



WITH CARRIE THOMAS

# AQUILEGIA

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# Contents

/ p. 5 :	/ p. 18 :
PREFACE	04
<i>Why aquilegias needed a whole book to themselves.</i>	<i>Ideal conditions for aquilegias to thrive.</i>
/ p. 7 :	/ p. 20 :
ABOUT US	05
<i>The expert, Carrie Thomas.</i>	<i>Growing aquilegia from seed.</i>
/ p. 9 :	/ p. 23 :
01	06
<i>Why I love aquilegia, and why you should too.</i>	<i>Breeding: The creation of colour.</i>
/ p. 12 :	/ p. 29 :
02	07
<i>A note on naming.</i>	<i>Seed sowing.</i>
/ p. 16 :	/ p. 30 :
03	08
<i>Aquilegia as a cut flower.</i>	<i>Aquilegia sadness.</i>

PREFACE

There are few plants that I would write a whole book about. Bearded irises already have a book (joint authored by India Hurst of Vervain) and there is one in progress on roses with Becca Stuart of The Garden Gate Flower Company. But irises and roses are big, blowsy, celebrity types of flowers.

So why aquilegia?

Partly out of cussedness, because I found them so tricky to germinate and to grow intentionally, even though they self-sow quite happily. But mostly because I find them utterly fascinating. Their form is unlike anything else in the cutting garden. Some are cute as a blackcurrant button, some are regal and elegant and sweeping. All are beautiful.

This book relies heavily on the expertise of Carrie Thomas of Touchwood Aquilegias and I am so grateful for her time and her generosity when I visited her collection on May. What she doesn't know about aquilegia isn't worth knowing, and I have distilled the essence of it all into this book. I hope you love it.

With love

Grace



## *About us*

*Carrie Thomas:* Carrie is a keen plantswoman, particularly interested in sowing seeds of unusual, gardenworthy plants, sowing several hundred types each year. Her seed company, Touchwood, supplies seeds of cottage garden favourites as well as rarely offered items. A gardener since a young child, her passion for plants really took off when she had her first house and garden. Carrie is a qualified teacher, and has an honours degree in Botany and Zoology from Swansea University.

*Grace Alexander:* Grace knows a bit about the need for escapism. When she isn't packing seeds, turning a back lawn into a kitchen garden, writing books, fermenting compost tea or debating the pros and cons of yellow Pompom dahlias, she is an expert witness psychologist in the UK family courts. The days might be a bit grim, but the weekends are filled with dogs, tea, flowers and the wondrous experience of life in a flower farm.





## 01

## WHY I LOVE AQUILEGIA &amp; WHY YOU SHOULD TOO

I am fussy about my flowers. You should know that by now. I like the bold, the brave and the little bit different. I don't like pink, and I only like orange if you could describe it with the word 'burned'. I like texture and depth and a little bit wild. I am not one for tidy. I am not one for obedient.

Aquilegia is completely different to any other flower I can think of. Nothing else that I can think of comes close. There is the unusual hooded shape, ranging from the true granny's bonnet of the cottage garden singles, to something that looks like it would be more at home at Paris Fashion week in the pleated doubles. Many flowers get messy and scrappy when they double too much (although I have yet to say no to any dinnerplate dahlia) but I find the aquilegias only get more interesting and more intricate.

And then there are the spurs. Anything from curled claws that give them their name (from the Latin, aquila meaning 'eagle', the petals being suggestive of an eagle's claw), to little

nectar filled stubs to the impossibly showy sweeping long tails of the *A. longissimi*. I love those ones.

A side note. If eagles are a little aggressive for this beautiful cottage garden stalwart, then call them a columbine. The petals, when looked at from the base, are said to look like five doves sat in a ring and the name columbine derives from 'columba' meaning 'dove'. I tend to use 'aquilegia' as their common name in conversation though, and I shall do so in this book.

And to be fair, it is likely that aquilegia are subject to closer inspection than many of your cottage garden staples, coming as they do in that tricky, gorgeously green but florally sparse period just after the tulips and before the peonies. You may find it easy to ignore them in July as they pop up like weeds under the hedges and in the vegetable beds, but you will be grateful for them in May.

