

A Visual Key to Norfolk Roses - Bob Leaney November 2021 - Introduction

This key is based on Stace's 4th Edition Key so as to include the newly recognised Dog-roses *Rosa squarrosa* and *R. corymbifera*, as well as *R. vosagiaca* (formerly *R. caesia* ssp *glauca*), *R. caesia* (formerly *R. caesia* ssp *caesia*) and *R. tomentella* (syn. *R. obtusifolia*). This new nomenclature was the result of work done by Clive Stace and the BSBI Rose referree, Roger Maskew, with two Dutch rose specialists (Dog-roses (*Rosa* sect. *Caninae*): towards a consensus taxonomy. Piet Bakker, Bert Maes, Roger Maskew, Clive Stace, *British & Irish Botany* 1(1):7-19, 2019).

The key does not much deal with alien garden escapes or "plantings in the wild", except in the case of one or two more likely finds (*R. multiflora*, *R. rugosa* and *R. 'Hollandica'*), and the frequent cultivars or hybrids of *R. spinosissima*. Other aliens should be recognisable as something different and identified using the Stace key and the BSBI Rose Handbook (Graham & Primavesi, 1993). The latter is essential for the study of roses – having made a provisional determination using this and the Stace key, one should always check one's specimens against the descriptions and illustrations in the Handbook.

The Key was originally written for a Rose Workshop of the Norfolk Flora Group held in September 2021, which I ran together with Alex Prendergast, with much help also from Bob Ellis the VC27 recorder. Bob has made a special study of roses in Norfolk over the last few years and regards *R. squarrosa* as quite common, *R. corymbifera* as scarce, and *R. tomentella* as scarce but probably under recorded – all these taxa were found for the workshop. We have not as yet found *R. caesia* or *R. vosagiaca*, but these taxa are both described by Stace as "very scattered" in the south, so could be present.

Purpose of the Key

The Key is based on local experience in Norfolk, but includes all our native taxa, so should be helpful throughout Britain and Ireland. It is designed especially to help in the recognition of the "new" Dog-roses, so these are dealt with all together, as are the two Field-roses (*R. arvensis* and *R. stylosa*), the Sweet-briars, and the Downy-roses. In the Stace 4th edition key, which was developed with advice from Roger Maskew as regards the Dog-roses, the twelve members of these four groups key out throughout the key. By keying out these species in groups it is hoped that botanists will be better able to recognise the newly recognised Dog-roses, as well as other species that seem to be under-recorded, such as *R. stylosa* and (especially) *R. tomentella*. The key should be simple enough to use in the field, or memorise for use in the field, before checking the provisional ID against the Stace key and Handbook descriptions and illustrations at home.

Some characters (for instance the stylar orifice to disc ratio and the undersurface leaf glands) are best assessed at home in any case – the latter may need a microscope. Furthermore, hip and leaf characters are often very variable on the same plant, and time should be taken checking on several hips and leaves, not just one.

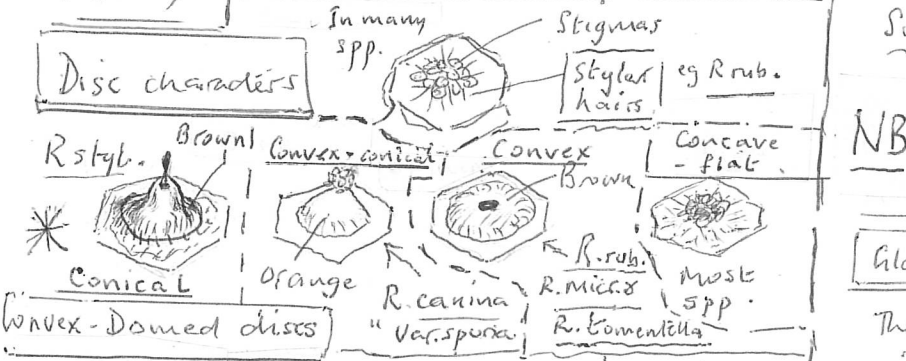
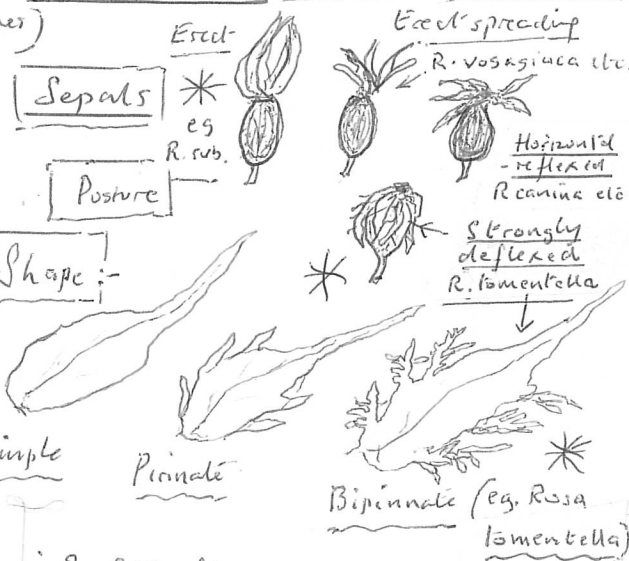
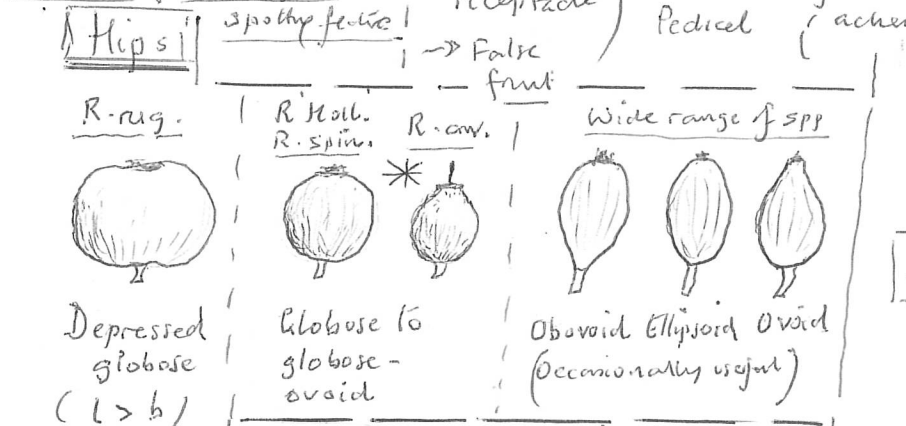
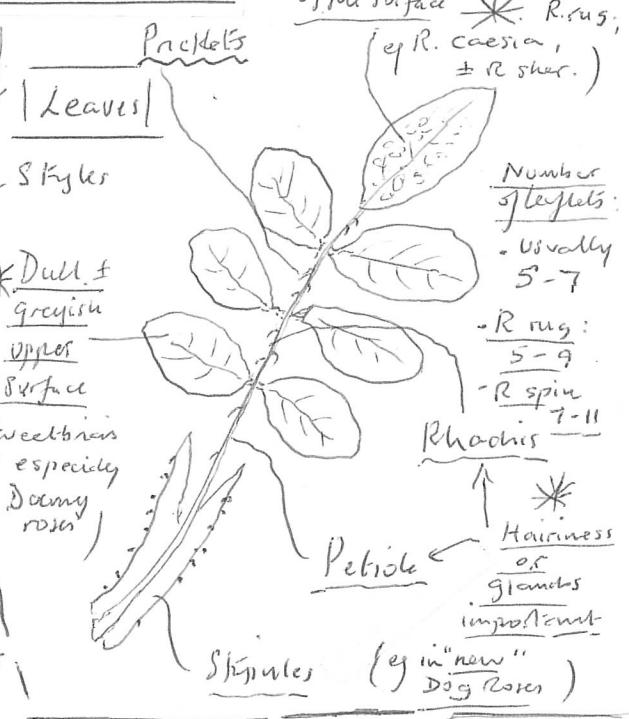
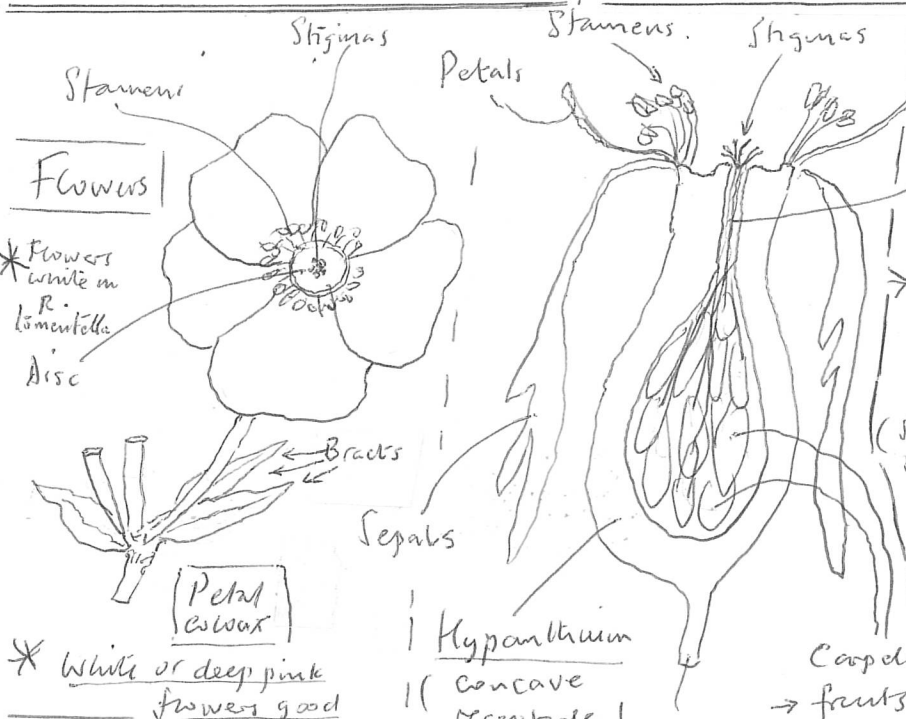
Using the Key

