

Hunt Institute for Botanical Documentation 5th Floor, Hunt Library Carnegie Mellon University 4909 Frew Street Pittsburgh, PA 15213-3890 Telephone: 412-268-2434 Email: huntinst@andrew.cmu.edu Web site: www.huntbotanical.org

The Hunt Institute is committed to making its collections accessible for research. We are pleased to offer this digitized item.

## Usage guidelines

We have provided this low-resolution, digitized version for research purposes. To inquire about publishing any images from this item, please contact the Institute.

## About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

### Ixia

As far as outside gardening goes 1 cannot believe that the South African Ixias are for Eastern Gardens and one can only read with a touch of envy Dr.Mitchell's note in Bailey's Gyclopedia as to the ease of th ir culture in California, maximum where they thrive and even selfsow. This is contrary to the opinion of other publications, my own verdict, not his.

In the cool greenhouse, where so many of their kin do well, there is no difficulty in raising them. Theywere planted in large bulb pans, using a rather sanay soil mixture and were given about the same streatment that is accorded freesias although this too is at variance with the usual book recommendations for a cool dark period for rooting before top growth starts. The next at night was just about enough to keep off any chance of frost but the day temperatures often rose to 70°F. before the ventilators would be opened, he harm seemed to come but it is possible that our? plants grew taller than they might with better temperature ranges. Since all have to be staked, this made little end by HUMI INSULULE FOR BOUANICAL DOCUMENTATION shall a corm.

Although most of the ixias that one can buy in this country are mixtures, there are a goodly number of species, some of which probably should be searched for once more while their follows can be left for the dolight of the bot mists who write books for other botamists to quibble about. All are from af ida and European most, are from Bouth Africa and came into/cultivation at the time when all the Cape plants were so much in vogues and the early volumes of the Botanical magazine show more than one illustration of species then more or less novelties. So It is probably that only a few true species have been cultivated here but one can be sure of <u>ixia paniculata</u> that under the cold pit conditions grow all of three feet allowed it in the text and produced a fine crop of its charming if no not very showy flowers. They are distinguished from their ordinary follows by the very long tube of the flower which gives a much more open appearance to the inflorescence than is common in the usual strains. All of our plants proved to be of one color, a creamy white with only the vaguest suspicion of dull pink Ixia - 2

It should be said in passing that this is not the only species of Ixia that is characterised by the long tube.

Of the mixture, one felt he might separate <u>i. maculata</u> for there were many plants with more bell-shaped flowers of white, cream, yellow, all with circular 'eyes' of dark color on the inner face, that dark color that suggests the readull black of chocolate, or aull/purple as the light might and strike it, but never a blue-black. Whether or not there was also, <u>i. polystachya</u> isopen to question, but certainly there were some lovely whites almost striped with cherry red on the bucks of the outer three segmente, less so on the inner.

The gamma genus offers other species in which the flower colors are yellow, orange, red, violet, paler lavenders and of course the famous green, offered usually under the name of <u>I. viridiflora</u> with its dark brown-black eye.

Since all would come from seed without too much trouble, a plan should be worked out to bring them in once more.

Digitized by brighty binited enterie to an Bio bitteneightory doil brightered of and no experience elsewhere, it is a ifficult to appraise the recommendations of excellent hen, who like good doctors do not agree among themselves. It is quite presentee enough to point but that the corns will not endure freezing and so cannot be planted out where that happens. How well they will tolerate long chilling and cold soil, has never been commented upon but apparently they can endure it if one follows reports from Massachusetts where many very late planting to prevent autumn foliage growth, a sandy soil drained well, and a three inch blanket of leaves were recommended. A cold frame is the obvious alternative. Summer lifting and storage of bulbs must follow since our rainy summers would not be suitable. What difficulties might arise in storage, one cannot guess.

All the species have the small mu corms ty pical of so many bouth African irids; all produce fans of leaves that are familiar in a way from those of the freesia, all produce the tall flowering stalks with the flowers from bracts in the upper reaches. The shapes of the flowers differ markedly. The Ixia - 3

Of the flower forms and colors, one can make few generalizations. It has been noted that there are some species that have long tubes before the six lobes flatten out to make the colored stars. Others have almost none. The flower faces may be flat like a star, cupped or even bell-snaped and modding. In the oldest plates there are examples that appear under other names than ixia, and on some there are almost tortuous lobes. In short \$\$\$\$ it is a genus that we should look at again, for inside culture in the cold parts of the country and for outs de culture in these areas where there may be a long hot ary summer and a winter that will permit slow growth of bulbous plants without freezing risks to tender foliage.

# Digitized by Hunt Institute for Botanical Documentation

as far as outside gardening gres, the North African ixias are MA for Eastern gardens and we can my read with a truch of anon Dr. mitchell' note in Bailey's Cyclopedia, as to the case of their culture in California, where they thrive and even self-Jows This is contrary & Then published primons. In the cool green house where so many south African belones things do well, there is no difficulty at all in raiting them. They were planked in large bulb pans, using a nich rather vandy voil mixture and about the same treatment that is usually recommended for peesias although his is at variance with the usual book recommendations for the cool, dark period for rooting before Top fronth shows, The heat at might was just enough to keep of any chance of frost but the day temperatures often rose to 7007 before the rank tators were opened. The harm seemed to come et by Huite Institute for Botanical Documentation oth otten Impersones. Since all have to be staker this makes )10little difference, for it is amaging that to much plant should be produced firm to small a corm. although must of the inias that me may buy in this country are mixtures, There are a goodly number of species some of which probably should be searched for once more while their fellows can be help for the delight of the botanist's who write books for other botanists to suittle about. all are from Africa + most are from South African and came to hurdpean attaction at the time elken all the take plants were so much in vogne, and the Early volumes of the Botanical mapagine show more than one illustration of opecies These more a less morellies. Bon 256: 1502 It is probable that any a fear true species have been cultivatur here but me can be ture of Ixin paniculata that under the cold pit conditions grew all of the 3 feet allowed it in the Feel with

produced a fine cup of its charming if not be show flowers. They are distinguished from their fillows by the very long tabe of the flower thick gives a more open character to the Abole inflorescence that is common. All of our plants proved to be of one sort with evening white fervers and only the request suggestion of dull prink on the reverse of the stary perior the segments. of the mixture, are felt he might separate I maculata for There were many plants with more bell-shaped flowers of white, cream, yellow all with circular signs of dark color, that common deep Rue that suggest black, or chocolake, or dell red purple as the light may strike it but never blue blacks. Whether a not there Was also J. polystachya is open to que tim bet artain there were some loved whites, almost shiped with chorry les on the back of the orter three segments, less so on the inner three. The genus offers then office in Shich the flower colors are Tellme, orange, red, widet pales larenders and y couse the amby Hum Institute for Botanical Doctime Hation Digi The all would or could enne from seed with and to mue > trouble, a plan should be worked out to tring them in once more. with one way limited their mar in extremely herry soil it california and no ontoide experiments out of - dons there elsewhere , it is difficult & approve the recommendations of excellent men, who The food doctor do not always afree among themselves. It is grup = surgh & point our that the come will not endure freezing , a mit so cannot be planted int where that happens. How well the in the tolerate cold son has never been commented upon but apparently They can subure it if me follows reports from massachusetts Filhere lake planting to prevent auturn growth, a sandydrained soil 23. But a three inch blanket of leaves where emmender. a cold frame is the obvious alternative. Summer lifting & strage of bulls must follow since an name summers would us be to their liking at all.

Tria work sheel Jom 256. D'xia long, flora Inte is alunor 3 1/2" log la s have that inflorence is fear + that sillimette is an acc "Ind. Kewaisis vaps that Maton intro. it in 1774 Pom 265 Ixia balboardin. Spain Italy-Looks like a rather mice Romulca, not Ixiz. 18m. 381 Dain Fridon - protect sparation a thitmin? Nalk & 12 feet another 3-4fs. at the paper vheather pricate lines - another on the self of the s 18h 139 - Xia unica "I 107 - We come and "I 100 - We come a Cape sup by Miller in 1757 : httpis figure Wes full 2 bit. Strops. Nice ixia, convolut birst type They ibobarice test & them is recorded here any the to the separate of the Strong Ballione. Jenno Vorbiana. 18h 541 Dria prandifin - Amttpul? Mrr. Ken Jackers 1757. Bh J2K I, scillaris V. latific is not a ixia 18h 487 (glad: las) linestro) Dia a Freesa? Les Freisia.

Km. 1.30 Dia columellaris. Looks like orth for y somethy clase. Bon 173 Dria erecta (v. like; odorata) Rate nice omale yellow. ? Drin? "The variety create i the most fragred of the genes. Probably a distinct species; at it's Digitized by Hunt Institute for Botanical Documentation

Poh 1245 - Iria helbifera. Ratter chaming pale strans yellows fl-" x x ; stem bearing from one to four bulls 02-It each just which fell of she meture; x x" " Propagales fast by seeds Men-bulls, and wor hulls, and is become me of the common the species in my gardnos, yet has reser hefore been fquet, except in the Strainst's Reporting. × × Cult. 4 Miller in 1758 Drain show us stan hills-18m 549 - Ixia maculata V. Vinidis -× If propagales freely by both leads + Apel's, is not reg Vender, never expands but in clear weather and the pertected p Digitized by Huptlinstitute for Botahical Apocumentation Pom 576 babiana pliata -Cult at Kent in 1778. - Partaby not as inequilar in corolla as sketched for Am Jog - his this the - maraca? Br 178 - Hadidas recurro rulco plate 18th 181 - Tritonia squality bracot thite flushed carmine -FP2 - Hatither confridates, a trut 183 - Poationa pilling higher = B. antro-cypren - The int. they about Backany is the dis proportionate size of anthens-

18m 184 - Dria excita - channy dwarf white - back lines res-Hills around Capetonn by Thurbey -Pom 587 - Ins Viracia - check is the Adabe - Morace? 101 588. Dachenalia quedricita - Dip - 1800 - Multiand dravm in 1801 fr bills inforted in 1800 - He lovotford, Vaux hell -First fed - Fil 1801 -18m v89 - Ixia avistata \_ Ver chan ferre pink - deepent toward the center , minute of mbe Mutz - "Sear ther" -Digitize the by furthe hospitation for Photanical Documentation 9. Leans & fue that airstate, falus + flexuosa may be me + the vame -18h 594 Ixia enlandes -" x ~ Howers in July. Propagales abundanty by affects. a par of them exactly resembles no por of our common grasses (graffes). Found accord it Mu nevin or the Cape in sand that near the transy four rivers by witz chang - day courson \_ outer 3 segs have Mitish trud cate of reverse -

18m 609 Tritonic miniata -? are there really 3 spl5 m 3 uppermost segmet - geller attiner 00 Por 618 Tritonic copursis ? Dric?. me z the long-taked lot! Mr 621 - Babare Michtyalt in 1757 5/ m Ph. niker -Jai ) & have more uns for corolle segs, & more upight the B. Plicate -Pon 622 - Initonia densta/- (DEUSTA) Much like T. circuty for them, orang with black show it base the B only see (ace drawn) intation Digitized by Hunt Institute for Botanical Documentation Pon 623 - Ixia erecte -Jaid & differ for D. maculata, my "in rel having the large circular stain at the base of the limb xx". Very chang Hight greenish white -B. 624 - Dxia floxuora -This again is any the finall flowers ixias that looks low like a ixia the most - hat it does have a short tote - De Ho volet, me + white liver with now En color - my smill lokal tomhes a ifter thinke. Cult milla, 1757.

Hom 598 - Ixia rocherisis (a) -Trice little thing lot looks to me like a devafes public importinghed tortrana -182 v 99 ) xia cinefa - Gitting Does not look like most ixia? - deare waved mponte to tell for cut just as if there were trucate terrations - room etc the Attendent trygest a opical arrange to the the calcel never - fer male - Ros-Bon boo. Hatomia inidi filia v. falgus -Jais & have be commente muserie ahre toron (Inda) at the publication to the like us common vatoria Digitized by HunthInstitute for Botanical Documentation Bm 607 - Ixia monadel pha -Comments -Said & be need I maculate. His as shows a fall gra blue -Com S dull varge gone . dull grea cate . 18h LOF - Wateria marginate \_ long me finte - for las Intelas + mor cuff shaped - Cuinson White patter about base of stamens its Hen this to have sent when that I bely things - Int. Musson 1774 -Seers + Aprils - Smethings fold His this to have send whe that of as this sceptum EE3 CNB

that is 'rideman pracem? Really chang - ) near Romales ? Cape of good Hope -Bon 1275 Tritonic Visidio -Autriguing picture - no picture or doscr. 2 balt or com? Three freish while - by the - pinkish - segnd distraught - look & as of wird-them. Draw of laf for sufferts a Huden of the fill No the the is likes? Intre & Kens & F. Marson, 765- 1789 -Specimen in Kanksing Herbaring Poh 1285 Dxia maculita 1 ochestence-310 Digitized by Hunt destatute for Botanical Documentation 16h 1378 It in monadelpha (B) Long boul shoped ixin - dull orays - red kish 3m 18m 1419 Pancration amboinence - ( Eurgacles) hir much & te edder to synony my ' Por 1453 Panchathen speciosum 3 Pancrahm speciosum web really langed his nor flor to hold appears smaller Per seg taking we the most " most derivable the strepart' g

18m 1090 Amandles) venusta herine, deries produced with the flowers. The species differs from Vernicusis, of which it has been beenes as more variety, in having leaves that are produced or the same the Horn and not some time after, as in the Japan plants et - " (Those that the 2 Japan plant free description sudiate) Bon 1164, Orni hogalum thyroodes -" X × This is me of the far Cape of Port Hope pearls mentioned by the callier Botanisto; Clusius received and specimen, by a subdy ship that had truched at the Cafe, " for back as 1600" Digitized bradunt Institute for Boranical Pocumentation "The variety of erecta is the next fragal of the Bh 1193 - Wething roser-alta (B) -Pale pres bitteher to Sinfer with commine Typical for Pon 1194 Water meriana (y). "This planting rants " meriana was important some years ago is m. Wy kea, for Holland - x He have never see at In any harbarium, n importation of the builds." g. Hore fur any large, critism -Bh 1195 - Watsmin him in R oge A tute.

### Ixiolirion

One probably strains a point to allow the inicilirion in this text, for it has a 'bulbous 'reststock' instead of a bulb according to those who know better than I ; but since one may buy it from among the items listed in bulb catalogues the quiboling may be left to others. It is, to be sure, one of the less important items of the long list, but it has proven hardier than was once believed and so has another claim to attention.

The bulbs should be planted about four inches deep in almost any type 62 good soil and should be planted in groups as a single plant will make scant showing. The growth pushes up quickly in the Spring and makes one think of a slender lily, though at times it leans in a fashion no lily ever assumed!

Like some lilies, its leaves grow fewer a toward the top of the stalk, some 12 to 18 inches tall, that is crowned by one or more lily-chaped flowers of a charmingblue lavender, a color not too often found in Spring, though some of the columbines show it well. The age and vigor of the plant will have much Digitized to be with the independence of a charmingblue to mini those of some of the brodiaeas or those of agapanthis, gampanthia rather than lilies, though like some lilies they tend to open widely with age and curl back on themselves.

> For <u>Ixiolirion montanum</u> the species most commonly met, the habitat range unfersant is given as Syria to Siberia, wide enough to cover a great variety of climates! . For its variety <u>tataricum</u> the range is given as the Altai Mountains. From both regions good hardy-to-cold plants have come for our gardens.

Since bloom appears rather early in summer they have many competitors, but nothing is their own shape and character. They are easy enough from seed so one could always find time to put in a pot or too in the cold frame where he might be raising bulbs from seed!

# Ixiolivion

Whether or not inistinim should be admitted here is to be determined the decition as to the window of about thing a ballows noststock to the company of bulls; but as one may buy it. among hills lister for vale, this quibble may be left open to others. It is to be sure, me of the less important items of the long list, but I has proven to be far hardier them was nee believed and To has another claim of to attent on. the bills should be planted about 4 inches deep in almost any type of good toil and shaned be planked in prompto as a trigle plant in the make scant shring. The fronthe pushes up quickly enorgh in their and makes me think somewhat of a slender liky, although at times it leans in a fashion no like ever took assumed Like some lities is leaves for fever trians the top of The 12 to 18 Atem that is crowner by men more, depending on the izer by Muntithstitute for Botanical Documentarion **)**1911 Grender, a color ride to often found in spring through some of the columbines show it. The flowers actually bring to mind flowers I some of the birdiaces in those of agapanthus rather than hiss, Kingh like some lities they vent to open wdel with age and curl back on themselves For Ixiolinin montaneum the species most commonly met errer a freak variety of elimatis. In its var. tatariam the rouge is given as the Altai monutains. From both regimes good have plants have come.

· fince the plant flower in early human they have mary empetitors in the hard, onder but few plants of its color or carriage.

### Lichenalia

As far as my own part of the world is concerned, lachemalias will always be tender bulbs but they are of such distinct and curious a character that I find it almost impossible to imagine them growing in the open ground. Many of are them/as odd as if they had been designed by some non-gardemer to illustrate an imaginary tropics, but possibly in some fog-washed Pacific slope that would not be too wretchedly chill, they could take over a normal life in the open.

Their fame as pot plants is probably bound up with the introduction of <u>Lachanalia tricolor</u> and all the color variants that soon followed it into <sup>9</sup> Europe, England in particular, together with those species that most resemble it <sup>1</sup> in corolla form, <u>L. pendulà</u> and <u>L. rubida.</u>

All species have tunioated bulbs and produce one, two or more loaves that may be broad or narrower, usually very glossy, som times spotted with aull brown, in some covered with green pustules for good measure, and all send up many-flowered scapes about like those of hyscinths, or the Spanish Digitize shull. If the faire scapes about like those of hyscinths, or the Spanish the squill, except that the three outer segments are shorter than the three though immor, in this suggesting sepals, must all are colored, and the a inner three the do not spread apart and are marked by/blunt end of the segment that gives them a characteristice appearance, a square-cut look. But the colors are the thing? The basic color is yellow, in some almost completely washed over with red, in others stained, but all marked by a green color at the tip of each segment, in some a single patch of color, in others a bread band, all sharply put on as if stencilled. In later times the color patterns were clarified by selection clones and manne of pure red, pure yellow and pure orange were propagated.

> In a cool groenhouse with slow forcing more or less as for hyacinths, a pan of those lachenalias makes a striking variation from the usual 'tensor' spring dolors.

How or why the popularity of the genus waned it would be hard to guess. The Joseph Hambun late Rev. Managahamanah Jacob, made valiant propaganda for a revival by his

Re pepeated notes in the gardening journals of his time, but even then they did not catch hold

### Lachenalia- 2

As they are easily raised from seed, it might be possible to start over again, but a word must be put in to warn the newcomer, that most of the species available that can be had from/seed ar not like these oldsters. Their flowers are a airferent matter. Since the bulbs also increase from offsets at the base, and since the leaves if properly managed minimum can be used as cuttings, a clonal increase couldee had if the original clones could once be imported.

