

HARDY GLADIOLUS PROJECT OF CULTIVAR.ORG

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INTRODUCTION

Cultivar.org's project to work on hardy and sometimes dwarf garden cultivars has two major focuses. The first is the **enumeration of all hardy taxa to USDA 6-7** and clarification of their history and descriptions. The second aspect is to **make both random/mass and controlled/named crosses** and evaluate those seedlings for possible naming and distribution. We will be using available collections in our area and those assembled at the homes of our partners.

The main goals for the breeding project are to achieve named clones as follows:

1. Clones with both mass market and collector's only interest
2. Emphasize true, inground USDA 6-7 hardiness, moving towards USDA 5 potential - thus the true perennial glad with no need for winter protection or storage
3. New flower color combinations
4. Clearer color pigmentations and markings
5. Addition of floral scent to familiar, existing Nanus Group phenotypes
6. Reliable winter hardiness in a consumer-friendly, no fuss inground culture (ie. no special winter mulching, no extreme planting depths) with no more maintenance than classic, hardy herbaceous perennials and most winter hardy of geophytes.
7. Incorporating traits of Large-flowered, USDA 7-10 hardy cultivars with traits of Nanus, Covillii, Tubergenii, dalenii, and other groups
8. Overcoming cytological breeding barriers among taxa that are known to range from $2n=20$ to $2n=138$
9. Incorporation of species traits into more hardy material, ie. hooded-flowers of *G. papilio*, ornate exotic spots and stripes, and ultra-narrow, undulate tepals

THE COLLECTION

The following taxa are being acquired or have already been put on order for 2018. This forms the basis of both a breeding collection and a useful set of plants for taxonomic documentation. The main breeding qualities of each taxon are provided. Descriptions of each and many more cultivars are found later in this prospectus.

'Amanda Mahy' - hardy, good pigmentation

'Carine' - hardy, nice pigmentation genetics

'Alakazam' - non-hardy miniature to cross with hardies, unusual tricolor genetics (plum-magentas, white, dark blackish-purple throat)

ATOM - hardy, US heirloom, picotee genetics, strong red colors

'Black Walnut' - non-hardy, full-sized, source of dark brownish-purple pigments in crosses

THE BRIDE - hardy, good clean white

'Brownie Points' - non-hardy, miniature, species or Nanus type look, brownish-red pigment set, cross to hardies

'Calabash' - non-hardy, miniature, unusual tricolor (red, orange, gold) genetics, cross to hardies

cardinalis - possibly hardy, parent of early hardy clones

cardinalis hybrid - unknown

carinatus - species genetics

carneus - good pink pigments, possible parent of early hardies

'Charm' - hardy, elegant

'Charming Beauty' - hardy, elegant, good bicolor pigments

CHARMING LADY - hardy, good color blends

communis subsp. byzantinus - hardy, high reproduction rate, magenta pigments, evaluate US vs. UK vs. Dutch stock, ploidy varies, can be $2n=90$ which is hard to breed

'Covillii Albus' - hardy, nice clear white look

dalenii 'Boone' - super hardy (USDA 7), mellow yellow to orange tones, hood shape, early (May 15th or so)

dalenii 'Carolina Prinrose' - hardy, clean yellow pigments, good source of classic Primulinus Group tones

dalenii 'Halloweenie' - super hardy, rich bicolor tones, red scape pigments, very late (November)

ELVIRA - hardy, good pigmentation

'Fiesta' - non-hardy, smaller standard, bicolor gold and red genetics, cross to hardies
 GALAXIAN - hardy, elegant form, strong pigments
 Guerne Glory - hardy, pleasant coral to melon tones
 HALLEY - hardy, something like a wide-petalled G. tristis
 illyricus - strong pigmentation, need to compare to G. communis
 'Impressive' - hardy, nice bicolor genetics
 italicus f. albus 'Snowflurry' - possibly hardy, possibly cross to G, illyricus and G. communis
 LAS VEGAS - hardy, very bold bicolor genetics
 'Little Knockout' - non-hardy, miniature to cross with hardies, species and Nanus-like appearance, red pigments with light yellow throat
 MIRELLA - hardy, rich pigment genetics
 muraliae - elegant unique perianth shape, possibly fragrant, sharp dark markings
 Nanus Group (mix) - hardy, mostly from named clones listed here
 oppositiflorus var. salmoneus - possibly hardy, pleasant coral to salmon pigments
 papillio 'Ruby' - possibly hardy, distinct hood form, rich red pigments
 'Priscilla' - non-hardy, standard type to cross with hardies, genetics of cream with subtle pink edge
 'Prins Claus' - hardy, bold bicolor, only clone left from Prins breeding program?
 'Purple Flora' - non-hardy, standard to cross with hardies, source of rich deep violet colors, ruffling
 'Reckless' - non-hardy, miniature, violet-red, genetics for massive (90%) white center, cross to hardies
 'Robinetta' - hardy, strong, rich pigments
 'Romance' - non-hardy, standard to cross with hardies, genetics for clean pink, super high ruffling
 'Rosy Cheeks' - hardy, very early (April), durable tristis hybrid
 saundersii - possibly hardy, wide red segments
 'Tampico' - non-hardy, standard to cross with hardes, genetics for clean pink, striated perianth, just one magenta marking
 tristis - super hardy, narrow reed-like foliage, very early bloom (April), mellow colors, rich scent
 West Coast Hybrids - unusual pigments, hardiness unlikely
 'Whiskers' - non-hardy, miniature to cross with hardies, unusual pigments in red but with yellow to cream outer markings

THE SPECIES HYBRIDITY GRID

We're keeping track of some old and new crosses here.

SPECIES	CARDINALIS	CARNEUS	COMMUNIS including var. byzantinus	DALENII	ITALICUS	OPPO	PAP	TRISTIS	WATSONIOUS
CARDINALIS	CARDINALIS	x insignis hort x spofforthianus = 'Blando-Cardinalis' and 'Cardinali-Blandus' of Herbert	X VICTORIALIS			x ramosus per LH Bailey		Covillii Group	
CARNEUS	x spofforthianus x insignis	CARNUS							
COMMUNIS incl. var. byzantinus	X VICTORIALIS		COMM	crossed per Herbert				always fails per Herbert	
DALENII			crossed per Herbert	DALENII					
ITALICUS incl. 'Albus'					ITALICUS				
OPPOSTIFLORUS	x ramosus per LH Bailey					OPPOS			
PAPILIO							PAP		
TRISTIS	x Covillii Group	'Tristi-Blandus' of Herbert	always fails per Herbert					TRISTIS	WEST COAST HYBRIDS
WATSONIOUS								WEST COAST HYB	WATSONIOUS

Primulinus Group x Covillii Group = Princianus Group, for one
 Primulinus Group x Nanus Group = Peacock Group, for one

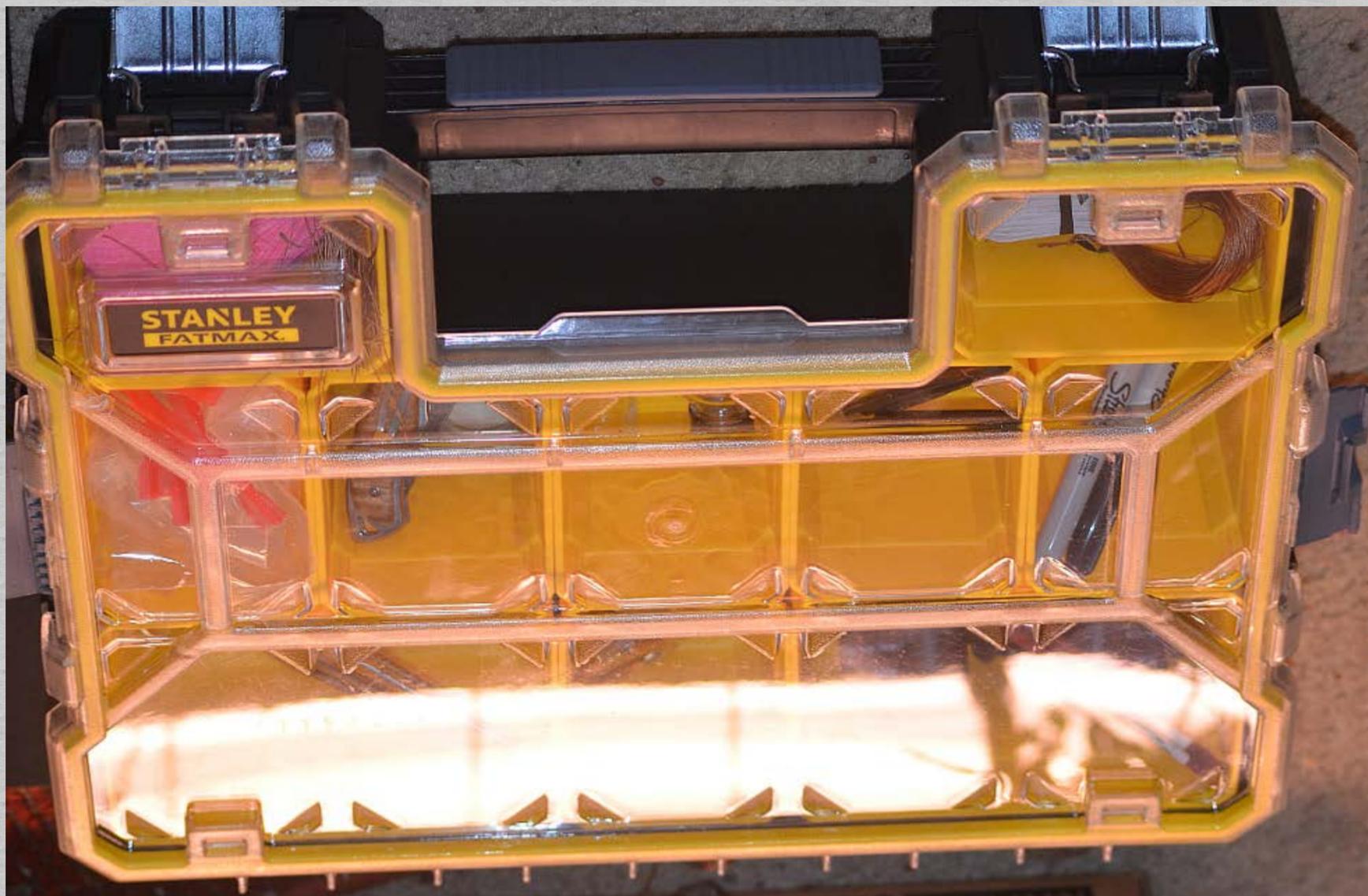
BREEDING STRATEGIES

1. Nanus/Covillii/Tubergenii Groups intercrosses - new combinations of colors and markings
2. Nanus/Covillii/Tubergenii Groups open pollinations - see what might show up.

3. Work towards fragrant hardy clones involving the scents of many species , especially *G. tristis* and *G. recurvus* - we really could use the Viola notes of the later
4. Miniature, species like cultivars (some resemble *Nanus* and *Tubergenii*) x known hardy dwarves - bring new colors (purples, green), color patterns, and ruffling to hardy stock. We expect to find some of these old school style miniatures to be perhaps hardier than thought as most of the breeders are from cold countries and US states.
5. Unusual, rare species x known hardy dwarves - add reticulations, cupped perianths (*G. papilio*), wing-like lobes, unusual markings, green tints, etc. to hardy stock
6. *Nanus/Covillii/Tubergenii* Groups x *G. tristis* - add earliness of bloom, unique *tristis* foliage, etc.
7. *Nanus/Covillii/Tubergenii* Groups x *G. communis/byzantinus* - add those rich violet and violet-red colors to existing hardy stock
8. *Nanus/Covillii/Tubergenii* Groups x *G. dalenii* clones like 'Boone' - mixing yellows and oranges (*Primulinus* Group) with the known hardy dwarf colors and markings
9. *Nanus/Covillii/Tubergenii* Groups x Large-flowered, *Grandiflorus* type cultivars of unusual colorations - hoping for hardier seedlings that take on brown, dark burgundy, green, and other extreme pigmentations. Imagine a super cold hardy dwarf in burgundy, another in true lilme green, and a third composed of four complex colors with genes for ruffling or incisions.

BREEDING KIT

In preparation for this project, I revamped my plant breeding kit and made considerable upgrades based on past experience, things I read, and consulting with vastly more experienced hybridizers. Having found a derth of recommendation for plant breeding tools or kits on the web, I want to present this for discussion and perhaps to help a person or two.



My tiny craft store box with translucent, pale compartment gave way to a more durable Stanley FATMAX®, a very durable, tough flat tool box with a massive handle and four closure grips, two of them in strong metal. A view inside follows:



The basic contents are broken down as follows. Please email with your comments and ideas. I want to reach out to all plant breeders and improve this design with a multitude of ideas.

- Cutting tools



- First is a gold-plated, surgical grade pair of Metzenbaum scissors known for delicate tissue cutting and blunt dissection. The long handle compared to the cutting blade length is key to their usefulness. Second is a pair of Japanese made barber scissors which I use mainly for trimming away unwanted corolla or calyx tissue. They are precise, efficient, very sharp, and do the job. Third is a pair of \$5.99 China made bonsai shears I bought at a large Asian supermarket. These provide lots of power and leverage and are ideal for cutting thick stalks like a strong seed pod base. Next up are curved ophthalmology scissors, again gold-plated surgical grade, very useful for inserting into any flower to trim off anything. Last are smaller curved kelly scissors, much like the former, but good with very small flowers.
- Knife - I usually carry a fold, tactical type knife that is kept very sharp. This is for cutting very thick woody parts.
- Labels - paper jewelers tags are often used in greenhouse conditions but I still prefer plastic labels because a greenhouse is still full of sprays and water. I once had some jewelers tags saturated by an eager greenhouse assistant and data was lost.
- Label writer - medium to fine black Sharpie® is my choice. Carry at least two because you don't want to go somewhere far away to get a replacement.
- Tweezers - most for manipulating floral parts, especially dissecting out pollen or remove bits full of pollen, and also depositing a fresh pollen dose on a stigma. I carry assorted, professional quality sizes and shapes.
- Pollen brushes - usually people recommend camel's hair brushes but I find most craft and art stores don't specify that species. I tend to buy the best, most flexible brushes I can afford, one at a time. Make sure the brushes fill well into the vials or containers you use to store pollen.
- Pollen containers
 - Temporary: if working live with immediate pollen transfer I like screw top beverage caps as shown above They are durable, have tall sides, are open enough for easy access
 - Longer term: If you plan on freezing pollen, glass is a must. Use whatever your cryopreservation experts recommend and that could be very complex liquid nitro vials. If I'm using my own freezer I use small glass vials. If I'm driving pollen from one site to another I still like glass vials.
- Seed storage containers: plastic and paper (coin type) envelopes are best. Only put thoroughly dried seeds in plastic to prevent mold and mildew.
- Visual aids: Most of the time a pair of cheap, grocery store 3x reading glasses work for me. I also carry a pair of cheapish Chinese, plastic jeweler's type glasses which has lens mag from 2x to 10x. They only work with a flower 1.0-1.5 away. More expensive surgical type glasses will provide mags at a distance of 1-2 feet. Some of the flat lens, head-held jeweler's hats give 3x to 5x with ease. I hate all that hardware on my head but for long sessions they work. If you have a long session (1 hour or more), consider a mounted round lens assembly attached to your lab bench, desk, or greenhouse bench.

USEFUL PAPERS ON GLADIOLUS GENETICS, BREEDING, AND CYTOLOGY

We highly recommend the website of master gladiolus breeder and grower Mark van Winsen who has first hand knowledge of cultivars and data from his family business going back many years:

<http://www.gladiolus.nl>

Google Scholar offers many Gladiolus papers from scholars all over the world. The best part about these links is that they refresh with new papers every time we clicks on them:

Gladiolus + Cultivar:

https://scholar.google.com/scholar?hl=en&as_sdt=0%2C34&q=gladiolus+cultivars&btnG=&oq=gladiolus+cultivar

Gladiolus + Genetics:

https://scholar.google.com/scholar?hl=en&as_sdt=0%2C34&q=gladiolus+genetics&btnG=

More than 1900 Gladiolus catalogs, books, articles, and other documents are found at Archive.org courtesy of the Gilbert Wild/USDA project to scan nursery catalogs. This is a massive resource. These include one of the oldest studies of glads (Thunberg 1874) and some of the earlier pioneers in offering, importing, and breeding glads (William Bull, Thorburn, Childs):

<https://archive.org/search.php?query=gladiolus>

The following papers are highly informative. There are a great many others found on Google Scholar but I have elected to include only those which are free on the web at this time.

