long laterals, herein following the Musk ancestor in blooming on side shoots.

From this point the roses we consider as related to *R. indica* bloom but once a season.

R. Lheritierana, the Boursault rose, is said to be a cross of *Chinensis* and *Alpina*. It has fairly tall (to 10 feet), bending, apparently unjointed stalks, sunburned to red or brown where exposed, with no prickles unless at the base of old wood, carrying leaflets simply but deeply toothed, often entire at the base, with stipules broad upward ending in free deltoid tips, forming a triangle. Blooms usually are in rich cherry-red and crimson to purple shades, in little clusters on laterals.

Hybrid China roses constitute a group of sturdy bushes of different heights, usually upright, sometimes arching, which bloom for five to six weeks. They were created by crossing the various Chinese everblooming roses with the different June-blooming roses, more often Gallica and Centifolia varieties. As within this scope there was a general intermixing, the Hybrid China roses, as a class, fall into three parts.

Hybrid Chinas are those showing predominantly the China rose features in foliage, prickles and bloom. Rivers' George the Fourth, found in old gardens, is a Hybrid China.

Hybrid Bourbons are those partaking more of the foliage and other features of the Bourbon rose. Coupe d'Hébé is a Hybrid Bourbon.

Hybrid Noisettes are those in which the foliage and clustering of the Noisette prevail. Mme. Plantier is called by some authorities a Hybrid Noisette.

GALLICAE ROSES

Botanists have agreed in grouping the four great June-blooming roses under the heading of Gallicæ. These roses have the low-set stigmas and styles included within the calyx-tube. Gallicæ roses fall into two groups as to prickles and foliage: Those with unequal prickles (large and small mixed) and leaflets glandular-serrate are Gallica and Centifolia.

R. gallica has dull green leaflets that are firm, leathery and rugose. (Authorities differ about their serrations being glandular.) The bushes grow to 3 feet on the average and are quite stiffly erect, with weaker prickles than any of the others. Blooms of the type are double, rose-red, somewhat fragrant, one to three, boldly upright, with glandular peduncles. Gallica roses are so hardy and

own assistance, we include here a group called Hybrid China, lost commercially but found in old gardens.

R. odorata, the Tea rose, has uniform prickles and glabrous evergreen leaves, as do the China roses. The Tea has 5 to 7 leaflets, sharply serrate, with stipules adnate and with few, if any, glands on the auricles. Sepals are usually entire. The calyx-tube and fruit are globose or depressed-globose. Plants grow taller and are more inclined to climb than the China roses. The very fragrant blooms are solitary or in two's or three's on peduncles often glandular, and are produced freely. The original importations were double forms with both pink and yellow flowers. Many varieties have been developed.

R. indica, Old Blush China, Pink Daily, has 3 to 5 leaflets, simply serrate, with adnate stipules, the small ovate free tips having ciliate glands. The moderately tall, arching stalk, with glaucous green bark, has uniform red, hooked prickles. Sepals are long, pointed, usually pinnate. Hips are ovoid, red, smooth when ripe. Flowers are double, rather irregularly cupped, pink, slightly fragrant, 1 to 5 in a corymb. It is a constant bloomer.

R. semperflorens, the red China, Sanguinea, has more slender stalks and branches, slimmer red prickles, darker wood and foliage; leaflets 5 to 7, tinted with purple. Flowers are double, more neatly cupped, often solitary, of a deep rich crimson.

These three China roses have been crossed and mixed quite terribly, but the roses properly called Chinas have definite checks with *R. indica* and *R. semperflorens*, as have the Teas with *R. odorata*. Certain differences to be noted are in fragrance, in foliage, and in hips. The hips of China roses are never depressed, are often variable, and are more or less sloping into the peduncle, while the hips of Tea roses are brusquely globe-shaped at the base, glabrous and glaucous, on a thicker peduncle, often jointed, and itself glabrous or a little glandulous. Blooms of China roses are usually quite upright, while Tea roses often nod (are *cernuous*).

R. borbonica, the Bourbon rose, has usually a few aciculi mixed among its prickles, and ciliated glands on the stipule and bracts. Leaflets are bright green, somewhat glossy, smooth above, obscurely pubescent beneath, leathery in feeling, often wavy on the edges. Glands often show up on the peduncle and backs of sepals which are likely to be pinnatifid. Flowers are from double to full, one or a few in a corymb. Bourbons are abundant bloomers, especially in spring and autumn.