For the few species that have the type of individual flower already described there are many more that have flowers of a smaller size, though doent enough. but that look like pot-bellied little kettles, with a nice lot of stamens and a pistil exserted from the somewhat closed mouth. They are crowded in the inflorescence and one feels of the whole that it has something oftee effect of an old head of old-fashioned mignonette before the florists got busy with it. This thought is sharpened by the fact that the colors of the corollas are in the general range of cream to green with some by-passes to dull lavender or to buff, touched with pink. There are shown also some curious blues almost touched Digitizedita your libritos. White the arous of tany Sal bren are 1 m Sinta before the pollen is shed. The situation is complicated by the fact that these species and forms, like some of the duller fritillaries, make beautiful black and white photographs; in fact many of the plants are much things, and except for the collector who has a passion for collecting and for the botanist who would devote his zeal to minor details, they are not for gardeners in general. When the species happens to be one that has its fine leaves covered with pustules as if it were about to break into some amazing rash, the limit is reached.

> Should one find an individual plant that no enerished above all others, he could, as has been mentioned before, increase it by leaf cuttings. The leaves should be well matured but not ready to wither, the cut should be across maximums the Wolade, and the cut edge should be buried in clean sand, kept warm and humid enough so the leaf does not flag, until the time when little bulbs appear along the cut edge. These with the natural increase from the mother bulbs should soogn suffice.

Lachenalia

As far as this part of the world is concerned, lachenalias is I always be tender tulls but no flight of imagination has been possible to Minh of them as garden plants anywhere. herst of them are as odd as if they had been imagined by some designer for some imaginary tropsics, but possily in Some fog washed Pacific Coast gardin where there was some source of slow ground moisture they could take over a normal life in the open Their fame as pot pearts is probably toms up with the gardon history I hadhendha Frierle, and it's immediate variants and theore species that ment nearly resentle it, L. pendula and L. rubida all species have trimated bulls and produce me, two or more troad, usually very glossy leaves, some shotted others pustulate for good measure and send up flower scapes with flowers arranger like there of the 'hydrith a the Spanish vguill, In the there species mentiones, the fewers are much like how of the squill except that the tips of the periorth segments teen by Hunn Institute for Boranical Documentation )101the Thing- essentially a red, from , yellow combination with the placement of the colors as artichary as in a planned dearpor, although the time Came when clear colors were preferrer and those clones that appeared a pure yellows or nearly volid red took precedence over the parti-colored blooms,

> In a gett cool greenhouse with down forcing were or less as fre hyacinthes, a pan of these hachenalisas makes a startling variation from the powerful tweetness & and render colors of hyacinthes themselves. How on ally the followith of them officies varies is would be had to guess. The lake Rev. Joseph Jacob made taliant perpapanda for a revival by his rejected notes in the hypish gaiden papers, but wen there they aid not seen to catch holds. Dala 1909 17 des they are easily raisest form sees is might user be difficult to start over afain, but a word must be part in the warm that heave ormer that heave of the other of a part is available are will like

These oldsters. Their flowers instead of tening hell shaped and of a. decent size are often no more than pot bellict little affairs, eigendes sometimes t if with stamens excelled making a head that looks like food of persiminal mignorette before the florist had remade it the colors in they hast species are sometimes amaging, on heride the usual of whites, pale during colors, pale buff trucked with prink, there are curious blues, almost metallic in their sheen, but where often oralaid with dull purple or pale brown. The dark anthers open to show darken pollen in some new detail can be filed upon detail wit. The Whole some alluring beyond words; the effect in fact is rather dickening, especially then the leaves are blistered with hundred I prea pustules as if some rash were atout to break. But should one from firm sees a particular individual with decart flowers, he could speed its increase to making eathings of the leaves taken the they do well matured inturied thighthey in clean, sand and take warm and humid (but rull dripping) much ? the little bulls izelyban Labout the novel effect of Botton i contrate of allo base of the mother buch would som perper his worke his stock Bm. 5992 dechender Trickor v. auren - just don form 18h J88 L. quadricola - native dears for 14 1801 pm held " infuks in 1803 - m. bood for , lang hell, pist fer. the 1801 Mr. 1020 L. Tricolor v. Inteste. color form. Mm. 1704 h. quadricolo (y) luter 2 Further reference to particle 2 Rachis + Cours blotches reddish the

All there notes to Corregill -Orcept those underlined in Blue Englandinata Ho white, scape dule, platched red purple, In 5-6-marrier & droop - 133395 Just Staller blotten res- purpe - hos large somewhat pustalate B formediana 133400 fls - white "12" across -with green spots -Reflexa Hs. 11/8" log, greenist yellow, Digitized by Hent Institute for Botanical Documentation un folia 133410 - He light spal bene, sparing an 18" scape, deaf me. Lesp and flower scape a base mottled with deep red purple -5 alles

flo mill over "14", blue in bue, through yellers the from princh. 15"; Deart + scafe brown spletched -L. membranacen [133401] Leaves stiff & upright: flower stalks flotched with light red brown blotches; flowers when fresh pearl gray deeping toward of boom on the lobes : as they with the they fursh with red brown : before open, widely, all tips are purplish brown . no scent . L. mutabilis [133402] haves more a los flaccid: no spots: stalks green, smetimes blotched & freckles with us brown, within the protion beaung fensers flashed with blue pupte - increasing toward tip which is pure violet Horas when Aresh - fale green, blot der dark brown (duest d by Hunt Institute for Botanical Documentation black) + chec z lipo alurst golden yellers - + slight Digi Vinnshucht: Gades to dark us brown tips: The outer 3 per. segments in unspired flowers are clear willet. -Sterile flowers toward and of spike - as in some grape hy scinths . Faint pollen scent - Very showy -The blac, yellow in throat, we lay teason

He blue at tace, with the purple toward and I signali. Two. In 518" broad with a suggestion of 133 to 5 Lachenslia pillansii The 2 the more slender vorts with narrow leaves -Is almost sessile, Calyx lobis toward the peacode blues corolla lobes troand violet - strong Stamens not exented. 133398 - L. junificia - Alander Aunder leaves. fls m stalks - up to \$18" lag - Stamens exected - solarhilly a tiker shite - not much. much exerted the say 3n 133394 L. backmanning narrow lines involution flor Stilk dull red puill up to thus gray - 76. almost Sessile . braddels gran, Calx lobes gran, corolle libes almost shik - O ship puipe, ho this, bound bree -g3548 Hunt Institute for Botanical Documentation DigitiZ pustilete - fls. to 1/2" stalk - dell larender to gozy calx lobes - corolla lobes - pinkish & liter - stamen 4 utid - Melating showing -133 377 glancina - Boord lance not may pustules: Stope - blown blotched helm - Hs. almost sessile -Showy - res or vinno purple - blue blotches toward upper The of calx lotes. Keally apgens Her large, Zam by 11/2 across Stack blitches not purper - Los lag - Emerthal protecte

h.28.42 76 farically shike, with some yellow, blue a rider dures (2) with some pusher Lachenalia Gillettii [133396]. Lesses more a les flaccid. : Sterns un blotched : open flover : blue green onter lobes - inner tipped red violet . withing darker: Stamens exected + conspicuous. No sant. L. pallida 133404 Leap(1) with thean pushes, Safe 18" almost the contrapart of L. Gillettii ht Stamons not exerted & color fale gran shaded darker + fading & yellow - Buds tricker brownish Considerable variation in the sign of ferverno scent. Digitized by Hunt Institute for Botanical Documentation Draves semi- flicid. Stalks in spotted. Howas large Inter segments gray shaded maure. Anne segments dup manoi flushed blue it base - also blue cutral streak. Stamen excited. Conspiciones that not to good as L. mutabilis. no scart.

### Lapeyrousia (Anomatheca)

The only member of this genus likely to be met in this country is much beloved as a manor bulby in California where it can be allowed to have its way in the garden, according to L.... Hannibal writing from central California. Both red and the white flowered forms will selfsow to the point that one can weed tame out of places where they do not belong without a pane.

The full mame is <u>Lapeyrousia</u> cruents which seems rather much for the small corm that sends up in time a freesiz-like fan of leaves and an ascending stalk to ten inches high with or without branches, and along the ends of the stalk and branches perch rows of small tubular flowers with starry faces. The six perianth lobes are not quite equal the upper three a little larger than the lower giving a slightly two-lipped effect. The color is a glowing carmine red with a bit of flecked pattern about the lower side of the mouth of the tube. Seed forms freely and not only will the plant self now out-ofdoors as suggested above, but will selfsow in the greenhouse and come to Glowe high the bit you arbited too functuated anical Documentation

Whether or not it would enjoy the climate of the lower South with rains that would come any time during the year, I do not know and I find no one who has committed himself to an opinion. Some one should find out, as it would cost little and if successful would give one more plant to use as a variant from the perfectly good but omnipresent <u>Oxalis Martinianus</u> of old gardens. It might be tried in just such locations as the oxalis prefers, in the curious mixture of winter foliage that builds up in well tended heds, under shrubs.

Seed is treasted as for any other South African irid(this one is from the Transvaal) and may be expected to germinate quickly unless it is too much dried out. Once growing, no further trouble could be had.

anomatheca = Lapeyrousia.

The one member of this genus likely to be met in this country is happyroneia comentra and at times it white comtempart. The Warm climates where preging in not serious does not occur and there are No net serious firsts through the winter months when it is likely to start genth, this truall cormous plant fin the Transvaal makes a delightful minn note. Its general plant habt is like that of the freesia but ponsits a little more stender than must freesias, with Several grasse leaves and a ten inche stalk sometimes transhed, along the upper portion of which are studded the starry fervers. from the slender, usually lighter orline & tabe flare out six periouth segments, the upper three a little large. that the lover, giving that 2- lipped affect me find in many blooms. Leed sets freely and ting plants come up quickly in the Fouches of the cold fit greechome made is only place the write has form it. A friend withing from Californe upolis that is his Boutin and Documentation Whether or not it would enjoy equally well The minister year round climate of the Southern Atlantic Coast & the help some me should discover, as should also be proven the worth of other species, particularly Some that belong in the other sections of the genus. Torsibly it could find a place in the Cons herbage, as have some of the oralis spaces That carpels shout plantings in good Northern gardens.

The true lilies management members of the genus Lilium as contrasted with the great host of plants commonly called lilies in 'folk' terminology, make a family with a world wide distribution in the northern hemisphere. They also have held the stage in garden literature for manyyears with periods of rise and decline in popularity that become more and more understandable as we know more of the plants themselves.

To get generalities out of the way, one may say that all have scaly bulbs widely differing in their size, scale characters and manner of vegetative increase. This last is most interesting for in audition to those bulbs that regularly increase about the central axis we have species in which the axis is more nearly horizontal as in Lilium :some that send out underground stolons that form a new bulb at the end, making in time a chain underground but with no growth save in the newest. They are all dormant in winter though a few keep a rosette of leaves at ground level. All send up spec al shoots for flowering that, are annual in duration, clothed with leaves of varying size and placement and bearing flowers from the upper parts of the stalk arranged according to the habit of the flowers in each particular group. Flowers appear from early summer to late autumn. Regular increase of the bulb is supplemented in some few species by the production of bulbils in the axils of the stem leaves and in nearly all others by a similar production of bulblets along that underground portion of the stem that lies between the top of the bulb and the surface of the soil. These bare bones man give very little idea of the beauties that can be enjoyed with lilies; nor would they suit a taxonomist to differentiate the lilies from the nearest of kin, whether that be Notholirion. Nomocharis or even Fritillaria. All that they can do is give a, gross idea of what a lily looks like.

It is possible that for the 'man in the street' the word lily suggest before all else a white trumpet lily, that he may think of as an Easter lily without suspecting that i is probably some form of <u>Lilium longiflorum</u>. He will not care perhaps that it may serve as typical of all the host of trumpet lilies that belong to the Section <u>Eulirion</u> of the boxtanists, of great value in all gardens save the northernmost nor will it mean much to him that they are all Oriental in origin with their center perhaps in northern india // extending in series northward across China into Japan, with one western outlying form in the lovely Madonna Lily (L. candidum) that is from the Near East and not nearly so trumpet-like as most.

He, our fabulous man, may recall any one of various garden lilies that flowered in May and June with erect cup-shaped lilies, usually in some rather ardent tone of orange or light red, uncompromising in the garden scene and **public** putting peonies and iris to shame if they bloomed together. As these are old cultivated plants they may have been any one of several species of forms, with excelsum and thunbergianum as one-time names no longer in current use. These ation representatives of the the bot mists.

If he lived in the East, he may recall the red lilies of the wet meadows or woodland edges, is superbum or if he was from the Pacific Coast, the somewnat similar is <u>Humboldtii</u> but if he knew neither he probably would recall the Tiger Lily of gardens, the European is <u>tigrinum</u>. All have perianth segments that open in a flaring position and then gradually roll or curl back onthemselves until the protruding stamens and pistil become the most important part of the bloom. This is the group that is called the Martagon Section, from that species of European origin.

Again if 'our man' had attempted growing lilies himself, there is small chance that he had not atsome time tried to grow the unique <u>L</u>. <u>auratum</u> with its widely opened flat-faced flower. This with one or possibly two other species is set apart by the hotanists as the archelirion Section.

and if 'he' knew lilies only by books he would at least have had a book  $\pi \ell \ell \ell$ acquaintance with the strange <u>Lilium giganteum</u> and its kin, the biennials of the gen  $\nu \leq$ ,

If he reads books, especially historically, he will find that troubles of one sort or another have always been associated with the genus. If he persists he will soon sense the fact that most of the difficulties are associated with cultural practices and that in time the bases of these difficulties b ecame clearer. These charifications have been brought about aby many personn, working separately and often in diverse fields but the general pattern seems to be falling into place.

As of to-day, even the beginner has more chance than the best of the oldsters to come through successfully. The basic concepts of culture are fairly complete even if they must be restated succinctly from time to time with slight modifications and additions.

For myself, one of the most important of such gathering up projects, from the gardeneirs point of view, was a paper presented by the later desceased Dr. Fred. Stoker, "The Environment of Lilies in Nature", in which in spite of the many admitted lacunae there emerged a clearer picture than any I had had Digitized before of the may lilles preventions the hand of mail (L.R.) Chily respect 101 1933).

> All that can be done in a relatively short treatment m such as must be given here is to result to the basic generalities and to urge the beginner to push on for himself, starting with the more easily grown species, the 'best bets' and then growing only those others that are most easily handled under his conditions, unless he wishes later to become a lily collector and specialist. The neither discretion nor wisdom will check his progress, but most frequently he will cease to be a gardener. What will he become? A technician, a clinical expert, a wet nurse and geneticist and in time perhaps even a mid-wife of some strange and curious thing that some one else may have to or finish off m to increase for the common imma herd.

It would appear that the great body of the lily species are hardy to cold, what that if pushed out of the way, may be pushed more easily northwards than southwards. In time this may be contradicted when we have had the use of the north Indian lilies that are not too cold resistant. It would be ideal if the beginner could and would grow all of his liftes from seed, and that he would live in a place isolated from all other liftes plantings that might pessibly be centers of infections; and far enough off se that no vector could wing its way from elsewhere. Failing this it would be wonderful if he could find lift bulbs that would be guaranteed to be free of all disease. The majority of growers do their human best to grow disease free stock; the majority of dealers who sell such stock and do not grow their own have to depend on the probity of the grower. If the beginner could then continue one more step on his do mward way he would grow all his new plants if they came as bulbs under a quarantine detention until they were glinically proven chaste! This, while not too difficult, takes time, space and close care. Failing all these he will buy as he can, hope for success and pray that he does not become a center to distribute twouldes for his neighbors. Dike many other plants once wild, lifties/new taken kinally to cultivation.

It is not beside the point .however, to remember that in the wild they grow in mixed company, their bulbs and roots often competing with the roots of surrounding plants both herbaceous and woody. One should remember also that many species are woodland plants with considerable tolerance in regard to the degrees of shade and some preference apparently in regard to terrain. For the other large group that are roughly meadow plants, one must recall that their flower heads usually rise above the tops of their companion plants and that if the land is wet, there is either reasonably good movement of water through the soil or the lillies grow on land high enough above the water table to prove themselves non-aquatic!

Dr. Stoker showed that there was considerable evidence to suggest that many lilies in some sites were there by survival rather than choice, a situation that is not peculiar to lilies.

One need not attempt therefore, to copy too sedulously, natural conditions provided one understands what they represent.

One does recall that the soil mixture should be such that it will allow moisture to mave through it without stagnation, that the soil itself need not have markedly alkaline or acid reactions, but rather a safe near neutral reading, that cool soil temperatures are helpful. He will recall that the tops at flowering time like the light and from then on till seeding should have whatever degree of sunlight the species prefers, even if the growing tips, pushing up in the Spring like and need some shelter from light frosts that may have to be pushed aside later on in the summer.

If he reads books, particularly those dealing with personal experiences, he will measure his knowledge of his own soil and climate against what he can discover of the situation where the writer gardened. He will remember again and again that he is not measure called upon to produce an ecologically prefect replice on lily habitats, but that he needs only to understand what they got at home! After all this he is at liberty to do as he pleases and he usually will, sometimes with successes that flout the books.

Digitize Much has been written about the manner in reporting the maximum growths among or

lilies including the terrific cases of fasciation that occ r, most often in Lilium auratum, accompanied or expressed in multiple flowering. Not quite so much has been written to snow that where the bulb grows well, it will increase in vigor and floriferousness to a point, then divide its energies among bulbs divided from the main bulb, which daughter bulbs will send up lesser shoots and grow on as their parent has before At intervals there are reports of the death of lily bulbs after several years of good performance. This most often in the press, relates to L. <u>Bhilippinense</u> with no suggestion that disease was involved but rather that a natural life span had been achieved. The gardener should recognize the fact that while the structure of the bulb is such that its and the their replacement by young scales, the artifical practices of gardening do not guarantee eternal life to any plant, but rather an amelioration of the plant<sup>4</sup>s working conditions.

The wise gardemer therefore, soon makes himself expert in growing more lilies from seed, or in taking if bulbils and bulblets just as the professional nurseryman would do. These are activities for the working part of the gardem in most places though I know of one garden where seedlings of <u>L. philippinense</u> are scattered through all the borders as the result of the seed falling. They are transplanted as need be to fill up gaps, but only rarely as there is no need. Naturally this is a wasteful method, but Mature herself is as wasteful.

If one browses through the literature, and this is something one should do, he comes upon endless suggestions as to how to use lilies in the garden scene . No one person could safely suggest for all other gumman gardeners. There are too many criteria that should be considered, after one has satisfied the requirements of site and soil. The obvious factor is color; the less obvious is habit, each as related to design.

Color provides the primary basis of most gargen enjoyment, whether it be color in masses or molor used as accent. Nearly everyone to-day remembers the so simple rules for complimentary colors, for the safe use off the service tonalities of one basic color and some at least know the safe and suite amazing success of the accent that may mman appear to flaunt all these rules in the face.

With proper soil preparation and a decent modicum of minum care lilies are safely proposed as elements in the perennial garden and the rock garden for the smaller species, as well as that more limited company that can be synd as an interplanting minum among shrubs. This last is almost traditional and all will recall fine bets of rhousdendrons with columnar masses, veritable pillars of <u>auratum</u> lilies rising above them, their heavy flower heads dominating the mann scene. Or one may recall the slightly overarching masses of <u>apeciasum</u> lilies in similar though shadler sites. He may or may not recall pictures of lilies in such places in the wild. If he does he will remember that each lily plant usually stood alone and that its companions were what the region provided. If also the filly were one native to open country as opposed to wood margin or forest growth, he may have thought in passing that low, coarse and vulgar company it kept.