Cytology:

https://www.jstage.jst.go.jp/article/cytologia1929/10/1-2/10_1-2_59/_pdf

<https://www.jstor.org/stable/2399794>

<https://naldc.nal.usda.gov/download/IND43968722/PDF>

https://www.jstage.jst.go.jp/article/cytologia1929/50/2/50_2_213/_pdf

<http://hortsci.ashspublications.org/content/26/2/216.full.pdf>

https://www.lib.teiep.gr/images/stories/acta/Acta%20673/673_62.pdf

<http://www.ijset.net/journal/1571.pdf>

https://www.jstage.jst.go.jp/article/jsbbs/58/1/58_1_89/_pdf

https://www.lib.teiep.gr/images/stories/acta/Acta%20570/570_26.pdf

Species breeding and RAPD DNA:

https://www.lib.teiep.gr/images/stories/acta/Acta%20673/673_62.pdf

Chromosome doubling of species for breeding purposes:

https://www.lib.teiep.gr/images/stories/acta/Acta%20673/673_20.pdf

Origins and History:

https://scholar.google.com/scholar?start=20&q=gladiolus+papilio&hl=en&as_sdt=0,34

Winter Hardiness:

<https://cdn.intechopen.com/pdfs-wm/25562.pdf>

Fragrance:

<http://bulbnoze.x10.mx/Amaryllis/McLean/McLeanFragrans1938.html>

<http://bulbnoze.x10.mx/Amaryllis/McLean/McLeanGlads1933.html>

Dr. Neil Anderson's University of Minnesota breeding for hardiness research and breeding:

<https://articles.extension.org/pages/72712/from-lilies-to-gladiolus:-flower-power-webinar>

<https://cdn.intechopen.com/pdfs-wm/25562.pdf>

HISTORICAL ONLINE GLAD NURSERY CATALOGS

Archive.org - over 1900 Glad catalogs, books, and articles

[https://archive.org/search.php?query=gladiolus&and\[\]=mediatype%3A%22texts%22](https://archive.org/search.php?query=gladiolus&and[]=mediatype%3A%22texts%22)

PRELIMINARY IDENTIFICATION KEY TO MAJOR HARDY TAXA

This is a first draft of the most widely grown, USDA 6-7 hardy taxa and will be updated as more details become available. I have excluded many taxa which are not in the modern commercial trade. Comments, corrections, and additions are most welcome.

1. Flowers bicolored in scarlet to orange PLUS yellow to gold.....2

- 1. Flowers monocolored or bicolored in other hues.....5
- 2. Yellow zone generally on lower tepals only, yellow 50% or less surface, upper tepals often slight hooded or flat.....G.dalenii var. dalenii and 'Halloweenie'
- 2. Yellow zone on upper and lower tepals, yellow more than 50% surface, upper tepals erect and arching when mature.....LAS VEGAS
- 5. Flowers at least partly medium pink to strong magenta.....10
- 5. Flowers white, cream, orange, light pink, yellow, red, or others.....15
- 10. Markings in a distinct halo, darker margin, paler instead.....14
- 10. Not well marked or if marked distinct lines or elliptical shape.....11
- 11. Tepals narrow, oblanceolate to narrowly elliptic, mostly strong magenta from a distance.....G. communis var. byzantinus
- 11. Tepals wide, typical of modern Nanus cultivars, distinctly bicolored from a distance.....12
- 12. Medium pink to light coral tepals, large elliptical or ovate red blotch in lowers.....'Nathalie'
- 12, Medium pink to red shades, markings of two colors or lines, not a shaped blotch in genera.....13
- 13. Upper tepals mostly rose-red to dark pink, lowers nearly all white, red triangular mark.....GALAXIAN
- 13. Upper tepals medium pink with darker pink lines are markings.....'Charming Lady' and 'Charming Beauty'
- 14. Lower tepals narrow, oblanceolate to elliptic, sometimes narrowly elliptic, magenta base color.....G. italicus
- 14. Lower tepals wide, mostly ovate, base color lilac pink, some magenta but variable.....'Charm'
- 15. Flower base color white to blush pink.....20
- 15. Flower base color medium pink, yellow, orange, red, or coral.....16
- 16. Flower base color crimson, scarlet, or red.....17
- 16. Flower base color medium pink, yellow, coral, or orange.....30
- 17. Few or no markings, mostly a solid red or red with white picotee.....22
- 17. Markings distinct, contrasting much, these pink, cream, yellow, or white.....18
- 18. Markings with white zone finely mottled red, one white dagger-like projection in the middle of mottling.....'Cruentus'
- 18. Markings generally not mottled with distinct halo-shaped or line markings.....19
- 19. Markings mostly pure white.....G. cardinalis and hybrids
- 19. Markings light yellow.....'Claudia' and 'Covillei Rubra'
- 20. Markings subtle, white to cream to light yellow, if pink a light suffusion25
- 20. Markings bold, pink to red.....21
- 21. Markings a fine violet-red speckling or suffusion at tips.....FROZEN SPARKS
- 21. Markings a halo, star, or line pattern.....28
- 22. Solid scarlet to red, very little in markings, perhaps a slight pink or whitish suffusions.....23
- 22. White picotee on red.....ATOM
- 23. Flowers cupped, subcampanulate or hooded, very dark ruby red.....G. papilio 'Ruby'
- 23, Flowers open, butterfly-like, upper tepals not hooded or flat.....24

24. Flowers very symmetrical, nearly pure red to scarlet.....RED DRIZZLE
24. Flowers often asymmetrical, occasional white lines or paler lines.....MIRELLA
25. Flowers nearly all or pure white, no markings nor contrasting throat colors.....G. italicus 'Albus' and 'Snowflurry' (if different)
25. Flowers with faint pink or cream markings.....G. tristis and var. concolor
28. Never yellow or gold throat, pure white except are dark red central, 5-pointed star.....G. callianthus var. mureliae
28. Sometimes a yellow throat, markings not a star, either small lines or a halo.....29
29. Throat mostly white to cream, marked in a bright pink to magenta halo with a pale pink center.....'Impressive', 'Nymph', and 'Prins Claus'
29. Throat large in yellow and gold, smallish red lines, no halo markings.....'Halley'
30. Flower base color yellow to gold.....31
30. Flower base color medium pink, coral, or orange.....35
31. Bold red to dark purple markings in center, flower often cupped, flat-topped, or subcampanulate.....G. papilio Purpureoauratus Group
31. New bold, contrasting markings, only fine lines or suffusions, or unmarked, flower typical shape.....32
32. Flowers yellow, tinged orange to coral.....Primulinus Group incl. 'Boone', 'Bolivian Peach', 'Carolina Primrose'
32. Flowers yellow, tinged green to lime.....IRISH GOLD

LITERATURE REFERENCES

- (B)=Beal, Alvin C. 1916. Gladiolus Studies I: Botany, History, and Evolution of the Gladiolus. Cornell Extension Bulletin No. 9. New York State College of Agriculture, Cornell University, Ithaca, New York.
- (BS)=Barr and Sugden. General Bulb Catalog Autumn 1908.
- (C)=Crawford, Mathew. 1911. The Gladiolus: A Practical Treatise on the Culture of Gladiolus.
- (CG)=Cotswold Garden Glowers, www.cgf.net, plant encyclopedia, accessed 2.1.2018
- (CH)=Childs, John Lewis. 1893. The Gladiolus, Its History, Species, and Cultivation.
- (CR)=Creasy, L.B. 1937. Garden Gladioli - Their Origin and History. Journal Bot. Soc. Africa
- (E)= Eeden. A.C. van. 1872. Flora of Haarlem.
- (EP)=Pole Evans, I.B. 1925. Flowering Plants of [South] Africa vol. 5: 182
- (H)=Hortus Camdenensis - online website hortuscampen.com, accessed 1.31.2018
- (HA)=Hampden, Mary. 1921. Bulb Gardening. T. Butterworth, London.
- (JL)=Lewis, Joyce et. al. 1972. Gladiolus: A Revision of the South African Species. J. South Af. Bot. Volume 10.
- (K)=Royal Botanic Gardens Kew. 1896. List of Published Names of Plants Introduced to Cultivation 1876-1896.
- (K2)=Royal Botanic Gardens Kew. 1990. Bulletin of Misc. Information Volume 4.
- (L)=Larson, Roy. 2013. Introduction to Floriculture.
- (N)=Van Weisen, Mark. 2017. www.Gladiolus.nl. Website, accessed 1.23.2018
- (O)=Ohri, D. and T.N. Knoshoo. 1983. Cytogenetics of Garden Gladiolus IV. Origin and Evolution of Ornamental Taxa. Proc. Indian Nat. Sci. Acad. B49(3): 279-294.
- (P)=Plant Delights Nursery. 2018. Plant Encyclopedia. www.plantdelights.com. Accessed 1.28.2018
- (PB)=Pacific Bulb Society, www.pacificbulbsociety.org
- (T)=Thomas, H.H. 2013. Dahlias, Gladioli, and Begonias. Read Books.
- (W)=Weathers, John. 1911. The Bulb Book.

Additional papers are cited under individual taxa.

REVIEW OF COLD HARDY TAXA

There are more than 50 other cultivars listed over the decades as *Gladiolus nanus* which we believe are merely dwarf and do not qualify as cold hardy, perennializing USDA 6-7 stock. Likewise, Primulinus Group includes a good many hardy clones but also very tender crosses to large-flowered cultivars. These are not included here.

The following taxa are generally considered more cold hardy or are thought to be early hybrids from crosses known to be cold hardy. This will get deletions and additions as the facts proven themselves or not.



GLADIOLUS. DWARF HYBRIDS

A lovely plate from Eeden's 1872 Flora of Haarlem, one of the best, most colorful documents on new dutch bulb cultivars and recently introduced species. One sees much of the same traits in our modern material.

'Albicans Roseus' (*G. dalenii*) - Ref: <http://hortuscamden.com/plants/view/gladiolus-dalenii-van-ged.-var.-albicans-roseus>, accessed 2.20.2018. Tepals white tinged rose pink or blush, vigorous, erect, long spike, striped or marked crimson. Camden Park of Australia obtained it from Veitch via Captain P.P. King in 1849 and then offered in their 1857 catalog. They also cite Bass and Brown Nurseries for offering it. This taxon is mentioned in the Garden Companion and Florist's Guide of 1852 without description as well as the Floricultural Cabinet of that same year as "white, tinged with rose". From the description, we believe this fits the Nanus Group more than the yellow or scarlet and gold African species *G. dalenii*.

var. *albidus* (*G. blandus*=*G. carneus*, based on var. *albidus* (Jacquin) Ker Hawler, Gen. Irid. 1827. Tepals pure white or nearly so.

'Albus' (*G. communis*) - a white form of the normally glowing, hot pink species and former subspecies. In: to US by USDA via Dr. Walter van Fleet, New Jersey. The material around today is thought to be actually *G. italicus* 'Albus' aka 'Snowflurry'. I cannot say we have a true Byzantine glad anywhere today in white. Please write with proof if this is wrong. Kelway offered this in 1913 if not earlier - see scan under 'Colvillii Albus'

'Alfred Tennyson' - "pale rosy salmon, with pure white flakes on the three lower petals, early and vigorous" (Kelway's Manual of Horticulture 1913)

'Amanda Mahy' - tepals coral-red to cerise-red, lowers with a large marking that is centered pale pink with a magenta margin. Or: Ernest Mahy, England 1930's, cross involving several existing varieties

'Amathusia' (x victoralis = G. communis subsp. byzantinus x G. cardinalis) - Or: Damman, Naples, 1893

'Ambition' (x haarlemensis) - Or: T.M Hoog, Haarlem, The Netherlands 1935, a miniature series of Colvillii Group.

'Amphitrite' (x victoralis = G. communis subsp. byzantinus x G. cardinalis) - Or: Damman, Naples, 1893

'Andre Viette' - tepals wide, near white, darker suffusions, white edge. (CG) gives it the British H5 hardiness rating (5-14 F.) and says "may be a species since it comes true from seed....Hardy"

'Andromeda' (x victoralis = G. communis subsp. byzantinus x G. cardinalis) - Or: Damman, Naples, 1893

'Atom' (Primulinus Group) - 30-36 in. tall, tepals wider than some cultivars, rich red, margined white in a picotee style. USDA 6a per (P). Or: Hedgecock 1946

'Ardens' ('Fire King' ex Luff not Childs) - Or: Mr. Luff, Chanel Islands, before 1858 when written about by Frank Daily in The Chanel Islands: A Guide (1858)

'Atratus' Gartenflora 1885: 341 as var. (G. papilio var. atratus) - tepals : "a dark purple ground color to the fl. instead of a yellow one" (K2). (W) says it has "no yellow".

'Bibi' (Nanus Group) - tepals medium pink beavily moddles in long, fused regions a violet-magenta to about 50% surface. It is however virus-free. Very cold hardy per (N). Or: K&M Bulbs 1954.

'Bizar' - flowers butterfly type, flat and hoods, red and white bicolor. H5 hardiness per (CG)

Blandus Group (G. blandus = G. carneus, especially paler, blush to white variants) - this name is often cited in the early 1800's crosses. See G. carneus below. This name is reserved for G. carneus which are paler, near white or blush, marked carmine to red or dark pink. The base color is never light, medium, or salmon pink as some G. carneus variations.

'Blue Gem' (x haarlemensis) - Or: T.M Hoog, Haarlem, The Netherlands 1935, a miniature series of Colvillii Group.

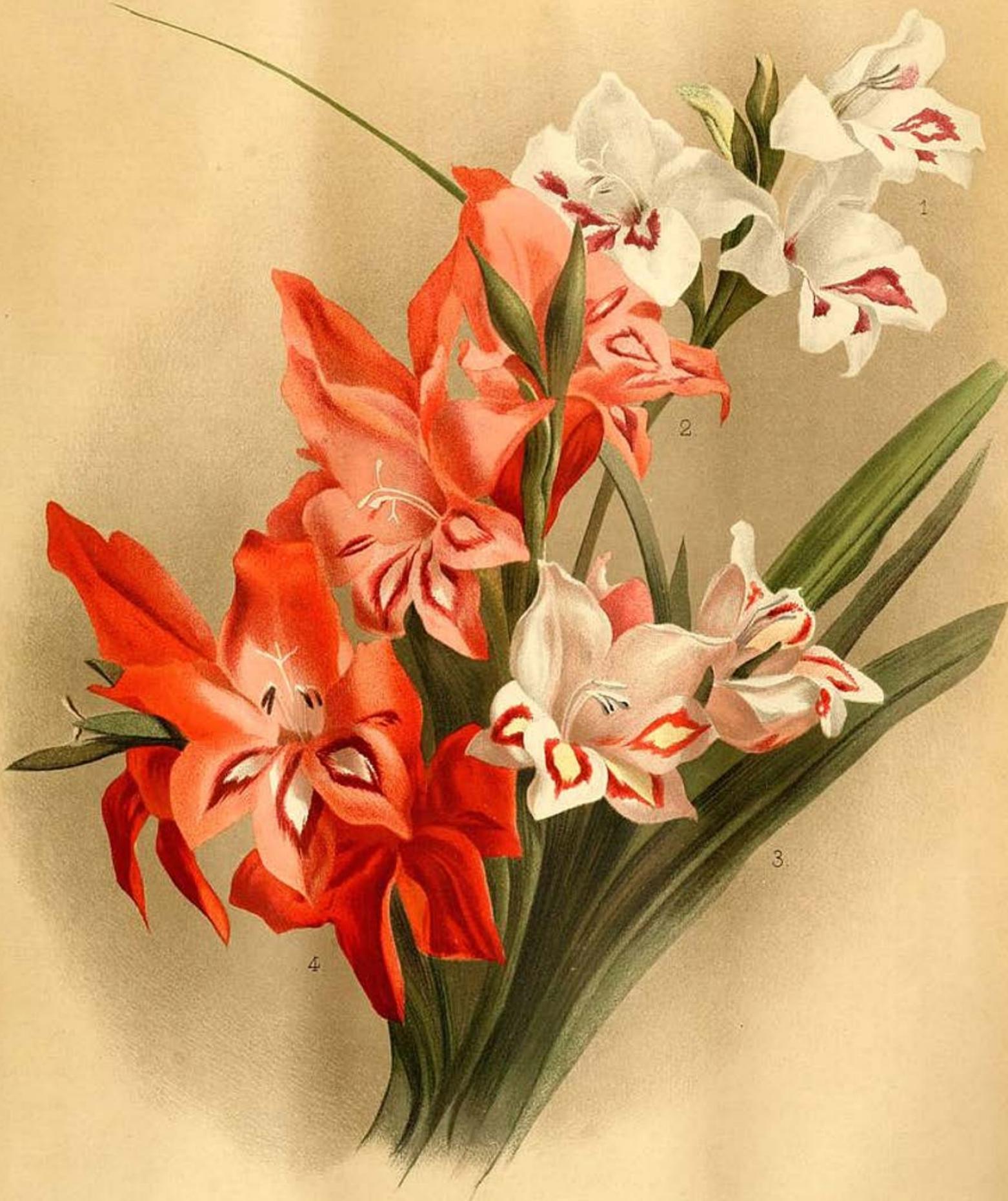
'Blushing Bride' ('Delicatissima') - tepals ivory-white with dark red halo-style markings. A plate from Barr's General Bulb Catalog of Autumn 1908 follows. The second plate is of four old cultivar thought to be in the hardy group from an 1888 publication I cannot find yet. There are currently two taxa under this name in the trade:

1) One like the two plate shown below, a Nanus Group look, mostly white base color, some blush, halo markings on lower tepals in bright magenta-red, the halo center pinkish, fairly small opening for a halo pattern.