R. Noisettiana, the charming Noisette rose, of which there are several varieties surviving, is a cross of *R. indica* and the Musk rose. Pistils protrude in the way of the Musk, but styles are free in the way of the China. Noisettes may be bush or climbing roses, with stout, uniform hooked prickles; 5 to 7 oblong, acute leaflets, smooth above and slightly pubescent beneath; narrow adnate stipules with small ovate free tips. Flowers are of medium size, double, many in a compound corymb. The immensely clustering bloom and the "paint-brush" pistils are distinguishing features. A red one called Felleberg is believed by some authorities to be a cross of China with Multiflora. It does not have the

pollen falls, and a *style*, which is a tubular filament leading to the *ovary*, safely imbedded below in the calyx-tube and enclosing the *ovule*, which, on being fertilized, produces the seed—the dénouement for which the mechanism is designed. This protected and efficient system of delicate processes is one of the most important features to examine.

If we find that the pistils protrude the full length of the stamens, from the center of the disc, and the styles are coherent so that the united pistils form a club, with stigmas like a berry at the end, our rose is one of a group of well-known climbing roses called *Synstylæ*.

If the styles are free, not coherent, and extend outward half the length of the stamens, our rose belongs to the Chinese group, and is one of those called *Indicæ*.

If the styles do not protrude, if the stigmas form a button or cushion closing the opening of the disc, and the filaments are wholly included within the calyx-tube, our rose is either one of the group called *Gallicæ* (Gallica, Centifolia, Damascena and Alba), or it is one of an odd lot made up of the bush roses, Sweetbrier, Cinnamon, Rugosa, the Austrian briars, the Scotch briars, and Microphylla; and in climbing roses, of Banksia, Bracteata, Lævigata, and Bour-sault. All of these roses have individual characteristics which distinguish them.

SYNSTYLÆ ROSES

Among the *Synstylæ* roses (those with protruding connate pistils), *Multiflora* (Thunberg), the garden family of Multiflora, is one vigorous class that stands apart from the rest by having a very decorative stipule, deeply lacinated and fancifully furnished with little points on the teeth, ending in long tips, edges with ciliated glands. Throughout the sub-classes and many varieties into which Multiflora has entered, it has kept its lacinated stipules. Look, too, for a pair of prickles below the stipule (infrastipular prickles). Refer to drawings on page 6.

Multiflora (Thunberg) has long, dense panicles of bloom, each rose about as big as a dime, single, semi-double, double, white or pale pink.

Polyantha roses, the result of *R. multiflora* crossed with Chinese roses, are equally small, with lacinated stipules but with two differences—they are bush roses, and bloom all summer.

Seven Sisters (*R. multiflora platyphylla*) is another garden form with larger leaves and flowers of greater size, many in a corymb (not a panicle), varying in shade from blush to red and purple, with lacinated stipules.

Crimson Rambler came from the union of Seven Sisters and the Chinese rose, (*R. semperflorens*, probably). The flower cluster seems to be a combination of panicle and corymb, with very closely crowded blooms. This rose blooms longer than the others and often recurs, probably due to the strong strain of Chinese influence. Dr. Wilson believed it came from *R. multiflora cathayensis*.

Baby Ramblers are believed to be crosses of *R. multiflora platyphylla* forms with *R. chinensis minima*, the "Fairy" Chinese roses. Always in these variations we find the lacinated stipule.

Others of the Synstylæ roses have either entire or denticulate stipules. Their habits of growth serve to set them into two groups. The stalks of *R. setigera* (to 15 feet), from which have come our Prairie roses, and those of *R. moschata*, the Musk roses (to 8 to 10 feet), are upright from the base, and if not supported, arch over about 4 feet from the ground. The stalks of the *Wichuraiana*, *Sempervirens*, and *Arvensis* (Ayrshire) roses are inclined to trail many feet or lie prostrate. The species, *R. arvensis*, shows a very interesting point of difference when we split the rose. Its club-like pistils rise from a very conical disc, a characteristic shared by one other rose in the Synstylæ group, *R. moschata*.

Moschatas give an impression of refinement, but more about the Musk roses later.

Setigeras are rather rowdy roses, beautiful in their autumn coloring. They have 3 to 5 pubescent, large leaflets, with large gland-ciliated stipules. The species with 3 leaflets blooms late in rather loose corymbs of deep pink, single blooms. Some Prairie roses (varieties of *R. setigera*) bloom earlier, and usually in fullness, form, and color of bloom depart from the species, as, for instance, Baltimore Belle and Queen of the Prairies.