The garden practice, therefore, while selective, is in terms of design, a matter of emphasis; in comparable terms in literature of overstatement. One builds up an effect by repatition. If the repetitions are managed spread in space or time, rhythm is accented; if the repetitions are better described as piled up upon themselves, that is in clump or group as opposed to single plant, one gets the vigorous accent, which may act as a colmination or even resolution of the color effect or should one choose, as a dissonance to announce a rigorous change of scheme.

Those lilies that thrive in shrub combinations rarely present color problems since one may find shrubs that flower at other seasons. The design problem will touch upon the contrasts in line of growth, textures of foliage masses, silhouettes of shrub mass as opposed to lily mass, with the eternal remembrance that the lily is the transient element, that is, the annually recurring feature of the more permanent shrub-tree composition.

In the herbaceous border, that is no more than a glorified, dondensed and carefully nurtue d Mitchen garden, rearranged for seasonal bloom, and color effects, the lily will be again a feature of annual recurrence. Color will come first, magnagementa masses, next.

As far as color goes, lilies do mammum not make much difficulty save in those forms that pass from the orange to sealing wax rea to dull crimson in sequence, or in that progeny that comes from the dull purple Martagon. Orange to red colors must either be aded in great masses so that they dominate, or as flecks of color to enliven the lavender pink to violet and purple sequences of other plants. The dull purple Martagon, the normally dulled hues of the Martagon hybrids and the like, some of the spotted <sup>O</sup>rientals, all need pure colors as foils and if one 'plays safe' those colors in their paler tonalities.

Nothing has been said as yet about fragrance. This is rather co mon among lilies and the gardener who is acutely we aware of scents will minute choose his favorites. The Englash language is rather poor in words to quality or name perfumes and no words will be coined here. The same gardener of whom we spoke, will find those that are pervasive and those that must be sought out.

They are by no means alike and require an educated appreciation. Among the known hybrids, ancient as well as modern, I could not make a choice. The colored trumpets that are on their way sound enchantin, the intercrosses between <u>aura un</u> and <u>speciosum</u> that are being recreated will be worth waiting for always, they may even outshine the <u>auratum x Henryi</u> mean crosses already here. The ancient and honorable and abominably expensive x <u>L. testaceum</u> will always have a special place in gardeners' affections. Of the host of red to orange lilies that increase the number of cold hardy lilies, personal choices must decide which will be grown. There are almost too many excellent clones.

In planting one has to be mindful of the changes of opinion in regard to the actual operation of planting the bulb. Literature is historically full of differences of opinion as to the best depths but whatever be decided one has always the opportunity of testing the theories in his own garden, with proper deference to the growth habits if the bulb itself. All lilies produce Digitizeroots from the base of the bulb and there beens tobe one by dence that these tion are of longer than annual duration, so that one wishes always that he might buy bulbs with this root system intact. If he cannot then he must wait till the bulb makes a new one, and should be feel hereic he may even out off part of the shoot that arises the first spring after planting in order to curtail the drain upon the plant's energies. But whether he does of not he will or should recall that the roots from the base of the flowering stalk may prefer to grow laterally into their storehouse.

> One practeal matter that is no different for lilies than for any other plant is the need to remember that the hole dug for planting must not turn into a drainage sump that will receive all the soil moisture of the area with no swift means of draining away the excess. If soil is naturally heavy and the prepared soil is easily drained, this may happen and then there must be a drainage line away from the base of the hole, filled with whatever will speed access moisture.

Lilium - y

Fortunately for gardeners this is not often needed but more plant than one has been drowned by moisture that collected in the hole that had been an filled with/ideally propared soil mixture but had not been provided with any means for equally ideal drainage.

Except for L. candidum and its progeny x <u>testaceum</u>, the old rule of thumb for depth of planting still holds. There is some argument rising against it, but every gardener should take into account the locality where the new theory is developed and decide for himself if his conditions would provide a similar interpretation of the evidence.

If you mean to propagate your own stock, seed will be the best means even if more time must elapse. Find out in advance which of the lilies you mame mean to sow will germinate at once or soon after being sown and which will need a year to lie under ground for the development of a bulb without leaf, before making any show and never under any circumstance throw out a seed pot or flat in too great a hurry. When the time comes that you can harvest your Digitize own Beed for sowing, you will have the happiest results. for any seed do not tiol improve no matter how mamma carefully handled, during the period between ha vest and sale.

> It is easy enough to increase plants through bulbils, but one should be sure that the parent plant is not infected with virus. Plant as soon as the bulbils come off easily from the parent plant, using as good soil as for seed and some extra shelter the first winter, a cold frame at the least.

Increase through the naturally produced bulblets that form below the ground line on the flower stalk is many equally good. One must burrow carefully in the ground to remove them unless he has courage to pull off the flowering stalk. This is a task for late summer. The little hulbs should be replanted as soon as possible and much deeper than they were on the parent plant.

Commercial growers take advantage of the bulbs' natural tendency to produce bulblets by an antidadadada artificial method. The flowering stem is 'jerked' up as the flowers fade and is then buried, as for a hardwood cutting of grape

in a carefully prepared sand bed in shade. 4

In time there will be a harvest of small bulbs, not just at the lower expenity but all along the stalk. In some cases, the stalk is almost buried in its whole length. The green leaves will ripen off and then the process will be as before. The whole business can be ivestigated at any time to see how matters fare, provided one keeps the moisture even and does not allow any part to dry out. I myself have never had the courage to do this but have contented myself with others successes.

There was a paper y ars ago, that recounted another deviation of this general methods of making cuttings, namely the careful division of the lily flower summ stalk into portions in which there was a bit of stem left to each leaf. These in sand soon produced a bulb from the leaf axil.

The other and more standard practice is the remdval of sound outer scales from a mature lily bulb. These are placed in a cutting bench or flat, usually of sand, buried so that the upper tips of the scales barely show, the whole forered covered with moist burlap and set aside in a cool place. In time small bulbs Digitize form along the lower cut edge for the scale. One becomes very skillful in this tion method and at times it has to be invoked to save a bulb that may have lost part of the basal plate and would therefore die.

> Naturally in all these almost clinical prodeedures, one must take every predaution against the invasion by fungus organisms that would reduce all to dead material in go time at all. The usual fungicides recommended are

But if you can bring yourself to do it, start all from seed.

To catalggue all the diseases that have been found on lilies would discourage any one from ever beginning their cultivation, unless one recalls that a freather similar catalogue of the organisms that might be found in an apparently human being would be no less stupendous, gruesome reading, but we do live on and not too dismally. The main point is to be prepared against invasion, and to keep the vitality high.

### Lilium - 11

Some of the lily diseases, especially such as botrytis are most alarming to see, Attacking from without, the young shoot does down as a slimy mess of green, unless you can cut it off promtply leaving sound tissue that you for flowering have sprayed with a good fungicide. The year's wait/at that moment, seems interminable but one may console himself with the thought that the roots from from the basal plate are probably more active than ever.

It would be splondid if all problems reglated to virus diseases could be met safely. They cannot. For the amateur who finds his lilies bearing foli ge all marbled over with yellow green, there is no sound alternative to burning all of them that show signs, keeping the remaining plants sprayed with some contact insecticide to prevent sap-sucking insect vectors from attacking any plants that may be infected already but without visible signs. For those other viruses, that never show, there is no quick proof. The juices or sap can be incoulated into a highly susceptible species and if the result is positive, the apparently sound lilies follow their fellows into the benfire. Digitized by antears are equipted for from testing an ical Documentation

> After one has undergone such burnings, he is much more willing to decide either to grow those few lilies that live amicably with the virus, or to start from the beginning with seed for all species.

There are some nutritional deficiencies that cause chlorotic disturbances in the leaves of lilies as they do in other plants. Usually a properly enriched soil does not allow these to develop. If there are doubtful specimens, they should be shown to someone who knows. Diagneses from a book, in the hands of the beginner, are just as likely to be wrong for lilies and for plants in general as for humans:

The, when courage sinks to the lowest, go to a good library, one that keeps bound volumes, go through them all starting about 1800 and see for yourself the ups and downs of lily interest, and that each downward trough is less and each enthusiasm greater. At first avoid like the plague the too technical papers that the learned write for one another. Later on, you will learn to glean from them, the meat, for their authors are becoming gardeners as well. Lilium - 12

What lilies should you try? Any you wish from those that are offered. The reduced lists that appear in most bulb catalogues are all sure fire. It is only when you come to the specialist's lists that you should go slowly. For outside/use, save in the warmest parts of the country don't try <u>Lilium</u> <u>longiflorum</u> and none of the Indian species should they be offered. You can work on them later and prove me wrong. Other than these, try any kind offered in an ordinary list, plant promptly on receipt, as early as possible and with care.

There are any number of lily books, of unequal merit but mamme none without its excellences. There are also yearbooks, a long series from the Royal morticultural Society of Great Britain, a shorter series from the American Hammanamam Horticultural Society and a new one just beginning from The North American Lily Society. Before you give your garden over to lilies, study at least some of these well.

Digitized by Hunt Institute for Botanical Documentation

dilium The true litres an members of the genus his hum as contrasted in the great bot 3 pearls called livis to in "fock" ternaindagy - make a linge surger family with a words tride distribution in the northern Remisghere, quite tange Enough to consider by itself without any of the interlopers of common terninology. They also have held the stage in garden literature for some many years with period of rise and decline in popularity that become more and none understandable as we know more of the plants themselves. To get the generalities at 3 the way, one may say that de have vealey ballo, indely varijing in their size, atta scale character and manner of begitative increase, are dormant in winker, Thim up leafy stalks for flowering, the leaves themselves showing barrows characteristic types and arrangements, the hopes arrisge and come from the upperson parting Howeving Varies from late spring to autumn. Regular increase division of the tost wills its augmented by other natural methods of increase than seed, by bulbils produced in The ayits of some species and by a none a ten common production of bulblets on the base of the stalk, above the bulls but below the level of the voil. these bace tones five little idea of the beauties to be aujourd with the fitter in the time a taxonist of differe twitter was common next y time It is probable that for the man on the vicest" the word lik suggests before all else a white trumper shape flager, and probably since farm of hitium longiflorum a standard ploriets for plant for Easter. This may serve well enough to represent the large group of truppet to his (Eulision to the botanisto) among which are many there of conspicuous

rearly all value in the garden scenes wave the most northern. It my same fabrilous man, may also recall any one of various quiden likes that grew a short shift stalks commer in have bray or early more with any member of erect, cup-shaped titre fensers, most ytam 3 a rather now & uncompromising wange color. These being old cultivated plants were ofter of mongred background bit The names, of excelsion and Shundergianum will serve on the moment or identify them and Isolinion will dentre their somp to the botanists. I he lives in one of the Eastern states he may recall the red lities y wet meadows or woodland Edges, h. superturn a if he lived in this west, L. pardalinum amony theirs, with their pagoda-like wholes gleaves and gand brown spotter the red h Jellow flowers that earl back in Themselves The older the set Huntil Institute for Betantial for extention stammens & fish for than 2 the for auth. These second and enough & suggest the martagen type 2 lilies, soon more generously represented in the old world than here. legain if our "man" has tried froming likes himstelf. There is small chance that some time or other he has not had a bulk y, the " Told bours hit of Japan", L. auratum that has been in and out of cultivation some time to it first came in. This with it's great fervers that make norther info, turbans or trumpels is set off by the botanists in auther fromp callet, archelision, I has tome ill-assures company but nessly rather cold - Funder likes that do not concern us much ; while we become specialists. If one reals tily literature, sopecially if he read Somewhat his torically, he will find that troubles of one Jost or another have always been associated with the

15-2 genus. I be pairist he will soon sense the fact that most of the difficulties are associated with cultural difficulties and that in time the bases of the se difficulties became the clearer. These classifications have been brought about I many pasons working separately and gree in diverse fields "have the general pattern seems to be falling into place. Os 2 tr. day, Even the beginner has more chance than The best of the oldskers to time through successfully. The basic encept's of culture are fairly complete, som of they are not must be restaked compactly from time to time with slight modifications and additions "an negself, the most important of tuck gathering up projects Was a paper presented by the more recently deceased Dr. Fred STOKEN, "The moinment of hilies in nature" in which in spitz of the many admitted facural there emerged a cleaner picture than an Hunt in stitute for Botanical Documentation all that can be done in a relativel shart treatment, such as must be given here is to report to bacic generalities and to kry the individual gardener to push on for huntelf, beginning with the nine casis, handler species, "he best bets are then growing only hear others that are most easily handled under his conditions males he when the come a lig collector and specialist. It would appear that he great body of lity species is relatively having to cold and that if pushed beyond its reasonable limits may nove easily the pushed northward than southward. In time this may be contradicted on it is certain that if there are lity geneers in the South they have been less vocal in reparty, than those of the holly growers of h. longiflorum excepted! It would be ideal if the beginner could and would grow all ghis til hills firm deed and that he and they were far isolation any other plankings that might serve as centers .

2 infection, particular to the vector transmitter mosaic diseases. Failing this, it would be test recersing to find billows stock guarantees & to desease free - a more or lease protlematical quest. The majority of geners do their human ber to produce sound stock and the majority of dealers. time noting except what they were assured as to the quality builded of the beginner could safely good all this frech new plants in greacantine for to take they are vound, This while mit difficult, takes time, space and close care for one searm at least. Tailing all This me may as he may and prays on favorable progress. Like many the plants are wildings, lities have a the whole Yaken kindly to garden life. It is not beside the print, however, I remember that in the nobe they grow in mixed company Their balls and roots green derrounded by the costs of They plants both herbactured woody. One Should remember ed by Hunternstitute for Botanical Documentation tolerance in regard to degrees of shade and some preference apparently in regard to terrain. For the other large group That are roughly meadow plants, one must recall that Their Henri heads usually nie above the shoulders topo of their companionar and that of the land to wet, There is sitter reasonably good morement quater through The soil on the lifes grow in land high enough above the water table & prove mensdres non-aquatic ... Dr. Stoken Mund that there was considerable evidence to suggest that many lities in some vikes were there by turvival rather than choice a totration not fuculiar or One need not attracht. Merefore, be copy too sedulously natural enditions all me need do is to recall that the Joil mixture

do titsutes and their replacement by yough scales, The artificial practices I gendening do mil guarantee strongle life to any plant, but asther an amelioration of the plants working conditions, The isse Gardener, there fore, soon makes trinself expert in growing more lities from send, or in taking you bulbies in bulblet on graving a just as the pelfersional nursey man might do. There are activities for the working part of the guiden in most places, though I know z me gardan where seedly y L. philippinense are scattered in the borders and The resulting sading are allowed to find for themselves. My raref me ing Tran-planked & new losstins. Notwell this is a wasterne method, but wasterne as is hat we herself. If me houses through the literative me comes upon subless suggestions as to have me may use lities in the Sacher for yood Afect. he me person could safed suggest for zee by the sandeness. There are the cuitere that shade he coundered, after the hes sate per the requirements of Site and soil. The obvious factor is color of the less obvious is hatir. Color provides the primary tasis of most garden anjoyment, thether it be color in masses on color user as accent. heary everyme tr-day remiters the simple rule on complimation Colors for the safe use of trafte seried touch ties of me Fasic color and some at least time the vafe and quite anying success of the accent had may affect to plain I all there rules in the face. with proper voil properation and a decent modium of late Care, lities are safed. proposed as clonents in the perennial your and the rock guiden as well as for that reduces empoy that may be used as an inter planty with should . This last is almost toed; hand and and reader -

should be such that it will allow moisture & none through it with my stagnation, that the soil itself need not have markedly acid a alkaline reactions but antheir the safe new trail yone, that an nonements stends to free but not vislent that the It seeking some like it be free in the sun, wen if the proving tips as they push up in spring, need some vhelter from light firsts. He will derose a site for his plants that is not shelteres & sufficien a 4 pores & every wind of beavery. I he rest borns, particulary more dealing with personal experiences, he will weasure his kundledge of his own wit and climate against shat he can discover of the discover the writer quedened. It has been prinked out often onryh, lik can be overlooked a frighten, thirt plants do with need duplications of their notinal hauts for vuccess, but rather an understand; Digitized by Hunt Misinute for Botanical Documentation them as far as he may a as the plants permit. Much has been written in the way of reparting wheat appear to be maximum fronthes among lities, including that cases 7fasciation that appear so ofter in h. auratum accompanied I multile flowering. Not quite vo much has been written to show that in cases where the hult grows well, it will increase In vign and planters to a point, then divide and send up lesser stalks fin the dought a fulls, they in turn repeat-Ing the succession. at intervals there are reports about the death new find halls after several year of good performance this winst after alakes to h. philippinense with no suggest on that disease was involved but rather that a natural he fan had been achieved. The gardener should the secoprize the fact that while the structure of the bulls is tuch that they construce fronty indefinitedy with the storphing of y

gardener will recall find beds of rhododendrons with columns bentable pillars of auration lities riving above them; their herry flower heard dominating the seene. Or he may remander The slight mer arching to prantice masker of his speciorum in timitar Mongh shadier sites. He may a may not recall hictures of lities when similar conditions in the will. If he dog he will remarke that each ling plant usually stord alone and that its companious were that the regin provided. If also He tily were me, mative to open country as opposed to forest in word margins, he may have kinght in passing she' low, crarse, onlyan company lities "Wan keep! The quide practice there for while selective, is in terms of design a matter of emphasis : in terms of Stracture, of overstatent. The mild up an effect by repitition. If the repetitions are a in space or time, shy this is accounted a if the rep to times are atter the contract and marted , the whole the endered alliet is and the first of the first is opposed to a single plant of me fils the bigorous accent - Inich my ast as a culmination of the color affect on, should are chose, as a distinance to annouse a nigrous drange of scheme. Theore lities that there in short continetions recel present Colon performs since me my find should that foren at other teasms. The design to proble will truch upon the contrasts in line of forth, Partines of foliage masses, villionettes of that man as piper to lig mars, with the stand remainder that the life is the transient - that is annually recurring, Lecture of the une permanent thrub the composition. In the habacens border that after all is no more than a glorifict, condencer and the campily mertured totalen quedai, rearranged on seasmal form and color sefects, the liky with he among the plants of annual recurrence. Color must ome first, masses next.