2) One very much like G. carneus (in fact sometimes listed after that species name), tepals very narrow, lily-like, slight reflexed, a spoon-shaped marking in violet-red with a long "handle", the markings center sometimes closer to true red, appear very much like a highly, marked, narrow-petalled carneus selection.



EARLY-FLOWERING **GLADIOLUS** "BLUSHING
BRIDE"



EARLY FLOWERING GLADIOLI

1 BLUSHING BRIDE 2 ROSY GEM 3 GENERAL SCOTT 4 ROSEA MACULATA.

'Bolivian Peach' (*G. dalenii* Primulinus Group) - 40 in. tall, creamy-yellow tinged light yellow in the center of the lower tepals, tinged peach orange, not as rich a yellow as 'Boone'. Ch: USDA 7a per (P). Or: Plant Delights Nursery found on abandoned property near Bolivia, North Carolina, collected under their number A12NC-018B.

'Boone' (*G. dalenii* Primulinus Group) - 48 in. tall, vigorous, quick to multiply, tepals a blend of peach orange and yellow, uppers more orange tinged in the upper half and margins, lowers with a distinct reddish-orange throat but not sharply marked, early season. Or: Jeff Owen, North Carolina Extension Agent found in Boone, North Carolina, a cold ski town named for the famous clan of Daniel Boone who lived in that area before moving on to Kentucky fame. In: Holbrook Nursery of Western North Carolina (now closed), also made popular by Plants Delights Nursery and Old House Gardens. Ch: USDA 6a per (P), reports of 5b exist too.

'Buttery Cheeks' (*G. tristis* x ?) - 24 in. tall, tepals cream with a large yellow center, upper tepals with a cinnamon (reddish-brown) midrib formed of two fused lines (or having a yellow midline if you will), very early (up to 1-2 months) before other clones per (P), being mid-April in Raleigh, NC. Or: Plant Delights Nursery.

var. *byzantinus* (*G. communis*) - the species is popularly considered to be represented in gardens by a vigorous, rich magenta to violet-magenta form which the Flora of North America says "differs little from *G. communis* except in the degree of robustness. Distinction are even subspecific rank does not seem warranted". Much of the material under this

name (aside from modern offering by Old House and Plant Delights, among others) is actually inferior material, very likely a derivation of similar *G. italicus* or *G. illyricus*. There may be a case of the Byzantine material to have wider leaf blades but as with almost robust plants, that is not surprising.

There is comment that this taxon, if it exists at all except as a garden strain, has both a Dutch trade form and a British wild form that is called *G. communis* by their botanists but sold in that country under this name. What American has is something perhaps different from these two?

Mr. Porcelli has an interesting paper that is based on first hand evidence, and stated var. *byzantinus* also has different tepal measurements and proportions:
<http://www.pacificbulbsociety.org/pbswiki/index.php/SouthernItalianGladiolus>

Anthony Hamilton's article on this variety and related *G. illyricus* is highly recommended:
<https://www.rhs.org.uk/about-the-rhs/publications/magazines/The-Plantsman/2013-issues/march/two-uk-gladiolus.pdf>

'Campanulatus' (*G. carneus*)(*G. blandus* var. *campanulatus*, *G. campanulatus* hort. perhaps not all botanical authors) - more robust form, light purple to mauve or lilac, lowers with red marks. It is not very campanulate in form per (CH).

Gladiolus cardinalis - this species is a major contributor to hardy, dwarf glads today and most particularly those with dark pink to red shades. The first plate below is from (E) and the second and *Cyrtis Bot. Mag.* of 1891.





G. cardinalis x *C. carneus* (*blandus*) - this cross is thought to be the first ever made in modern times and down by W. Herbert, Dean of Manchester before Colvill did his work. One of the groups of this same parentage may be *G. x insignis* hort. though some think it was *G. tristis* x *G. cardinalis*.

'Carine' (Nanus Group) - tepals mostly pure white to cream in the uppers, lowers boldly marked with a pointy brushstroke of violet-red. Or: Van Winsen, The Netherlands before 1993.

Gladiolus carneus - a true species and parent of some modern hardy, dwarf glads. The plate that follows is from the Botanist's Repository of 1797.,



?'Carneus' NOT *G. carneus* (?*G. communis* or *G. carinatus*) - the plate below is from Curtis' *Botanical Magazine* of 1813, showing a nicely marked, pale pink variant of this species. It does not resemble *G. carneus*. Gladiolus grower and master breeder Mark van Winsen of Holland informs me that this plate is almost surely of a pink form of *G. carinatus* which he has used in his breeding work.



'Carolina Primrose' (Primulinus Group) - 36 in. tall, tepals a light primrose-yellow or butter yellow, lower ones with a violet-red midrib to just 25-40% of their length, but effectively an all-gold look. USDA 5a, one of the most cold hardy glad per (P). Or: found at an old abandoned house in North Carolina, proven hardy of many years. It is almost certainly a *G. dalenii* Primulinus Group clone which out-survived the other seedlings or plants from it's original lot.

Gladiolus caucasicus - "hardest" per www.rareplants.co.uk, accessed 2.22.2018

'Charm' (Tubergenii Group) - perianth uppers all pinkish-lilac to lilac-rose, lower lobes white or much paler in the throat, about 40% of the lower surface. or: Van Tubergen 1920 using *G. oppositiflorus*, *cardinalis*, and *lilaceus*.

'Charming Beauty' (Tubergenii Group) - sport of 'Charm', some trade plants shows as mostly a blush pink with some portions richer in tone than others, far less lilac in tone than 'Charm', other stock is clearly marks red to very dark pink lobe tips both upper and lower.

'Charming Lady' (Tubergenii Group) - a sport of 'Charm' with uppers much paler, central lobe light pinkish-lilac or blush lilac, the outers more white tinged pale lilac, lower mostly very pale lilac blush, purple streaks occur. Some plants seems to be more uniformly bluish pink-lilac throughout with not much different from upper to lower lobes. We will study this discrepancy.

'Charming Henry' - tepals pale lavender to lavender-blush, effectively pale rose-pink, dark magenta-lavender midribs, lowers the same color but with a huge (to 60%) white suffusion. In, so: <http://jacquesamandintl.com/product/tubergenii-charming-henry/>, accessed 1.28/2018. Or: sport of 'Charm'

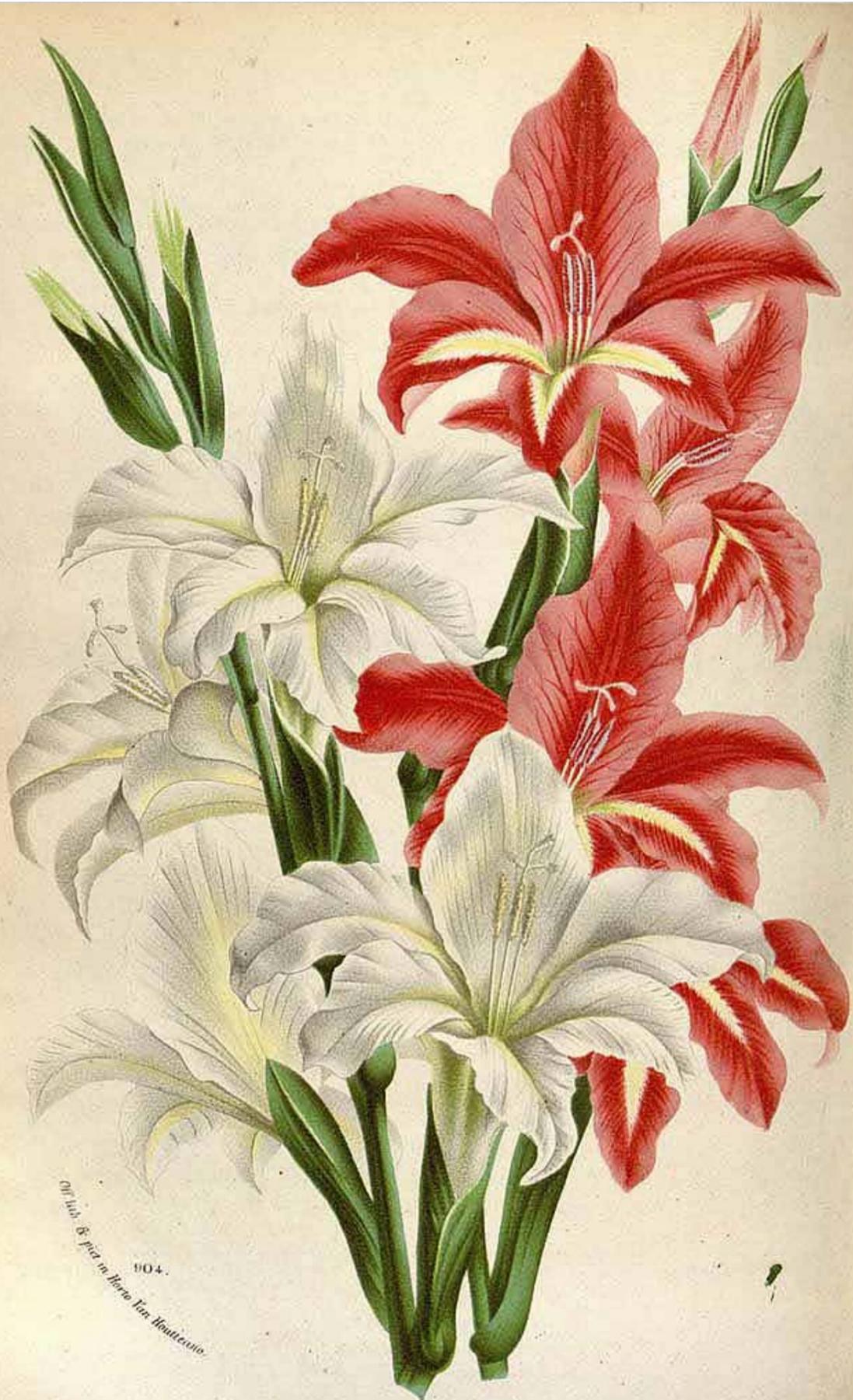
CLAUDIA® (Orchiflorus Group) - tepals rich red, lowers with long white claw-like centers. Or: Israel 'Addi', an Orchiflorus crossed to a Nanus Group *we think), mutated and it was named by van Winsen 1990's

Colvillii Group ('Covillvei', G. x colvillii, G. x colvillei) - the typical clone 'Covillii' is shown in pink and red tones with lower cream markings while the white or 'Colvillii Albus' is also seen in this plate from van Houtte in Flores de Serres of 1847. The second plate is from (E). Or: The group and its three original clones were bred by James Colvill of the UK around 1823-1826 from G. tristis x G. cardinalis. Reg: 1855 per (N). This is the same parentage as G. x insignis hort. (see below)

The spelling of 'Covillii' is correct because the originator was Mr. Covill and not Mr. Coville as sometimes stated. The name 'Covillei' has no standing and in fact Sweet's 1827 publication (British Garden Flowers) of G. x covillii (third plate below) locks in the spelling as correct and valid.

Was their one original, that is typical 'Covillii' clone from the start? This first plate from van Houtte suggests it was medium pink with a darker or redder central zone, roughly what some call 'Covillii Roseus'. The second plate below clearly is much darker red and is closer to what was sold early on as 'Covillii Rubrus' ('Covillii Ruber'). Sweet in his 1827 publication of G. x colvillii says the perianth was "bright red with pale purple margins" (third plate below) and that does not seem to agree with anything we have today. The Florengium Harlemense .c 1908 under 'Covillii Albus' below says "ruber (typus)", strongly implying it was the type or standard clone. It is not however ultra dark red and seems to have mixed pink, red, and orange shades in it. Old plates can be very hard to judge for years of fading, going then through modern scanning, and not accounting for the artist's own license in terms of tones.

Kelway's Manual of Horticulture 1913 seems to agree with the 1827 Sweet plate below in mentioning purple tones: "rosy purple, shaded darker, white stripes". Most catalogs and authors don't mention purple tones at all.



Off. lib. & pica in Horto Jan. Houtteano
1804.

GLADIOLUS ... GOLVILLI. Swt.

Plein air



Arentine H. Arendsen, ad. nat. del.

Chromolith. G. Severijns, Brussel.

GLADIOLUS COLVILLII, GLADIOLUS COLVILLII FLORE ALBO

A. C. van Eeden & C^o. Wagenweg, N^o 51, Haarlem.



Sweet in British Flower Garden (1827)

'Colvillii Albus' (NOT 'The Bride', *G. x colvillii* var. *albus* Baker, Hand. Irid. 288 (1802) (Colvillii Group) - Tepals white, effectively all white, centered yellow, the lower with a yellow suffusion in the center, stamens richly colored red to violet. (CR) says "the first white form (var. *albus*) arose as a sport in two Dutch nurseries in 1872. We have reason to believe these were both imported from Britain and were perhaps two of Covill's own white creations. They had coloured anthers and their popularity declined when a pure white form with white anthers appeared. This was called "The Bride". (CR) notes "confusion exists" and that the Index Londonensis of 1885 was the first publication of var. *albus*. The following plate (Floengium Harlemense .c 1908 shows the anther color difference between 'Covillii Alba' (dark violet or red) and 'The Bride' (nearly white), despite them being synonyms in catalog and literature in our current time. Note in the above plates that the white form has both dark and near white or cream stamens. Note also that the two plates above under Covillii Group show one white-flowered specimen with pale, creamy stamens and the other with dark ones!

516
THE GARDENERS' CHRONICLE.
[OCTOBER 24, 1885.

JERSEY TREES—CARRIAGE PAID.
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36 Hyacinths, distinct colours.	400 Crocus, in 4 distinct colours
51 Tulips, single early.	103 Ranunculus, double.
52 Tulips, double.	24 Gladiolus.
25 Tulips, single late.	50 Snowdrops, sing'le.
90 Narcissus, Polyanthus.	25 Spanish Iris
30 Narcissus, incomparabilis.	25 Tricelcia uniflora.
24 Narcissus, Poeticus.	25 Scilla byzanthoides.
52 Anemones, double.	4 Lilium umbellatum.

COLLECTION "C." FOR INDOOR.
Containing 277 Choice Bulbs for Pots and Glasses.

Hyacinths, 13 in 18 splendid named varieties.	Narcissus, double and single—13 in 4 named varieties.
3 Roman Hyacinths.	Jonquils—6 double, sweet-scented.
Tulips, single early—	

SPECIALY SELECTED
ROOTS and BULBS
FOR EARLY FORCING, &c.

B. S. WILLIAMS'
Extra Strong Clumps—
LILY OF THE VALLEY, SPIRÆA JAPONICA and
PALMATA, DISLYTRA SPECTABILIS,
BELLEBORUS NIGER.

Single Crowns (German) LILY OF THE VALLEY.
AMARYLLIS, seedlings and named varieties.
FREEZIA REFRACTA ALBA.
GLADIOLUS BRENCHLEYENSIS.
GLADIOLUS COLVILLEI ALBA.
GLADIOLUS COLVILLEI THE BRIDE.
LILIUM AUREATUM.
LILIUMS in variety.
TUBEROSES, AFRICAN.

For Prices and particulars, see Illustrated BULB CATALOGUE, post-free on application.

VICTORIA and PARADISE NURSERIES,
UPPER HOLLOWAY, LONDON, N.

This is a scan of a B.S. Williams of London advert in The Gardener's Chronicle of October 24, 1885 showing the two whites were in fact sold as separate entities in the early days.



GLADIOLUS COLVILLEI.
1. RUBER 2. PUSILLUS 3. ALBUS 4. 5. ALBUS - THE BRIDE

Gezondheid door het Hoofdbestuur der Algemeene Vereeniging voor Bloembollencultuur te Haarlem

* GLADIOLI; EARLY-FLOWERING and OTHER SPECIES and VARIETIES

The months mentioned show the time of flowering. They should not be ordered later than November.

ALFRED TENNYSON, pale rosy salmon, with pure white flakes on the three lower petals, early and vigorous. 6d. each, 2/3 per doz. 15/- per 100.

BLANDUS, blush rose, very early. 8/- per 100, 1/- per doz.

BLUSHING BRIDE (see *Nanus delicatissimus*).

BRENCHLEYENSIS, brilliant vermilion-scarlet, flowering just before Kelway's large-flowering varieties and the Gandavensis section. Fine flowering bulbs, per 1,000, 50/- and 70/-; per 100, 6/- and 7/6; 1/4 and 1/6 per doz.

HOLLANDIA (name), longer spikes than *Brenchleyensis*, with flowers of very good form and free, 30 or 40 being sometimes produced on one spike; salmon-rose colour. 5/- doz.