Of the roses which trail by nature, the species *R. Wichuraiana* is used as a ground-cover at times, going by its common name of Memorial Rose. *Wichuraiana* and *Sempervirens* have lustrous, almost evergreen foliage, while Ayrshires have rather thin, deciduous foliage.

R. Wichuraiana has 5 to 7 small leaflets, "box-like," and a dentate stipule with small free tips. The small white blooms are borne in a panicle.

Dorothy Perkins, a *Wichuraiana* hybrid, is more upright and stronger in its growth.

R. sempervirens has 5 to 7 medium-sized leaflets with an entire stipule and large white blooms in a corymb.

Félicité et Perpétue, a *Sempervirens* hybrid, shows the same upright and strong growth as found in Dorothy Perkins.

R. arvensis, from which came our Ayrshire roses, may rise a foot or two before it ramps away (often to 20 feet) on its long, stringy stalks, with 5 to 7 small, thin leaflets of a deep glaucous green, paler beneath. Such Ayrshire roses as we know keep a fair tendency to run.

Ruga, a cross with *Chinensis*, grows taller, carrying wreaths of blossoms resembling the old Blush China in form, but paler in color and more fragrant.

R. polliniana is a cross with *R. gallica*, having a vigorous habit.

R. moschata is discussed here because, like *R. arvensis*, its club-like pistils rise from a conical disc. Dr. Wilson added new forms to Musk roses during his explorations in China which do

not concern us now. Rather, we are interested in two old forms—the old Musk rose which figured so prominently in the creation of the Noisette roses and the Tea-Noisette roses, and has carried on into modern rose life, and Brown's Musk rose (*R. Brunoni*).

R. moschata, the old Musk rose, has 5 to 7 long, green, oblong, acute leaflets, quite firm, glabrous on the upper surface and pubescent on the midrib beneath, with small, curved prickles on the petiole. There are small lanceolate tips on the dentate (not lacinate) stipule and one infrastipular prickle, with other prickles scattered on the stalk. Long, ovate-lanceolate sepals, slightly compounded and smooth, decorate the white blooms, many in a compound corymb. From a distinctive fragrance comes the name "Musk" rose.

R. Brunoni, Brown's Musk rose, is the other old form. It differs in having pubescence on the under surface of the leaflets and on the petiole, along with the small prickles. It might be well to remark that authorities are at variance about the discrimination between these two Musk roses. We have followed Miss Willmott and Rehder.

R. anemoneflora, a rose brought from China nearly a hundred years ago by Robert Fortune, bears many resemblances to *R. moschata*. It has 3 to 5 narrow, acuminate, finely serrate leaflets (mostly 3), glabrous above, glaucous beneath; small pinkish blooms, with outer petals round and inner petals narrow and ragged, and pistils united in a column. Inflorescence is in a corymb.

Here we conclude the group of Synstylæ roses.

We have three climbing roses with styles included within the calyx-tube, stigmas closing the aperture, in *Banksia* roses, *Bracteata*, and *Lævigata* (Cherokee) roses. All have free stipules.

R. Banksia has shiny leaflets, free linear stipules, on stalks almost thornless; the flowers are sweet, flowering in an umbel on smooth pedicels.

R. lævigata has 3 leaflets, shining and glabrous; free stipules on stalks with scattered prickles; copious aciculi on the flowering shoots and on the pedicels of large, single, white blooms usually solitary.

R. Fortuneana, with its large, double white blooms, is a cross of the two above. It was introduced from China by Fortune.

R. bracteata has free stipules, pectinate and margined, with glands having infrastipular prickles, in pairs. The distinguishing feature, however, is a growth of imbricated bracts on the very short peduncles of the many solitary white flowers, with a halo of stamens surrounding the disc, and with sepals and calyx-tube tomentose. *Bracteata* roses bloom all summer. (An examination of the bracts on the rose *Microphylla alba odorata* suggests that *R. bracteata* enters here.)

INDICÆ ROSES

The group of Chinese roses called Indicæ includes the Tea rose (*R. odorata*); two China roses (*R. indica* and *R. semperflorens*); the Bourbon rose (*R. borbonica*); the Noisette rose (*R. Noisettiana*), and the Boursault rose (*R. Lheritierana*). For our