After dealing with the roses with a fused stylar column, and then those with straight prickles, the Dog-rose section begins by defining the virtually glabrous and eglandular *R. canina*, which is "allowed" only glands on the stipules or hairs on the leaf undersurface midrib, and should have a mainly uniserrate edge. Other Dog-roses are then separated from *R. canina* one by one, according to whether they are glaucous (*R. vosagiaca*), have glands on the leaf rhachis and undersurface midrib (*R. squarrosa*), or have a few extra hairs, but no glands, on the leaf rhachis and undersurface (*R. corymbifera*, *R. caesia*); some of these taxa may have biserrate or multiserrate leaves. The remaining Dog-rose, *R. tomentella*, is dealt with between the other Dog-roses and the Sweet-briars because it has a lot of affinities with both, and can be confused with either group. Like the other Dog-roses it has no glands on the pedicels or hips but, like the Sweet-briars and the Downy-roses, it does have a lot of hairs and glands on the leaf edge and undersurface. The last group, the Downy-roses, is mainly separated because the leaf uppersurface is densely hairy as well as the leaf undersurface. In the Sweet-briars and *R. tomentella* the leaf upper surface is sparsely hairy or subglabrous.

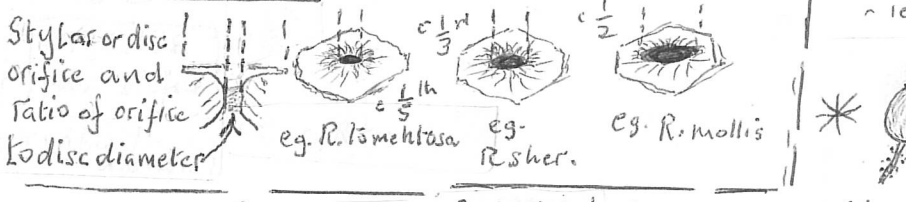
IDENTIFICATION CHARACTERS

Spotting characters asterisked

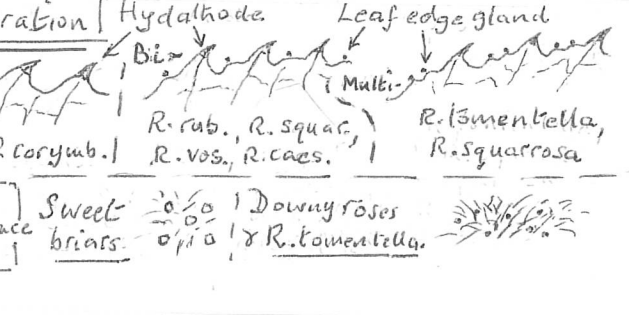
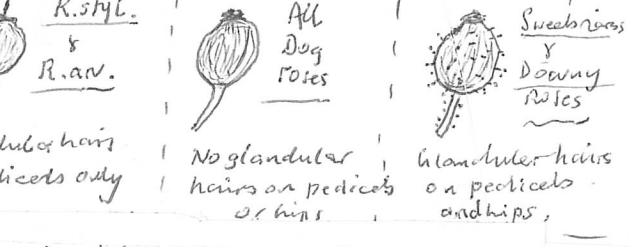
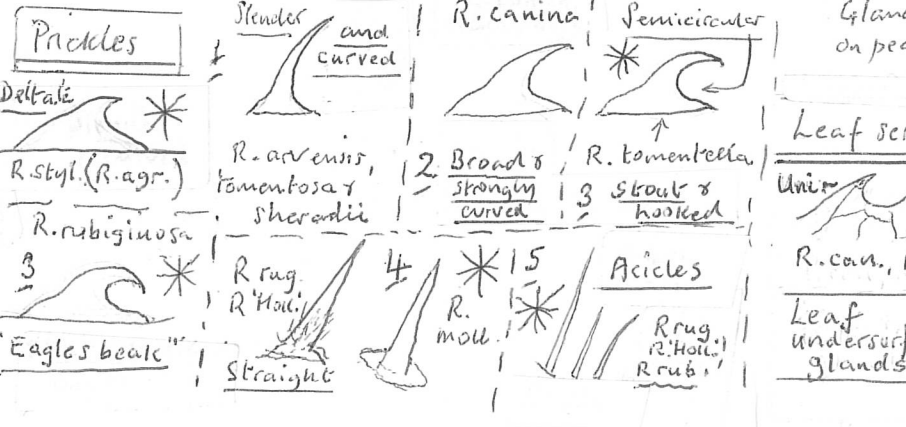
Rugose or Bullate upper surface * R. rug. (eg R. caesia, ± R. sher.)



NB :- 3 of the five sepals are always simple (or ± simple)



Glandular hairs on pedicels & hip 5 :-
The best spotting feature for 'something different' is not R. canina. Hips & pedicels globose in all Dog Roses *



Identification characters and spotting features: some tips and problems

The characters and terminology used for rose identification, taken from the Handbook, are here illustrated; spotting features are asterisked.

Habit is not shown in the drawings, but is a very important spotting feature: the normal habit of most taxa is best thought of as climbing and arching, for this is the habit of the great majority of roses encountered, including *Rosa canina*, all the other Dog-roses and *R. stylosa*. A trailing habit is found in *R. arvensis*; an erect (\pm free standing) habit in *R. rubiginosa*, *R. agrestis*, *R. sherardii* and *R. mollis*; and suckering in *R. rugosa*, *R. spinosissima* and *R. mollis*.

The posture of the sepals is a very good spotting feature for something other than *R. canina*, where the sepals are horizontal to slightly reflexed. It is especially important in spotting the under-recorded *R. tomentella* (strongly reflexed and bipinnate, but falling early), *R. rubiginosa* (erect), *R. caesia* and *R. vosagiaca* (erect to spreading) – except for a glaucous leaf undersurface, the last rose looks much like *R. canina*.

It should be realised that just before erect or erect-spreading sepals fall the weakness at the line of abscission may result in the sepals becoming more horizontal.

Prickles can be useful for identification and are a good spotting feature for several species. Look out for: the very broad-based prickles of *R. stylosa* and *R. agrestis*, difficult to describe but very striking; the very strongly curved and hooked prickles of *R. rubiginosa* and *R. tomentella*; the slender gently curved prickles of *R. arvensis*; and the straight prickles of *R. mollis*.

It is important to realise that the diagnostic prickle shape is not to be found by any means in every prickle, and is often best shown far down on the stem – these prickles can be detached and put in a small polythene bag to accompany the 25 cm long fruiting stems that constitute the main specimens (see below).

Leaflet shape and spacing are useful spotting characters for: *R. stylosa* (spaced out and attenuated at the tip); *R. tomentella* (\pm overlapping and orbicular); and for many of the Downy-roses and Sweet-briars, where the leaflets are more or less contiguous and broadly elliptical.

Leaf upper surface texture and colour is very useful in spotting something other than *R. canina*, where the upper leaf is a shiny bright green: look out for the dull, greyish look to the upper leaf in the Sweet-briars, and especially the Downy-roses; and the rugose upper leaf in *R. rugosa*, and to a lesser extent in *R. sherardii* and *R. caesia*.