BYZANTINUS, rosy purple. May and June. Showy and suitable for borders, free-flowering. 4/6 per 100, 8d. per doz.

CARDINALIS, fiery scarlet, flaked white. June to August. 12/- per 100, 1/9 per doz.

ELEGANS, larger flowered and more free than the type. 12/- per 100, 2/- per doz.

COLVILLEI, rosy purple, shaded darker, white stripes. May and June. 30/- per 1,000, 4/6 per 100, 9d. per doz.

ALBA, white (with violet-coloured stamens). May and June. 35/- per 1,000, 4/- per 100, 8d. per doz.

THE BRIDE, pure white with white stamens. May and June. 40/- per 1,000, 4/6 per 100, 9d. per doz.

COMMUNIS ALBA, fine white. 1/- per doz., 5/6 per 100.

PALLIDA, lilac. 1/- per doz., 5/6 per 100.

CUPID, soft rose, lovely. 15/- per 100, 2/6 per doz.

DELICATISSIMUS (see *Nanus*).

EXPRESS, three weeks earlier than *Nanus*, fine salmon-red with dark brown spot. 3/- each.

FIRE KING (see *Nanus Ardens*).

FLORIBUNDUS, white, with delicate violet-pink, very free-flowering. May. 12/- per 100, 1/9 per doz.

FORMOSISSIMUS, bright salmon-scarlet, flaked magenta, with white streaks in the centre. June and July. 12/- per 100, 1/9 per doz.

GLADIOLUS PRIMULINUS.—See another page.

INSIGNIS, crimson, flaked purple. June and July. Suited for beds and borders. 35/- per 100, 5/- per doz.

NANUS ARDENS (syn. Fire King), beautiful fiery scarlet, with pink and magenta flakes. June and July. 6/- per doz. 45/- per 100.

FLORUS, light rose with dark carmine, white eye; long stalk. 1/3 per doz., 7/6 per 100.

DELICATISSIMUS (syn. Blushing Bride), very lovely and striking; white, with pink and carmine flakes on the lower petals. June and July. 8/- per 100, 1/6 per doz.

SALMON QUEEN, clear salmon-pink, with maroon shading; exceedingly pretty. 12/6 per 100, 1/6 per doz.

NE PLUS ULTRA (see *Ramosus ne plus ultra*).

PRINCEPS (see p. 316).

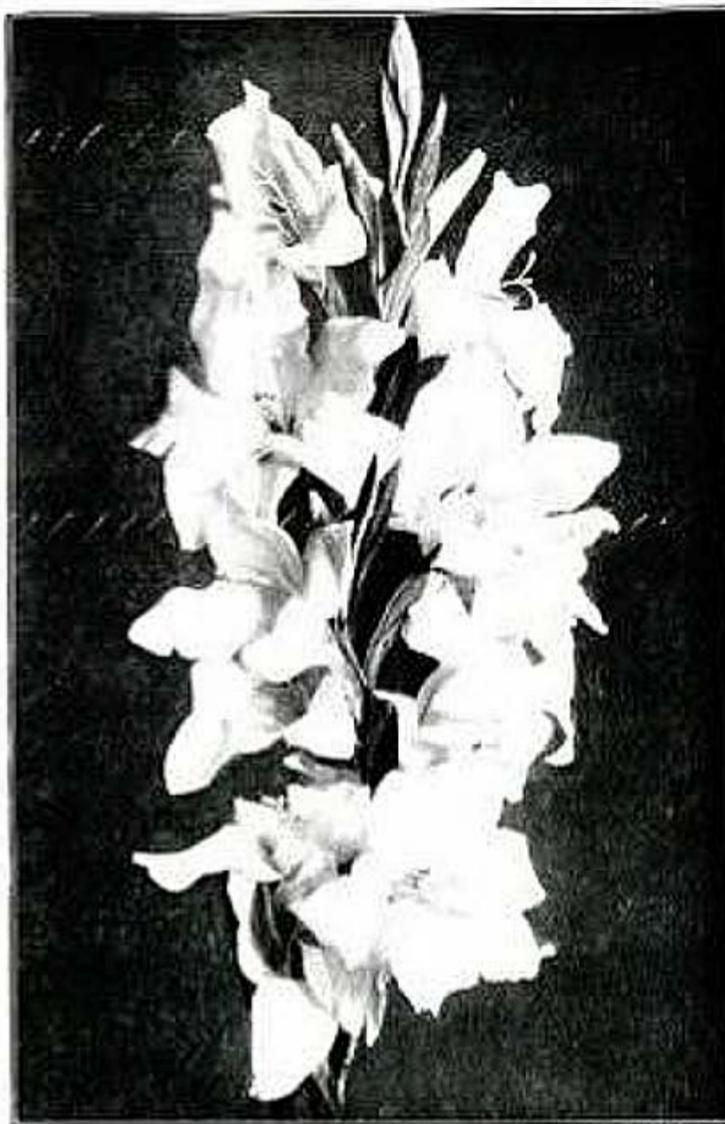
PRINCESS BEATRICE, rosy scarlet, flaked white, very pretty and vigorous. 15/- per 100, 2/3 per doz., 3d. each.

QUEEN WILHELMINA, showy and beautiful, salmon-pink, with a cream blotch on upper petals surrounded by brilliant carmine, and on the lower petals by a vermilion blotch. 6d. each, 3/6 per doz., 18/- per 100.

RAMOSUS, in choice mixed varieties. June and July. 7/6 per 100, 1/3 per doz.

NE PLUS ULTRA, scarlet, blotched white. June and July. 12/- per 100, 1/9 per doz.

QUEEN VICTORIA, salmon-scarlet, feathered pure white. June and July. 18/- per 100, 2/6 per doz.



Gladiolus nanus delicatissimus Copyright, K. & S.

ROSY GEM (true), delicate rosy pink, shaded deeper, blotched blush-white on lower petal, with a rosy crimson band on lower petals. Most useful for cutting. June and July. 35/- per 100, 5/- per doz.

SARNIAN GEM, beautiful salmon colour with white and crimson flakes, very fine. 10/6 per 100, 1/9 per doz.

THE BRIDE (see *Colvillei alba*, *The Bride*).

TRISTIS, creamy white, scented. May and July. Each 4d., 2/3 per doz., 15/- per 100.

VILLE DE VERSAILLES, white, with distinct rosy crimson flakes. 15/- per doz., 1/6 each, 100/- per 100.

VINDULUS, creamy white, with a striking maroon blotch. May. 2/6 per doz., 4d. each, 18/- per 100.

THE GLADIOLUS—POT CULTURE

IF it be desired to have them late for decorating the conservatory, they may be grown with tolerably good effect. The corms should be potted singly in 6-inch pots, about the end of May, using a rich compost of good yellow loam, old hot-bed manure, and silver sand. They should then be plunged in a bed of very rich soil, placing the rims of the pots about 2 in. beneath the surface. In dry weather they will require to be kept tolerably moist with frequent waterings. As soon as frost commences the pots should be lifted and placed in a cold greenhouse or vinery, and brought into the conservatory as soon as the first beds begin to open.

Kelway's Gladioli become more and more wonderful, and although I am quite unacquainted with any one connected with the firm I would not hesitate to back them against the world. One was literally pulled up by the wonderful, bright, yellow *Golden Masses*. —*Horticultural Trade Journal*, September 20, 1908.

Kelway's 1913 catalog showing a very large selection of early, (mostly?) hardy clones for this era. Many bulb growers gave up on these groups by 1875! This plate shows that 'The Bride' and 'Albus' where in that year at least distinguished by another color.

'Covillii Roseus' (Covillii Group) - base color a coral or dark reddish-pink, never as dark crimson as 'Colvillii Rubrus'. Some consider the original 'Covillii' to be this pinker one and others say it was always the most red one! In any case, we have four clones early on if 'The Bride' is added as the second white clone.

'Colvillii Rubrus' (Colvillii Ruber) (Colvillii Group) - the most red of the clone, scarlet to crimson, lower tepals well marked in blush to white. It is the typical, original clone by some reports but others suggest the original was much more coral to pin and best called 'Roseus'

Gladiolus communis - the following is an 1841 plate from Sturm's Deutschland's Flora, showing the typical magenta creation we know today under the name var. *byzantinus*. That variety or subspecies is considered unnecessary and redundant of the typical species, though admittedly it can have the occasional paler variant that is not typical. The early color

variants of this species from the 1800's including a near true red, flesh-colored variant, and a light pink. These might have been confused with other species so it's not clear what they actually had.

The white variations are generally thought to belong to *G. italicus* 'Albus' (seeds not yet seen) but doubtless albinos can pop up in any species of flower any where any time. The "purple" is probably the more typical violet-magenta material.

The separation of *G. communis* for similarly bright pink *G. italicus* bears mention:

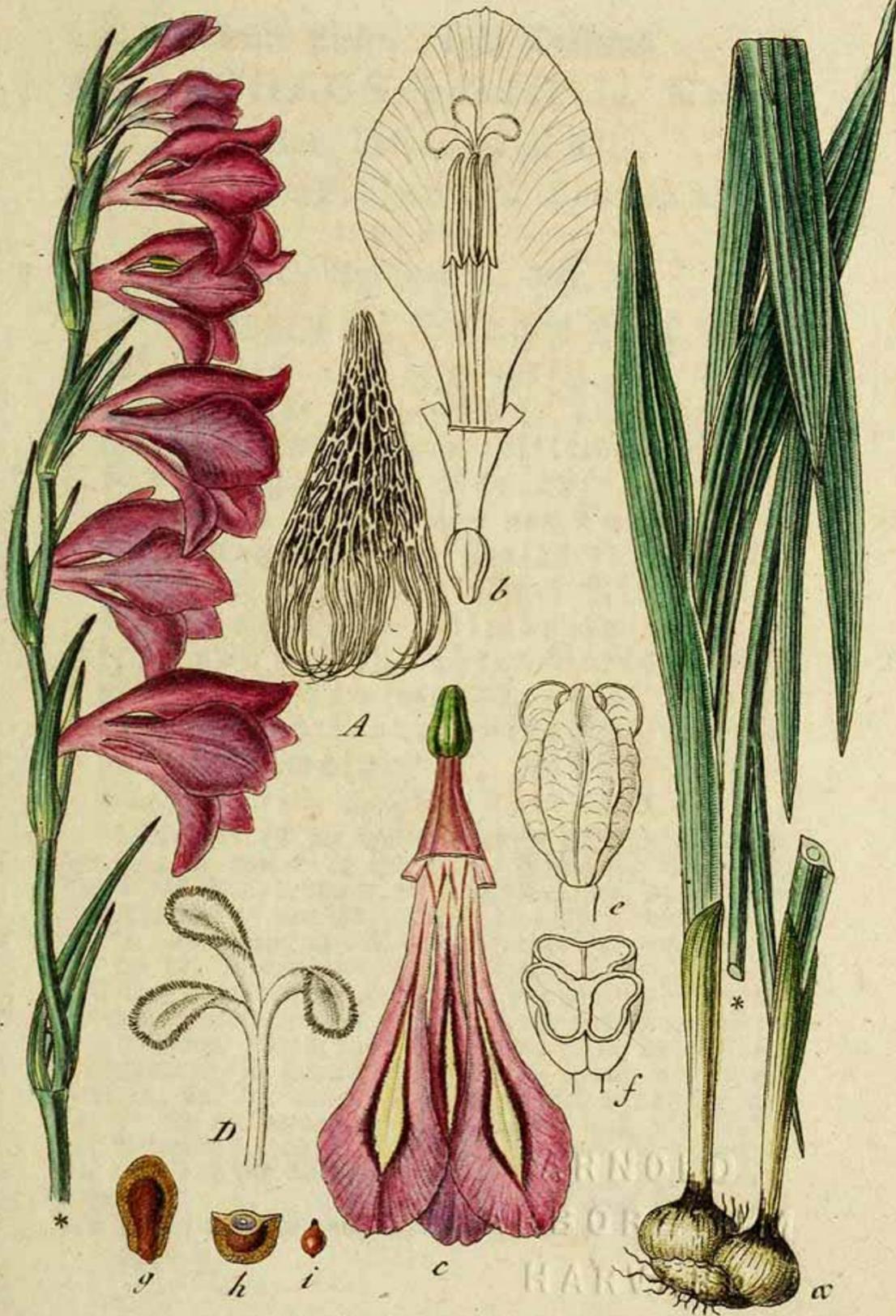
- 1) anthers 10-13mm (15mm in *italicus*)
- 2) seeds winged (unwinged in *italicus*)** - this is the really big taxonomic delimiter
- 3) capsule oblong (globose in *italicus*)
- 4) anthers shorter or equal to filaments (much long anthers in *italicus*)
- 5) capsules 18-24mm long (much smaller at 10-12mm in *italicus*)
- 6) tepals color a bright purplish-pink, dark magenta, or violet-magenta (less harsh, paler in *italicus*)
- 7) taller at 80-100cm (*italicus* often 45-60cm tall)

Based this paper, *G. communis* (var. *byzantinus* not considered distinct) is separated from *G. illyricus* by:

https://www.researchgate.net/profile/Aeron_Buchanan/publication/268008891_The_Taxonomic_Status_of_Gladiolus_illyricus_Iridaceae_in_Britain/links/548376f90cf2f5dd63a912db/The-Taxonomic-Status-of-Gladiolus-illyricus-Iridaceae-in-Britain.pdf

- 1) *communis* 50-100cm tall (*illyricus* 25-50cm tall)
- 2) *communis* leaf length 30-70 cm (*illyricus* 10-40cm)
- 3) *communis* leaf width 5-22 mm (*illyricus* 4-10mm)
- 4) *communis* 10-20 flowers per stalk (*illyricus* 3-10)

The second plate is from Curtis Bot. Mag. of 1805 under the name *G. byzantinus* Miller. In fairness, Curtis described Miller's Byzantine taxon are earlier in flower, shorter but more robust, and the better ornamental than *G. communis*. Most modern glad experts consider the species identical to var. or subsp. *byzantinus* although the garden escapees are often in fact more robust and actually taller with more flowers. If there is a better garden strain or clone or two, let them be named! Because alot of this material is not $2n=60$ but $2n=90$ it can be very hard or impossible to cross.



Gladiolus communis L. J.W. Sturm ad viv. del. & sc.



var. concolor (*G. tristis* var. concolor) - tepals light yellow to near white, not as light or strong a yellow as 'Sulphureus' and some species variants. Some experts consider var. sulphureus to be identical to var. concolor.

'Cooperi' (*G. dalenii* 'Cooperi')(*G. psittacinus* var. cooperi (Baker) Baker) - this is not a true species or wild variety but in fact a clone of *G. dalenii*. Baker notes that it has more acute, sharp lobe apices than the species and also a longer perianth tube. The upper tepals are orange in effect, somewhat gold striped and faintly suffused orange unlike some of the other clone which have a more solid orange or scarlet upper. The lower are at least 80% yellow with orange tips. Thomas Cooper found it in Natal on a collecting mission for Wilson Saunders. It first flowered at Kew in 1872. It is considered lost to cultivation. It is notable as seedling with orange and yellow stripes or markings are known today, some with a massively yellow set of lower tepals and others not. Baker's plate in Curtis Botanical Magazine of 1876 follows:



G. cruentus Moore ('Cruentus', *G. cruentus* 'Cruentus', possibly also *G. communis* subsp. *byzantinus* 'Cruentus' of Old House Garden, Plant Delights Nursery, and others) - 24 in. tall, tepals a bright hot pink or magenta to cerise-red, lower tepals with a creamy-yellow line that is edged in a darker shade of magenta. Ch: USDA 6a per (P). In: *G. byzantinus* is often confused in the trade and stock offered is not always true. Plant Delights credits their stock of true material to Texas plantsman and bulb expert Greg Grant. A plate from Curtis Botanical Magazine (1869) as *G. cruentus* follows. This is based on the flowering plants from William Bull Nursery which first flowered in 1868, being a native of Natal in South Africa.

(JL) is this modern taxonomy, considers it a true species and notes that no type specimen elsewhere, leaving the Curtis plate to be the nomenclatural standard. Dr. Lewis and associates say *G. cruentus* is endemic to the Drakensberg Summit around Mont-aux-Sources and adjacent peaks. There is a very good description of the species. I consider the cultivated material to be a "typical clone" of the species from gardens and thus worthy of being called *G. cruentus* Moore 'Cruentus'. It is important to note that (JL) describes the flowers as "scarlet, the tube pale outside, yellowish white mottles with red in the throat, and the lateral lobes with an irregular white and red mottled band near the middle with a dagger-like mark projecting from the centre towards the apex"

The big "white dagger" of this true species is seen in a photograph at: http://www.ecoman.co.za/nursery/articles/art_g_cruentus.html, accessed 2.12.2018



The second plate below of *G. cruentus* Moore is from *The Florist and Pomologist* III(2): 121 (May 1869).