to far is color goes theis do not make much tificality save in these forms that pass from the orange progen that comes for this dull pupe martagon. Orange to red colors must within be in great nearties to That they dominate on as flecks of color to enliver the pink of will' I puple sequences. The dull puple martagen, the would dulled his of the Backhouse hybrid, some y. the spatter mintals, all new dear pure colors for foils and I me plays safe, show colors in their pales tonalities-Within has been said as get atmit pragrance, this is rather common among lities and the gardner the is acutely awant of scul will chose his favorites. The hybigh larguage is rell rich in word specific to the factures and no word will be coined here. The jundance the cijays pragrames will find a four pleasure in those sich seals that fill the shole goed on Ed by it were required that Bolan and must take out it would be me of the highly colorer forms of h. speciosum. Second choice would go to me of the great white trumpets and third choice, my because of its frequent uncertainty would be my favoure above all, the delicated pink trunpet L. japonicum mee. L. Kramen, Digner there three certain Des, it would be hard to go, save to day that most y the cup-sheped tities ome the forgotten, and almost all y the mortafin types. thing the turnor by bidd , auciat as well as of to-by, I could int make a choice. The colores trempet lities that are in the stay such and anchanting, the intercrosses between awatum and speciosim will be worth waity for dways and probably may the about already extant auration × Henry i that is fine enough. The ancient honorable and

always tro uppensive X L. testaceum will have always a special place in all garden affections. to has already ben intimated tities need some case in planting terstore is full of continuous regarding planting practices but of me read with case, the battles are most I will all about the planting of lities in gardens wat a work Ebut mass production when nausa, consisting exact that tas been written for other museymen. Since it is determined. particularly to y the plants own proto habits. the majority I all lities produce roots fim the basal platt as would be specked and as there do not seen to be g annul kination, the helt grows best of they are vaved. Usually they are not except in trans planting in one's non garding The pation of the flowering stalk below from the above the bull proper. as a result, me must provide abundant food m two levels, an End contrived commonly by the usual deep Prenching and a ford rich mulch. The laver roots will form Inom into it and the upper roots in the fear by the nourishment leaching know to them In preparing the area in which the lities are to be parted whether it be large or small, it much be an area in which soil moisture with not collect. This danger arises perticularly on here in this, If a plant hole is dreg in them I filled with the most friable mixture in the world, all the reatural thoisture of the area may flow into them I escape so should that any help would suffer an any other times & plant; save the Semi-aquatics of toy margons. The standard practice to avoid his is the diffing I a trench away from the area

the farther and being much lower that the fear of the light. this dean can be filled with stones though southall they will be found in the doil mixture from this Chies. Tratunated, for both lities and gand many this is names neares. Should there be no remed for it all, on may shill ty this lities that ghe fernisch in nature on margins of wamps or streams, in soil high above - I which must bene the water level. Except for L. candidum and its performant. testaceum, all Slies follow that me of themeto for depth of planting, the top I the help down so that above it the distance will be how and one half times the vertical det dimension of the bulb itself. If you mean to perpapake your an stock, seed is best and the fresher the seed the to more quickly it will germinute. dities react in two ways, there that forminate at once, in the annable fushion of the firming and have that formzed by Hunt Institute for Botanical Documentation the finde forminating the may find to affect in Shich case, plunge the illiste por a flat in a colo frame & let it freque + New through a winter. Terminetia will be poor though probably his good that of you had hervested and town your home from tect. It is easy enough & lam to pather bulbils firm the species that produce them fread, to topinum, b. Seignitice, L. bulfiferum, etc ft. they role of readily then ready to know the parent stalk and islands be planted before they drivel, horing the same rule for defith, that me would use for mature halts adding a little more, never a little less, for good luck. It is less easy to gather the belblets that form on the below from portion of the flower stalk. The may Easily loose the soil about the stalle + remove them, provided me can set

get at the hills. This is a task for late summer. The sually bills should be replanted as quickly as possible. Commercial provers take alountage of this tendency for bulk formation along the flower stall to arrange force the istue. If the stalks are jerker away from the bulls immediated after the fervous fall, they may be healest in prone sandy soil much as me could place hand wood grape cuttings , on they may be haid at a more quille stope in a saw perpapation bed. Said a soil Amels to help moist but not wet. In due time, long enough too, Finall bulls with form all along the trevied New, after the fashion I there that former naturally below on level. The treads them the is me might any other bulblet's, This proctice I never have bod courage to Very though There seen it are and vapely. There was a paper, years ago, that accented the cutting up zed toy fruint thatting to in Botallical Bocuthentation as the cutting, the leaf countrally with one but the bit of See produced its bulblet. This to Share never tried. One other standard practice shower he noted, namely this careful removal of the outer veales of the dormant ling with. These are allower to day a little and then are buried in sand baseland down, tip just strang, some use vand: some use a saw fresh this, Nome chipper sphagness. Matives is used must be kept damp but not wet. Places in a cool temperature, all the scales should produce fim me N descul small bulblets fim the base. In all these hodifications of "cutting" perpapation, the plant shall be disease free, tince any systemic disease could be carried over in the tistuss. all perfer practices for the present on of frigers disease forothis, whether pathologic or not should be used

of you can bring yourself to start it, good all ferm seed. It is show but sure. To catalogue all this diseases that have seen been reported in lities, would disconcept me from when attrupting their altristin. hules me remembered that a catalogue of the bacteria of his own body only make freesme reading, wellers again, one rematibered that se do live trather. At some of the lity discuses, especially such as botrytis. are must alarming to see. attacking firm with mit, the your short for down a thining wass of freen, when you can cut it of looking sound siture that you spray with ford pungicide. The years Want at that moment secures interminable, but one may more himself with the chright that the nosts firm the baral plake are probably more active than wer. It would be splandid if all proteins relater to river titeases could be met safely. They cannot. For the amatur who pur his Digitized by Hunt thistly of for Botantical Declimentation no smul allementer to turing all z them that then vigns, keeping the balance sprayed with contact insectibles to prevent Sap- queling vectors from attacking plants that may be infected alread without betraying visite symptoms. For there there Vineses, that never show, Their is no pride proof. Their juices a sup can be invalated into a highly susceptible spaces and if the result is positive, the apparent sams by lies, follow Their fellows to this brufits. Few anothers are squiffed for this. After me has underfore There tranings, he is much work willing to decide - either to for three few lilies tiplet have anicold with the vinus, on it stark from the beginning with tar! There are some deminal deficiencies that cause chearting disturtances in the leaves of lities as they to in Sthen plants, housely - properly awrided bes does and allow There the

to swelling. of there are doubt ful spear mans, they should be shown to some me this knows. Diagnoses firm a todk with just as likely to be wring with and for plants, as for humans! Then, when courage sinks lowest, go to a good Library, me that heeps tomis volumes, go through them all starting day about 1500 and Lee for yourself the ups + downs of like interest, and that each downward though is less and each entreis arm freater, at fist, avoid like the plague the too rechnical papers that the learnes wite for each other. Lake on, you will learn for glean the meat fim each bit on they too are approaching goedhing , hit fem a quile different direction. What Cilies shall you tay? any you wish from those that are Aferes. The reduced lists offered in most bulk catalogues and all sure fire. It is only then you come to the specialist's list that you Digitized by Htm Institute for Botantcar Doctimentation country, don't by a long florums since it gta tries to fors in astronom and is caught. Then than this, tay any kind Acred in an odinary list, plant it promptly as early as provide, and with care. There are any number of lily books of unequal value but none withink it's points. There are also year boths, a long series fin The Royal Hindi cultural Join of in Guar Britain, a short me from The American Hosticultural Society and a new me beginning for The worth America his Jociety. Before you for your goide over to cilies, study at least some of these.

## Lycaris

This is a small genus of Amaryllidaceous plants with starking summer bloom, curiously one at best known by the two species that differ most from one another, one a common and not much prized garden plant of the lower South, the other much talked of but not too commonly met in the North. As is the case with other plants of this genus, their usefulness is determined by the hardiness of the leaves which appear in autumn and remain evergreen through the winter to ripen and disappear in the spring, leaving a bare patch from which rise the maked stalks of bloom.

For the North, there is Hall's amaryllis so-called because it was first classified as an amaryllis and because it was sent to this country from Jacan by Dr. George R. Hall, an American physician who travelled in Japan and sent oack to New England, a number of fine plants including Hall's honeysuckle that has become such a pest in the milder parts of the country. The bulbs are of a fair size and should be planted with about 2 to 3 inches of soil above Digitizedthe Yops. Like other amaryllicaceous plants they first establish themselves 1101 with the formation of minma heavy roots typical of their kind and may yield only leaves for a year or two afterplanting. When fully established flowering begins. The leaves are strap-like, about three quarters of an inch w de and seem a little thin as compared with those of others in the genus. Frequently they are somewhat damaged during snowy winters but usually only at the tips that may look ragged enough before they ripen off in June. In August. here, the flower scapes at times/to 18 inches tall, bear a terminal umbel of lily-like flowers of about the same color as those of Amaryllis Belladonna; the narrow segments, however, do not over lap much at the base and give a starrier effect than those of the Belladonna lily. They are delightfully scented and last well when cut. There is some variation in color and a variety, purpures is reported though not seen by this gardener. The most interesting feature of the color is that in certain lightsthere appears a bluish sheen as if the tissues were of some changeablegsilk.

Lycoris - 2

In the plantings known to me seed has not been produced. The degrees of hardiness are not well defined. There are ample records of its growth in New England and there are fine plantings in Ohio and Illinois. About the District of Columbia there are both good and poor plantings, the poor lots being condemned for the lack of flowering. In the Mississippi garden best known rarely maximum the plant makes luxurious foliage but ma flowers sammaham.

The common species in the South, where it is usually known as the red spider-liky, is <u>L</u>. <u>radiata</u> but is hardier to cold than had been thought and is pushing its way northward as are many other plants once believed tender. It is a small species in all its parts. The leaves are dark green and somewhat channeled with a paler green hue along the midrib. When well established the unbels bear as many as twenty-five flowers that suggest those of the herines, rather than asaryliks from the faction in which the perianth segments curl / back upon themselves leaving the long and prominent stamens and pistil standing flower out about the/mass, in the same charming faction that one may note in the wild Digitize ataleas of the factor donet. The factors become more and more in ruffled as the flower ages and the color faces slightly there, **m**, leaving a dark central stripe, also reminiscent of the tender nerines. In my own garden the fine foliage is rarely injured by the winter and in fact makes a better show than that of stornbergia which it somewhat resembles.

> Leaurea has not been cold hardy for me, which is most regretted since its fine flowers midway in habit between the two menti ned, are of a fineyellow color. The leaves for me, pushed up in late August but were so thin in substance that they were ruined before December. The normal decay that took them off, seemed to continue its downward way into the bulb probably also cold injured and finished it off. It had been planted on a sloping site in good soil to which extra grit had been added in the hope of keeping it drier and a bit warmer through the winter months.

Lycoris - 3

L. incarnata I have never seen but there was an interesting white counterpart of L. aurea introduced by the U.S. Department of Agriculture in 19-under the name of L. ------. It was flowered in the cold pit already often referred to and seemed so much like <u>L. aurea</u> in its characters that it was not attemn ted out-of-doors. The stock was sent to bulb growers in Florida and California and like so many other fine things has disappeared into the limbo of forgetten favors.

It would be interesting to discover if the species would interpollinate although one would have to store the pollen as their flowering seasons are distinct, and it would be even more interesting if they could be bred to the pollen of merines, a not altogether fantastic thought when one recalls the fair number of bigeneric hybrids already known among the Amaryllids.

Digitized by Hunt Institute for Botanical Documentation

Lyconis This is a small family of amonglidaceous balls with striking tunmer bloom that enriced enough is best kumm hat the species that differ most from each other, me a common and not to much prized goeden flower of the Inith, the other much talked of but rest too commonly found in the north , to is the case with other plants of this order, their resepties is determined by the hardiness of the leaves which appear in very lake stimmer or autumn out remain werpeen through the winker to then ripen in lake Spring, leaving a bare patch of zarth, from which rise the maked statles of bloom. to the hold, there is stell's amonghis, so called because it was first classified as an analyllis & because it was shet to this country form Japan 1, tr. Korge R. Hall, an American playsician who travelled in Japan and such tack it this country a considerable number of fine plants, as well as the treatiful thele's honeymakle that das become such a pist in Stines te plankes with about 2 to 3 inches of voil one their tops. )191 tike the among Midacerus plauls, Key first establish themselves with the formation of the heavy roots typical of their kind and may yield my leaves for a year or too after planting. When fly established, tensing legins. The leaves are strap like, about three quarters of an inch across and seema little this as compared or there of some other species. Thequeally They are damaped during terms winters but usually only at the pho that may look ragged enough before they repending Junes, the flower scapes, at times up to 18 inches high, bear a terminial untel y lit like fewers I about the same color as Keore of Amanyli's Belladonna; He segments however do not overlap much at the base and goe a starrier effect than there of the Belladonne ling. They are delightfully scaled and has I well when cut. There is some variation in the flower color and a variety, purparea is reporter, though not seen by this goutener. the next interesting feature of the color is that in certain lights

2. - Lycnis ben planked on a sloping sike in good toil to which extra grit had been added in the light of teeping it drive & warmer though The winter months. d. hicarnata I have never seen but there was an interesting floweres in the cool pit greenhouse alread referred to and seemed to much like & aurea in its characters hear it was with attempted and g- doors, The stock was sent to ball growas in thirda and California and like to many five things, has never been heart I since. IT would be interesting to discover if any of these species might interpollinate, although me would have to store pollen as Their flowering teasons are distinct and it would be even more interesting if they could be bret Digitized belen Hunt ministitute Tor Bolanical Documentation ne recalls the fair nuber of bigeneric hybrid alusty kinn emory the amazilio. 18m 409 L. aurca (as amarghis) "'In aiton in his Howh's Kewandis informs us that then slepat Theirs of among this was intho. for Chine & Joh Wheep'll M.D. in 1777 That it is a store plant, & flower from day & fift " tome doubt expressed as & new y "store". It like may then help in blove deg inequilary & is propagated & affects which are produced in thereaster abundance.".

## Melasphaerula

Only one paragraph is needed to record the fact that this cormous plant from the Cape, is by no means a first need in any garden, in fact one wonders if it is needed at all, save in botanical collections. -t sends up a fair fan of the typical iris like-leaves, rather on the small side, and then a most interesting flowering stalk that has an almost symmetrical series of opposing ourves as it ascends, the high point of each arc being the point where a lateral branch 'takes off' to curve again, the whole lying approximately in. one plane as if pressed. The flowers themselves are small affairs, almost regularly starry, white on opening and creaky the second day, dull yellow the third, a color sequence that recalls some of the bush honeyeusckles. The anthers are dark. For the record, we quote from Curtis (B.M. 615) that it was \*Found by Thunberg at the Cape of Good Hope on the Groenekloop hills and near Bergrivier: introduced to Kew Gardens by Mr. Masson in 1787.' That same Mr. Masson was responsible for many other introductions in the same and other years and one wonders is ne was as disappointed as we on seging this small tati second-rate plant.

melas phaenela granissea Apr. noth Jeg 1938. p. 236 4239 Common plant - for shoped set y leave that become ragges -Il safe - to 2/r - Franched - current tristed - J all inf. lies is one plane No. Anite first day - 20 creany, bull yellow 3\_ 18m. 615 [1803] -From y The beg at the Cape of good the on the Troenskloop hills & near pergrivier : intro. I kan Sardas 5 m mason in 1787. side-Digitized by Hunt Institute for Botanical Documentation

## Littonia

In so far as 4 know this genus is not in cultivation in this country but its name creeps into discussions especially when the Gloriosas are mentioned. Its species, <u>Littonia modesta</u> is well figured in Curtis Botanical Magazine (BM 4723) and shows clearly the interesting tuberous root that apparently renews itself before it sends up the shoot. The latter clims aloft like the Gloriosa and attaches itself by the tips of the leaves in the same fashion. The flower is quite different, a modding lily-like bloom with equal segments of a pale orange color, that completely hides the stamens and pistil, with nothing of the bizarre that makes Gloriosa so surprising.

Digitized by Hunt Institute for Botanical Documentation

18m 3873 Uisene Ingipetree\_ Litting Periath fraid Mite + uld as in maphent Cinus of hymenoallis - inner crown thinkle vhippe + model - deep emerall for at bas 3-6 flo in hers. Peru? Cajamar Zuilla - Elt 10, 00 ? 18m 4335 Tritmin aurea -Lottes life a find example of What a gailine work all a month facing but nearly is. 18m. 4337 Infacolum untellation Digitizant by hunt anytiture afor Botanical Documentation Hos - Les - tips 7 cagx dull Jeller 3-7 (usuel D) in under ind ween Ror due per-18m 47r3 Litmie moderte -Plank like Floriose - Uning h laf tip- Root quik diffent "Radix tubersa, tubere inferne short bilobo, loto unico tator nordlum Franfe / modeunte." newroot Im Hookered.

18m 3675 Ismine Macleana tothe and while a por capathing he with more + Smiller flowes - guilt greenish fufforet to be doest to. I pedmalata, Fragont - not much.' great -18th 3714 Japaerla thereau the stars of the Peruna ande -18th 3727 Corpain Judancelata -Long - Her & Texas & Tayland in 1835. "primere like deap" - the pick titled tracts -Digit the story Haspacher thad aras hices of Kore net and the total and the setting Teller the the the - and for for Valpariaso "Hor de Perdig" Bm 3862 Hechata pulchelle - , This - Breno aires-Horas turn heard door Bon 3872 Sprikelin aprila Bolina! all haring on top of Scepe - Legments Carthan freezis devices after flowers -

In spite of the fact that the name <u>Mills billors</u> has been snown to me, almost since the earliest days when 1 could read manage a catalogue, I have never seen one is flower, nor mot a gardener who had ever grown them. One trial manda was made several years ago when I bought bulbs and roots of a number of plants that I had never seen and had almage always meant to try. Mills was among them. The bulbs arrived, a whole twenty-five that I shared with the Mississippi garden. Mine went into a pot according to all instructions and in due season in varying degrees of feebleness, according to the size of the corms, spindling leaves appeared. Nothing else ever happened. These sent to Mississippi behaved in the same fashion except that their demise occupied two seasons.

The books say that there are starry white flowers over 2 inches across, as many as five of them on a more than foot high scape. Perhaps the whole business is ano her of the taxonomists' cull jokes for something named <u>biflors</u> for better it may be taken for them that a high from the lifetic. Arizona and New Mexico cannot endure the sticky East. It is kin to Brodiaea and its kin, so perhaps it would be quite unreasonable to hope for it.

Wherever it would thrive, it would doubtless be of secondary interest late to be used in mixed plantings where there could be a perfect/summer rest and a winter season without much cold and dry as well until wammin came with approaching spring.

In ofite 2 the fact that the name hills hifters has been known to me, almost time the sarliest days when rimer was a estalogue, I have never seen one, now met a gardener who has ever grown. me. The trial was made several years ago to buy bulb and nools of any number of plank. I had never seen and always meant to see. Thills biflors, was arong them. The bulls conived, a whole trent five that I deared with the Thistiveriphi garden, there sent is a pot, according to all instructions and in due season in varying dequees of feeblenees, according to the size of the little. Corms, spindly leaves appeared, hothing the week happened. Those leave to thistissippi techared in the vame fashion except that their deniese occupied two seasons. The boots to, that there are starsay this flowers are 2 inclus, across, as many as fire of them on a more than food high scafe. Perhaps the those buickers is quarker of the stars for high scafe.

than that a nice thing for heepico, and you have the winds, could not endure the sticky fort.

# Montbrotia

Although it is a horticultural proceedure to maintain the word montbretia rather than to use the more orthodox Tritonia, it is as montbretia that most of us know them if we know them at all. In Our minds assent easily to the splendors of the Earlham hybrids, later in the scene than the clones of <u>Tritonia crocosmueflora</u> that we knew as <u>Montbretia Crocosmueflora</u> along with the poorer older kinds, <u>M. Pottsii</u> and <u>M. rosea</u> that never looked very pink or rose. In no way did our gardener's eye or thought connect them with the startling beauties of the flat-faced strongly eyed <u>Tritonia crocata</u> with its more ixia-like, indeed more freesia-like stature and habits.