Flower colour is nearly always pale pink in *R. canina* flowers (occasionally white), so white flowers or deep/bright pink flowers suggest a scarcer rose species. White flowers are an especially good spotting feature for *R. tomentella* and can occur also in *R. stylosa*; deep pink flowers are found in *R. rubiginosa* and *R. sherardii*.

Disc characters are used widely in the Stace key, especially the size of the disc orifice and the relative size of the orifice to the disc diameter. The orifice is usually obscured by the spreading stigma mass; this can be removed in older hips by rubbing of the stigmas and styles with a thumbnail, but in fresher hips the styles and stigmas may have to be grabbed and pulled out to expose the orifice. Hairy styles are important in separating the Sweet-briars, but actually occur in many other taxa – the stilar hairs are seen protruding from the stigma mass, but in older hips (November or so) may have been shed. A conical disc is a very good spotting character for *R. stylosa*, but it should be noted that some forms of *R. canina* (“var. *spuria*”) can also have a domed or conical disc, though a different shape and usually orange, or part orange, in colour, rather than brown. *R. tomentella* and *R. micrantha* both regularly show a convex (low domed) disc.

Glands are an important identification feature. The hips and pedicels of *R. canina* and all of the Dog-roses are always completely eglandular, and this is an important defining feature for this group, including the otherwise very glandular *R. tomentella*. Stalked glands (stipitate glands or glandular hairs) are confined to the pedicels in the Field-roses (*R. arvensis* and *R. stylosa*), but occur on both the pedicels and hips in the Downy-roses and Sweet-briars (apart from *R. mollis*). However, it should be realised that these glands, especially on the hips, may be very sparse and fall off when the hips are very ripe.

Gland odour is not used in the key presented here, except in the case of *R. rubiginosa*. In my experience it is a mistake to put too much emphasis on the fresh fruity or apple scent found in the Sweet-briars, and even more so on the resinous odour said to be characteristic of the Downy-roses.

The apple smell of *R. rubiginosa* certainly can be very strong, but this species is anyway an easy one to spot and identify, and on occasions the smell can be difficult to detect, especially late in the year or in cold weather; the Handbook also states that some people with an otherwise excellent sense of smell cannot detect the odour. The absence of apple odour certainly should not be taken to rule out even *R. rubiginosa*; it is less strong in *R. micrantha* and is said to be harder still to detect in *R. agrestis*.

The resinous smell in the Downy-roses is also hardly present in our Norfolk species *R. tomentosa*. It is stronger apparently in *R. sherardii*, and especially in *R. mollis*, a species anyway best separated by its glandless hips and pedicels and straight prickles.

Though gland odour can be useful in the initial recognition of *R. rubiginosa* and *R. mollis*, I feel it should not be used as a major key character to define the Sweet-briars and Downy-roses.

Gland colour is another character that can be misleading; more important than colour is size, degree of translucency and position; glands on the leaf edge and undersurface are by far the most important. The Handbook describes three types of gland:-

- (i) On the stipules and bracts of many species, and on the pedicels of *R. arvensis* and *R. stylosa*: small (c.40 µm diameter), stalked, but with the stalks of very variable length (always long on pedicels); and deep red or red brown.
- (ii) In the Downy-roses: again very small (c 40 µm. diameter), short stalked or subsessile; opaque and “red to orange-yellow” - in my experience they look a very dark brown at normal magnifications and light conditions. These glands again have longer stalks on stipules or pedicels, but very short stalks on the leaf undersurface.
- (iii) In the Sweet-briars: 2-3 times as large (100 -120 µm diameter) translucent and “golden or brownish”. To my mind the most striking feature of these glands when on the leaf undersurface, is that they are much larger than those found in the Downy-rose, and a very pale, translucent, pale brown or buff.

Hydathodes seem not to be mentioned in the standard rose descriptions and should not be confused with glands; *R. canina* and *R. corymbifera* with uniserrate leaves have hydathodes on the tips of the serrations; they may also be found on the primary serrations of biserrate or multiserrate leaves (see illustration of *Rosa rubiginosa* leaf edge in Poland and Clement, 2020 : Plate 22).

Hybrids and recording

Stace accepts 73 spontaneous hybrid combinations between our native species, and 2 involving the alien *R. rugosa*. Hybrids are extremely common and the picture is further complicated by the fact that many hybrids are fertile, so that introgressives closely resembling one parent are frequent. Our VC 27 recorder, Bob Ellis, who has for several years been looking for the newly recognised Dog-roses, finds that a large proportion have mixtures of characters indicating hybrid origin – involving in our area *R. canina*, *R. squarrosa* and *R. corymbifera*. Overall he feels that around a half of all the roses he finds are probably of hybrid origin.

This problem was recognised by Graham and Primavesi who in the Handbook commented that “in genera where promiscuous hybridisation occurs, it is considered permissible to allow for some degree of introgression when determining the limits of a species this is essential if we are to record species at all: the alternative would be to revert to the former multitude of named species of dubious credibility” They therefore suggest that first generation (F1) hybrid roses should be recognisable but that complex introgressives should be ignored for recording purposes.

On the other hand, especially now that the nomenclature has been clarified, our Rose referee Roger Maskew does feel that many hybrids, including introgressives, should be reliably determinable. The key here presented will hopefully help in this process by providing a full complement of diagnostic characters for each species that are not to be found in the more rigorous but more “artificial” keys developed by Stace and Maskew. If any rose does not more or less fit all the characters for any species a hybrid should be suspected.

Hybrids are usually suspected because of the presence of characters that don't fit the initial ID. As an example, in hybrids involving *R. canina* as one parent, the other parent might be suggested by the presence of :- erect habit, acicles, erect sepals, or large pale glands under the leaf (*R. rubiginosa*); the presence of dense hairiness on the leaf upper-surface (a Downy-rose); or deltate prickles or conical disc (*R. stylosa*).

In fact by far the most frequent hybrids we have found over the last few years involve *R. canina* and *R. squarrosa*, or less often *R. corymbifera*. The Norfolk Flora Group is recording these roses as *R. canina* agg., because they seem to be so common and can't all be sent for identification, but botanists who want to become specialists in Roses could send these and other suspected hybrids to the referee.

Reciprocal hybrids between two rose species are usually very different from each other and nearly always much more resemble the female (ovule) parent. This is because of the unusual breeding system practised by most of our native roses (in fact all of Section Caninae, which includes the Dog-roses, Sweet-briars and Downy-roses). In these taxa the male and female gametes do not contribute the same number of chromosomes to the fertilised ovum, as is usually the case, but instead the male gametes provide only 7 chromosomes and the female gametes 21, 28, 35 or 42, producing what are known as unbalanced polyploids.

What this means in practice is that any parent present near the hybrid find, since it will almost certainly be the female parent, is likely to much resemble the hybrid and be taken as part of the hybrid population.

Collecting material

For the study of roses it is advisable to have a large, bin bag sized polythene bag, and a pair of secateurs or strong scissors. In case one ends up with specimens from more than one rose, it is also best to have some treasury tags to attach to the specimens with the 8 figure grid reference, parish, and habitat noted on each. One should always take two specimens from each rose, so that a duplicate can be kept for reference if material is sent to the referee.

Each specimen should consist of two stems around 25 cm long, with well-developed but not necessarily ripe hips and several sprays of leaves, making sure that both stems come from the same rose (beware "mixed collections"!). The fruiting stems should be long enough to include 2nd year wood, where the prickles should be typical for this taxon; but always look at the stem further down, for it may only be here that the characteristic and diagnostic prickles are to be found. These prickles can be detached and put into a labelled small polythene bag, along with the two main specimens.

Record the parish, 8 figure grid reference, habitat (hedge, calcareous scrub etc) and the habit of the plant (especially if it is erect or suckering), together with the posture of the sepals (which may fall off in transit) and any evidence that the rose could be planted. If a hybrid is suspected, note any putative parents in the vicinity.

Rose specimens should be placed as soon as possible in an airtight plastic bag, preferably immediately after cutting, and properly "sealed" in by rolling over the end of the bag several times. They should keep fresh and identifiable in this state for at least a day or two, especially if kept in a cool place or fridge, but if left exposed will dry out and become more difficult to identify within a few hours. After identification the specimens should be returned to the airtight bag as soon as possible; if a specimen is to be sent to the referee it should be posted 1st class – preferably in a cardboard prickle proof packet!