This third plate from (EP) was illustrated by F. Sewell before 1925 and adds much to our understanding of the wild form. Again, the spotted region and long white dagger-shaped point make this very distinct.



'Cupid' - "soft rose, lovely" (Kelway's Manual of Horticulture 1913 under Early-Flowering)

'David Hills' (*G. papilio*) - "astonishing red flowers which nod. Aug-Sep. grey-green foliage. 1m. Easy....Hardiness Rating: H6" per (CG). Lambley Nursery, www.lambley.com.au, accessed 2.18.2018, considers shows something more akin to *G. dalenii*, upper tepals scarlet with pale cream centers, lower tepals mostly yellow with coral or light orange on the edges, but having the hooded *G. papilio* look too and a 35cm height.

'De La Roche' (*G. carneus*) - an old name, thought to be a possible synonym of 'Campanulatus'

'Delicatissima' = 'Blushing Bride'

'Delicatissima Superba' - a listed name for an improved blush form.

'Delight' (x *haarlemensis*) - Or: T.M Hoog, Haarlem, The Netherlands 1935, a miniature series of *Colvillii* Group.

'Excelsus' (*G. carneus*) - based on *G. blandus* var. *excelsus* Sweet, best regarded as a cultivar, plants larger, flowers larger than typical.

'Elegans' (*G. cardinalis*) - "fiery orange-scarlet, with conspicuous snow-white blotches and light center. height 21 in." (BS). Or: Frank Lilley, Guernsey, England. A plate from Barr's follows. The second plate is from (HA). Kelway's Manual of Horticulture 1913 says "larger flowers and more free than the type"



GLADIOLUS CARDINALIS ELEGANS.



GLADIOLI

Hooded *Gladiolus*
Primrose and Coral)

Early-flowering
'Cardinalis Elegans'
(Scarlet, flaked with white)

July-flowering
'Mrs. G. W. Willock'
(Bluish, with cerise markings)

'Elvira' (Nanus Group) - 24-36 in. tall, tepals blush pink to light pink, lower ones marked with a zone bordered in near magenta to medium pink, early season. Or: van Winsen Warmond, The Netherlands 1956.

'Eris' (x victorialis = *G. communis* subsp. *byzantinus* x *G. cardinalis*) - Or: Damman, Naples, 1893

'Express' - "three weeks earlier than Nanus, fine salmon-red with dark brown spot" (Kelway's Manual of Horticulture 1913 under Early-Flowering)

'Fair Lady' (Tubergenii Group)

FIONA© 'Gunung Gedeh' (Primulinus Group) - tepals light yellow to cream in bud, opening to near white with a big yellow center, maturing to nearly all white. Ns: the trademark is named for the wife of grower Mark van Winsen. Or: A.P.J.J. de Redder in 1991 from Gunung Gedeh of Sumatra. It is essentially a pure white *G. dalenii* as far as I can tell without having one. High *Fusarium* resistance.

'Fire King' = 'Ardens' if the dwarf, hardy type. The correct use of this name is for a red form in Child's King Series.

Gladiolus flangagannii - somewhat hardy by a few reports.

'Floruus' - "light rose with dark carmine, white eye, long stalk" (Kelway's Manual of Horticulture 1913 under Early-Flowering as "Nanus Florus")

'Fragrans' (*G. tristis* x *G. recurvus*) - given the parentage, this was likely a hardier cultivar. The following plate is from Mclean, Forman T. 1938. Double factors for the fragrance in the *Gladiolus*. Journ. Heredity 29(4): 115-121. Perhaps it could be synthesized again? This is not *Gladiolus fragrans* Jacq., a taxon based on wild material and not a man-made cross like Herbert's plant.



WILLIAM HERBERT'S "GLADIOLUS FRAGRANS"

Frontispiece

Vase of first-generation hybrids between *Gladiolus tristis* and *G. recurvus*, two fragrant species related to the garden gladiolus. They are very different in respect to odor,—*tristis* having a lily-like scent at night, while *recurvus* has a mild violet-like scent during the day. All of the first generation hybrids have the violet fragrance of *G. recurvus*, but lack the *tristis* fragrance, though it reappears in some of the seedlings in the second and later generations. This cross was made over a hundred years ago by Dean William Herbert, one of the great hybridists of the early nineteenth century, who called the hybrid *Fragrans*. The hybrid was propagated for a time, but eventually disappeared. One-third natural size.

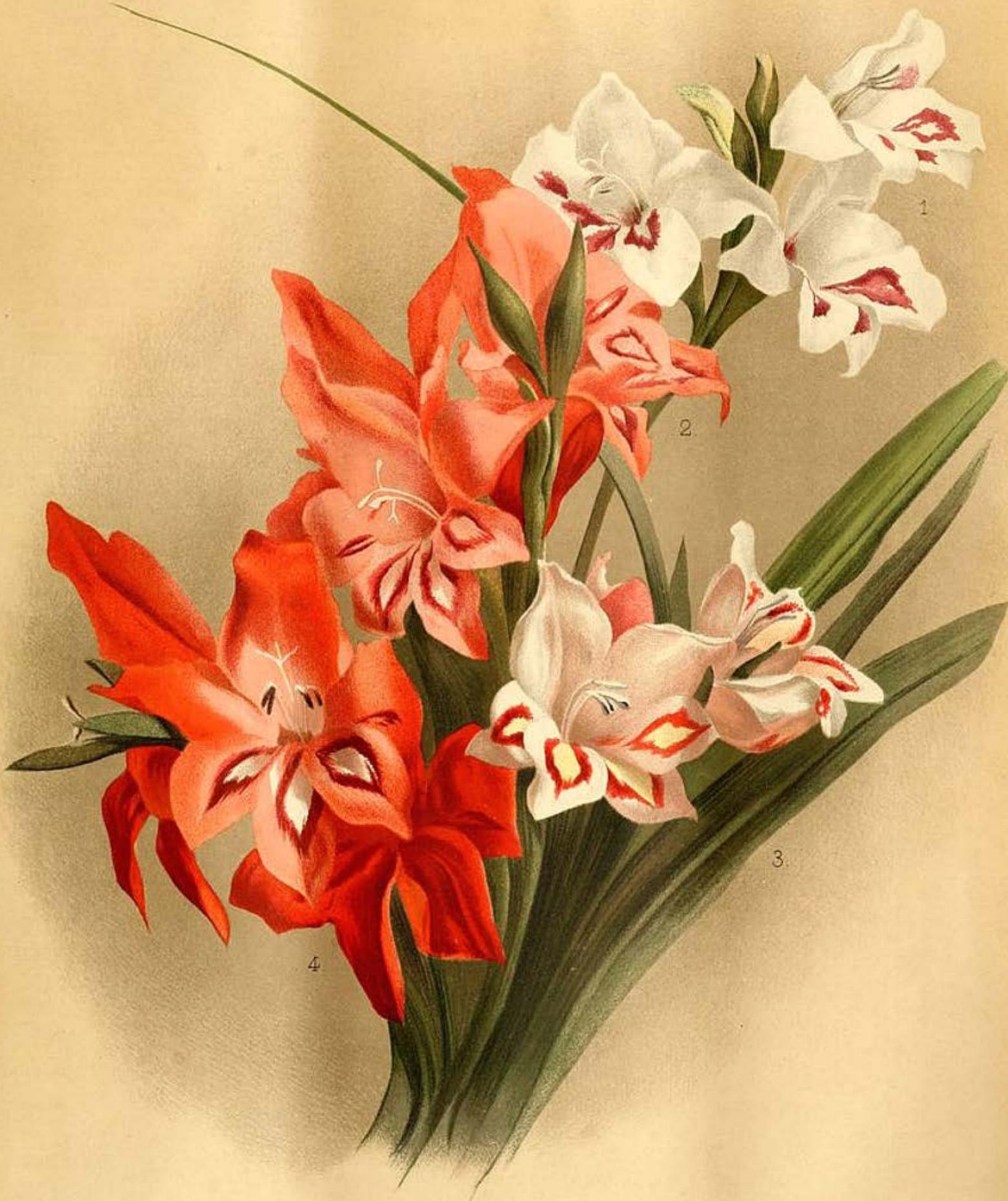
FROZEN SPARKS® (Colvillii Group) -

'Garnieri' (*G. dalenii*) - 75cm tall, tepals "large peachy-red and cream. May-Jul...Hardiness Rating: H4" per (CG)

GALAXIAN® (Colvillii Group) - a plate follows of this complex, multi-colored clone:



'General Scott' - an old plate follows.

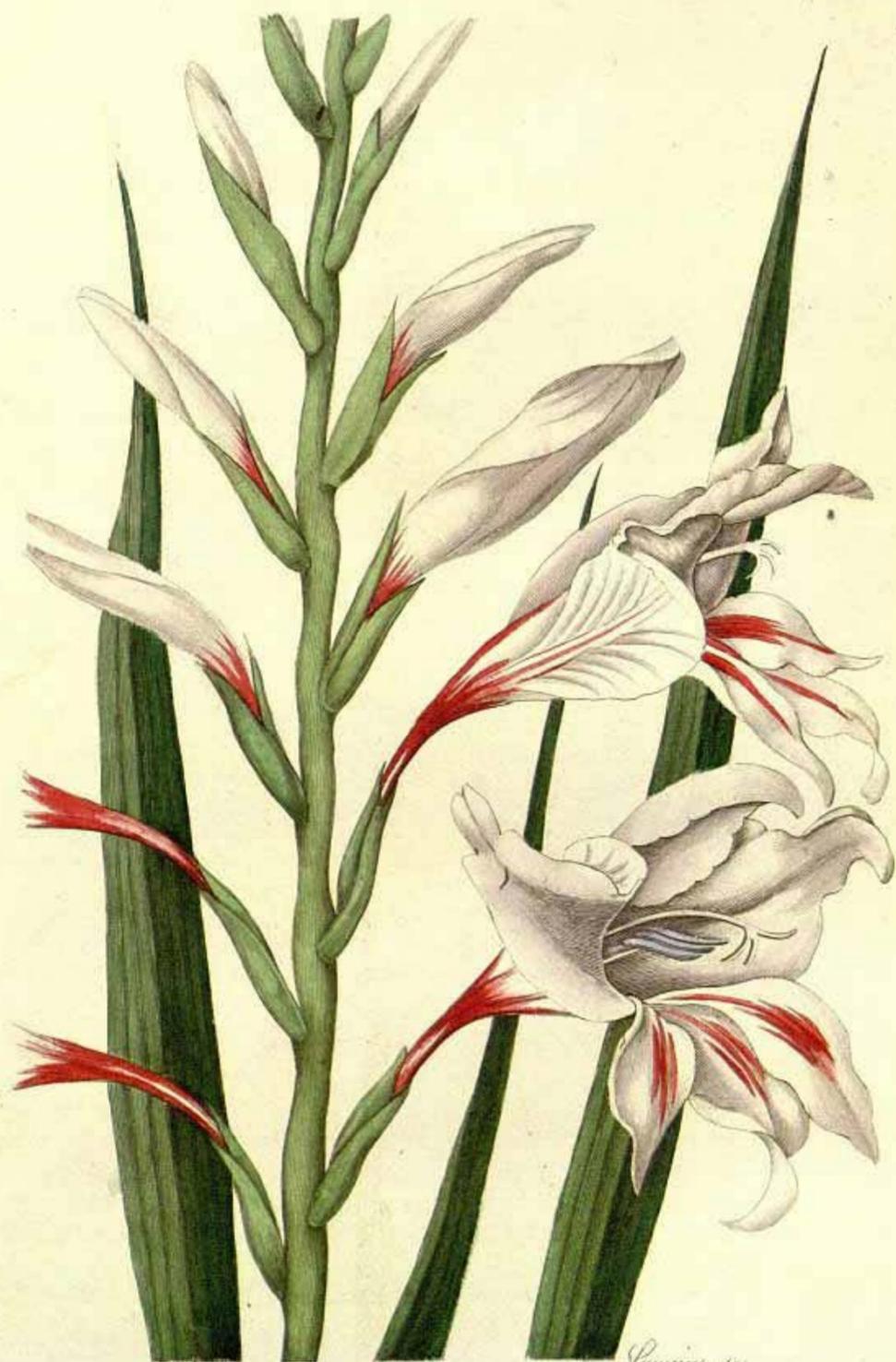


EARLY FLOWERING GLADIOLI

1 BLUSHING BRIDE 2 ROSY GEM 3 GENERAL SCOTT 4 ROSEA MACULATA.

'Grandiflorus' (Primulinus Group) - 40-50 in. tall, a larger plant, flowers also larger, often with 12-18 flowers per large bulb.

'Grayuel Charmant' (*G. carneus*, formerly called *G. blandus*) - the following old plate (*Annales de flore* 1837) shows the lovely red markings, even in bud. This species is quite cold hardy and we therefore have enough reasons to believe this hybrid belongs with this lot. Or: M. Poiteau 1837 as *G. floribundus* x *G. blandus*=*G. carneus*.



Pinxten sc

GLAYEUL CHARMANT
Gladiolus blandus

'Halley' (Nanus Group) (NOT 'Halley' of Velthuys 1910) - upper tepals white with a yellowish to cream center, lowers more heavily suffused cream with a violet-red midrib to about 30-50% of the length. Or: Van Winsen Warmond 1986. Hs: a later homonym of the 1910 clone but reuse of names is permitted when old material of the same name is thought to be extinct or lost. A nice plate follows:



'Halloweenie' (*G. dalenii* var. *dalenii*) - 60 in. tall, tepals scarlet-orange in the uppers with paler, yellowish suffusions at the base, lowers partly golden-yellow and the same shade of scarlet-orange, blooming around Halloween in Raleigh, NC. Or: Plant Delights Nursery for S. African seed. Ch: USDA 7a per (P)

x haarlemensis - Or: T.M Hoog, Haarlem, The Netherlands 1935, a miniature series of *Colvillii* Group.

Herbert Group - this is a general grouping for various hybrids made by Rev. William Herbert, Dean of Manchester, from the 1820's onward (perhaps even a decade sooner), him now credited as the first serious glad hybridizer of modern times. Some of his crosses discussed here in detail are 'Fragrans' and 'Pudibundus'. His crosses mostly involved species *G. recurvus*, *G. tristis*, *angustus*, *cardinalis*, and *carneus*. Few if any survive as far as they can be clearly documented. He save many seedlings to Mr. John Bidwell and those were cultivated in Australia and some of that stock down under may prove of his origin. While he produced some very nice material, his work was not widely recognized in the trade, being eclipsed by Covill's hybrids and later those by Lemoine and Childs. His 'Fragrans' had a violet (*Viola*) scent at night; something we do not have today. Herbert's legacy is somehow crossing diploids and tetraploids and perhaps triploids as well., which is seldom successful today, but perhaps his breeding stock was different in the cytology - which we do not know for sure nor can prove. His writing for the Horticultural Society of London in 1820 and 1822 are worth finding. *G. x sproffortianus* is named for his home town but it's unclear what all these involved.

'Hibbertii' (*G. carneus*) - based on *G. blandus* var. *hibbertii* hort., tepals pink, spade-shaped blotch

'Hookeri' (*G. dalenii* 'Hookeri') - thought to be one garden clone of this species, vigorous, corms on long stolons, large-flowered, mostly yellow, very late-flowering compared to other stock, perhaps distinct for lack of interbreeding opportunities in the wild, thereafter only a garden variety as introduced. See (JL) for the long, complicated history. She refers to plate 6 (shown below) but is has the odd name, not referenced elsewhere in the monograph, of *G. natalensis* f. *domesticus*. Perhaps they had planned to use a different name?



'Impressive' (Nanus Group) - upper tepals, lowers marked with an elliptic zone have a violet-magenta edge and pink center. Or: E. Mahy, Guernsey, England 1957

x insignis hort. (Ramosus Group?) (G. tristis OR G. carneus x G. cardinalis)(G. x nanus var. insignis) - it is not a wild form and thus not a true botanical hybrid species. Note that the parentage is identical to the Covillii Group and some expert consider the two taxa full synonomous. No material is sold today (we believe) with the insignis epithet so creating another cultivar group is clearly unwarranted. Indeed, having been considered a variety or subtaxon of G. x nanus hort., it represents one of the parentage sets that make up the modern Nanus Group; that group probably having three to six species if not more at one time in terms of the hardy, dwarf material. Dwarf, non-hardy G. x nanus hort. that came later almost certainly have more species in the mix. The following is an old botanical plate from Paxton's Botanical Magazine of 1840 shows this taxon which favors G. cardinalis for color and markings. Paxton says this plate is based on a plant which bloomed in 1839 at Messrs Lucombe, Pince, and Co. of the famous Exeter Nursery in the UK. Curiously he mentioned is "was purchased, at the sale of the late Mr. Colville's Plants, Chelsea, among other Gladioli". The parentage her is identical to 'Covillii Rubrus' but apparently marked in a less white manner. It bloomed at Exeter in June, July, and August. Gardeners Chronical of 1851 says it from the "Ramosus tribe, together with G. splendens". It seems likely this taxon was raised by Colvill about 1835, more than a decade after his Colvillii Group material. (H) says it was found in the Camden Park catalogues of 1845, 1850, and 1957 "obtained from Veitch's Nursery. There is some thought (see (H)) it may still exist in Australia under the name 'Spitfire' but that is considered a G. carneus x G. cardinalis cross. One of the fathers of modern American Floriculture, Dr. Roy Larson (L) considers this is G. carneus (blandus) x G. cardinalis.