The whole lot, whatever you may call them, have plants that look more or less like lesser eidtions of gladiolus and like gladiolus come from corms that in their turn send out longer and shorter underground stems with eventual cormels at their tips, turning finally into new corms. This is all vory well in climates where montbretias must be lifted and stored like gladiolus, Digitize but in the deep South and elsewners, where they remain in situe, the fean interation generally do form unprofitable masses of foliage from which rise through the summer, the over-arching flower stalks.

> Even in the best forms of montoretia, it is only so-so. One could spin a paragraph or two about the charms everyone of which would be correct, but the only way to see a mutbretia flower is either to lie flat mm under it and look up, or cut it and put it on a mantel shelf above ones head. The flower faces look one in the eye if the shalk is cut, but in the garden the overarching stalks show you only the backs, a neat pattern, a markedly rhythmic arrangement and so on but not what one pays money for first of all. As fas as the deep South garden is concerned, possibly the most interestig time comes in December when, the leaves still green, and the garden not yet too blantantly overwhelmed with camellia warworks, the capsules begin to turn dull orange, burst open and show the dull black seeds, but it still remains a secondary thing.

Montbretia - 2

In buying montbretias, always buy enough so that if a few refuse to grow, which they sometimes do in spite of a mild soaking, there will be enough. Don't blame the dealer for your own, dug later may do the same thing.

Following the highly recommended system of buying some of each variety of any plant, 1 once bought a series of the Earlham hybrids. Gentainly the individual flowers are much larger than any older kind, but there is not much enlargement of the color range. Although the colors come within the gamut of my favorite hues, it seemed no loss to me that I did not carry them on. This of course, is treason.

Since x T. erocosmaeflora is a bigeneric hybrid, attributed to Lomoine (T. Pottsii x <u>Grocosmia aurea</u>) it would seem that perhaps some enterprising soul might find some other kin, <u>manimumanentation hypenen</u> that would make the flower stalks more upright in all their length - possibly some of the antholyza's might be commandeered, because if one might see better the flowers themselves, these would be showier plants.

mont bretias.

although it is a horticultural procedure to maintain the wond monthetia, rather than go to the more orthodox Tritmia, it is as monthretias that most gue kuns the plant . Twe know tosm at allo for mint assenting easily to the Alendors of the Earlham hyprid, lake on the scene than the clones of Initmia crocosmaetlora that we know as monthetia Crocos maeston along with its hoddies dose kin, M. Potoi I the onea that never looked va pink a nee : in no way did an quitmer's eye or thought link there with the starthing beauties of the flat-faces, strongly eyes Tritmin crocata with it's more ixia-like, indeed more Theesia like stature + habits. "the whole lor, Materia you call them, took to have plants that look more a liss like desser editions of gladidles and like gladidees spring firm comes that in their turn land zearby a former interition at for the warding on Distance that it in new cornels tuning to comes. This is all very well in chinates Where montbretias must be lifter and stored like gladistus, but in the deep south & electhere where they remain in situ They can and usually do form profit form improfitable masses of foliage fim which rise, here and there the over arching flower stalks. wen in it bet formes the montheretia is my vo. vo. One could spin a paragraph or two about its dearms Every me of which work be concer, but the my way or see a remethetia Almoer is sitter to lie flat under it a look up a cut it and put in an a maintel shelf at me ne's head. The finner taces look one in the sys of the ellere stack is cat, but the orecarching stalk shows In my their tacks, a neck pattern, a marked & she think and and no m but not shat me pays mongy the first of all. As far as

the deep south guism is concerned pointly the most intri-Juing time comes in December when, the leaves still green and "the garden will yet the blatants or provering of the comellia way works, the capsules begin to turn dull muge red, brust start + shoor the dull black seeds havit still remains a dull Ming. In mying montheticas always buy enough so that if a few represe to grove, which the sometimes do apparent out of talki in spile of a mill soaking, there will be enough, Don't Hame the dealer on your non will do the Name thing - in parts Tollming the highly recommended system of bryson some of lach of any plant I are tright a teries of the railham hybrids Certain the individual flowers as larger theme there of my the sols & there is some range of color of and the though the Colors come with in the gament of my favorite hues, it seemed us loss to me that I did ut carry them m. This of course is treasm. d Sweet white an Botanicat Doctimentation Semine (1. Potton & Crocosnia aurea) it would seem that Some enterprising sone night find some other king that would write the flower stalks more upright in all their length - possibly I'me of this autholizas might be commandeered, because 'f me knight see better that flowers themselves, these would be Ihmin plants.

The grape hyscinths as a family are probably not as well known as they deserve to be, and if they have little favor in some parts of the country, it is only because the speakers know only the dark almost blackish blue, dull flowers of the typical <u>Muscari botryoides</u> brought to the country in Colonial days and esda ed to meadows and pastures to be come almost as much of a nuisance as its contemporary star-of-Bethlehem, <u>Ornithogalum umbellatum</u>. The other later importations that one comes upon in other old gardens is a monstrous form of <u>M. como/sum</u>. Later years and good propaganda brought 'Heavenly Blue' to the fore, probably no more than a good color form of <u>M. botryoides</u>. But there are others worth the attention of the gardener who likes masses of spring bloom, for the bulbs are mostly cheap and permanent in sunny places.

The family is Mediterranean with probably the greatest number of pass representatives at the eastern end where they become neighbors of the Bellevalias and wild hyacinths, as they pass south into Palestine or eastward into Iraq. The bulbs wary in size and neatness and do in fact suggest small hyacinth bulbs. One may safely follow the old rule of thurs in depth of planting, choosing almost any good soil for them, but a sunny site even one that may grow quite dry in summer for all the forms save those related to the musk hyacinth. as will be noted later. The leaves are mostly channeled, and like those of many spring-flowering bulbs continue growing after the flowers have passed in some species making a transment towsled mass of green. There are a few exceptions as in H. paradoxum and the broader-leaved M. latifolium in which the leaves and suggest those of their kin, the hyacinths. The musk hyacinths again, stand apart with broader leaves, sometimes faintly tinged with pinkish browns. The modding flowers are either shaped like little urns turned upside down or are somewhat more elnogated which gives a very different aspect from that of the imaginary bunch of grapes made by the crowded urns! Many species show a difference in the flowers at the top and the base of the scape, the upper flowers usually sterile and often paler in color.

## Muscari- 2

Among the catalogued variaties tried, only <u>H</u>. <u>armenaicum</u> make an autumn growth of foliage here and it is rarely damaged even in severe weather as is befitting anything from Armenia.

As far as I personally am concorned I should buy any muscari. I might find, whether its name is in good standing or not. If I were to be limited in choice I should certainly have <u>M. armenaicum</u> and ,or Heavenly Blue,<u>M. latifolium</u> <u>M. paradoxum</u> and <u>M. polyanthum</u> for the grape hyacinths with grapes, and <u>M. moschatum</u> or any of its forms that might be available.

The bulbs that I have were mostly purchased with the help of Mr. John Hoog who has halped so many and it was because of his interest that I had bulbs of <u>M. masseyanum</u> that was illustrated in the Mational Horticultural Magazine for July 1938, along with other species that fall into the gam general orbit of still another small group of species, usually known here only in their mostrous forms, the feather and phasem plume hyacinths of old catalogues.

M. argaei and its white form, as far as garden effect are concerned are little better than the clear blue and white forms of M. botryoldes with possibly a little favor for the white form over the white form of the latter species. The foliage is definitely yellow green.

<u>M. armenaicum</u> has already been described, a fine tough thing making good increase from the base and moderate seeding. The lavender blue flowers are more blue than lavender.

<u>M. asurgum</u> of course is a hyacinth that can be had under the name of <u>M. ciliatus</u> or the incorrect name of <u>H. asurgus</u>. It is a lovely thing in its own right and that testimony can be read under Hyacinthus.

M. <u>commutatum</u> for garden purposes is merely a robust <u>M</u>. <u>Botryoù es</u> with dark but not as dull flowers.

<u>M. conicum</u> again is of lesser importance but its flowers are bluer than thes of the common grape hyscinth.

<u>M. latifolium</u> is at once set apart by its broad almost hyacinth like leaves. Its scape is tall with fine deep blue violet flowers, these topped by a few sterile flowers of a lovely clear blue gray.

### Muscari-3

M. neglectum is a good vigorous plant with fine dark blue flowers.

K. makymentium paradoxum as admitted is one of my favorites, with fine dark flowers that are so deep that they seem almost to have a grape-like bloom over the color.

<u>M. polyanthum</u> is another vigorous dark blue purple well worth having, while <u>M. racemosum</u> and <u>M. Szovitzianum</u> mh bring to an end this section of the genus, the first with dark flowers but the second a rival to <u>armenaicum</u>. Foth are excellent in masses.

The musk hyacinth needs rather more moisture in the soil than any of the foregoing and it needs a carefully chosen spot for it is not a beauty. The leaves come up as primly as do those of a hyacinth, and the flower scape rises slowly to show the stubby bells, longer than anyof the foregoing. Their color is difficult to describe for it is neither pure nor clear; but it may be termed as a dull yellow, of the mustard persuasion, overlaid with dull purple and touches of wood browns or it can be defined as dall purple rading to brownish yellows. The important thing in the scent, usually described an official do here is to say that these species and forms have a delightful fruity smell, fruity in the same sense that good freesias remin one of warm ripe apricots, plums and a touch of grape. One spike in a spring nosegay will charm a room.

For the remaining species that make another group, one has to present guarded praise. For <u>M. company</u> itself, there is not much one can say. It begins not unlike the musk hyacinth but soon runs up a tall scape with dull greenish olive fertile flowers and a goodly portion above them of sterile flowers of a rather nice but notbrilliant violet. I had also, <u>M. Pinardi</u>, of very similar characteristics, and chiefly of interest to me as it is claimed that its bulbs are eaten in Sicily, an experime t I did not try.

#### Muscari- 4

There are two monstrous forms of M. <u>compsum</u> one with the name of <u>plumpsum</u> and the other <u>monstrosum</u>. As they grow for me, the former had distorted flowers only in the portion of t e scape where there are sterile flowers and in the second, all the flowers had become changed. Nothing is left of the ordinary corella and in its place there are spriously twisted and almost beaded strips of marrow violet-colored petal-like tissue. The whole diameter of the scapes is increased and the flowering scape becomes of considerable making else. All garden visitors will stop and aski

Like <u>M. comosum</u> in general aspect but with really decent coloring is the plant received as <u>M. Masseyanum</u>. The flowers here were not rose-colored as promised in the **desaminution** description, but strongly rose-tinted over the apple drab base that turns to olive as in <u>M. comosum</u>. The effect is charming but not brilliant.

There is little scent in all of these last species and forms as far as I could detect. Nothing has been said about the scent that can be sniffed from Digitize the species in the first longish enumeration. They are all pleasant enough but nothing like the scent from the muck hyacinth.

> In texts, there are frequent mentions of the teeth, usually white that are show about the mouth of the urnshaped flowers. They are there but/of little comsequence in the appearance of the flowers and of no interest to the gardener unless he has reached that happy state where he no longer mamma agonizes over effects but enjoys the beautiful anatomy of each growing thing.

> Montion has also been made of the genus, Bellevalia, that comes near Muscari. All my efforts to get it from seed, have turned out to be mum useless, for the seed produced only poor forms of <u>M. botryoides</u> and my curiosity is still unassuaged. All the grape hyacinths can be increased by seed, in the easiest possible fashion, but one will get a larger increase if he sows the meed with some care and does not trust to its appearance where it may fall.

Muscari Pinero The grape hyacinthe five protates will as well known as they deserve the and of they have little favor in some parts of the company it is my because the contents turns my the dark almost black ish the dowers of typical muscari botryoides that was brought care to the colonist's factures and escaped to meadows and nastures to becoming almost as much of a minitance as the Star-J- Bothlehem, Orni thogalum umbellatum. The Aher later importetim that me comes upon in 25 gardins is one of the monotrous forms 2 M. comorum, take year and good propagarda, Grought "Heavenly Blue" & the fore, probably no more than a color form of the bothy orders. But there are there quite worth the attent in y tic gardiner the Likes markes of spring bloom, on the bulls are mostly cheap and permanent in Junny places. The family is mediterranean with probably the greatest number Digitized by funt Institute for Botanicar Docurrentation of the Idlevalias and who hyacinthes, as they pass into Peleotine a sostward into drag. The bulls vary in wige and next new and do in fact suggest streak & hyacinthe bulls, One may safely follow the old rule of themat in depth of planting, devising decest any good soil for them, but a survey site that may form quite day in Summer In all the forms save those related to the much hyacinth as in the motes later. The leaves are most narrow, somether channelet and like those if many oping flowering talls continue forming after the flowers have passed, in some species making a mophile tousled mass of green. There are a few craft ins as in m. paradoxum and The broader R. latifolium in which the leaves suggest there of their kin, the hyacinth. The much hyacinthes. afain, stand apart with broad in leaves, sametimes faint, tinges with printish browns. The flowers are little better strap i like little terns three apoide down a are somewhat like trancation were

slongabad which fires a very different aspect from that of the incapinary burch of proper formed by the letter wins. Than species show a diference in the flowers all the base and the top of the spikes, Here at the top usually paler in hue and stende. most species led rether well and it is us trouble & raise a tappe shall me wish. Unione the catalogues varieties triet al M. armenaicum reakes an autumn fronth of foliage here and it is raref damaged soen in Levere weather as is befitting any thing from lermenia. to far as I personally an concerned I should my any muscari, I might find, Whether its name is in good standing or rult. If I wave to be limited in choice I should certain ghere. M. armenaicum aut/or Heavenly Blue, M. latifolium, M. paradoxium and M. polyanthum on the frape hyacinthes with grapes and the moschatum itself a any of its forms that might be available. The bulls There and have were princhased with the help of the John Hoog zech by Huht instructer of the because of This Shat help mining and the Botanica Documentation Digit pr - -, along with prictices of other species falling in the orbit of the musk hacinths. M. Agaei and it's thit form, as far as garden effect are encorned are little better than the eleas blue + white forms of M. bothyoides. with possibly a little favor for the white form one the older botaysides album. The foliage is definitely a yellow green. In armenaicum has alread teen described - a fine tough thing histing good increase from the base and underste seeding. The torenter the ferrers are more the that loverter. the agareum of concer is a hyacinthe that can be her with the home of Attracinthus cilictus on the incorrect H. afarenny 97 is a loved this in its non right and the his binning can be four under tracinth. Mr. commutation for gaven purposes is merely a robust hu. bottayoides. with dark hur not as dull flowers.

2 = Thuscari

M. concurs again is of terre importance has its flowers are blues than those after common prope hyacinthe M. latitium is at once set about by its trad churst hyacinth like leep. It's scape is tall with fine deep blue violet flowers, these topped by a put sterile flowers of a lovel clear frag flue. M. neglectum is a good informs plant with fine dank blue fenders. In paradoxium as admitted is one of my personal preferences, or the buy dark allovers that atoust here almost a bloom, my polyanthism is another vigorous dark blue pupe well worth having. While M. racemodum and M. Szovitzianum bring an and to the darker blue pupled, which far ontourbe the species that approach, blue bot Mat are threndid forts for the light colored masses. The musk hyacinthe, M. moschatum needs tomething more of soil moisture than the foregoing and it needs a carefull, chosen shot for A Byuthanterthstitule of Both prink Documentation )1011 longer than any of the foregoing. Their colo is difficult to describe on it is norther pure nor clear, but may be termed a got dull rellow (of the mustard passasim) reclaid with dell purple a truches of wood from a it can be dull puper fading it browinsh yelows. There is a form in which only yellow shows. The important thing is the Scart - usually described as y musk , It has never been my lucks to small the seart of mush, so the best I can do is to tay that it is a wide finity smell, finity in the same sense that freedings remind one of tim warmed apricols, planes and a truch of grape. The spike in a spring more gay will chann a room. There is not tro much that can be said for the charmes of M. comosum it self. It begins not white the musk hyacinth but soon news up a tall scope with dull greenish slive festile, flowers and a proof pretin above there of feature decile flowers of a rather nice

low not billiant wolds. There are two monstrons forms of This species, one m. computer has the same var of spike hit with the sterile flowers empletely some much and changed & worth strests of the same ball'; the other the comosum monsteroum represents The first madness with no fertile flowers left and the whole saflares cence a mars of violet three and fatters. Presurably there are hit degrees of the same thing but in the gardin here, they have maintained their degrees of madness without change. Like M. computing in fareral aspect but with really decent coloring is the species sent me as M. Marseyanum. The flowers are not rose-colored, but merely nore tinked, strongly and well, but still one that pale diet base that twoms to olive in comosum. here is likke scent in these last formes as far as I can detect. and mothing was said of the gleasant perfumes of some of the frake hyacinthe first enumerated. They are all pleasant mongh not as nothing empared to the scent of the dowdy musk hyranth. Digitized by tryts that the freque mention in the the movel which about the promote of the file wells. They are there had g little consequence in the general aspect of the flower forthe the greatines purposes, when he has reached that happy stage then he us longer agonizes over speels but cignes the beautiful anatomy of each forming thing. Check Rotth, that show relative of the comosum when in disil etc. \_ M. p\_\_\_\_ nor July 1938

Check against the west \_ muscar 18pm - nth - apr. 1938. Mr. sgovitzienum in place of Herring Blue \_ when leggenthe how - M. armenia cum blue lilee - excellent -M. lat folium single boost less, dark blue purple. M. neglectum , very dark color dull blue Hack) M. polyanthum Digitized by Hunt Institute for Botanical Documentation

### Narcissus

TA

Among the many garden flowers that most of us know chiefly as manande forms, 't t there are few that have so much known history. It is true of course, that there have been and still are breeders who do not divulge the pedigrees of their productions but enough records have been published that one can surmise with some assurance if he knows the material at all.

For convenience, a classification was devised that was more horticultural than the true jonguils, the tagettas, the hoop petticeats, the <u>triandrus</u> group and somewhat later, the North African forms with almost nothing left of the inner crown. More than one species appeared in some of these groups, as for example in the trumpet section; in contrast, possibly all of the tagettas were garden plants, collected by whom, who knows? Between these soveral fixed points, were various groups that appeared to be hybrids showing something of the characteristics of their putative parents. Much of what was put forward first as hypotheses, was proven experimentally later on, by Herpert and others.

But what are narcissus? A great family of buibous plants native to Europe and extending eastwards, in broken sequences perhaps, and carried still further by gardeners even further eastwards, with another line trickling down across the Iberian peninsul and with a final fillip in North Africa.

# Narcissus - 2

Because the plants always have been cultivated by all the myriads of unknown gardeners, we probably could never know, even if we had the means, the exact limits of their natural distribution, but there seems to be somthing of a pattern of garden usefulness that parallels the patterns of the various climates represented in old time. The endless garden creations have done away with some of the difficulties, taking what was hand needed from the tender or the difficult, to add them to the easily grown. So from the high Alps, from the wet spr ng meaders of France, from mountain and promontory of Spain, from mountain passes in North Africa, from Italy, from India, from South China, they come, some with winter growth and flower, some with quick flowering on the hoels of winter, some late flowering as if awaiting summer, some from lands that winter scarcely knows, others from regions of fure winter.