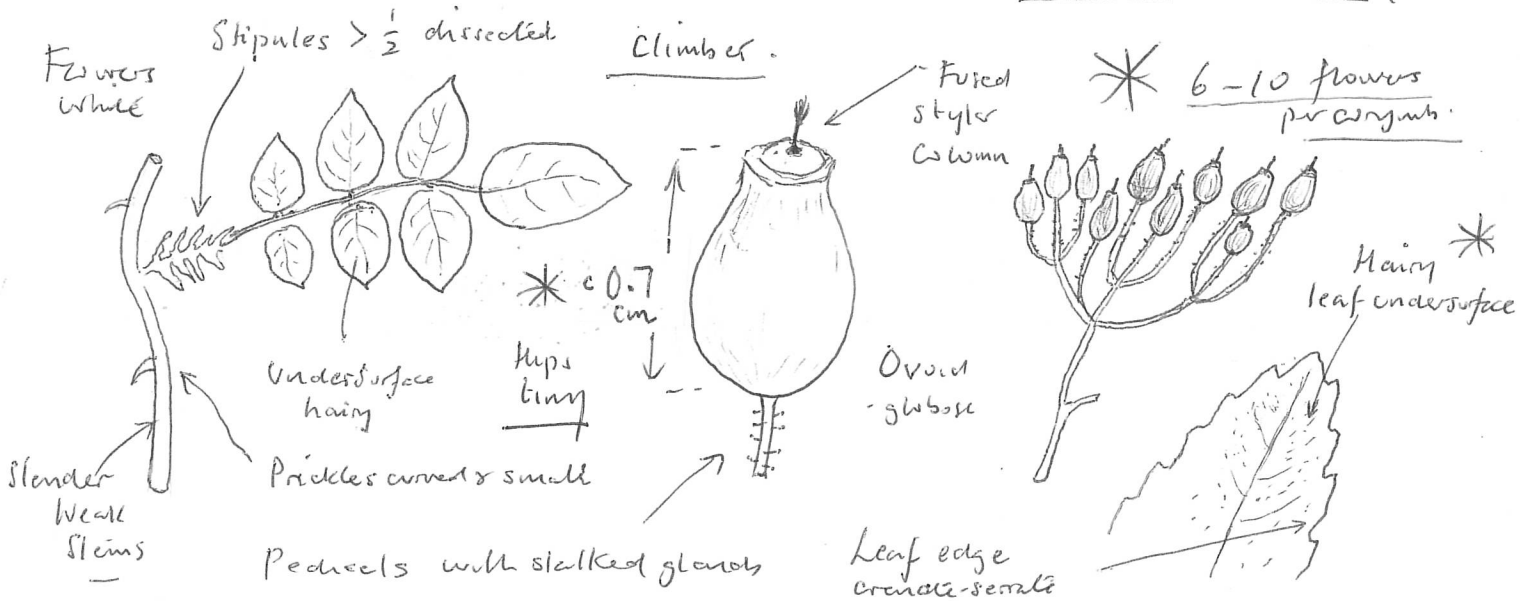
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Key: — Spotting characters asterisked *

- ① Styles exerted and fused into a column, sometimes becoming free
at fruiting 2
- ① Styles exerted or not, not fused into a column 4

② Flowers 2-3 cms across, mostly in corymbs of 6-10, stipules lobed $> \frac{1}{2}$ way to petiole; hips small. . . . Rosa multiflora

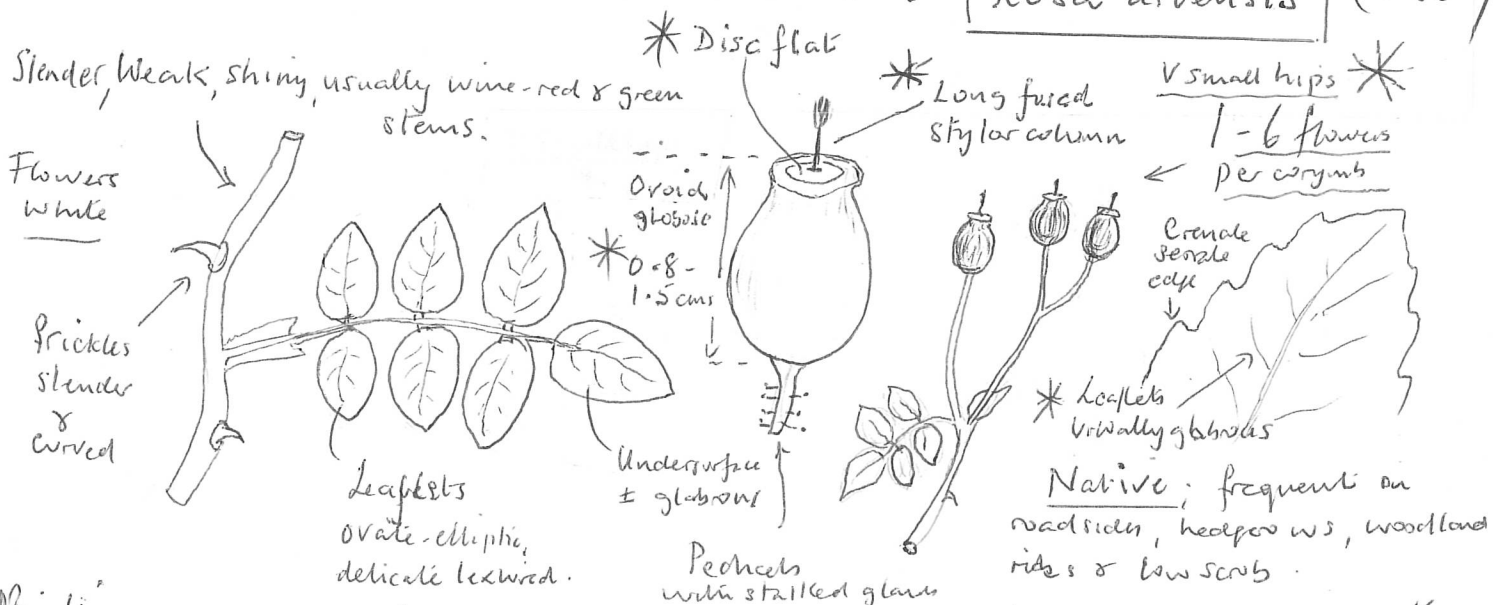


Neophyte-natal; hedges & copses; naturalised. In frequent. E. Asia

② Flowers 3-5 cms. across, mostly in corymbs of 1-6; stipules not lobed or lobed to $< \frac{1}{2}$ way to petiole 3

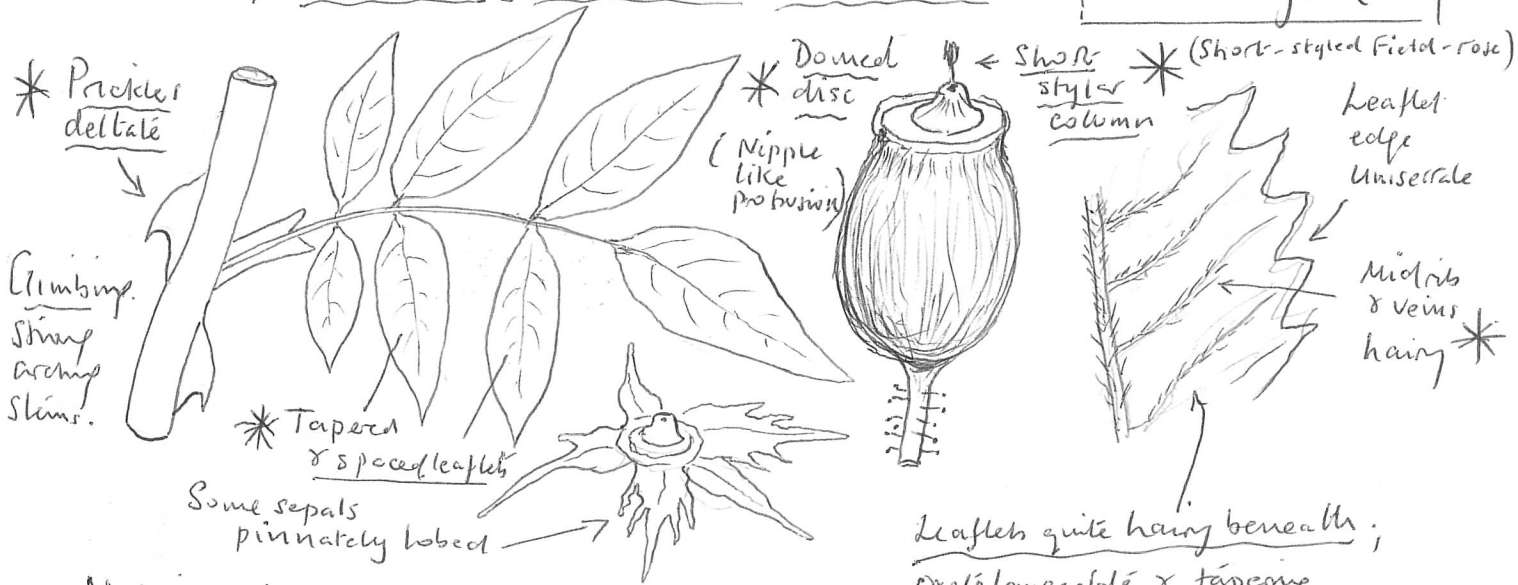
③ Stylar column as long as stamens; hips small, disc flat; sepals entire, or outer with a few small lobes, prickles slender and curved; trailing or sprawling with fine shiny, usually red, stems