So their beauty makes me grow them, as well as their generosity in arriving when we need them most, but what makes them really compelling for me is their variability. It is well known that gambling is addictive because of its inherent unpredictability; you keep turning over the cards because glory and riches just might be in that next hand. With aquilegia, their seeds so rarely come true that every sowing is a gamble. They might be pink or blue, streaked with whites or (rarely, and only if you are also growing the American varieties) yellow. The two-tone ones, like magpies, are an especial treat.

In this guide I will cover types and forms, how to germinate and how to grow. For the reckless and the lucky amongst us, I will cover how to breed and to cross pollinate. For the less fortunate, a chapter on what might go wrong.

Welcome to the cheerful world of the columbine.

”It took me many years to decide that the aquilegia was my favorite flower. And then I started collecting them and growing them from seed and breeding them.

Now, it’s an obsession; I can’t *not* do it. It’s the fact that each year I am still wowed, because there’s new forms and new ways of combining what you’ve already seen.

There’s always something new.”

· *Carrie Thomas*



## 02

## A NOTE ON NAMING

All flowers within the genus *Aquilegia* have five-petaled flowers that have long, backward-extending spurs as pouchlike extensions of the petals, which contain nectar. Sepals and petals are brightly coloured. The leaves are usually rounded and notched. I have always been rather fond of the leaves.

So far, so good.

There are a number of species of *Aquilegia* with which you are likely to be familiar. *A. vulgaris* is the common European columbine, the one that crops up in cottage gardens and woodland edges.

There are the big, more open, American ones, *A. caerulea*, with their showy long-spurred flowers in a variety of colours ranging from white to yellow, red, and blue, and the softened butter-yellow *A. chrysantha*.

Less showy in form (think tall but narrow pork pie hat, rather than full granny's bonnet) if not in colour, the wild columbine of North America (*A. canadensis*) is red with touches of yellow.

Now usually, different species do not cross. You can grow a butternut squash next to a red kuri because although they are the same genus (*Cucurbita*) they are different species. Not so with the aquilegia.

Essentially, if it is an aquilegia growing next to another aquilegia, it is going to mix and mingle. As a result, I will generally just call everything an aquilegia and not try terribly hard to distinguish between one species and another.

Funnily enough, once we get to the level of varieties, things start to clarify again. There are a number of sorts of aquilegia (known as 'series') that breeders have produced and which seem to be quite consistent. I have a number of 'Spring Magic Yellow', which is a form of *A. caerulea*, although it also comes in pinks and whites.

I have acquired a denim blue pom-pom that I fervently hope is something from the unfortunately named 'Winky' series, a 'Winky double dark blue-white'. Such a fabulous ruffled appearance, such an absolutely dreadful name.



What I am trying to say is that identifying aquilegia is an absolute minefield.

Even when I buy seed, I have no idea if it is going to be what it says it is, and once I have planted it, goodness knows what it is going to cross-pollinate. Yes, I am just getting my excuses in early; many of the pictures in the guide are just flowers that caught my eye in my garden or in the vast collection of Carrie Thomas in Swansea.

Just please don't ask me what they are.





## 03

## AQUILEGIA AS A CUT FLOWER

A short chapter, as aquilegia are stoically trouble-free in the cut flower department.

In my view, aquilegia can add something very special indeed to a bunch or a bowl of flowers. Their unusual shape adds interest to rounder focals and more linear foliages but, to my mind at least, their super-power is lifting a whole colour palette. The tones of aquilegia are zingy and yet they seem to shift and change in the presence of others. Perfect for transitioning or emphasising colour,

They last a long time in the vase, have the most elegantly fine, long stems (and Sarah of Simply by Arrangement swears that the secret to gorgeous floristry is to start with very thin stems), and have no complicated conditioning requirements. You can sear in an inch of boiling water if you want to, but I don't bother.

Harvest just as the flowers are opening for the longest vase life. Some varieties do seem to last a little longer than others, but all the ones I have trialled have given four to five days if the water in the vase is changed and it is kept out of direct sunlight.