The bulks are of all sizes and snapes, and annually produce a great mass of roots in the autumn season, that resumes growth in the following spring or whenever the leaves and flowers are produced, dying away as the flowers fade and leaves ripen to summer domancy. The leaves are almost always 2-ranked with the flower scape rising pervoon them; in most cases they are flot but among the jonguils they are rush-like. The chief differences are found in the flowers, all if which have the same basic structure, an inferior every 3-belled and later becoming the seed pod, a longer or shorter tube that bears a perianth of six parts arranged in two series of three, a crown or trumpet, longer or shorter like an extension of the tube itself, six stamens and a central pistil of a long style and the terminal stigma, sometimes showing in its periphery a suggestion of the pattern of three that dominates the whole. The diversity lies chiefly in the colors, basically yellow with its accompanying white forms, red color appearing only in the thin line that marks the cup of the poet's flower, the angle at which the perianth is attached to the tube and the number of flowers on the scape.

The limits of their usefulness in our own country is determined by several factors. winter cold, summer heat(especially in its duration), lack of rainfall; by lack of rainfall because they are not desert plants, by summer hest because some of them are too northern to endure nine months of summer, by winter cold because some of them have too much manufarman southern blood to tolerate too low temperatures.

#### Narcissus - 3

Their toleranne of soils is wide, out the soils must be fertile or only leaves will appear. The site must be well drained especially through the dormant seasons or the bulbs will rot from the basal plate, the most important part of the bulb since from it arise, roots and the bulb itself with its extensions of leaf and flower. Protection must be given against their normal enemies, the soil-infecting mematode and the soil-sheltered grabs of the marcissus flies. One need not fear the burrowing animals that eat other bulbs and corms, since the marcissus carries its own protection in the bulb tissues, crystals of oxalate, that are dama damaging to any intestines!

The gardener planting narcissus in his own garden, may use it in warious ways. If he grows flowers for exhibition, he will have a place set aside for them vegetables as if for magataides or any other crop, and gives them the care that will produce winning flowers. If he wants them in his flower garden, in his borders with such annuals and perennials as the region may admit, he will recall that their foliage does not ripen much before late June and place them where later perennials will Digitiz cover to cover their aparture no will range ale the cher no was ation tena to face the sun, so that they will not give the semi-formal parade that may be had from hyacinth and tulip. If he plants them under the margins of shrubbery he will recall that they must be fed more often and in time be rescued from the mag encroaching roots and overshapping branches. If he is so fortunate that he has a field or woodlot in which to naturalize them, he will plant more deeply to alow up increase and he will choose strong colors for mass effects. Always he will choose varieties suited to his climate, and always he will remember that the farther north he lives, the earlier he must plant to establish good autumn root growth.

> Thanks to the diversified materials with which the plant breeders started, the narcissus has become a highly developed race of garden plants, of mixed lineage, and of such quality that purely arbitrary standards have been devised to determine - or to suggest - what is excellent, what is desirable, and that extreme of temerity, what is beautiful. He will find from time to time, if he reads, brief articles on the aims of breedrs. So many of these aims have

#### Narcissus - 4

have been achieved that it seess hard to think that all may not be in/time even those new goals that outdistance accomplishment. If one considers only the rich harvest of bright color in cups and crowns that has been evolved from dark the tiny line of/red on the edge of the Poet's Marcissus crown, he must yield his admiration. If he consideres the faultless beauty of the modern white flowers, be they trumpets or small cupped 'Leedsiis', he will agree. If he studies the winter hardy types evolved from the tender-to-cold taxettas, he will go further in his praise. If he knows even something of the most recent work that is being done toward getting purer pinks in the cups and trumpets, he will be eager to see the future, and will agree that the end is not yet.

In such a book as this there is no use to list varieties. The only sound advice is to urge the nurcissus lover to watch exhibitions of new sorts, to choose those that suit him best. The list I might have given twenty-five years ago would evoke only a nostalgic smile to-day. The list I might make to-day would might doubtless be absurd in another twenty-five years. This is true for all Digit of plants with which min really works and none is to be blaned.

> I am betrayed of course in my enthusiasm indimens because of all bubbous plants, narcissus have given me the most acute pleasures. They grow well in my soil and site. They persist immum in spite of my irredular attentions, going through lean periods with patience and returning to full beauty when well tended. Care is simple enough. Food supplies must be in the soil, preferably deep the annual down but well within the reach of/roots and away from the bulbs themselves, with top dressing in autumn of slowly available fortilizers on established plantings. Division should come, ideally, each three years, with careful lifting of the bulbs, not before the foliage is half dimined dead. The bulbs are dried in any ariy but no summy place under shelter from rain. When all are quite dry the root masses come off easily and the bulbs part easily with clean breaks in the bushes. Experience alone will tell the gardener's convenience but must never be late. Experience alone will tell the gardeners which varietide are best replanted at once.

# Hardássus - 5

ta

In the study of varieties, one must follow his growing approciation of beauty. The claims of the knowledgable are not always immediately apparent, and the modern tendency to assertion, and overstatement, may seem irritating at times. For myself, I can say only that I find my greatest pleasure in those flowers that most clearly emphasize the almost geometrical forfections of form that arise in the contrasting elements of triangle and circle and in the diversitites of pattern that appear from posticus and its derivatives. But each fightestor has its own form, its own style, its own essential being, and each must be studied and valued for the perfecting of those elements.

# Digitized by Hunt Institute for Botanical Documentation

narcivous.

Among this many garder flowers that near i us know chiefs in man made forms, there are few that have so much I their thistory known. It is the if course that there have been and shill are breeders also do not dowligh the pedigrees of their productions but enough records have been published so that me can turmite with some tweeters if he know the material at all.

A first Some reference must be made & the times of Peter Barr and his friend who probably emphallifed the interest of Birtish formers about 18 -- with the result that a fromp of another assisted in bringing tratter att, the New Kumm partin forms as possible, paid Jome case to getting plants from the with some galache proved N be there in the common acceptance of that time and time of natural hybrid. I Gence, in the person of -- Herbart contracted by experiment to the solution of certain doubts about natural hybrids of provide the person of the person of the production of the provide the solution of certain doubts about natural hybrids and in the persons of the first breders. Starker the production of the particulation of the person of the production of the production of the person of the production of the persons of the first breders. Starker the production of the persons of the first breders of the production of the persons of the first breders of the production of the persons of the first breders of the production of the persons of the first breders of the production of the persons of the first breders of the production of the production of the persons of the first breders of the production of the production of the persons of the first breders of the production of the production of the person of the person of the production of the person of the perso

For convenionce, a classification was devited that was more horticulture than taxonomic. The fixed points were the transfer narcistus, the foods narcistus, the true jongnils, the tagettas, the hosp petticosts, the friendrus, and somethat the horth African forms with alress with jeft of inner error . more than one species appeared in some of these grap as for totante the Knumpels : the foosilly all of the then attailable tagettas were gaid in plants - collected - the knows. Between these fixed points, were various for that appeared to be build showing something of the characteristics of their putative prine these joints, were various for the last appeared to be here fixed points, were various for the how appeared to be here fixed points, were various for the start of the putative prine is.

But ithat are vareisous? a great family of bullons plants hotive to harde and extending eastward in broken sequence packaps and carried on possibly by gardness era further east with another line triddig daw across the Iberian peninsula and a final filled

of in howth Africa. I because the plants, thave sall been cultivated by all the negrical of unknown gardeness, we packaps could never know, som if we had the mesans, the the exact limits of meteral distribution Inv there seems to be something of a pattern of gaedon usefulness that parallels the pictures of the cation dinnates represented in old time. The endless goed on creations have done away with some of the dificulties, taking And was needer from the Jender on the difficult, to add then to the contain. So from the high deps, from the wet oping meadows of-Trance, for monitain + promontory of thain, for monitain Passes in half aquica fine Ital, us the India - South China - they come - some with winter fronth an floor, some for faithe alcost apricitient to. some late flowening as if awaiting tummer ; some from land that winter barcely tune, other form regime of sure winter. The hills are all sign + of varies shapes and annually produce a great mass of works in the autumn season, that resumes growth in the spring on Therever the leaves and ferrors are perduces, diping away as the flavors pide and have site in the formance of the leaves are duest chores in the for Botanica Documentation are flat but among the gragnils they are resh like. The dist differences, the in the flowers, all y which have the same basic structure, an inferior scaled , a longer a shorter tube, a perior the y fix for arranger in too Series of three, a cornor a trupet, longer a shorter like an extension of the tube itself, i'x stamens and the long central style bearing a styme that when something of the pattern of three that comers the the structure. The diversity his directly in the color, yellow a whites, the angles at which the parts are held, the ribbon of red that Egod marks the poels a Their usefulness in this country is set by writer als, runner heat, by back of rainfall; they lack of rainfall for they are not desert plants : by summer hear, for many are of too hostern, origin to endure nine months of tummer, by winter colo because their Jouthern ancestors cand Enduce the drop in temperatures. their tolerance of soils is wide, but this soils must be feature

soper all in dormant - Seasons,

or this will produce my leaves. The site must be well drained a they will not, partimbers at the region of the basal plate, the chiefpart of the plant form which themigroots + abult itself. They near be protected against mein special enemics, the sort-infesting nematode and the soil shelfned sputs of the marcistas fever- of their here laker.

The gardener in planting marcistus in his partin may use it in barious ways. If he good the flowers on exhibition, he will have a place set aside for them as if for begetables or any other cuts and give them The care that will produce winning blooms. If he wants them in his Show gardin, in his borders with annuals and perennials as the region may atmit, he will recall that their foliage does not repen away much before take fine so they must be placed where hater perennials will deacloss to even their decline. He will remembe also that their florers Very to free the sun is to that they will not five the same formal paret Dip margins of shundberg, he will recall that they must be fer were glan + ~ time rescued from the enciraching rooks and the overstradown tranches of the shub. I he is so fortunate that he has field a mendoor i Shich to naturalize them, he will plant more deeply to slow up increase & choose strong colors for most inflats. always he will choose vorieties thit is to his climate, and always he will rember that the farther north he lives, the earlier he must plant to be done of good auturan root growth. Manles to the divisifier materials with which the plant breeders Starter, the marcissas has become a highly developed race of gordan plants, of mixed lineage, and of such quality that parely achitrary standard have been divised for determine - or to suggest - what is excellent, what is derivable, that and that 4/ remeit, What is beautiful .. If me head tack the earlier marcissus Literature, he will find from time to time, brief articles on that

aims is the breedees. To many of these aims have been achieved that it seens hard to believe that all may not be in time ; Even those new aims that always outstrip accomplishment. I me considers only the rich harvert of bright colorer cups + consultant har been evolved from the tring line of deep and on the margin of the comp of the poet narristus, he must give his admination. If he considers the faultless beauty of the modern white flowers, be they trumper as small cupper hertsi types he will gree. If he Harrines the cold harty derivatives of the Tender polyanther or tag the types he will be more and more convinced that The and is not yet tor such a both as this there is no use to list variaties. The only some advice is to use the nancistus lover to watch the sphihting of new sols and choose there that more him most. The list I might have made twanty. five years ago would not be the list I should make to-day. That list will doubtless be abound twenty - five years from non . This is The mall gaidin plants with which man works and none is to be flames. ed by former in contraction of the second of the grant well in my interesting the grant well in my int and site. They persist in spite of my includer attention, going through lean periods the patience and returning to full beauty when well landed. deep down at is simple enough. Ford supplies must be in the soil, prefuebly with in reach of the annual cools and away from the bulls Meanselves with top decising in autumn of story available partilizers on established plantings. Division should come ideally each three years, with eacepul lefting of the fulls not before the foliage is half dead, The hills are dried in any provent sommy places under sheller from som. When all are quite dy the not masses one of casily a the balls part saving with elean breaks at the basal peate. Replanting can be at the gardener's convenience, but must never be late. Experience alone will tall the gardener which variations are but replanted at In the ship of varishies, me must follow his growing appresiation

of beauty. The claims of the knowledgable are not always apparent. and the modern tendency to assert in I may seem initating at times-For myself I am say only that I find my prestort pleasure in those Anous that most clearly emphasize the almost geometrical perfections I form that arise in the contrasting the clements of triangle and circle and in the diversities of pattern that appear from wetimes and its derivatives. But each ancestor has to won form, its non style, its own securial being, and each must be studied and values for this perfecting of those ilements.

Lown up Joseph Jacobs list - 19 - vome og the left lists

Digitized by Hunt Institute for Botanical Documentation

Nemastylis

As far as this reporter is concerned, he must depend upon others for his only sight of was a tiny specimen, a veritable pygmy according to reported fig res that he managed to flower in a pot from several collected bulbs sent in by a botanist friend travelling in Florida. Since all the species as well as those of its near kin, <u>Eustylis</u> and <u>Salpingontylis</u> are from the South, the deep South of the modern novel, and even deeper, he did, perhaps, as well as could have been expected.

The three genera are rather much alike in the general characteristics with plicate leaves like slender versions of the e of tigridia and tall stalks that bear in their uppermost bracts, fugitive flowers, usually blue lavender in various hues, those of <u>Salpingostylis</u> are said to open only in the early morning,<u>Nemastylis</u> in the late afternoon and <u>Hustylis</u> accept

If any of them can be persuaded to anonyma garden conditions in the South, with well drained, probably acid soil, and if proper company can be found, not Digitize too begrepeiver at strong protect to explore the sheater state constantiation furnish a delightful and dis inctive note. Being Iridaceous, they probably could be easily increased man from seed, since most irids are easy. They do not seem like garden plants and yet one would not care to assign them to that limbo, frequently quite horrible, of the so-called wild garden. As far as Their reporter is concerner, he must depend upon others for his only sight op was a tring specificer, a veritable pygney according to reported figures that he managed to ferrer in a pot ferm several collected tables sent in by a botanist friend travelling in Horide. Since all the species as well as there of its near kin Eastyle's and Salpingostyle's are from the senter and even deeper, he did, perhaps, as well as could be expected.

The three genera are much dike in their quered characteristics who percate laws like slender versions of theory of tignidian and tall Italks that beer in the upper brack fugitive flowers, usually blue laverder in various tones, those of Salpingroty his open only in the east morning. Themastylis in the late afternoon are histylis in

If they can be pursuades to accept gaidin child times in the south, when well drained, probably and soil and if profer company can be found not too appressive by string enough to support the slender Digitize they they that Institute for Botanical Documentation Raing Stiedaceons plant, they probably could be savid increased from Leed, fince most inide are relatively song.

#### Terine

Unless there are greenhouse collections of merine, it is possible that one would find these stunning South african amaryllids, only in California gardens at present, for there seem to be no large stocks of them in this country, although they have long been cherished abroad. The belief that the Guernsey Lily, Merine samiensis was common in the southeastern States has been disproven the long since, the plant being/no less min beautiful byt distinct, Lycoris radiata.

The writer's one attempt to overwinter <u>Herine Rotheralllii</u> and its form major, both now assigned to <u>N</u>. <u>curvifolls</u> ended in what should be called failure. The bulbs did not die in the entirely unheated pit, they lenguished so obviously that they were finally given to another garden where they could be kept warm in winter. The difficulty lies in the fact that the winter months are those in which the bulb makes its foliage growth for the leaves stat in autum and must grow actively through the winter. Since they will not tolerate freezing here, and apparently dislike prolonged chill as much, the areas in this country where they will sruvive happily must be limited. The cold pit momentment is frost free use. Plants left on the one bench do sometimes freeze when the temperatures drop dame to zero. But at no time could one say that the place is warm when the

outer temperatures are near zero.

<u>N. sarniense</u> by report, makes a bulb of about the size of a good marcissus, and in autumn sends up rather stiff strap-snaped leaves that die off in the spring, when the plant begins its rest period, a period that should be warm and dry. By late summer, after the fashion of the lycoris already mentioned, it sends up its flower scape with a terminal umbel of up to 12 flowers, the number depending on the age and vigor of the plant. These are a fine crimson in the type but there are variants with duller or pinker flowers. After the flowers 'fade, leaf growth begins again. Nerine - 2

It <u>entrifolia</u> in its varieties montioned above made a rather larger bulb and roduced broader, flatter leaves more like those of a garden hippeastrum or amaryllis. The habit of the leaf growth and flower production are the same as those of the Guernsey Lily, but everything is more robustuous. The color of the flower is really stunning, a glorious red, too deep for scarlet and yet perhaps not deep enough for crimson. The stamens make a good show but no so much as in Lycoris.

N. pudica man with its white flowers and I have never seen, nor N. howlenii N. pudica man with its white flowers and I have never seen, nor N. howlenii Never but in the frost free and baroly neated greenhouse pit in the Introduction Garden we grew hants N. undulate, N. humilis and N. Massonarum in pots which they accepted with apparently good grace. L. undulate is a little more slender in its frilly reflexing flower parts than the others, a light like pink, and N. humilis of about the same hue, flowered with its leaves! N. Massonarum is another of the pinky-lavenders mann and like the rest has frilled flower parts in a som what open head. Under our somewhat routine culture, humilis flowered in Flowender. But that it by ho methe fixed as it has Dependent prestation times during the winter. He great effort is made to induce dormancy by any of the usual gardener's practices, except in mid summer when the hose is kept off. The plants are left in their pots and under the glass where the temperatures may rise to really astonishing heights!

I have been told by garden friends in Berkelpy California that these small norines make charming masses along the edges of paths in a garden where there are many distinguished trees and shrubs, that provide broken light.

There are hosts of named garden clones of merine offered in catalogues abroad and these should sole day be explored. In addition to those with recorded parentages, true hybrids, between species, there are far more that perhaps are not other than garden crosses or even selections from chance seeding. The colors range from pure white to deep/ drimson, with and without a vein of color along the central vein in each lobe, the margins usually crimped and waved. They few I have seen have been exquisite and their trial is urged on the owners of houses notgiven over to the usual stupid routines offered by the florists, Nerine - 3

with flowers for the inevitable births, deaths, weddings and general roisterings of the public.

For potting soil, use a good rich soil, fibrous to hold some moisture and with onough grit to insure run-fif. According to Mr. Houdyshel, the reaction should approach acidity though the figure he cites is not for a very acid mixture. Plant the bulbs with the necks just showing, several to a pot if you can afford it. Good growers recommend liquid manure during the period of heaf growth which seems sensible, and a uniform moisture supply throughout all that time. The day of repotting can be postponed by renewing a top layer of soil in each pot.