Rosa arvensis (Field-rose)



NB: Hips go black overwinter & stem identifiable. Flowers white with cream centre *

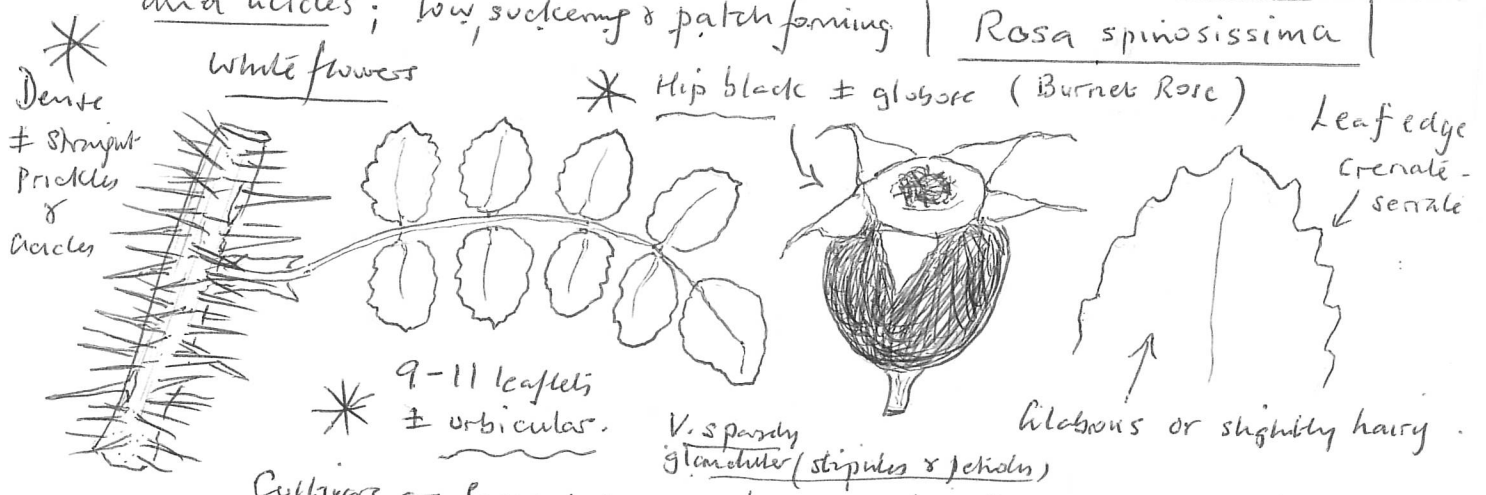
(3) Stylar column shorter than stamens, hips large, disc conical with nipple-like protrusion in centre of dome, brown; sepals pinnately lobed; prickles very broad based & deltate. . . | Rosa stylosa |



Native; hedges, scrub woodland; a southern species south of line from Dublin to Suffolk (c14 recent records) - Only 3 at all recent records in Norfolk -

Leaflets quite hairy beneath; ovate lanceolate & tapering, widely spaced *

(4) | Fruits blackish when ripe; leaflets mainly 9-11 and orbicular; flowers without bracts; numerous slender & straight prickles and acicles; low, suckering & patch forming | Rosa spinosissima |



Cultivars are frequent & can look very like the native plant, but tend to have more glands, pink or yellow flowers (*R. spinosissima* *Dunwichensis*) Many hybrids occur and usually have more elliptic-lanceolate leaves & often red hips.

(4) Fruits red when ripe; leaflets mainly 5-7, flowers with 1 or more bracts 5

(5) Prickles straight; hips depressed globose, globose or broadly ellipsoid, sepals spreading to erect . . 6

(5) Prickles well curved to hooked; hips ovate narrowly ellipsoid or obovate, sepals variously directed 8

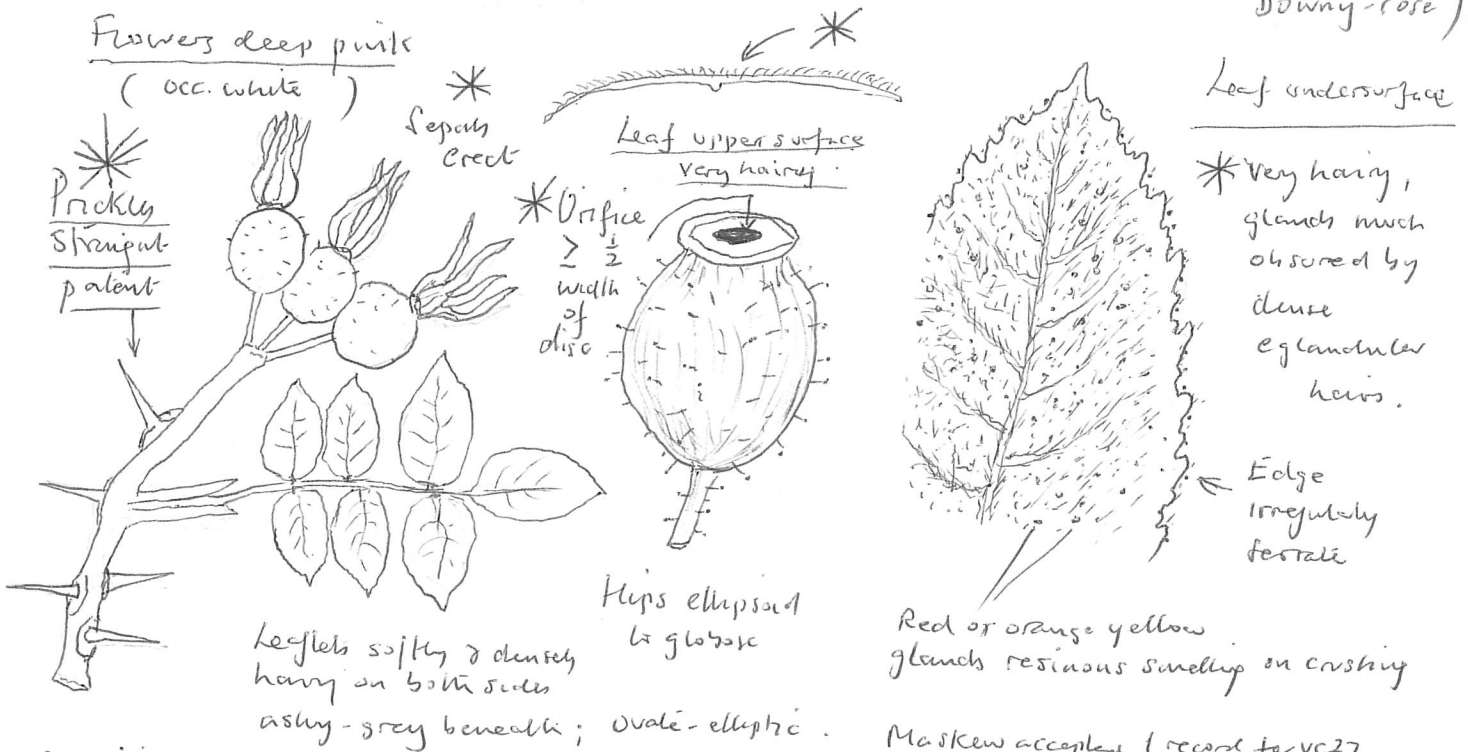
(6) | Prickles straight or near straight |

Stems without acicles; hips broadly ellipsoid to globose
 1-2 cm across; leaflets smooth on top and densely
 hairy, with dense resinous smelling glands, beneath,
 & on leaf edge.

Rosa mollis

Erect & sometimes suckering forming dense thickets on occasion. (Soft Downy-rose).