IRISH GOLD® (Colvillii Group) - tepals mostly all yellow, tinged green in bud, some portions and midribs darker. Or: Van Winsen 1988, registered by Mark van Winsen 2017.

Gladiolus kotschyanus - "very hardy" per www.rareplants.co.uk, accessed 2.22.2018

LAS VEGAS® (Primulinus Group) - tepals bold bicolored with scarlet-orange above and most of the tepal bases, upper and lower, contrasting with yellow. It has a general look of other bicolored G. dalenii types such as 'Halloweenie' but far more yellow than it. Or: van Winsen

'Laura Jay' (Primulinus Group) - 70cm, flowers distinctly hooded (potentially G. papilio in the mix), central upper tepals rose-red, very strongly flattend or hooded, later upper tepals red with a distinct white midrib to about 80% length, lower tepals most yellow with a white apex, often fringed or pointed. Source: <http://jacquesamandintl.com>, accessed 2.1.2018

LITTLE VINTAGE® (Colvillii Group) -

'Lucky Star' (G. callianthus var. muralae) - 48 in. tall, much as a the variety but markings a more light violet-red (than some which are very dark blackish-red), these marks cream suffused on the edges, but most importantly a very well-scented clone, being of this species usually a fall bloomer. Or: Joan Wright, New Zealand, 1960's. Ch: USDA 7b per (P).

'Magnet' (x haarlemensis) - Or: T.M Hoog, Haarlem, The Netherlands 1935, a miniature series of Colvillii Group.

'Maid of the Mist' - this is said to be a common name for misty cream and yellow material of Primulinus Group but not a cultivar per se.

'Mirella' (Primulinus Group) -

'Monsieur Piquet' (Primulinus Group or G. papilio hybrid) - "hooded deep slight orangy-maroon and cream stripes flowers (G. papilio shaped rather than G. primulinus). Jul-Sep. 1m" per (CG) with hardiness of H5.

'Mortoni' (G. carneus) - based on G. blandus var. mortoni - 16 in. tall, tepals white, vertical streaks in some tepals. In: 1835.

Nanus Group (G. nanus hort. not L.) - originally a name for any dwarf or short cultivar but over time this name has come to mean in the trade a series of cultivars listed in the Nanus Group here and considerably more cold hardy (USDA 6b to 7) than a dwarf, florist's cultivar of modern times. Based on the best available sources, the original Nanus Group hardier clones involved G. x insignis (G. tristis OR C. carneus x C. cardinalis), cardinalis, scullyi, tristis, and carneus in the mix. (O) considers G. x nanus hort. to be a mix of G. x colvillii, G. x ramosus Paxton, and G. x insignis hort. and they have diploids, triploids, and tetraploids in the batch.

The most widely cited article on G. nanus is Fuld's 1912 article in Horticulture and before that in the Bulletin of the American Gladiolus Society found here:

<https://books.google.com/books?id=79tKAQAAMAAJ&dq=gladiolus%20nanus%20fuld&pg=PA459#v=onepage&q&f=false>

He lists as the cultivars known to him but I cannot be sure all or most are hardy but here is the list:

Blushing Bride—delicate rose suffused with white and deep red blotch. Boildien—carmine. Brilliant—the earliest red. Bee-theven—blue. Booy St. Vincent—ilacrose. Cardianis elegans—orange red, large white blotch. Catharine—pure white. Chas. McIntosh—orange red with purple blotch. Crimson Queen—scarlet, violet blotch. Carnot—dark scarlet, purple blotch. Charmante—creamy rose, pretty blotch on lower petals.

Delicatissima Superba—delicate pink with dark blotch. Delicate—white, crimson blotch, an improved Blushing Bride. Dutchess de Parma—rose flaked white. Duke of Albany—light rose, carmine spotted, white eye, very free blooming.

Fairy Queen—light scarlet. Fire King (Ardens)—brilliant orange scarlet. Flery Knight—bright vermilion scarlet. Florus—light pink shaded crimson, white eye. Favorite—pink, blotched sulphur.

General Scott—white with red blotch. Gordon—most delicate ilac.

Henry Irving—soft ilac, flaked white and violet.

Innovation—beautiful soft pink.

Jeanne Potler—pale crimson with dark blotch.

Konigan Wilhelmina—delicate pink with dark pink blotch. Kelway's Beauty—white spotted rose.

Lady Howard—blue and white. Leonora—soft rosy white, pink blotch. Lord Grey—pale red, white blotch. Lucretin—large white, flushed rosy flesh, yellow blotch, edge red. Little Lady—white flamed, wine red. L'Unique—fiery orange red, blotched pure white.

Mathilda—white shaded, ilac blotch, sulphur, bordered with ilac. Mina—creamy yellow, orange blotch. McIntosh—fine scarlet. Marlborough—rose. Madame McIntosh—dark orange scarlet with purple blotch. Maltravers—deep pink. Modesty—delicate violet, pink blotch.

Orange Queen—clear orange scarlet, blotched white.

Peach Blossom—pure salmon pink. Pink Perfection—clear satiny rose. Princess of Wales—large white with rose overhead. Prince of Wales—light pink. Professor Blume—extra fine blush.

Queen of Holland—pure white with a distinct crimson blotch. Queen Wilhelmina (see Konigan Wilhelmina).

Red Prince—bright orange red, white blotch. Rosy Gem—rose with carmine blotch. Romulus—salmon, white blotch. Rose Queen—deep rose. Rosy Morn—soft rose shaded orange. Rosa Maculata—light red, white spot.

Sappho (Zimmerman)—most delicate lavender, with ilac blotch. Stephanie Endlicher (Gaubald)—light salmon. Sarman Gem—salmon with ilac blotch. Salmon Queen—salmon orange. Sans Pareille—light ilac, small blotch on lower petals. Sydonie—very fine soft rose, dark blotch with cream centre.

Von Mottke—soft rosy and light orange sturdy grower. Victor Hensen (see Apollo). Victor Hugo—light red, long stalk. Von Schilder—rose and violet.

William III—fine salmon pink, crimson blotch. Weber—(Duchesse de Mompensier) cherry red, white spot.

Where are our American breeders

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Gladiolus Cardinalis, or Nanus (THE ORCHID) GLADIOLI

Ready in November

A specialty of exceptional value both for forcing and outdoor culture. Extremely early-flowering
Flowers outdoors in June and July

These beautiful early-flowering varieties are invaluable for pot culture and for border planting. They force readily, and they may be had in flower from the end of April till the end of July. They may be forced like ixias, but they require more pot room, and they are invaluable for their yield of cut-flowers from the open in June and July. They last long in water, and every flower opens to the extremity of the spike. Their rich colors and vivid markings on the lip petals rival those of orchids, and we recommend this group not only for their beauty, but because they are very easy to grow. A light soil and a slight protection with litter during very sharp frost will prove all they require, and the spikes will be longer and the flowers larger if the plants are mulched in dry weather.

Ackermanni. Salmon-orange, with white blotches edged scarlet. Doz., 30 cts.; 100, \$1.50; 1,000, \$12.

Ardens (Fire King). Fiery scarlet, pink flakes. Doz., \$2.50; 100, \$18.

Blushing Bride. Pure white, with deep crimson flakes; most effective. Doz., 30 cts.; 100, \$1.50; 1,000, \$12.

General Scott. Delicate rose, red blotches. Considered one of the best pink varieties. Doz., 75 cts.; 100, \$5.

Lucretia. Large white, flushed rosy flesh, yellow blotch, edged red. Doz., 50 cts.; 100, \$3.50; 1,000, \$30.

L'Unique. Rich coral-red, with carmine tips, flaked white and edged crimson; a very rich form. Doz., 75 cts.; 100, \$4.

Modesty. Very light violet, blotched rose. Doz., 40 cts.; 100, \$2; 1,000, \$15.

Ne Plus Ultra. This *Gladiolus* received an "Award of Merit" from the Royal Horticultural Society, London, England. Grows 3 feet high and has magnificent spikes of reddish salmon flowers, with white tongue-shaped blotches on the lip petals. Forces splendidly, and likely to prove the standard *Gladiolus* for this purpose. Every bud opens in water. Doz., 60 cts.; 100, \$4.

Orange Queen. Clear orange-scarlet, blotched white. Doz., 40 cts.; 100, \$2; 1,000, \$15.

Peach Blossom. Rosy blush; extra. The most delicate colored *Gladiolus*. Doz., 60 cts.; 100, \$4; 1,000, \$35.

Pink Perfection. Deep rose. Doz., 25 cts.; 100, \$1.50; 1,000, \$10.

Prince of Orange. Dark orange-pink, flaked white and margined carmine. A grand *Gladiolus*. Doz., 90 cts.; 100, \$6; 1,000, \$50.

Queen of Holland. Pure white, flaked light sulphur, bordered red. Doz., 50 cts.; 100, \$3; 1,000, \$25.

Queen Wilhelmina. Blush-white, with conspicuous blotches of cream, with scarlet margins. Doz., 75 cts.; 100, \$5; 1,000, \$40.

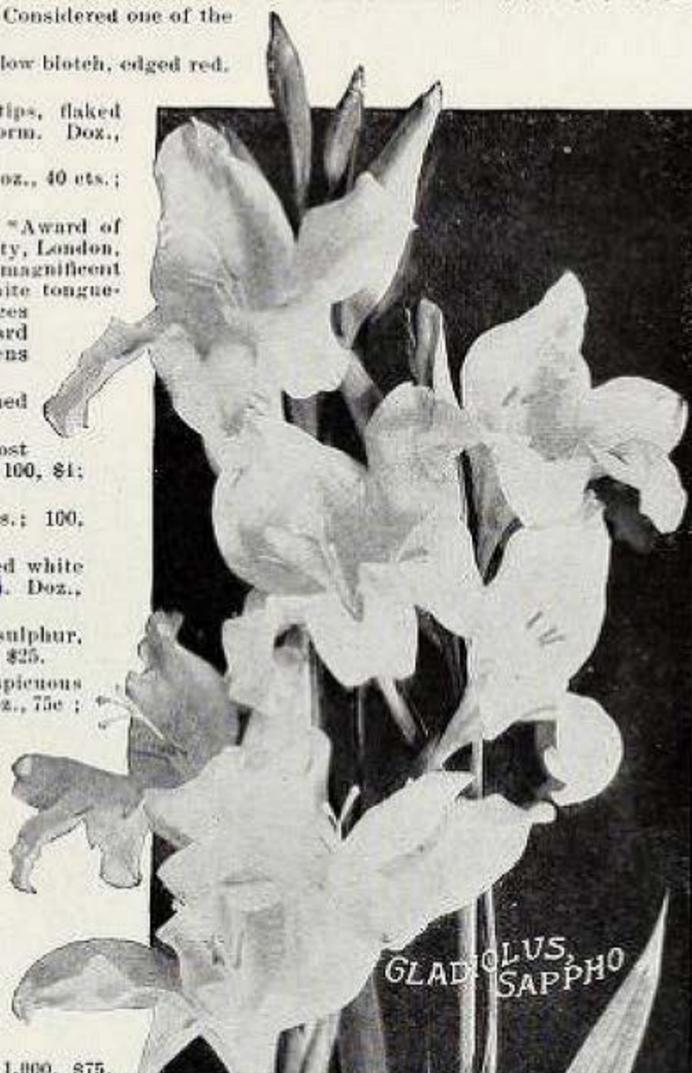
Rosy Gem. Rosy pink. Doz., 40 cts.; 100, \$2; 1,000, \$18.

Salmon Queen. Beautiful salmon-pink. Doz., 50 cts.; 100, \$3; 1,000, \$25.

Sappho. Delicate lavender, with faint creamy blotches edged violet. Doz., 30 cts.; 100, \$1.80; 1,000, \$15.

Sans Pareille. Light lilac, small blotch on lower petal. Doz., 40 cts.; 100, \$2; 1,000, \$15.

Tristis. A slender-growing grassy species 2 to 3 feet high, producing lovely sweet-scented yellow flowers, the petals of which do not reflex so fully as most others. Quite pretty and novel. Doz., \$1.25; 100, \$8; 1,000, \$75.



This very extensive selection of Nanus Group or *G. cardinalis* variants appears in the Fall 1908 of Rawson Bulbs of Boston, Mass. They were surely not cold hardy in Boston but we suspect some of these rarer ones could be USDA 6-7 durable. Southern US gardening did not even make it to the radar of northern US nurseries until the southern US population exploded in the 1970's.

UNDULATA AUREA VARIEGATA.—A very showy variegated variety; ideal for pots or rockery ... 3 6 20 0

EARLY GLADIOLI.

These are Guernsey-grown and raised with one exception, true to name, free from disease and early to force.

Culture.—Plant in late Autumn in well-trenched ground about 4in. deep, and use no stable manure.

NEW NANUS VARIETIES.

	Doz.	100
COUNTESS OF ILCHESTER. —A pleasing pink with primrose blotch, not spoiled by weather ...	s. d.	s. d.
EXCELSIOR.—Delicate pink; a Dutch seedling of great merit ...	1 3	8 6
KING EDWARD (Lilley).—Fiery scarlet with long narrow crimson flake; A.M., R.H.S., 1910 ...	2 6	12 6
KING OF SPAIN. —Rich scarlet, with pure white flake; very distinct ...	4 6	30 0
PRINCESS MAY. —Pale salmon pink; a very beautiful flower, large and shapely ...	4 6	30 0
PRINCESS VICTORIA. —Rich salmon pink, with pure white blotch; very floriferous, one mass of bloom in July ...	2 6	15 0
QUEEN ALEXANDRA. —Bright pink, edges crimson and fimbriated; very upright grower; a distinct break ...	1 3	8 6
SALMON GEM. —Salmon pink, shading to orange, white blotch, edged crimson; tall branching stems ...	5 0	35 0
SALMON KING. —Large flowers of a salmon shade, white blotch edged pink; very strong grower ...	5 0	35 0
THE QUEEN. —White, with clear rosy flakes, tall upstanding spikes; vigorous and free flowering; forces well ... 1,000, 30s.	2 6	15 0
	—	4 0

NANUS VARIETIES.

	100	1,000
ACKERMANN. —Orange salmon, flaked carmine; very fine ...	3 0	25 0
ARDENS (Fire King).—Fiery scarlet, flaked magenta; a most telling variety ...	10 0	95 0
BLUSHING BRIDE. —White with crimson flakes; very early, splendid forcer ...	2 0	15 0
CARDINALIS ELEGANS. —Fiery scarlet, with conspicuous snow-white flakes ...	5 0	45 0
COLVILLI ALBA. —Pure white; earliest and best for forcing ...	2 6	17 6
CRIMSON QUEEN. —Orange scarlet, flaked carmine and white ...	2 6	20 0
DUKE OF ALBANY. —Deep crimson, flakes white, heavily suffused magenta ...	5 0	40 0
FAIRY QUEEN. —Bright reddish crimson, flaked white; good for forcing ...	2 6	17 6
GENERAL SCOTT. —White, delicately shaded rose, flakes creamy white, edged crimson; branching habit; a real gem ...	4 0	35 0
LORD BYRON. —Rich pink, flaked white and carmine; vigorous and free flowering ...	2 0	15 0
PINK PERFECTION. —Rosy pink, flakes white, shaded maroon ...	5 0	—
PEACH BLOSSOM. —Beautiful rosy blush, with deeper pink markings; splendid for vases ...	2 6	20 0
QUEEN WILHELMINA. —White with rosy red blotch; tall upstanding variety; free flowering ...	7 0	60 0
ROBY GEM (True).—Delicate rosy pink, blotched deeper pink; good forcer and very free and early ...	4 0	35 0
SARNIAN GEM. —Lovely salmon pink, blotched pink; splendid for cutting ...	2 6	20 0
FINEST MIXED. —In splendid variety; a cheap offer for forcing ... 10,000, 90s.	1 6	10 0

Frank Lilley of Guernsey, England published this massive list of Nanus Group in 1915 and three cultivars in their Ramosus Group (see below).

The Gladiolus.

PAPER BY MR. E. T. WHEADON.

In Guernsey Growers' Association Year Book, 1914.

[Concluded from January issue.]

EARLY FLOWERING SECTION.