# Digitized by Hunt Institute for Botanical Documentation

Unless there are freenhouse collections of nerine, it is piobable that me would find there strenning South african amonghids my in Colofonia garding at present for there are no large stocks of them In his country, although they have long been chairs had abroad. The belief that the Surrousey dily, herine samianses was common in the south castern states has been dispersen long since, the plant being the us less beautiful who distinct Ly constradiuta The write's me attempt to over winter herine tothersilli and et bariet major, both new assigned as formes of n. curvifolia suded in what must be called a failure, In while the balls did not die in The entirely unheated foir, they languished to obviously that they were finally given away to another pardener this could provide for them decently. The difficulty lay in the fact that the leaves are produced in autumn and must give through the winter. fines they will red Digitized by Hunt Institute for Botanical Documentation is quite accure from front for all plants kept on this floor g and - One half of the space is firen over to that use. Plant's left upon the build do sometimes freeze when the temperature drops to zero. N. Jarniense by report makes a bulb about the vize of a good marcitaus and in antenna sends up nother shift strop thaped leaves that die off in spring them the plant begins its rest period\_ a period that should be both warm and dry. By take summer, after the fashion of the lycons alread mentioned, it sends up its flower scape is the aterminal teachended of up to 12 flowers, the number depending on the age + vijor of the bills. These are a fine A crimeson in the type but there are variants with duller a prinker 1039 fervers. After the fervers fase, leaf fronth begins afam. N. Curvitolia in ils varicties mentiones above made a valter haven bull and produced broader glatter hears more like those

of a hippeastrum or freenhouse amonglis. The habits of leaf promotion and finne production are the same as there of the merney dig but everything is more robust. The color is really sturning, a glorious red too keep for rearles and get perhaps not quite crimition. The stamens make a good show but rept to much as in tycois padiate. Bm 725 (amon the curofile) 2RR 22-73 for forther, this BM 5001 n. Indica with its white flowers I have never seen nor h. Bondemi but in the first free pit at the Subioduction Parder we great both h. undulater and h. themilis where they have accepted for culture with apparently good frace. N. undulata is the more Slender of the two see like n. humilis ferrors with the leaves. lucter my somewhat routine culture, it fervers usually in hovember but may bloom at other times during the winter. ho start is hade It induce domany, save by all watering during this summer months. Reports of this firm the Bay Regim in California vous a of it were quite at home, but also is if is slender scapes of fals A. hamilie is a mire robin offan, larger in all is parts with help nore pink flowers on stalks us over 14 inches. While the stamens are interesting elements in all nerines, They are not as showy in These two thesis as in some others. there are hosts of named varieties I garden origin offered abroad that should some day he explored. In addition & those with recorded parentops, true hybrid of there are far more that perhaps are no more than faids crosses a was selections mu chance seeding. The colors tange fim pare white to deep environ, with and with a vin of color in the carter of each signent and with a without the wavest, dues terimped Etge. The few I have seen are loved and their trial is wight upon the strongers of greenhouses to real given over for the same shipid routine of early fearers offerer by the florists - on the invitable triths, dealts, weddings and general rois temps of the public

2. Kerine In patting voil use a good rich voil, forms & hold some moisture + with sand to insure run-off. Plant the bulls with the necks just shrong, several & a pot. Tood grovers recomment liquid feeting during the period of leaf growth and a minfor mosture tappy. (Our an species have had no tuch attent in and tave done well enough.) The day of repatting can be post poned by renewing a top layer of soil in each pot. and, h, massmarun Digitized by Hunty Institute for Botanical Documentation

Neine 18m 5422 digatyles cocciner -" x x the inhabits easter river of Varthe office, calle the Kabrusie & Kein- Kamma in Kaffragens." Letter -" near Drackensberg monitain, Xx British Coffraria, ets\_ hotel, d-Stalk - with & lung - days as in fassich - tall stack - bads like glad the + flat commise flor equal per vag-18h 5619 Bonsier volubilis "Easter function of the Cape District" 18h 1890 Juis juncen " a mathing des hills near the torn y algins share I is a freet ornament and " "It is also matire y Tangies in Morres, of Genone + Vicily " Jost . a figured this is loved 5. lemm, 7 gollen - mall red Digitized of funt hat stitute for Botath dal Becumentation 18th 5901 Nerike pudia -Horker miles that he find heiter notes nor specime like it. Plate strong the with the States and specime like much more like for the States of in tips + measures - dond if tome - noth & suggest the strong recarny of some off-Horden considers it closest to n. flexusa fuffre to be I africa?

10m 598 Xiplin Flighting "xx souther of pain where it was dis correct by Doisoier, in sand calcoren rocks on the Vierra Bermeja, at a elevat \_ 3000 & 4000 to (Franch): it pertally also inhahts thoreas, where the magnificient & tangitance forms with darker more maron - colonies flowers " "x x The speciming here foure ras brought by man mais the the Noch of gibreter in 1869, & ferreres - benthal Garden :- July of the present year - In Gibretan it flowers in april - 1 Dot -Hower statos - stanlard squet - fais at - all pals definited new puper -Bh 5992 Lachendia fricker v. aura jut all for 18h 6033 Xipling Historio-Digitized by Attaket heistiftered for potentientered getartermination Nevera- cas in March for painting) - Mr. Letinn + Mr. Gerizin In Palestine - Ley section - Menula gas -pin laventa gas -the pupe for the pupe Stanlard blige purple -Rom 6072 doth up Syring odea pulchelle\_ Chan the - Get it cope but leaves like errors - to hinte her. puper tipper a tach -"plains & amount the free water his at else thootr thing is April.

Pom 290 (amarglis liter) -" x x 25. a hand perennel bulbon plant, a native of Spain, and the of the more southern pas printe & was all. in an gardens in the sime of general a Parkiniston". Obviously - Sternbagen later -18m 294 - Cemaylia Sarrienses - Nerite "The Gurnsey hig - , as it is most commonly called is anghall a netrice of Span Share it is described to grow Kaenfifer & Thanking, who visited that island that latter Japon the holds of negasoli & from them works are said to have age interduced to the gardens of Johannes morning at Paris, in there it flowent, betoken 1934 : it introduction to this country Much was repeated to the XXX mi aitmilets, that the head was cultural of here in 1659 General dentation and by funt Institute for Botanical Documentation XXX Ist Sniglan themes describes than (the for) each flower then in its prime looks like a fine goes his wought on a ine - coloured ground, but when it pegins & fast & decay it tooks here like a silva tismo, n chat they call a pich actors; -Alean we look upon the glova is full surshine, and leaf affere to be studded is the thomsand of letter diaments, sharkling + glittering with a surprising + must afrecate custre, but of we view the some by condle light, then numerous spectes or spangles lotte have the fine gold dust. There is a fort whe that huphasized the necessity

13m 381 I xia Tricolor ? Wer inia?. State to 12 fr. cooked 3-4 fes at the fala shedhis plicate leave - lemme orange publish black -anthers wellers - Agme 3 for and part high - publish -16m 383 - Gladisten securigen nor clasister. Dutroduced 1724 5 m masson for the cafe All driet a fr Dia Nur His file muy - unt stain love 3-Canta limm of Ver Digitized my attent In fituge for Botanical Dogumentation Marcines amonthe was retardered for China, & John Hothagell, M. 2. 1977, that it is a store plant and forver from any. I hepp." "The doubt expressed as & new of store". "The man the helps it blows ver megulal and is fir-pagated & yest, And are purduces in tolesable abundance." Pom 410 (Ixia) who cyaner Babiana. The Ina here represented was dear last fammer fin a specimen unusually for which flower with m Contle, Tursymm, Knips Road, May 24, 1797 - x x " It is propaget. I in the same way I succeeded with the same treatment as other Ixias: care must be take when it comer into former that it he not to much ishould the sun, for that will renter its bentigs of short duretton.

18m 725 ( amanglis ) anni form according to the Ponikaine Herbarin, an plant was hough into the Kew Tarkes about 1788, for the Cape - Jacquin receiver it for the Vanne place. There is a saiding tradition that it was likewine received for Japan by the lake Dr. Margill : . Joo this with belladmina + samicusis would make the third species I the firm that is common to the Cape, is well as & contines immensed distary for it ; but we confirm that we place no reliance whatever a the stay by my its bare for hits. "G. Bm 726 (amayllis) Tunicho neike. This differs to undulate ( 95 369) in having the leaves more black prinker, the colle make imagela outer segues what the compour mucro that epists in the other ; the on lover of them Digitized by HungsInspittute for Platanesa Decumentation by tisted plifon patent signers." 00000 IS in oyland "latter - en quorman" he tata in date of him intro. 9. 15m 1090 (aus 1/45) venusta heaves produces with the fes - "The space's d. Here fin Samiencies of Alich it has been deemer a mere ramely in having leaves that are purduced all the same time as the blow and will ome Vine after , as in the Japan pend"; etc \_" (Show that gap he. was yours and: da) 18th 2407 nerine pulchella hive pale pinh -> white

18m. 2124 nerine rosea "This species was found with all the Cape, & the importants bill florer at proffort i- 1815" \_ Dear distinguisties in france. h. samiensis. \_ me curious bit : "xx, the (the leave) lie flat upon the from , not at all erect as in samicuis There is considently prote an Actal MSD. The part of I is gintered - see Eurycles -"The genus herine is nearly allied to bidely reparated for low or this and Cyrthanthus. It is nearly allied to the halls perposed to be named Cobrigia but in its cup a seed it apprache nearer to Calostemma + Cante Pancratiums of the tisken Henrisphere's The Surspen + Canar Pancratiuns form a distinct forthe general with mall black cert like Marcivous, I the antogra Daucratum being of an equal different genus, thick presents the virgelar thenmenn 7 a perfect timicates bulk formal in the capelle. herike is probably confined & Anthe Africa. X X X" Digitized by Hunt Institute for Botanibal Dogumentation tostarles n p. reper & dycris & amarylis (Cobrigin)

. In treating this genus mm it is only proper to say that 1 am projudiced against the few members of the large family that 1 know. For example, I should never willingly suggest that any one plant bulbs of <u>Ornitogalum umbellatum</u> although 1 have seen rough fields of grass beautifully starred with its green and white flowers. Q. <u>nutans</u> is a charming thing out it too gets out or hand. As for Q. <u>arabicum</u> with its startlingly beautiful black pistil agains the white flower, is definitely not hardy with me though it has been reported as hardy from locations further north than my own garden. For me, the bulbs planted with great care, n ver showed a green sprig and when dug up, yielded only a mass of decaying tissue.

Essentially/is a large family of mom minor bulbs, mostly green and white in flower color, with its main distribution center in the Mediterranean area and an outlying group in South Africa. The <u>O. biflorum</u> credited to Chile and Peru I do not know but it seems very far from home; even so it is possible for there are some other familias as widely separated.

with

The two'colonial' species, matching and materies probably came over/the earliest plants from Europe, their nome. They are uite unlike. The first makes clumps by the prodigious multiplication of its bulbs, that send up tight sheaves of green leaves/ with a central line of silver, that remind one of crocus. Closer examination will snow the aulier hues and the lack of the sharp pointed tip that the orocus boasts, and a slower growth thrust as bofits a later plant. The flower scapes just overtop the foliage and open wide umbels of starry flowers that close at night to show dull gray green backs and open by day to show green-lined, white stars. If one attempts to eradicate them, it should be done as growth commences in spring with a good spade, taking up a clump of soil, as if one were lifting a choice evergreen. Sift out the bulbs with care and burn them, if they cannot be crushed.

<u>O. nutans</u> I have never grown. I profor to admire it elsewhere though it makes less of a weed than the Star of Bethlehem! It is a more robeut plantwith broad plain leaves and a tall scape to 10 inches with 6 to 8 flowers modding in the bud Ornithogalum -2

bud and starry wide when open, about an inch across, white inside and gray green without. The neatly withering flowers may only close about the growing seed capsule from force of ancestral habits, but they do and the nodding capsule in time lets down its shower of seeds.

A number of miscellaneous collections grown to flowering from seed collected in Iran, turned out to be mostly feeble counterparts of <u>umbellatum</u> with fewer stars and more open umbel. No botanist would look at them and for safety's sake they are now dying under the shade of some flourishing cotonessters. One ran up like a small edition of <u>0</u>. <u>longibractentum</u> but any camassia would put it to shame, perhaps this is a slander.

Many people cherish <u>O</u>. <u>caudatum</u> as a house plant though why they should is hard to tell. Its fat green bulb is not decorative nor are the flopping green leaves, and even less the long spike of the inevitably green-white start, for the spike may reach four to five feet, writhing about unhappily.

0. thyrspides, in white, and its yellow variety auroum once 0. am auroum Digitized average of the and out of this child and an auroum once 0. and auroum cold as befits Cape species. They will be found in popular titles as 'chinkerichees' and there have seen times, now hard to recall, when they were shipped as cut flowers from the Cape to Britain, with the knowledge that if they dried out they would make fine 'everlastings'. They should perhaps make permanent residents in California and certainly would be different from the small fry we can do here. The bulbs are fair size, the leaves large and financh fairly broad another stalks at best up to two feet. Bulb mites are devoted to them, according to the reports of incoming shipments and so again one wonders.

> Perhaps some time there will be found some species with fine yellow to orange flowers that would wax fat like the Star of Bethlehem, and then, planted in the grass it could repeat at a later date the picture made by the earlier bulbs; until then I want none of them.

a tall scape with Dix to sight flowers, an inch a vo corres, of the inevitable green stars that span to show shink faces and else & show grear with silvery edges + a near habit of folding up like unbrellas & hang down. Whether they fold up H hide growing confoules of reach for people the earth & I don't turns. a number of miscellaneous creatures, from fim teed collected in Persia furned not be be fieble parallels to O. unfellatum but len invasive. The botamist would both at them + for valety's sake, they are now dying in the excerime shade of some Cotoneasters. Unother rain up like a truall edition of O. longi tracteatum but any camaria would put it to shame, that perhaps that is a slander. O. candatum of enerse, in cherister in many a shelp y hous plants, along with other equally stapid creatures - but nothing to commend it save its pale freen transparencies. Its scape admitted 2 feet long often smakes its way to 4 aus blooms share you don't would it. O. thypsoides and its golden form v. aureum have had no not ed by Hunt Institute, for Botanical Documentario Digi and reportedly a delight pil habit & behaving like immortalles if art influen + drie govin ally. Personally & prefer the yellow to crange form as side afield from the familiar white green, but they will take the chill and less first - to the Californians + the finist can have them. (Bull mits an devoted & hen!) There are more + more - hundred newsay -but not for my gardher & you are warned. 18m263 O, netrus - good plots against one sheller to retire to Stal . nice trees : " In the Anthe Kewenies it is cet drin as a greenterne peak, me of the mare enors Arich occur," that reach usefe work". Bh \$90, O. aureum: " x x y moder introducts have bee seccire & kesses bee I kenned a few years since for the Cape, ywhich it is a netice xx "I This prop. by offsels of the helds & has the appearence of bains a plant of hirdly porte + season to

Omithogaluma

Personal experience with a relatively small member of species is all bad and it is with some diffidence that anything is written, In Example I should never willingly suggest that any me plant bulls of Omithogalum unbellation although Thave seen rough fields of frass beaut full starred with its frem and white flowers. C. mutans is a charming thing bit it to gets out of hand. Ao for O. arabicum, with its black pistil, it definited is not hardy in In my regim and investigation below the heavy mulch showed only It a mass of nothing bulls and not bulls subling for another season. Escutially it is a family of bulls who a main distribution area about the mediterranean going of toward Asia Miron and is the and this fromp of species in South Africa. The O. biflorum credited to Chile + Pern I to not kuns. It seems var far from home. The two "colonial" species, O. unbellation and O. mutans are Digitized by Hunt Institute for Botanical Documentation a dull silver mid-vein that remind of me of crocus. The careful comparison will show the difference, particularly the duller green of the owni thopalum and it's wir leaf top that has none of the inforous hund of the pointed croas. In ferrer stalks just over the the foliage at blooming time & spread mit Their imbells of white stars, free in the back hurth a hink of free strong Mungh. They per best in sunlight. If me attracts to eredicate them, it should be done as the growth starts and a spade should be used, taking up a soit mass as of me were to Vacunplant a choice everymeen, Shift our the hulls with the Whitst care and if you dare, shew here in a good traffic lane Shere they will be grown to past . O. mutaus & have never from a prefer to admire it electer. It makes a more robust plant in the broad plain free leaves and

Bu 805 Omi Mojale cardatu "Brongh he Cape , 9. H, by non neason in 1774, where A Has four her her Con live generally going out on all strange I trees that as full y months + rotte word , 9 18m 1164 O, thy sordes xx This is one of the few Cape of Good tops plants mentioned by the earlier borranists; Clusices acceived a specimen, by a Dutch ship that had fonches at the Cape, No for back as 1605. Mr. 1510 O. nortmense. E head! quite per opike - White les pra midrile. (to Toma?) Digitized by Hunt Institute for Botanical Documentation

## Oxalis

It is with some caution that one comes to the genus. Oxalis, but fortunately the situation is solved in part by the fact that some of the species are annuals, and many others have no bulbs, even if furnished with other kinds of permanent underground rooting arrangements. Dr. Bailey's Cyclopedia records William Emakement's Trelease's dictum that 'Generally speaking, the genus Oxalis is not highly esteemed by florists', a mild way of saying that many are wrotched and invasive weeds, once introduced, never eradicated.

As a family they are characterized by their 3-foliate leaves, though some forget this and go on dividing leaflets, that look more or less like those of clovers and like clovers close at night, by erect stalks bearing one or more five-petalled flowers often quite showy, yellow in one series, pale lavender pinks to deep rose red in another, and with all those delicately tinted and lined intermediates that adorn such. Most of them come from warm climates. from this hemisphere and South Africa, with only one from the Eastern United States. Oxalis violaces dismissed by Trolease as 'scarcely aseraly except for mardy orders la and rockeries' but praised by Farrer as 'very lovely too, in the same line and for the same situation' (referring to Q. mugellanica). It is knownto the writer as native to his garden hill long before he arrived, and as one of the natives that has revelled in the deep soil prepared for azaleas, ending out endless stolons that end in new bulbs and paying its board and lodging by sensing up 8 inch stalks of fine pinky lavender flowers eyed with a curious off-yellow color, neither mustard or chartreuse. How many of its far-flung seeds will increase the colony remains to be seen.

In some of the older gardens in California, Q. <u>cernua</u> with its superb golden yellow flowers has thriven to such a degree that all hope of ousting it has been abandoned. Oxalia - 2

This condition is often paralleled in the South by the pink to lavender flowered Q. <u>martiniana</u> from Mexico, that sometimes appears in bulb trade under any one of several names that look scientific and authentic but are not. Those who have it are prone to feel it a serious weed, which in fact it is, but in the middle of winter when the thormometer takes one of its sudden drops and frost carries off all the bloom in the open on even hardy thinge, it is rather nice to find the exalts in full flower on the next sunny day wherever it may have had the shelter of overhanging shrubs.

Neither Q. <u>enneaphylla</u> (nine-leaflets) nor Q. <u>adenophylla</u>(gland bearing) much beloved by rock gardeners and endlessly praised by Farrer make bulks according to Trelease, though Farrer claims for <u>enneaphylla</u> an 'annual little scaley bulb like that of <u>Lilium auratum</u> forming a sort of rootstock' and for <u>adenophylla</u> ' a solid bulbs like the corm of a cyclamen'. <sup>16</sup>either has come under the uncertain hand of the writer but for those who might wish to grow them it can be recorded that they make low masses of more finely cut foliage, than <u>most</u>, that hugs the ground and above which rise the targe flowers, low-borne and pearly white in enneaphylis and a life-pink in ademophylla.