For the best crops for cutting, Erin Benzakein of Floret recommends treating them as biennials and replanting fresh stock each season means a much greater harvest each spring. In the USA, older plants seem to succumb to disease after a year or two, and their self-sown plants aren't numerous enough for a meaningful crop.

If, like me, there is absolutely no way you could grub out self-sown ones, or dig up established plants, then you might have to just accept that you don't have the most productive plants, or the most consistent varieties. Generally, I find in my mild and sheltered climate, the clumps just keep getting bigger and better. However, as I am not growing on any professional scale and joy is more important than productivity, I am just going to keep buying seed that catches my eye, and then letting whatever comes up do its thing.

Oh, and talking of seeds, the interesting jester's hat form of the seed pods are wonderful dried.





## 04

## IDEAL CONDITIONS FOR AQUILEGIA

Grace: *What are the ideal conditions? If somebody wants to grow aquilegia what the ideal conditions that they would want?*

Carrie: They're pretty good at coping with whatever they find. They self-seed in places you'd never believe was possible, such as little cracks in the paving stones or in paths, so they can cope with an awful lot. The received wisdom is that they grow in moist conditions and on the edges of woodland, but I think the UK is just particularly good at giving them the conditions they want. Fairly mild and lots of rain, which we've certainly got here.

Carrie's garden is in South Wales and so yes, she has plenty of rain. As do I, although I find aquilegia to be gloriously forgiving in terms of their growing conditions. However, as with so many things, there is a difference between surviving and thriving. I have self-sown aquilegia in the cobbles at the front of the cottage and they are so utterly beautiful but they are also tiny, the height of a mug at best. In the kitchen garden, where the soil is richer (although not as glorious as the field),

then they are up to my waist. Some of this (see above) is about the variety, some of it is about the soil, but I am also of the view that aquilegia really does need a lot of water to reach its full potential. If we have a very dry early spring, a bit of watering will go a long way.

I know this because I bought some aquilegia in pots and then put them on my raised table display of historic tulips. Then we had a very hot spell and my lovely new aquilegia looked very sad indeed. I put them in the shade in a tray of water to see if I could rescue them. You absolutely shouldn't leave plants in standing water by the way, but I have a terrible habit of forgetting them. Anyway, every single pot blossomed into a whole new happy flush of flowers. I really do think they like moist.

The other thing to bear in mind is how mild the winters are where you are. Aquilegia are generally quite hardy and if you can overwinter them, the third year plants will be more prolific and beautiful than ever. Once of a decent size, they are hardy to -15 celsius but seedlings that are still young might give up at the first sign of a chill.



## 05

## GROWING FROM SEED

*Grace: What are your tips for germinating aquilegia seed?*

Carrie: I am always being asked that and my first response is like, is there a problem?

*Grace: Yes. It's like sourdough, isn't it? Those who have cracked the code go 'I don't know why people find so difficult.'*

Carrie: Firstly, don't be impatient. It's not going to come up like cress. At this time of the year, May, it's going to be as quick as it ever is but you should still expect a month. Many people say they needs a period of cold to germinate. I don't know, because I always sow at this time of the year [May] and I've never had issues. Sometimes I have sown as late as the end of June but it's hard to get them big enough to come through winter to flower the next year. The later you sow, the more likely they are to just be too small to survive the cold. That said, if it's been an early flowering plant, I've actually sown the seeds that first year and then got my own plants the next year.

But typically I will sow mine anytime after Christmas and then just wait. If you sow in December and January, expect them to take

three months to come up; it's not until it starts warming up and the days are longer that they'll germinate. But in the meantime, you've got that job out of the way when there's probably not a lot of else to do on a rainy day in January.

*Grace: And you do all yours outside?*

Carrie: Yes. We don't have a greenhouse, I don't have a cold frame. I do keep them usually in trays and up out of the way of cats, but they are very much outdoors.

*Grace: I do have a greenhouse and I found that not putting them in full sun made a real difference. Maybe I was impatient, maybe they would have come up anyway and I just hadn't waited long enough, but when I put them underneath the staging so they were a bit shaded they really started popping up. I was also obsessive about making sure they didn't dry out.*

Carrie: That's really important. You've probably read that I did an experiment and it came with very good results, but for the totally wrong reasons. I love it when that happens. So the books will say do not cover seeds because they need light. I've always very gently covered them so you can barely see the

seeds. You might see one or two, but most of them are just about covered.