Flowers deep pink
 (occ. white)

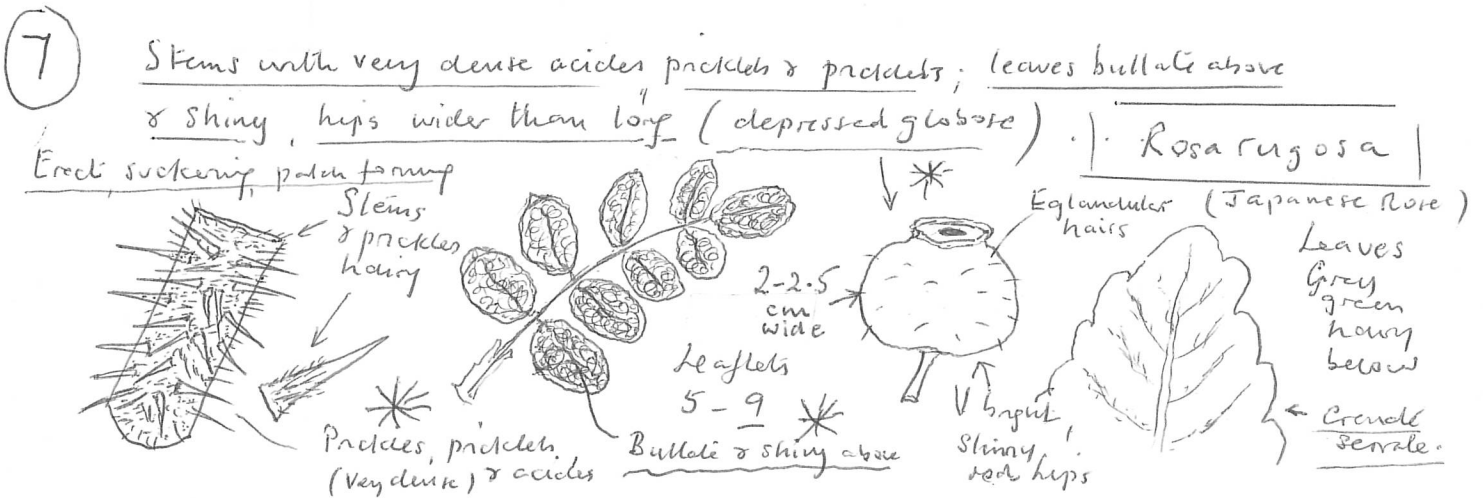


Native; heathrows, woodland rides & sinks or 22 records in B & B are increased.
 A northern & western species, few even in Yorkshire (2020 Atlas) None in Suffolk.

(6) | Prickles straight or near straight |

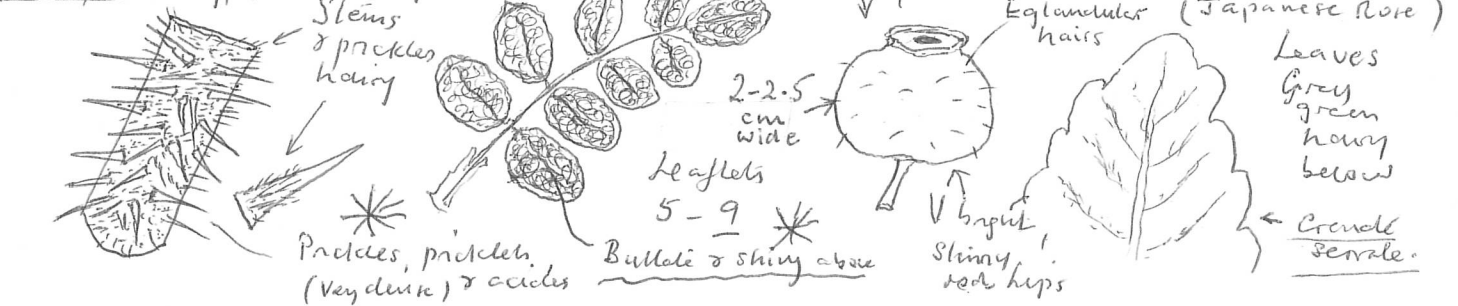
Stems with acicles & pricklelets, hips depressed globose to globose-ovoid
 0.8 - 2.5 cms wide

7



Stems with very dense acicles pricklelets & prickles; leaves bullate above & shiny, hips wider than long (depressed globose)

Erect suckering, patent forming



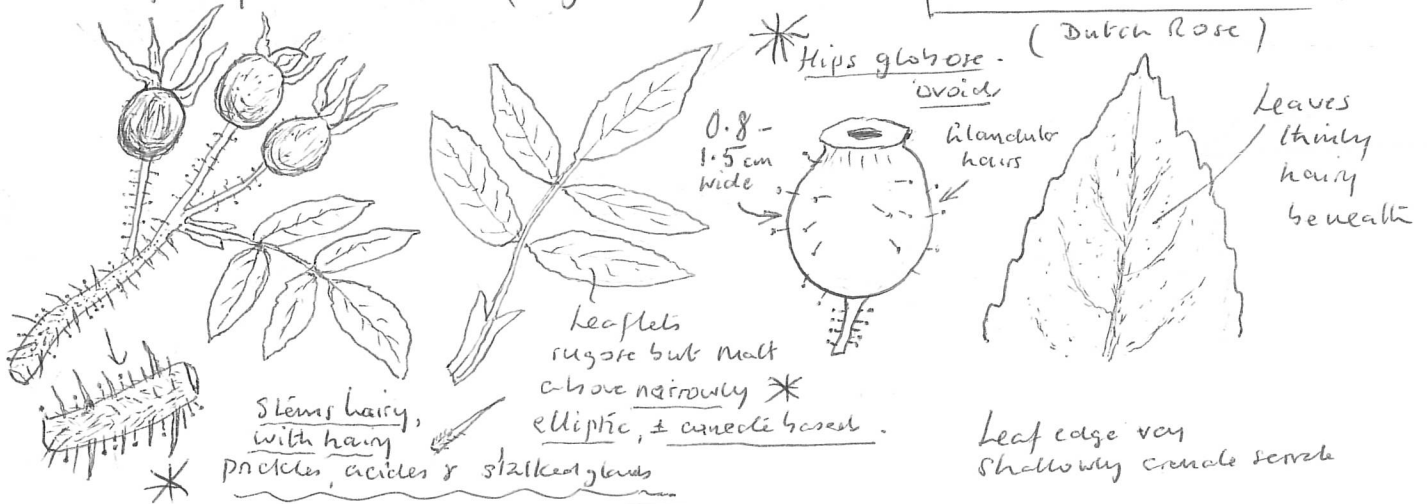
Rosa rugosa (cont) Popular ornamental, much planted & widely naturalized, sometimes invasive, on dunes, rough ground, banks & waste; E Asia (Japanese rose)

(7) Prickles straight- or near straight cont;

Stems with fancy sparse prickles & acicles, plus long stalked glands; leaves rugose but matt above; hips small (0.8-1.5 cm) usually ± longer than wide (± globose).

Rosa "Hollandica"

(Dutch Rose)



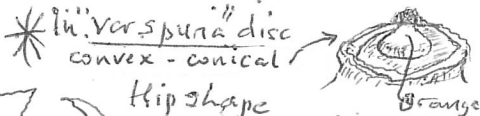
Neophyte naturalized; outcrop or relic on roadsides or waste, or in hedges. A hybrid between *Rosa rugosa* & some other species.

Prickles well curved to hooked :-

(8) Completely glabrous, or with glandular hairs confined to undersurface midrib of leaflets; or with glands confined to stipules 9

(8) Leaves with more widespread glandular hairs &/or glands, on petioles, rachis, or leaf undersurface/edge 10

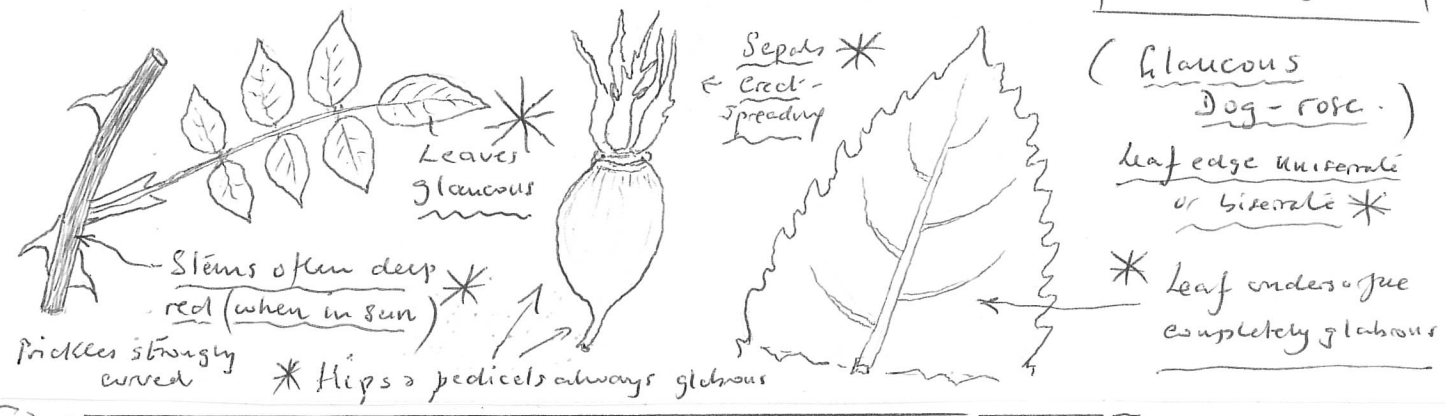
(9) Leaves mid-dark green, usually shiny above, not glaucous & seldom with red stems