I would like now to say something with regard to the early flowering section. We all know such varieties as *Blushing Bride*, *Red Prince*, *Cardinalis Elegans*, *Delicatis-sima Superbissima*, *Crimson Queen*, *Ardens*, *Gen. Scott*, and in the newer varieties *Fiery Knight*, *Peach Blossom*, *The Queen*, *Little Lady*, *Lucretia*, *Rose Queen*, while such sorts as *Queen Mary*, *Mrs. Atkinson*, *Innocence*, *King Edward VII.*, and *The Cardinal*, which have gained awards during the past two or three years, have not (with the exception of *King Edward VII.*) yet found their way into commerce. This race of Gladioli is particularly interesting to us in Guernsey, because all the varieties I have named and many more were raised here. The late Messrs. C. Smith and S. Priaux being amongst the pioneers of this work, while latterly much good work has been done amongst others by Messrs. C. Smith and Sons, F. Lilley, C. B. Blampied, F. Guilcher, and Le Page, varieties of whose raising have all obtained awards recently. We have reason to hope that in the near future some other varieties of real merit will be added to our lists. I have taken a good deal of interest in this work and now have a considerable number of seedlings under trial,

What more delicate colours can be found than the pink of *Peach Blossom* or the salmon of *Queen Mary*; the blush white of *Blushing Bride*, *The Queen* and *Delic. Superbissima*, while the white of *The Bride* with its delicate tint of green will always be in great demand. If we look to the deeper colours, we find in *Cardinalis Elegans* the very brightest of fiery scarlets set off with its pure white flakes, while *Ardens*, *Fiery Knight*, *Crimson Queen*, are all scarlet varieties of great merit.

The origin of this race is shrouded in some mystery, but it is generally supposed to have originated from crosses between two or more of the following species: *G. Trimaculatus*, *G. Tristis*, *G. Blandus* and *G. Cardinalis*. *G. Colvilli*, which originated with a Mr. Colvill, is said by some to have been a cross between *G. Tristis Concolor* and *G. Cardinalis*. This hybrid was brought into commerce in 1823. About 1872 it sported white on two farms at the same time near Overveen, Holland. This sport became known as *Colvilli Alba*, the white variety with coloured stamens. This sensational novelty was surpassed some years later by an entirely white form which was introduced into commerce as *The Bride*.

some of which I hope may merit a place amongst the standard varieties. Looking over the leading kinds now in commerce I can only trace a few varieties of any merit which have been raised outside of Guernsey such as *Ackerman*, *Excelsior* and *Queen Wilhelmina*.

This early section is also of importance to us here because our climate suits them admirably. They stand our ordinary winter without any protection outside and propagate freely. It is a crop that is grown on a very large scale outside for cut bloom, while for indoor work they are particularly suitable. Some skilled forcers have had them to flower as early as March, but with ordinary care they come out in April, or if in cool houses, in May. Their bulbs being small a much larger number can be grown in a pot than with the late flowering section which has very large bulbs. As to colouring, they have not such a wide range as the late ones, but they include tints and soft tones which cannot be found in the tall varieties.

As regard culture, the early *Gladiolus* seems to thrive nearly everywhere in Guernsey, but preferably they should be given a good deep rich soil in a sheltered position, shaded somewhat from the full force of the noonday sun. No fresh manure should be used for them, but well-decayed manure may with advantage be dug in some time before planting, so as to become thoroughly incorporated with the soil. They appreciate having the ground deeply worked, as this enables them to hold out when the dry weather comes in the late Spring.

With our mild winters we are able to plant in August, September or October and ensure a good crop of flowers, provided always that we do not get an exceptionally hard frost. In Holland they always wait till Spring to plant, as otherwise they would certainly suffer through freezing. We usually plant about four inches deep, giving four inches space between the bulbs, and whenever possible give a mulching of straw manure just before

E.T. Wheadon in the 1915 issue of *The Modern Gladiolus Grower*, reprising a previous work in a local Guernsey grower's guide of 1914.

'Nathalie' (Nanus Group) - tepals light-medium pink in the uppers, base paler, lowers with a solid, bold violet-red marking that does not have a contrasting pale center to it. Or: J. van Winsen, 1986

'Ne Plus Ultra' (Ramosus Group) - "scarlet, blotched white" (Kelway's Manual of Horticulture 1913 under Early-Flowering, sold under "Ramosus Ne Plus Ultra")

'Numa' - William Herbert creation, grown by John Bidwell at Camden Gardens, Australia, pink with spots, 4 x 3 inches tall and wide, offered by Camden Park in 1845 and later catalogs.

Web ref: <http://hortuscamden.com/plants/view/gladiolus-hybrid-numa-herb>, accessed 2.20.2018

'Nymph' (Nanus Group) - upper tepals nearly white, lower ones marks with a elliptical, violet-magenta band, the center more white than in 'Prins Claus'. Earlier than 'Prins Claus' per (N). Or: van Tubergen 1914, possibly from *G. undulatus* or *G. angustus*, the later usually meaning *G. undulatus* or *G. blandus*.

Gladiolus oppositiflorus - this true species has involved in our modern hardy, dwarves but varies in tepal color from medium pink to salmon-pink, near orange, and occasionally near white. Mauve forms exist too and the amount of reddish markings varies from little to moderate. Most have fairly undulate tepals. The best forms have a 3-pointed star-shape with massive upper tepals and fine undulates of most tepals. The species varies in color and the more salmon-pink to light oranges are referred to subsp. *salmoneus* and this variant seems most important in the ornamental evolution in the early days.

'Pallidus' (*G. communis*) - a lilac-colored version of the species. Offered by Kelway in 1913 (see plate above under 'Covillii Albus')

Papilio Group - involving the *G. species papilo* and having that look of being hooded in the upper, central tepal (thus a flat top) and usually extreme hardiness. Flower shape ranges from narrow campanulate, something like musical bells at times to slightly trumpet like and flaring but often with a hooded upper, central tepal. Tepal colors range from rich ruby red ('Ruby Red' cultivar) to cream and yellow with large dark brownish-red markings. Others have pale lavender colors or white tinged lavender, occasionally with very ornate markings on the lower tepals that include yellow and numerous small violet dots. Given the cold hardiness of most garden material, I'm surprised there are not a hundred individual clones with unique color combos. Maybe we'll go for a dozen soon..

'Peach Blossom' (Primulinus Group or *G. papilio* cross) - tepals rose-pink, marked white below, tinged orange in bud and sometimes marked orange. (CG) says it has H6 British hardiness, likely because of the *G. papilio* ancestry

Peacock Group - I have no word on their hardiness but decided to include on a preliminary basis this series of Primulinus Group x Nanus Group hybrids made by Unwins of the UK. They were dwarf, star-like, and sometimes nicely reflexed. The name implies a range of colorful patterns and hues.

'Penelope' (x *victoralis* = *G. communis* subsp. *byzantinus* x *G. cardinalis*) - Or: Damman, Naples, 1893

Primulinus Group - this is based on the species concept of *G. primulinus* hort. which is now part of *G. dalenii*, the softer more yellow side, not strong orange or bicolored side of it's genetics. As a Cultivar Group it involves crosses to large-flowered hybrids (especially in modern times) and in the past mostly to other true species. The species served to make Primulinus Hybrids which were both pretty and yellow and not very hardy. Others described here are more dwarf and hardy. Primulinus stock was often sold as a mix but sometimes broken out by colors such as pale yellow, golds, oranges, and reds. The first plate here from Curtis Botanical Magazine of 1906 is typical of that unicolored, yellow material. The second plate from *Revue Horticole* shows a broader range of colors known then in France. In: J.M. Thornburn introduced *G. Primulinus* hort. from South Africa in 1908 and it was used under this name until recently as a source yellow genetics in hybrids. Other attribute the introduction to J.T. Last in 1887 from the Usagara Mountains (T). Indeed in 2018 many glad specialty growers still use the species name. Had the botany gone differently in the past we might have well called these taxa *G. dalenii* f. *luteus* as with other yellow-flowering variants of other species which may be orange, bicolored, or reddish. (L) says that "a whole new race of garden gladiolus originated when a yellow form of *G. natalensis* (*primulinus*) was collected at Victoria Falls and introduced in 1902" and crossed to existing large-flowered hybrids followed and these are the larger-flowered, less hardy Primulinus Group we have today in many catalog. (K2) describes this based on *Gardeners Chronicle* VIII: 122 (1890) as "a robust broad-leaved species resembling *G. psittacinus* but the fl. is a uniform pale primrose yellow, without any spots or streaks. East Africa."



M.S. del J.N. Pritch. lith.

Vincent Brookes Day & Son. Lith.

L. Reeve & Co. London.



Gladiolus hybridus de primulinus.

1878 J. T. Giffart - Bruxelles

'Princeps' - a possibly hardy old clone, bred from Childsii Group (less hardy) and *G. cruentus*. It closely resembles *G. cruentus* in the mottled markings and white dagger point, having a similar red to scarlet base color. Some old images don't show red mottling on its white zones. There is some evidence that it is *G. cruentus* x 'Mrs. Beecher' of the Childsii Group.

'Princess Beatrice' - "rosy scarlet, flaked white, very pretty and vigorous" (Kelway's Manual of Horticulture 1913 under Early-Flowering)

Princianus Group - H. Prins of Wisbech, Cambridgeshire, England crossed Primulinus Group with Covillii Group (in some variations) around 1926 and produced a series of seedlings that bloomed earlier than Primulinus Group. They never became popular. (CR).

'Prins Claus' ('Prince Claus') (Nanus Group) - upper tepals white or nearly so, lower three white with a wide elliptic marking of violet-margenta edge, a medium pink center, and a paler pink midrib. Or: J. van der Voet 1961 as sport of 'Impressive'. Per (N) more disease resistant, later, and with a darker green leaf than 'Nymph'. Base color is white and not a light pink as 'Impressive'. A lovely plate follows courtesy of Wikipedia Commons courtesy of Cdamond 2016.



'Pudibundus' - It is not a species but in those early times, new hybrids were given species style names, ie. *Gladiolus pudibundus* or *G. x pudibundus*. Rev. Herbert raised this cross of *G. cardinalis* x *G. blandus-carneus* around 1835 (Edwards says 1833) and it was featured in Sweet's *British Flower Garden* of that same year. The plate is unfortunately in black and white but Sweet says it bore about 10 flowers per stalk, was brilliant rose, large, 2-3 ft. tall, blotched pale to whitish in the lower tepals in a lanceolate shape, the halo margined in dark red, and purple anthers. In modern terms it is like several cultivars, being essentially a pink with a white halo margined in dark red.

The first plate is from Jane Loudon about 1850 (undated):



Our second plate is from *The Ornamental Garden and Shrubbery* by Sydenham Edwards (1854) after Sweet. I cannot locate Sweet's earlier plate.



Our third plate and the oldest of 'Pudibundus' is quite unlike the rest and if from Paxton's Botanical Magazine of 1834. This has nothing of the same markings and in fact has upper markings which is nearly impossible for the parentage given! I suspect Richard Harrison of Liverpool might have sent the wrong stuff because no artist will change a cultivar this much. Or, and this is a big Or, did 'Pudibundus' turn into something else decades later or was it a lot of seedlings that varied this much?

GLADIOLUS PUDIBUNDUS.

(ALBIS-FLOWERED CORN-FLAG.)

CLASS.
TRIANDRIA.ORDER.
MONOGYNIA.NATURAL ORDER.
IRIDEÆ.

GENERIC CHARACTER.—Spike two or three valved. Corolla tubular, six parted. Legume ovate, lanceolate. Seeds winged.

SPECIFIC CHARACTER.—A bulbous plant. Stem two feet six inches high. Leaves sword-shaped, ribbed, bright green, sharp pointed. Flowers a light and delicate rose colour, twelve or more in number, produced alternate on the stem. Corolla divided into six basal segments, three upper ones larger than the lower ones; rich rose colour, becoming more faint towards the base, these lower ones narrow, having in each a pale yellow blotch, with a dark crimson edge; the base of each segment nearly white.

We understand this is a hybrid, raised by the Honourable and Reverend William Herbert, between the *G. cardinalis*, and *G. blandus*. It is a very beautiful kind, flowering with the greatest freedom, with us at Chatsworth, in the greenhouse, and producing a succession for a long time. It requires precisely the same treatment as *G. cardinalis* and the other species. (Vol. I, page 98.)

For our present figure we are indebted to Richard Harrison, Esq., of Liverpool, who sent us the spike of flowers, previous to our own plants coming into bloom.

The generic name is given in consequence of the sword-shaped leaves of the plants of this genus.

*Gladiolus pudibundus*

'Pure Bride' (Nanus Group) - tepals, stamens, and pistils are pure, clean white. Or: Ernest Mahy, 1930's.

Purpureoauratus Group (*G. papilio*) - (PB) shows images from John Grimshaw of "a form he labels" as this. His image there is mostly a pale yellow with a very large dark purple to maroon blotch on the lowers. It should be noted that *G. purpureo-auratus* J.D. Hooker is considered a synonym of the species but in this one particular color combination only, I suppose. William Bull imported it from Natal to Chelsea. Lemoine used it as a species in his crosses. The plate from Curtis Botanical Magazine of 1872. Hooker's detailed description follows the illustration here.



here figured, which flowered in his establishment in August of the present year.

DESCR. Quite glabrous. *Stem* very slender, with the scape three to four feet high. *Leaves* short for the size of the plant, six to nine inches long, by three-quarters of an inch broad, acuminate, dark green, stout, erect. *Scape* simple or divided, very slender, 10 to 15-flowered, terete, quite naked between the flowers, from the bracts not sheathing the internodes. *Spike* eight to nine inches long. *Flowers* almost bifarious; bracts one to one and a half inch long, lanceolate, acuminate, exceeding the perianth-tube, pale green. *Perianth-tube* a quarter of an inch long, concealed by the bracts; limb broadly campanulate, one and a half inch in diameter, nearly regular, pale golden-yellow with a large purple irregularly elongated blotch which is broader at the apex, on the disk of the two lower segments; outer segments broadly obovate, with slightly recurved subacute tips, inner narrower and more spathulate. *Stigmas* linear-spathulate, recurved, tips notched, almost 2-lobed.—*J. D. H.*

'Queen Victoria' (Ramosus Group) - "salmon-scarlet, feathered pure white" (Kelway's Manual of Horticulture 1913 under Early-Flowering, as "Ramosus Queen Victoria")

Ramosus Group (G. x ramosus Paxton)- This taxon, whether based on a true species or not has unique for having branching arms unlike nearly all the other gladiolus groups or species of this coloration. 'Robinetta' offered today is a good example of this group. There is some question as to whether this is a real species in terms of the Dutch material used to make hybrids and (CH) below brings some clarity to this process.

- (H) says it is likely a G. cardinalis x G. oppositiflorus hybrid with heavy, wide leaves and flowers of pale to medium pink marked richly in carmine on the three lower tepals.
- Paxton says it was introduced in 1838 and may have come from the Cape of Good Hope but not likely a true wild species. The name G. ramosus is thought to have had at least three different taxonomic identities but all seems to be pink with carmine, red, or scarlet lower tepal markings. Paxton's illustration (Magazine of Botany 1839) below is surely of the most common garden material. Paxton's plate is based on a plant flowering at Lucombe and Pince's Exeter Nursery in the UK which showed up in glory in fall 1838. The show in July was best.
- (L) states that Schneevogt of Holland crosses G. x insignis hort (itself G. tristis OR G. carneus x G. cardinalis) with G. oppositiflorus in 1833.
- (O) reports G. carneus x G. oppositiflorus as the cross and is a triploid.
- (B) cites Revue Horticole of 1838 saying this group was made in Haarlem from G. blandus=carnus or G. floribundus, first flowering in France for M. Rifkogel in 1838. It was already introduced in England in 1835 as Paxton's Mag. will prove.

G. Ramosus, (*The branching Gladiolus.*) There exists considerable doubt as to whether this is a species or a hybrid form. It was introduced from Holland in 1836 and claimed to have come from the Cape of Good Hope. Whichever it may be, whether a species or a class, it is unquestionably of the greatest importance for garden ornament. In the size and beauty of its flowers it yields the palm to none, and on account of its peculiarly branching habit it may be considered the most ornamental. In favorable situations the flower stems will grow five feet high and produce a succession of flowers from June until August. The flowers are very large, well opened, and of good shape. Color, rosy-blush, with heavy carmine stains on the three lower divisions. The leaves are proportionately large and handsome, and the whole plant forms a magnificent object when given plenty of room for its development. The bulbs should be planted in the Fall, in a dry, sandy loam, and the bed protected from frost by a liberal mulching.

The Dutch claim to have found several varieties at the Cape from which they have procured a large number of cross-breeds, all partaking of the same general character, differing only in the colors of the flowers.



Gladiolus ramosus.

WHOLESALE LIST OF BULBS.

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EARLY GLADIOLI (continued).

RAMOSUS VARIETIES.

	100	1,000
FORMOSISSIMUS. —Salmon scarlet, white flakes edged maroon; strong grower; flowering August	s. d. 5 0	s. d. 40 0
INSIGNIS. —Bright scarlet, with deeper shades, crimson blotch; extra robust and most gorgeous; good forcer, but scarce	Doz. 3s. 20 0	—
NE PLUS ULTRA. —Delicate red, flaked white and crimson; most vigorous	4 6	38 0

LATE GLADIOLI

Frank Lilley of Guernsey, England published in 1915 a huge list of Nanus Group cultivar (see above) but I found it interesting these three were put in their Ramosus section.