And so I did an experiment where in little three inch pots, half of them were covered and half of them were not. We went away at the end of February to Snowdonia. It was absolutely beautiful weather, beautiful blue skies in Snowdonia. I did have a green house at that time to keep the cats out and I found that up until then I hadn't needed to water them but whilst we were away, the tops of them had dried out.

So I watered everything, the ones that I had covered slightly, germinated in a lot of pots whereas the ones that had been uncovered didn't. My interpretation would be that, just at that point of germination, they dried out then and having a slight covering was enough to stop it killing the germinating seeds. I think that's more important than whether they have light or not; you just need to make sure they are in a place where they won't dry out.

*Grace: I will now always make sure my seed trays are covered, but not sealed. Even in a small tray, just putting a plastic cover over it to keep in the moisture has made all the difference.*

Carrie: Putting them in a plastic bag can help, but sometimes you can get too damp and wet they could come up and damp off.

The one thing we didn't mention in this interview is possibly even more important than consistent moisture, and that is freshness of the seed. It really does matter with aquilegia and its fickleness in storage is one of the reasons that I don't stock it in my shop. It is also why you can have aquilegia self-sowing round your garden like a weed, but not be able to germinate the seeds of a variety that you would really like.

The solution?

Buy a couple of plants that you adore and then let them do the work. It is quite likely that they won't look exactly like the parent plant (more of that below) but you will at least have them in abundance.





## 06

## THE CREATION OF COLOURS: BREEDING

Carrie: It took me many years to decide that that was my favorite flower. And then I started collecting them and growing them from seed and breeding them. Now, it's an obsession; I can't not do it. It's the fact that each year I am still wowed, because there's new forms and new ways of combining what you've already seen. So there's always something new.

*Grace: I'm having quite a difficult relationship with at the moment, because yes, I can absolutely see the magic of every year, something's new and exciting, but part of my business is that I sell seed and the idea that these plants might just magically cross and produce something new and interesting. I feel that's probably really good for me to embrace that, but at the same time, I can feel myself feeling a bit anxious about not being able to control what's going to happen. It feels like there's a lesson in there for me somewhere...*

Aquilegia are notoriously promiscuous. Indeed, the naming of cultivars is difficult as so many wrongly named plants and synonyms (same name for what appears to be the identical plant) exist.

Particular trouble stems from Aquilegias needing to be raised from seed, rather than being vegetatively propagated from cuttings and divisions (that is, they are clones) as most Plant Heritage collections are. Seedlings always show natural variability, but it is compounded in two ways with Aquilegia hybrids.

Firstly, the plants are able to easily cross-pollinate between the species (and cultivars), and so, as seed production is invariably by open pollination, bees are busy cross-pollinating and ensure liberal mixing of genes in the next generation. Offspring are thus unlikely to resemble the seed parent in all aspects. Very little seed production is carried out under controlled conditions, which is done by growing the parent plants away from other Aquilegias, ie, outside bees foraging areas.

Secondly, cultivars are complex hybrids, and may contain many recessive ('hidden') genes. This means that even if a plant was 'selfed' (that is, its own pollen used to fertilise itself and so produce seed), not all progeny would look the same. This is because offspring will show 'throwbacks' where recessive genes are





exerting their effect, in the same way that two brown-eyed parents can have a blue-eyed child. For example, I (Carrie) 'selfed' a beautiful crimson & white pom-pom Aquilegia to discover its offspring were very variable indeed! The recessive genes showed up as single forms, less-than-pom-pom double forms and even plain crimson rather than bicoloured. The permutations were numerous.

*Grace: My very first aquilegia to come out each year is a very deep sort of indigo blue, but the flowers are always deformed on it. You mentioned that bees might be getting in the spurs, but I don't think it is that, they're just twisted. Is something wrong with it?*

Carrie: There are some flowers can't make up their minds about what they are and sometimes do get crosses that are not quite one or the other. There is such a range of shapes, such as the *A. stellata* which almost doesn't look like an aquilegia anymore, or you can get clematis flowered or star flowered which is totally flat faced. Sometimes with aquilegias that may have crossed with other ones and it may not be one or the other. I'm wondering whether it's that? It's not a clean, clear shape.