Rosa canina (Dog-rose)



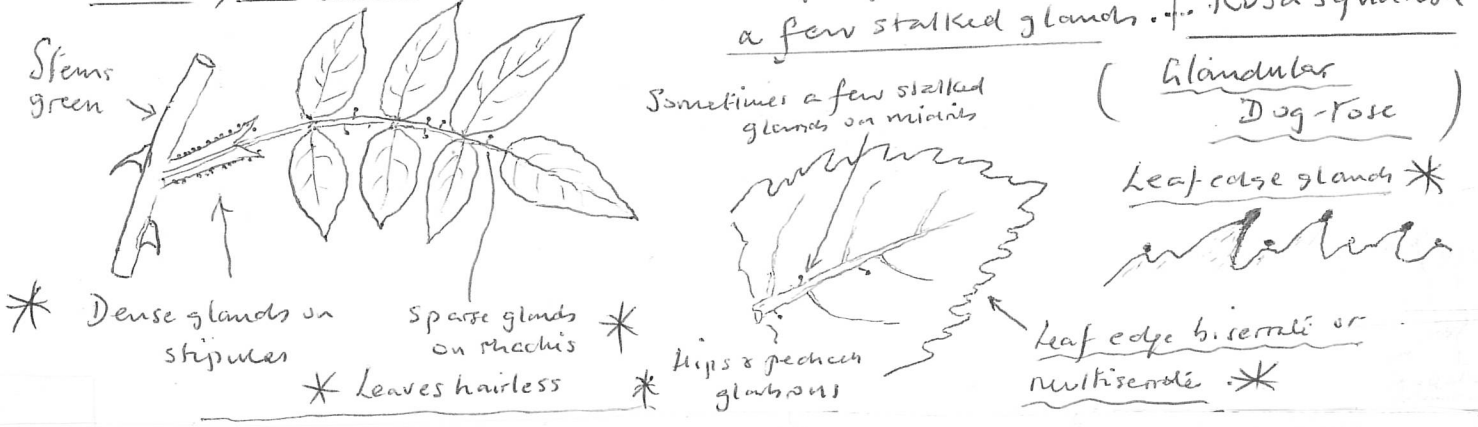
(9) Leaves glaucous, especially beneath, ± slightly rugose, stems often deep red, sepals erect or spreading, persistent... | Rosa vosagiaca |



(10) Rosa canina like roses with slightly more glands or hairs | ... 11

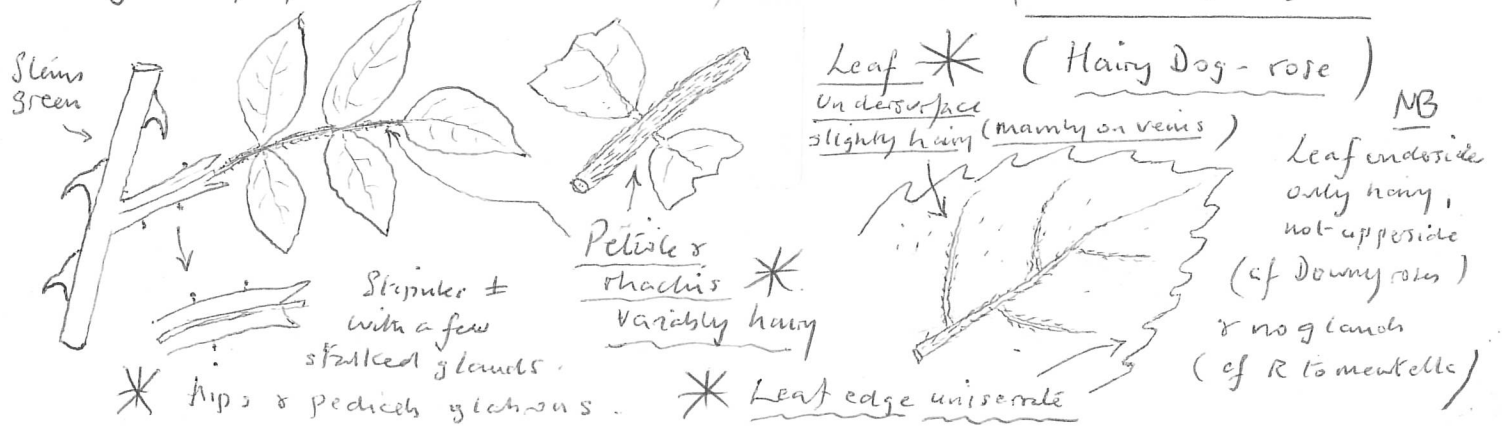
(10) Roses with quite dense hairs and glands on at least the leaf | ... 13

(11) Like Rosa canina, except more glandular; leaflets bi- or multiseriata, with small red glands on teeth; stipules densely fringed with small red glands; petiole rachis, and sometimes lower side midrib of leaflet, with a few stalked glands... | Rosa squarrosa |



(11) Like Rosa canina but with some hairiness away from leaf | undersurface midrib | ... 12

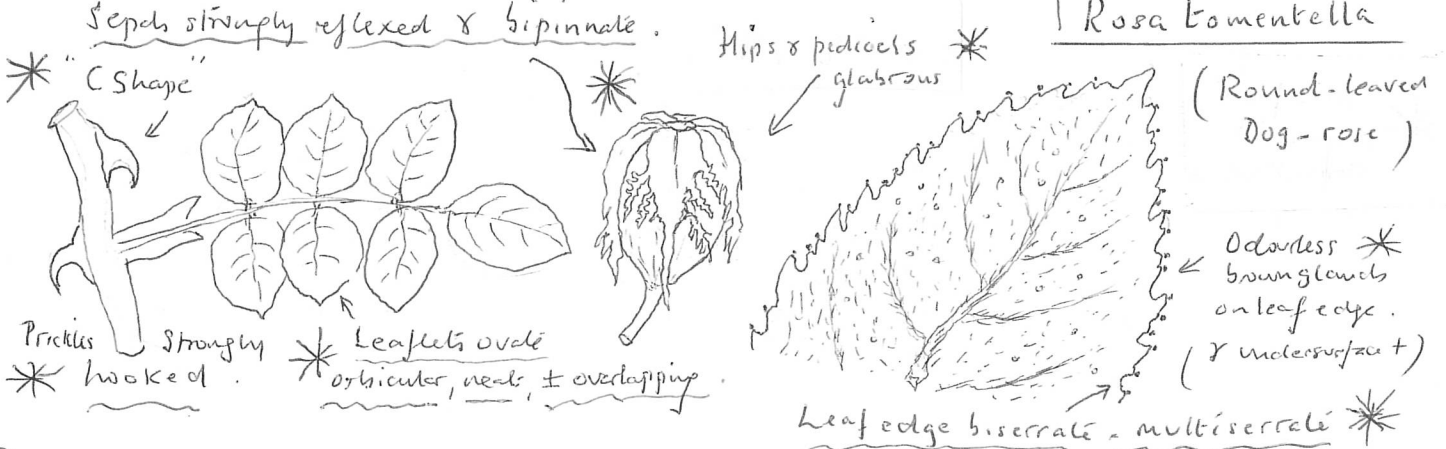
(12) Petiole, rachis and underside of leaflets variably hairy, leaflets eglandular uniseriate; stipules occasionally with a few stalked glands; pedicels 1.0-2.0 (2.5) cm. | Rosa corymbifera |



(12) Undersurface of leaflets hairy; hardly glaucous but somewhat rugose above, uniserrate or biserrate, with few or 0 glands; - *Rosa caesia*
flowers deeper pink than *R. canina*, & sepals erect to spreading (Northern Dog-rose)



(13) Leaflets broadly ovate - orbicular ('heart looking'); similarly hairy but also with odorless brown glands on undersurface & edge; often hairy above as well; edge of leaf biserrate - multiserrate; prickles strongly hooked, with curve forming semicircle;
Sepals strongly reflexed & bipinnate.