RED DRIZZLE® (Colvillii Group) - flowers effectively all red from a distance, "silvery drizzled" (N) on the reverse, uppers mostly red, lowers red with a medium pink, thin midrib. Or: Van Winsen Warmond 1980's, registered by Mark G. van Winsen 2017

x rigidus Herbert (G. tristis x C. blandus=C. carneus) - Or: Dean Herbert as G. tristi-blandus in Trans. Hort. Soc. London 4(2)

'Robeson Red' (G. cardinilis? x ?) - 48 in. tall, tepals effectively all scarlet-red from a distance, on closer view a paler, creamier throat, lower tepals with a faint whitish to pink midrib of only 40% of the length. CH: USDA 6a per (P). Or: Arley Dugger found an abandoned homestead in North Carolina, guessing from name in Robeson County(?). In: Plant Delights Nursery.

'Robinetta' (Ramosus Group) -

'Roseo-Maculatus' - tepals rose-pink, large lower tepal markings in white bordered red. An old plate or is shown below under 'Rosy Gem'. This appears in William Bull's 1899-1900 catalog show below:

GLADIOLUS. EARLY-FLOWERING VARIETIES.**GLADIOLUS,** "THE BRIDE."

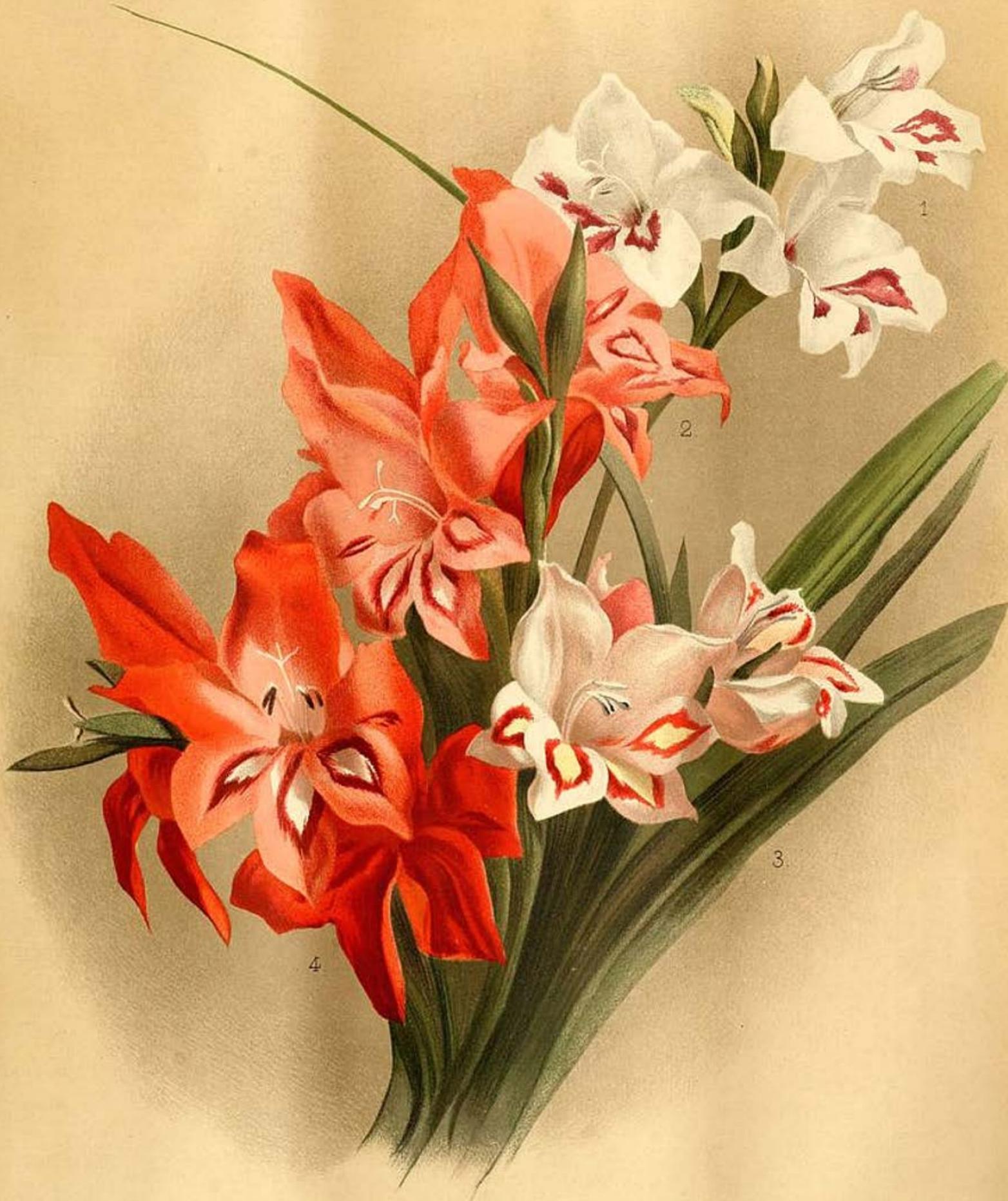
For grace and beauty these compare favourably with any other section of the *Gladiolus*. They embrace the most delicate and beautiful combinations of colour, are of dwarf branching habit, free blooming, flowering from June to August, or by gently forcing will bloom in April or May. They are specially adapted for growing in pots for conservatory decoration in the spring and early summer. Invaluable for cutting, the flowers lasting a long time when placed in water.

	Per doz.	Per 100.
BLANDUS , blush rose, very early ..	1/-	7/6
BYZANTINUS , rosy purple, suitable for clumps in borders ..	6d.	3/-
CARDINALIS , fiery scarlet, white stripe ..	1/9	12/-
COLVILLI , rosy purple, striped with white ..	5d.	3/-
— ALBUS , "THE BRIDE," produces spikes of pure white flowers, 24s. per 1000 ..	6d.	3/-
DELICATISSIMA (Blushing Bride), white with beautiful pink and carmine flakes on lower petals ..	5/6	—
DUKE OF ALBANY , rich crimson, flakes white shading to magenta ..	2/6	16/6
FLORIBUNDUS , rosy white, very free flowering ..	1/6	10/6
FORMOSISSIMUS , deep vermilion-scarlet, pure white centre, edged with magenta ..	1/6	10/6
INSIGNIS , scarlet tinged purple ..	1/6	10/6
LORD GREY , soft rose, pure white blotch, edged with crimson-magenta ..	1/3	7/6
LYNX , bright scarlet, flaked magenta, shaded maroon ..	2/-	12/6
NE PLUS ULTRA , delicate rose, flaked white and shaded with magenta ..	1/6	10/6
PRINCE ALBERT , rosy scarlet and white ..	3/-	21/-
ROSEO-MACULATUS , salmon scarlet, flakes white, with dark shading ..	3/-	21/-
ROSY GEM , delicate pink ..	2/-	14/-
SARNIAN GEM , beautiful salmon colour, white and crimson flakes, very fine ..	3/6	—

'Rose Charm' = 'Charming Beauty'

'Roseus' (*G. cardinalis*) - "beautiful rose with salmon band on petals and primrose blotch" (BS)

'Rosy Gem' - an old plate c. 1888 follows. In: Oldest US source I have so far is Peter Henderson of 1892. He also offered 'The Bride' aka 'Colvillii Albus' that same year.



EARLY FLOWERING GLADIOLI

1 BLUSHING BRIDE 2 ROSY GEM 3 GENERAL SCOTT 4 ROSEA MACULATA.

'Ruby Red' ('Ruby') (Papilio Group) - stoloniferous perennial. Flowers, rounded, tepals very rounded, broadly ovate-suborbicular, dark magenta-red to ruby-red, lowers the same but with darker suffusions. Or: David Hills, England 1970's using *G. papilio*. These are quite "hooded" or subglobose when first opening.

'Sabu' (*G. natalensis*) - "dusky rose madder delicately flared flowers. Jun-Aug. 60cm. Easy." per (CG). Bob rates the specie as H6 or very hardy.

'Salmon Queen' (Nanus Group) - "clear salmon-pink, with maroon shading, exceedingly pretty" (Kelway's Manual of Horticulture 1913 under Early-Flowering, under "Nanus Salmon Queen")

Subsp. *salmoneus* (*G. oppositiflorus* subsp. *salmoneus*, *G. salmoneus* Baker) - a rich coral, salmon-pink, or salmon-orange for of this species. Tepals usually somewhat undulate. The amount of red markings and midrib width does vary. (JL) reports that this differs in 1) spike secund or subsecund (distichous in the typical subsp.), 2) up to 20 flowers (to 30 in typical), 3) perianth salmon pink (white to pink typical), and 4) plants puberulous (glabrescent in typical). It was used in cultivation by breeders since about 1930.

'Sappho' (Nanus Group) - tepals mostly pure white, sometimes tinted in lilac, said to be more vigorous than 'The Bride' aka 'Colvillii Albus'.

'Sarnian Gem' (Nanus Group) - salmon marked white and crimson. In: Coolings Bulbs, Fall 2012 Cat.

Gladiolus saundersii - said to be USDA 5 hardy per Edelweissperennials.com, accessed 2.22.2018.

'Snow Flurry' (*G. italicus*) - apparently a modern improved version of the old var. *albus*.

x *spofforthianus* Herb. ex Baker, J. Linn. Soc. Bot. 16: 177 (1877) (*G. cardinalis* x *C. blandus*=*G. carneus*) - tepals more like *G. carneus* than *G. cardinalis* (B). Or: Rev. Dean William Herbert, named to honor Rev. Herbert of Spofforth where they originated. Not sure this makes sense! J.E.T. (J.E. Teschemacher) in the Horticultural Register Volume I (1835) wrote this in his own words so it sounds like he named it and may have created it to honor the Reverend. He called these 'Cardinali-blandus' and 'Blando-cardinalis' in one article.

GLADIOLUS CARDINALIS

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and Rev. Mr Herbert of Spofforth, in England, has been eminently successful. *Gladiolus blandus* is white, with a very light roseate tint; I cultivated a beautiful hybrid between this and *cardinalis*, then called *Blandus cardinalis*, but which has since received the appellation of *G. spofforthianus*. *G. colvillii* is extremely handsome. *G. hastatus* (bearing a spear) is delicate white, with a most elegant bluish mark, somewhat resembling the head of a spear, inclosing the white space observed in *cardinalis*. In cultivating this and all other

'Sulphureus' (*G. tristis* var. *sulphureus*) - tepals a light, sulfur yellow, species can be very creamy, especially in var. *concolor*. In: Dreer Gardens Autumn Catalogue 1891, as *G.t. sulphurea*, described as sulphur colored and new. Some consider this name to be a full synonym of var. of *concolor*.

'Superbus' (*G. dalenii*) - the plate below is from The Garden of 1891 and shows a bright, bicolored variety of the species, best considered a cultivar.



Gladiolus symonsii - possibly UK hardy per www.rareplants.co.uk, accessed 2.22.2018

'Tender of Heart' (Covillii Group) - 85cm , perianth pink to coral in bud, opening cream to pink-blush with the apices most highly colored, the centers very pale and sometimes more yellow. Source: <http://jacquesamandintl.com>, accessed 2.1.2018, listed as part of *G. colvillii*

'The Bride' (Covillii Group) - this is commonly and incorreced lumped with 'Covillii Albus', which differs in having dark reddish to violet stamens. The real "The Bride" has very pale, mostly creamy stamens. See under 'Covillii Albus' above for some documentation and plates. On account of this name, it has long outsold the Latin-named white clone but is not a good a grower or cut flower by some expert opinions. But buyer beware, you don't know what you're really buying until the stamens appear.

(B) lists that a Silver Medal at the Massachussets Horticultural Society exhibit being awarded to a J.S. Richards in 1867 for showing "The Bride". I suspect this was something else for almost any pretty white hybrid could be given this name. It does bear mention for historical references.

G. tristis - this species is of major importance in breeding dwarf, hardy material, especially in the use of var. concolor. The typical species has distinct dark red to purple and violet markings on the exterior, sometimes pencilings and reticulations, throat often with one stripe per tepal in this same dark color. The var. concolor is effectively all cream from a distance being white to cream with slightly more yellow zones down the center of each tepal, bearing no dark red to violet markings at all. It was considered "the best form" for decades as the marked species was sometimes odd and muddled in colors. *G. tristis* is a major parent of the early, dwarf hardy material and contributes mainly 1) light yellow colors (mainly from var. concolor), 2) very early flowering (April in some areas), and 3) distinct, narrow reed-like foliage than does not obscure the foliage.

(JL) in their 1972 monograph define it's botanical taxa are:

KEY TO VARIETIES

Spike with 1–8 flowers, flowering August to November:

Flowers more or less tubular campanulate, densely striped and stippled with dark green or various dark-hued shades on a pale cream or yellow background (a) var. *tristis*

Flowers usually more funnel-shaped and concolorous, pale sulphur yellow or cream (b) var. *concolor*

Spike up to 20-flowered, usually 8–10, flowering December to January (c) var. *aestivalis*

Tubergenii Group (*G. x tubergenii* hort., not a true species) - van Tubergen bred 'Charm' before 1920 using *G. oppositiflorus*, *G. cardinalis*, and *G. lilaceus*. 'Charm' should be considered the standard or type cultivar of this group. (O) states that about 1914 Tubergen crossed *G. x nanus* with *G. x childsii* to produce the Herald Group of cultivars which were triploid and tetraploid. These were later crossed about 1924 to *G. tristis* var. *concolor* to make the this garden species or what is more correctly called a cultivar group. (O) further states these were triploids with more open flowers and earlier show than the Herald Group.

x victorialis (*G. communis* subsp. *byzantinus* x *G. cardinalis*) - Or: Damman and Co, Naples 1893, perhaps the first cross of a Eurasian and African Species (B), (O). The following plate from (B) is a direct quotation from Dammen. (K) lists this name as a garden hybrid of *H. communis* (of which subsp. *byzantinus* is now a part) and *G. Covillii*

A new early-flowering class of gladioli standing the winter well. It is the first hybrid gladiolus between a European and a Cape species. The habit of the plant stands between those of its parents. It is dwarf, robust, and rich flowering. The flowers are pink or dark red, and the inner segments are striped like those of the African *Gladiolus cardinalis*. They appear about the middle of April, are large, very open, and somewhat scented. The *Gladiolus Victorialis* offers quite a new field to the grower as he may further try to unite the beauty of the African species and the hardiness of the European kinds. Well adapted for the market and cutting.

'Ville de Versaille' - "white, with distinct rosy crimson flakes" (Kelway's Manual of Horticulture 1913 under Early-Flowering)

'Vinulus' (*G. carneus* or *G. vittatus*) - "cream white, with a striking maroon blotch...May" (Kelway's Manual of Horticulture 1913 under Early-Flowering). The herbarium type of this taxon appears here: <https://plants.jstor.org/stable/10.5555/al.ap.specimen.k000320916> . I suspect it is one of many pale, creamy, well-marked version of *G. carneus* and easily considered a garden variety. The nomenclatural codes allow an originally botanical taxon to be converted to a cultivar if it does not appear to exist in the wild. The name *G. vinulus* is based on Weiner Illus. Gartner of 1888. Some consider it based on *G. blandus*=*carnus* but *G. vittatus* has also been named as it's parent (Nicholson, Dictionary of Gardening). Robinson in *The Garden* (1904) says it blooms 7-10 days before 'Covillii' and 'The Bride', noting his plants were 22 inches tall, 4-6 blooms of 2 inches wide per stalk, adding it has stripes and purple anthers. Van Fleet of New Jersey reports he used this taxon in his breeding work.

'Volcano' (Ramosus Group) - a listed name.

'Warmunda' = 'Charming Beauty'. This name appears in the New England Glad Soc. issue of *The Gladiolus* (1959).

West Coast Hybrids Group (*G. tristis* x *G. watsonius*) - 15 in. tall, dwarf, tepals creamy-yellow, uppers centered brownish-red in a long tapering shape to nearly 100% of the length, the lowers centered yellow with a red apex, very early (late March to April in Raleigh NC). Or: based on Collingwood Ingrams cross he called 'General Smuts', which red understand was mostly red in one offering, seed grown per (P), thus slightly variable. Ch: USDA 7a per (P).

'Whistling Jack' (*G. communis* subsp. *byzantinus*) - flower center a mix of cream, green, and yellow, upper tepals rich magenta-pink, lowers then same but with a narrow cream to light yellow midrib, margined a dark magenta. Or: van Winsen selected from countryside in Cornwall, England

'White Eyed Miss' (Nanus Group) - upper tepals a salmon-pink, lowers the same base color but with a large elliptic white zone that is bordered in rich red.