*Grace: and that's just because they've crossed with other things and then it hasn't quite got clear enough path to know which one it's going to be? It's not dominant in one*

*way. It could also be growing conditions. It is growing in a crack in the wall, it is probably not having a great time.*

Carrie: It takes a lot of energy to flower.

*Grace: I didn't put it there to be fair. So just thinking about how different types of aquilegias cross, is there a dominant sort of aquilegia? If you grow lots of them, will they tend to revert to a particular type? I have a lots of the sorts of pink/lilac, quite vintage looking singles. If I leave them long enough, will all the self seedlings will go to that?*

Carrie: Yes and no. It depends... What is the main one in your garden? They'll always be the tendency that those seedlings are going to be in other colours, even if you've got a darker colour, it's probably got recessive genes in its colour.

So, if you don't want that colour, allow them to flower but get rid of all of the stems full of seed pods, before you allow them to drop. And vice versa, if there are flowers you do like, leave those to self-sow. I would say if there's ones that you really don't want the colours of, root them out, but people don't want to do that. But you can encourage it to go in the right direction by allowing the ones that you want to self sow and stopping the other ones. But having said that you probably got a huge seed bank of seeds in your soil stretching right the way back...

The other thing is if you want to collect your own seed then it's really important to have

labelled them when they were in flower, because you won't remember. So just make sure that you label, or you could have a colour system of ones that you're going to snap off when they set seed.

*Grace: A little bit of red thread goes a long way I always find with marking pollinated flowers that I want to keep the seed from. But you mentioned you are intentionally breeding them. So we were just talking before about mixing the American ones with the British colours and shapes?*

Carrie: So I'm trying to bring in the American colours, they've got a clearer blue and they've got yellow. With all of ours, if there's a second colour, it's always white or two tones of the same colour. And so, yes, I'm bringing in the yellows, but I'm also bringing in the size and the doubles crossed with the American ones. So you get the size and you also get often the long spurs on them.

*Grace: Yes, which are not native to the UK, because we don't have pollinators that can reach that far. I guess we're just talking about hummingbirds and the very different spur length.*

Carrie: Hummingbirds are actually a fairly short and fat because it's the tongue that goes in. It's the moths that pollinate the big long spurs usually.

*Grace: I mean, we are surrounded by bees. I don't know if it is the echium or the aquilegia it feels like the whole*

*garden is moving slightly because of so many bees here. So when you're intentionally breeding, can you just talk me through how you do it?*

Carrie: Basically, I select the plant or the pair of plants that I want, and then it's either going to be 'selfing' it, which is using its own pollen to fertilize itself or I'll be crossing it.

So when you have decided which ones you want to cross, then you have to write it down. You always put the mother plant first because the one thing you can be sure of is the mother plant, because that's the one you collect the seed spike from. However, even if you're bringing in the pollen from close by, you can't always be sure that you've been the one to pollinate it.

*Grace: As in, you might have missed a bee or someone has got there first?*

Carrie: Exactly. So this is how you do it...



1) Once you have chosen your mother plant (the one that is going to bear the seeds), find a flower that hasn't quite opened yet, and which definitely hasn't already been fertilised. Look for a soft, light-coloured inner, no swelling, and with soft, long fibres coming from the top of the inner.

2) Remove all the petals (this makes it essentially invisible to bees!) as well as all of the bright yellow stamen which hold the pollen.

3) Choose your father plant. It needs to be fully open and have lots of loose yellow pollen. If you have one you really like but it seems to not be producing much pollen, cut the flowers and put it in a jar in the house; it probably will be producing it, but the bees are taking the pollen just as fast as it is coming.

4) Dab the pollen onto the fluffy fibres on the mother plant.

5) Label. The convention is to name the mother plant first, father plant second.

6) Wait for the seedhead to form, to swell and then dry. Sow as soon as it is ripe.