(13) Hips and pedicels usually glandular; leaflets ovate-lanceolate, with glands on leaf undersurface and edge, densely hairy above and below (Downy Roses) or mainly below (Sweetbriars) 14

(14) Leaf glands large, pale brown/buff; usually smelling of apples when rubbed, upper leaf surface sparsely hairy or glabrous, lower with prominent glands and rather sparse hairs 15

(14) Leaf glands small, dark red brown, may smell resinous, (Sweetbriars) but mainly in *R. mollis* (see earlier), and hardly in our two Major species (*R. tomentosa* & *R. sherardii*); upper surface of leaves densely hairy and undersurface glands obscured by hairs 16
 (Downy Roses)

15
Sweet-briars

(i) Erect and often free standing; pedicels & hips glandular hairy; stems without inflorescence with mixture of prickles, pricklets & acicles ("unequal prickles"); styles hairy; apple smelling glands on leaf undersurface & leaf edge profuse, hairs sparse & mainly on veins; sepals erect or spreading erect, persistent. . . . Rosa rubiginosa

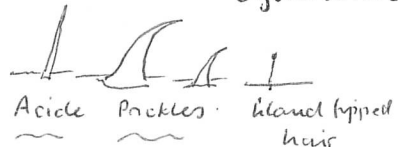
Flowers dark pink

Lower stem

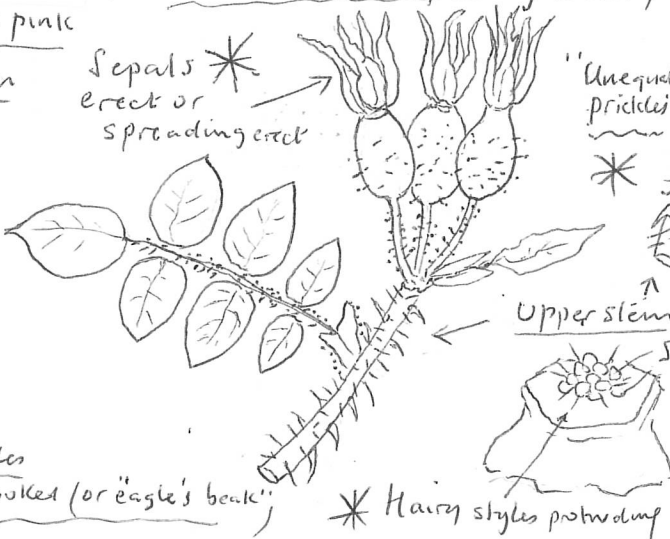
Sepals erect or spreading erect

"Unequal prickles"

(Sweet-briar, eglantine)



Larger prickles strongly hooked (or "eagle's beak")



Native; frequent, on chalk & limestone mainly, occasional in hedgerows elsewhere (? planted)

(ii) Climbing and arching; pedicels and hips glandular hairy; prickles ± equal sized, sparse, & no acicles; styles virtually glabrous; weakly apple scented or scentless glands profuse on leaf edge & undersurface; sepals mostly reflexed, falling before hips ripen; Rosa micrantha

Flowers pale pink

Pedicels & hips glandular

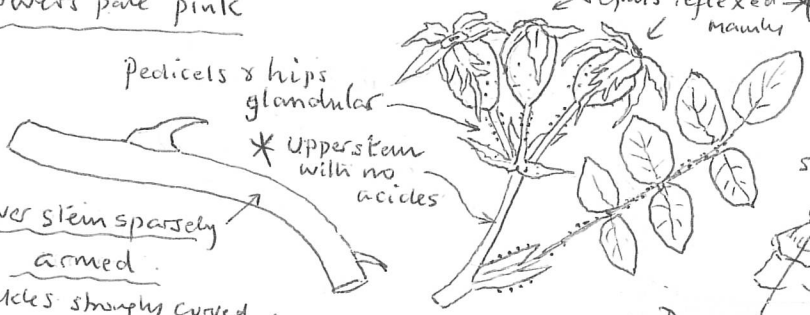
Sepals reflexed mainly

(Small-flowered Sweet-briar)

* Lower stem sparsely armed. Prickles strongly curved.

* Upper stem with no acicles

* No stylar hairs



Disc convex

(iii) Erect; pedicels & hips glabrous; leaflets cuneate at base and narrower; prickles very stout based & deltate; leaf indumentum much as in R. rubiginosa & R. micrantha. . . . Rosa agrestis (Small-leaved Sweet-briar)

Flowers white or pale pink

* Pedicels & hips glabrous

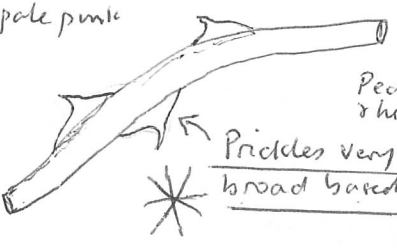
Sepals reflexed

Leaflets with ± cuneate bases & acute tips

* Prickles very broad based

* No acicles, upper stem ± unarmed

Leaf edge & undersurface indumentum as for (i) & (ii)



16

(i) Leaflets densely hairy on upper surface as well as below;

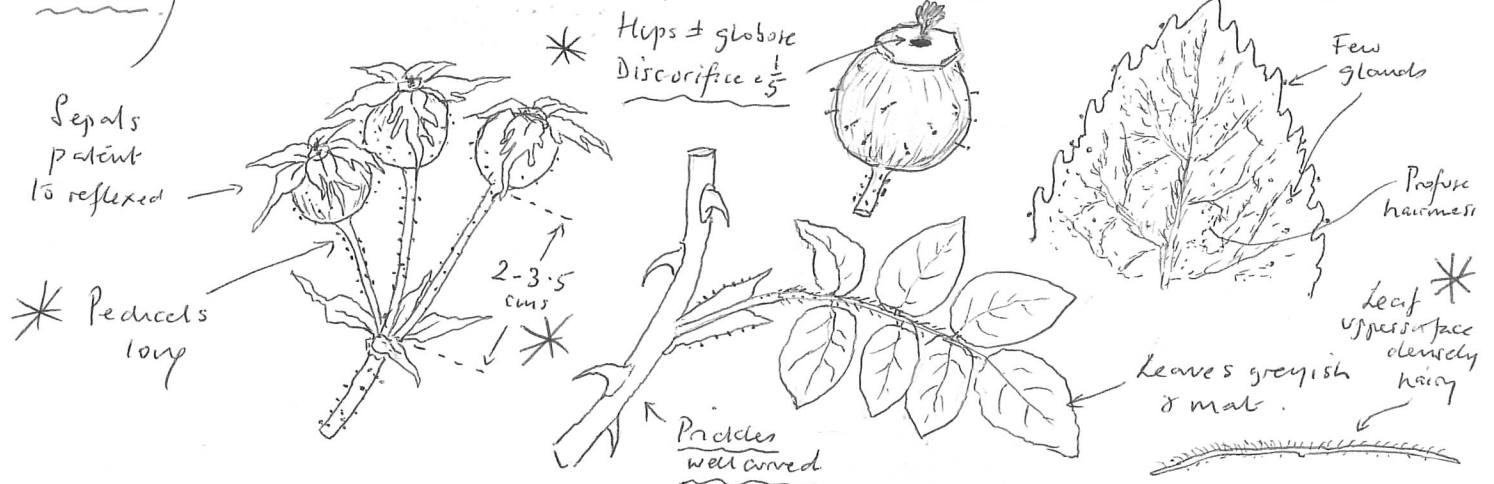
very small & dark red brown glands on leaf edge & undersurface ± obscured by hairs and hardly resinous smelling; sepals patent to reflexed falling before fruit's ripe; disc orifice c $\frac{1}{5}$ th of disc width; pedicels long (2-3.5 cms)

Arching; flowers pink (occy white)

Rosa tomentosa

(Marsh Downy-rose)

Downy roses
See earlier for Rosa mollis, which has straight prickles



Native; hedges, scrub & woodland sides, mainly on the boulder clay S. of Norwich (Records of R. mollis for this area in B & B are incorrect ~ R. tomentosa is frequent in N Suffolk and R. mollis absent.)

(ii) Erect; leaflets similarly hairy on upper surface and below; and glands similar, but with rather more resinous smell than R. tomentosa (though less than R. mollis);

sepals erect-spreading, more persistent; disc orifice c $\frac{1}{3}$ rd of disc diameter; pedicels mid. length (1-1.5 cms) - not so short as in R. mollis; Prickles less curved & more slender than in R. tomentosa

Rosa sherardii