## 07

## SEED SAVING

This couldn't be easier, it really couldn't. If you leave them to it, aquilegia will do all the work for you. However, if you want to either curate your collection or to share your favourites with friends, this is what to do.

Firstly, identify which plants you want to save seed from early in the season. Aquilegia all look exactly the same once the petals have gone and you think you'll remember which is which, but chances are you won't. Either cut down those that you don't want before they have chance to set seed (if you are ruthless, dig them out) or tie a piece of red wool around the ones you like the most.

Secondly, maximise the quality of the seed by letting the plant form one or two really good, big seed pods, rather than lots and lots of smaller ones. Just cut off any that appear after the first two on the main flower spike.

Thirdly, watch them carefully as the seed pods swell. They will turn brown and then split open from the top, spilling their precious seed. You can catch them at their ripest but before they explode by listening for the rattle. As the seeds and their casing dry, the sound that they make when you shake them changes. As soon as they rattle, cut them.

You can then bring them indoors to dry for a little while, and the seeds should then come loose quickly and easily. Once the little black seeds are in your hand, you can sprinkle them in other areas of your garden, raise them in pots, or put them in envelopes and share.

## 08

## AQUILEGIA SADNESS

*Grace: One of the questions I had was about a mystery. A Gather member said she had lots of aquilegia just self sowing around and one year they suddenly disappeared. Just disappeared. Do you know what that might have happened?*

Carrie: Aquilegia Downy Mildew.

*Grace: What is Aquilegia Downy Mildew?*

Carrie: It came out of nowhere in about 2013, 2014 around that time. And it's killed lots of plants in the UK. There's no stopping it.

Up to then I'd mainly grown from seed, which is fairly safe, although not totally. But I was being more successful in my business and so I was going out and buying some of those big, long-spurred types. The hybrids that I couldn't get through the first winter outside in Swansea. And I evidently bought Aquilegia Downy Mildew in on some of my plants.

I didn't know anything about it because I'm a big believer generally in the garden of turning a blind eye to anything that doesn't look particularly ok. Generally, plants can cope. So I evidently didn't look closely at my

aquilegias and didn't realize the symptoms.

When I lost mine, it was just one spring. It was like where've they all gone? There were hundreds in that front garden, especially. It took me a long time to work out what the problem was. I asked the mycologists I was referred to, and the RHS, and they finally both gave me the answer on the same day. Aquilegia Downy Mildew.

It had been known about but not described, there was nothing online at all. They were pretty blasé. 'It's Aquilegia Downy Mildew, we've known about this for a couple of years', but that was it. There was nothing that you could use. No way of combatting it. I think the RHS didn't realize at the time how devastating it was because it was only home gardeners.


I decided to put something online and it took me months. I mean, months to actually describe what I was seeing. How do you describe a plant that crumbles and dies? How do you describe plant that just never came up the next year?

So it took a long time and I had no idea what had happened. I'd thought it was a mosaic virus to start with because that's what the initial symptoms looked like. It's almost like you're trying to describe two separate diseases. The initial one where it's inside the leaf in a hidden way, but it's discolouring the leaf slightly yellowy green, and then they come up with jagged, angular edges. But then sooner or later it will become systemic and new leaves come up infected, totally infected.

The new leaves are a very white colour and they're deformed. I've got pages on my website about it describing the shape. They've got longer leaf stem. They've got smaller leaf surface area. The leaf is more divided again.

But there is nothing you can do about it. I was trying a copper fungicides on things but there is nothing. Just pull them out, including the soil around them and get rid of them, burn them if you can, which isn't usually possible although the RHS said that otherwise the council recycling should reach the high enough temperatures.

*Grace: How devastating. I do recommend if anyone is worried to go and look at Carrie's website. I know of some other gardens, such as Nant-y-Bedd that have suffered from this as well. It is good to know that using seed seems quite safe as I have sourced and grown a lot of aquilegia seed this year.*

A close-up photograph of purple aquilegia flowers on thin stems against a dark background. The flowers are the central focus, with some in sharp focus and others blurred in the background. The lighting is soft, highlighting the delicate structure of the petals.

*& that is everything I know about aquilegia.  
A huge thank you to Carrie Thomas  
of Touchwood Plants.*