The Samson Clay 'Present Day Rock Garden ' give six pages of tantalizing that ' nismoro' brief paragraphs cataloguing the names that caught 'Asada than usual attention mostly among mo/the South American species that were brought infrom the collecting trips of H.F.Comber and others in the middle 1900s. He also shows a plate of O.Commeric taken by the collector in argentina, that shows a flat sward of folded leaves studded over with flat-faced flowers said to be yellow veined red without. Endless weeding in my own parden of the pestiferous usually annual Q. <u>Acetosella</u> makes me wonder if as fine a photograph might not be had of that charming, acid-soil loving weed! whether slanderous or not, the writer would be extrembly cautious about letting any exalts have free rein, even if he lived in the deep South where other winter flowering things would cheer the chilly days.

Their charms are essentially these of starry effects in bright-colored flowers opfig only in the sun, or taller modding stalks, all above clover like swards. Some are amazingly near being entirely everypeon.

Xalis cantion It is with some trapidation that one comes to the genus Oxalis, but fortunately the situation is solved in part by the fact that some of this species are annuals and many others are all ballos even if & furnished with other kinds of permanent undergrows woting arrangements. Dr Bailey's Cyclopedia record trillian. Thelease's diction that "generale, speaking, the genes I xali's is red highly solutioned by the florists - a mild con I saying that many are writched and invasive weeds, mee introduced, never to be evaluated. to a family they are characterized by their 3-foliolete leaves that resemble there of clovers and sugaringly "go to sleep at night" I erect stalks bearing one or nine five petalled often quits showy Slowers, brithiant yellow in one series, larender to deep rose red in There with all the paler + deeper variants that go with lavender to no devices. Most of them are of warm climate areas, from this zeouspher and Institute for Bottante an Ducuter entration mitter States, Oralis violacca, dismissed by Thelease a "scarcely useful, except for hard borders and exclusion but praised by Farrier as " Very long tro, in the same line and for the same situation (referring to ? magullania) and known to the writer as a denign of his wordlot that has realled i'm deeply prepared ajulta in I, sending not endless undergrowed stems, each foring a new bulk at the ty and paying on it's board by sending up eight inch stalks with fine pinky latender ferrors eyed with a curins go yellow have. How many gits far fung seed will hasten to build up the colonies remains to be seen. It some of the older garding kunn in California, D. Cernua with Is reall gorgeons butter gillow flowers has theiren to tuck a degree That all hope of ousting it has been abandones. This condition is gle parallelad in the day with and even in the not so deep South In this pink to lavenda flowered species Kest may be O. Lasiandra or the O. Mariabilis from the Cape, both of

of which have been in Trade in this county, usually under innours Letin memes that vignity oug the vappoir who of the flowers. adupted Neither O. enneaphylla un O. adenophylla much beloves of noch gardeners and endless & praised by Farrer make hills according to Treliare, though Farrer claims for enneaphylla, an annual little scale bull like that of hilium awatum forming a sort of purgressive notstock and for adenophyllia "a solid bulk like the com of a ly damen " heither has come under the uncertain hand of the writer, but for those whis the and doing not been, it can be recorded that they make low masses Indiage, hist hugs the growed and about which rise the large fervers, low borne + pearly which in Ermeaply la + lilac-pink for adenophylle. The Sumon Clay "Present Tay Rock Jarden" gives six pages of Toutalifind brief paragraphe catalogueing the names that caught his Jana with perhaps more than usual attention to the South Anerian Digitizelició Itanto Institute PortBoranical Doctimetritation of O. Combern taken by the collector in the Argentine that shows a flat trant of folded heaves & flat faces flower said to keyellow, Visuel red outside, hudlen weeding in my non garden of the pertiderms, usually annual, O, acetosella makes me wonder Tas five a photograph might not be had of that charming, acid sol lowing weed, Muther slanderous or not the writer would procede Suggests trying all new species there would be certain to till them, before they were tried in areas they might over num, preserving only a small bit under plan. their charms are essentially live of the staring effect of bright creat ferroces, open ong to the vun, that in the best that is dwarf and non-invasive, species, stud a tward I charming where like leaves.

# Phaedranassa

This is another Latin-American amaryllid only for Californians if it is to be grown out of doors, perhaps only for them anyway as one must have a rather lot of plant for little flower if he grows it in pots as we have done in the nearly cold pit greenhouse. There are few species, most assigned to the Andes with one for Costa Rica. They are all strapping amaryllids with the usual type of leaves, the usual succulent scape, beating at the top, terminal sheathes that burst in time to release a shower of modding tubular flower, from 2 to 12 depending on the vigor of the particular bulbs. They look tubular with the expected six reflexing lobes about the mouth out actually are a sort of fake with a short tube and longer segments that are connivent and reflex only at the tips. The color is red, about the red of a coral honeysuckle with green tips that may or may not be margined with off-white.

Perhaps we missed some trick in growing them in pots, but certainly they were not 'floriferous', though interesting. Possibly if they could be induced to grow on the north side, of the houses in California, along with the showy d by Hunt Institute for Botanical Documentatio clivias that love sur spots, they wouldmake a welcome variation, though nover. displacing the clivia.

We grew only <u>manufaborations</u> <u>Phaedrahassa chloracra</u> happily enough in pots in the pit, but contrary to its published descriptions, it kept its leaves while it flowered. One suspects that we should have arbitratily laid it on its side and made it rest, then possibly there would have been more scapes of bloom and later leaf development. If this is indeed true them probably there would be no use in planting it with Clivias!

Phaedranatea

Dig

This is matter genus on the Californians of it is to be grown out of doors with a few species all Andean, save my fem Costa Rica. They are strapping ananyllid with the usual strap-like leaves, the usual succularly scape with its terminal sheathing brack form Which in due sedan emerge the 2-3-4- to 12 flowers that usually have their head. The look tabular with the would be reflected lobes but they actually are a sort of the fake with a very short tube & the segments consident to look like a tube & reflexed tips. The colors are not, about the nes of ned trumper honeysuckle, with great ps that may or may not whom a whitish edge. The only trauble is that me must have a lot of plant organi one scape of bloom, It could not be urged on any me for graving in poly, but my goos in the north side y a house, used Like Clinas in the greenery, they might be fine, particularly if here ed by Hunt Institute for Botanical Documentation quite happing in the much mentioner colo prit where it comwhilekel ignored the taxonomist's remarks & parametor its flowers is the it's leaves at the same time, but provide baker who created the genees Ame not my harbarium wheels har perfort raised plants, is the an enforced day period as is the custom on most amaryllids.

# Polianthes

Nost persons start to apologize if they admit that they like tuberoses. I like them and donot apologize, though I really prefer the single flowered form, and liked it long before I saw it so abundantly used in Mexico as a most common of cut flowers, and belowed even by other foreigners than myself who mapt is often in the corrido/rs or paties of their taken-over houses.

The species is usually given as <u>Polianthes tubeross</u> and it is usually usecribed as a bulb which it is not. It is unfortunate to have to repeat once more the old statement that it is not known in the wild though there are some (precies in Mexico. Way no one has ever bothered to come to an end or this nonsense, is hard to guess. It is belowed by many, less avowedly by the horitaern races but cortainly openly and boastingly by the batin peoples here and in the old country. There was an time when the roots were exported to the continent of Europe? It is to be seen commonly enough in the markets of Colompia and peru though not as exuberantly grown if the towns are un the highlands. No one Digitize when the seen in the fight have been introduced or by whom.

> When one buys a root, it is not a prepossessing affair, but seems rath r a shaggy mess, with the dried vestiges of last years roots and the ends of the tough leaf bases about a harder central core, with perhaps one or two or more small bulbs attached on the sides. One plantait out after the soil is really warm. Never before. as the season advances the tufts of grassy leaves grow wid r and in time from the central axis rises the flower stalk. The original type is provides with a goodly company of tubular flowers, with a starry spread of six lobes at the end, an ivory white <u>stalk</u> sometimes stained with pink. The texture is smooth and fine and recalls ivory. The scent is the thing; it has no counterpart and you either like it or not.There is no middle ground but there was a time when it was romantic to say that it was 'too sweet, too heavy, too sad'. Now one does as he pleases, perhaps.

Polianthes - 2

I did not come upon any record to show when the first forms were reported with double flowers. But there are endless magnaine accounts that tell of this and that improved' form of doubles. The manner of improving seems to have seen airected chiefly to the development of plants of dwarf stature, with very double flowers and if possible even a purer white. They seem to have appeared as chance individuals in larger fields of already existing doubles, but that still leaves the problem of where the first double appeared. They have all so to of old fashioned clonal names, The Pearl, Diamond, and so on.

If there is a problem in the growing of tuberoses, it soons to be that of attempting to grow there where the seasons are not long enough. The older articles tell of starting there roots in pots in a greenhouse and then moving the plants outside. That soon was abandoned as the space was too valuable for a plant going out of fashion. If then the season is not long enough one has no choice but to give them up. So far I have not seen any signs of a rovival of tuberoses in the peep South, but I do not know it all, nor would I have a change Digitized her; is many may still inter the fractions of the protocol of the protocol of the season is not seen any signs of a rovival of which seems foolish enough when they have no shame in taking the gardenia to their amples hummones bosons!

(Tuberose =) Polian thes

that perfect start to apologize for liking tuberoses and a sulla site the vingly species, and liked it long before is tail it in taking the interview of the the vingly species, and like work and free user is all the "foreigners" in their halls + pation. Bout the tuberose and the "foreigners" in their halls + pation. Bout the tuberose and it is madely of the user of a bills though the tuberose and it is used, of the of a bills though the or of the start of the start of a set of the of and green repeated that that it is not keenen in the with, there are some precises in the pation of the work of the of and green repeated statement that it is not keenen in the with, there are some of precises in the price and the forther markets of the form that me tees in the forther markets in the form that me tees in the forther or introduced.

When me brugs a work it is rely a prepresessing affair but seems a shaggy mass with dried vistigs of roots at the twade mit, and drist tongh had bases that stongh the the more compart ed by the perhaps, we a more the due attached the plants it after the soil is warm, com planting time, and as this season warms, fim this site that should be rich, beaut and Junny then will rise highs of leaves that thereat wider + order circles with there rives from the carter a stalk mouthan happy at the tase, with brack like scales above, lach tablending the flower todo. The unimproves former is a subaler flower with sig lobes to make the stamp face. The color is a fine, frink von white, the has at times band truched atte pink hope they open. The report is smooth to the substance seems like ivon. The feature for which the plant is grown is its heary sweet respine that diffuses in the warm summer air. It is this considered doned to say that it is papersoive too hear, too tweet the sad; but more and more people insist they they Like it just as it is, heavy, sweet and vas.

although the flowers hast well (they start at the bottom. of the spike + open performinely trace the top) the impeored formes doubles your int or another last even better. This is a neather of teste, true of may how the formers there are ravious difficulties about forming processions fordus and the common emplaint is that the grow, multiply the first, and do not fenter. Many of them come, from the same reason, namel that no them gardens do not provide a sufficient long Junny seaton for flower production of the bulls are planked directly in the ground when the it is warm. There is no help for this mulen the bulls can be started inticle & brought out laker. too shallow planting helps multiplication as does for feeding. To possible for the South alread famous for it's hear scanbed clovers, there is an undisputed field for the taberose. In gardon literature & old catalogues me prod references to rarians married sats. To day one must by what he can fut zed by Hunt Institute for Botanical Decimentation )101f bitte fir months long, plant a fire row in the vegetable gardon, feed well and in season, allan armful of the stalks in ablack jar; put the a m the porch of you must but dream of Chochimilcho. Spelling? Us a post script and an aside no may chuckle a bit that This guile American plants in the American forms made many conquests in the old complices and brought a considerable income to the States dung me long festimable period.

Polanthes: Rev. Hnr. 1882: 429 - Variety Diamond" 5 Jean Sidley - word and -"Obrained for the old vairedy Pearl by a gardane in Kentrichy use, when gave the eights to mm. hang and neuron of home wille." affarent a clone values because it is ong dwarf - will forms in fols & an stand tringents for forcing a planty over which ammits is hotbed and in-Digitized by Hunt hestitute for Botanized Documentation Pame vol. ha note a G, balsanireflora -Mentbretia crocomiferra-

# Puschkinia

There was a time when it was difficult to find bulbs of Puschkinis offered in this country but now they are almost as easily bought as bulbs of the Siberian squill, and a good thing too. The species, usually offered as <u>Puschkinia libenotics</u> is now to wear the longer name of <u>R</u>. <u>acilloides libenotics</u> which is a nuisance, but does tell a bit more of its nature, as the Lemanon form mmom of the squil-like puschkinks, said to differ from the type by having larger flowers and certain intimate changes in its innormost arrangements: It is a delightful addition to the April scene.

The bulbs are about an inch in diameter with no special distinctions and produce a few good leaves, usually about 6 inches tall at flowering time and not much larger thereafter. The scape rises from their midst and only slightly overtops them. There are 5 to 10 flowers at the apex, arranged in a hyacinth-like raceme, with the distinct feature that all are in bloom at about the same moment. In cool weather they just well. The color is the valuable thing however; a pare white lined with a slightly freenish pure light blue. Distributes as intermediate characteristic a hue as does the porcelain blue of <u>Hyacinthus ciliatus</u> (once <u>Heaturous</u>) in the earlier scene. These greenish blues, reminisch)t of aquamarines are of great value in the huge army of lavenuer blues that are nore common not only in the Spring but always.

Like the hyncinth species the puschkinia sets seed without apparently harming the bulb and the seed sown at once will germinate freely the following year., producing facil sized little bulbs if the seed pots are kept watered and the newly germinated seedlings are kept growing as long as possible. Three years should make flowering bulbs.

The genus is usually given a wide range, Asia M, nor, the Caucasus, and to Afghanistan, vague enough terms, that might include a wide variety of climatos. the term <u>libanotica</u> happily does not suggest tenderness to cold, so that its spikes that come a little late on the spring scene, do not suffer the fate of the really wonderful blooms of <u>Scilla Tubergeni</u> that always try to flower with Iris histricides and are always caught here, a pity for they too are of the aquamarine persuasion. Puschkinia - 2

My own plants were raised from seed and have lived happily for over fifteen years in the same spot, a bed once deeply dug and enriched with peat moss, to make ready for the neighboring Californian erythroniums, various snowdrops and other odds and ends of bulbous stuff. Increase has been slow possibly due to the constantly increaseing though high, overhead shade. The bulb leaves ripen by late May and by late June there is novestige of the plant in the general greenness.

Among the lesser bulbs this is one of the most important for the unique quality of the color it provides. If you have room for it by the thousand, by all means have it by the thousand!

Digitized by Hunt Institute for Botanical Documentation

Puschtinia

There was a time then it was difficult to find bulls of Puschkinia affered in This country but und they are alreaded as rasily formal as bulls of the Scherigen Agrin 11. The species usually affered under the name of Puschkinia libaratica in tests at present reduced to a varietal status under P. scilloides from which differs in having larger flowers and certain interior variations, but Mutever it have it makes a release and cisting addition, here, to the Afril scene.

The hills are about an inch in Diamater with we special divisions and produce a few good green leaves, whilly about 6 indues tall at ferviering time. The scape rises from their midst and ong slightly we tops them. There are from 3 to to ferviers at its apex arranged in a hysicist like racesses, with the distinct feature that nearly all are in bloom at one time to in the cost weather last well. The color is the maturable characters a pure white fixed with a clear tized by Hunt these of the scales the formed to a clear the proceeding blue, that for a characteristic a cost well. The stight greensh blue, that for a characteristic a cost as does the proceeding blue of the carlies Agacinthus citization (once the gureens)

tike the hyacinth prochkinia sets sees and seed soon at ance germinates fines the following spring producing pro offers bulls the first season of the pols are kept well watered and blomming the third spring as a rule. The genus is usually any good to Avia Minor, the Cancours and afghanistan, vague unigh terms that newst include a wide dariety of climates. In spite of the specific news libanotice cold seems to be no hardship and the starts lake enough so there is no damage to preceding flowers as is the falle of the blank per scoking thirds of the second seems to be scilla vantubergenic which offices almost the scilla vantubergenic which

my mon plants were raised from seed, and have lived helping on ora prices years in the same sich deeper prepared wood bed that harbors the California king themilius, bairres thoredays and other odds & Ends of bulbons shuff. Increase tas been slow, possible due to the constants increasing, though high, overhead shake. The leaves ripea by lake May and all vestiges are som lost in the general high core of the hilloide. among the leaver bulls this is definited, a desirable thing and should be used in quarking rather than Daugper lots. BM. 2244-"This pears were for manuel in honour of the lake Court apollos Mussin Puschtein by Dr. adams, + was pist recorded as Hora Turico-Caucasica by Mr. Marschell V. Bieberstein. a hand parennial. Communicated by - d' Digitized by Hunt Institute for Botanical Documentation

#### Ramunculus

This is a huge and terrible family with a prodigious number of dowdy and invisive weed/ species, some extraordinarily beautiful //////// and difficult alpines and one old and long-cultivated species that is no more a bulb than any of the former though it does have roots that can be dried off and sold in bulb stores, <u>hanunculus asiatious</u>. Its fleshy roots, dried out sometimes almost too much are regularly so sold. These when set out in baskets with a gau y colored plate above them, often lure the unwary into purchases that may not be too successful.

Having had trouble with some of the other things that behaved in this fashion and feeling fairly certain from what my elders told me, that it would not be hardy in my cold climate, I have never grown this plant. I had also been told that it could be held over and planted at a decent season, but I am too lasy a gardener for that and so I come to this page dependent entirely on better men than I.

If your climate is such that you cangrow plants that make slow growth of leaves through your winter period, this should be tried; it index myself that tion is impossible, try, as I mean to do, the advice of my friend Mr. Furniss of Oakland California Buy the roots as one would any bulb and store them in a cool dark place until spring, then soak a bit, and plant out. Their whole growing cycle is not very long and the growth and flowering will be swift to come. The roots can then be dug and the storage continued as before.

The charm of the flower in its full double forms comes from the absolute symmetry of the doubling and from the range of colors, that are essentially yellows. The series starts with rather pale yellows, that grow stronger and stronger till they pass the colors of trollius. Some brassy, greenish yellows are included, that one comes to like, and there are others in which the suggestions of reds appear.

Do not forget that this was once one of the florist's flowers, when that word meant a person who grew flowers to a perfection that had its criteria in art rather than in co merce. These in season held the stage that was at other times occupied by auricula, viola and carnations!

Ranuncolus

This is a truge and terrible family with a pordigous number of dordy and invarioe well species, some extraordinarily beautiful and difficult alpines and one old and throng even gaudy there is hear is no more a bulb than any of its fellows, Revenuence anations. Its fleshy roots are regularly told as bulbs, but even that would will five it place here, save that too often the beginning gardener, lured on by the gay flowers, pictured on the Jules Liberstore or alread seen at genists, forgets that this plant is only for there areas where growth an continue all winker with mit first and where the summers will be continuously dry for several henttes de form forme de tor sud of deplember a coa later. It that is prosible, be sure to my the best strains - my all of Them and the choose shich is preferred.

Digitized by Hunt Institute on a could life the rooks as som Digitized by Hunt Institute for Botanication Officer, with a then proper planting season. The writer has never known a parden there they was stred in a cool place + planter in Spring the My could prove on to flowering. Inch a procedure through frontlessome would solve the problem for those the would have in Spile y elimote.

The basic color is yellow place or darker as may be, almost he while at me extreme, almost deep orange at the then, at times raquely shrifted with res. Most of the nort's offered new are very dontle to the allector, there will be good reading in the gorden books of the middle 1800s show the "firists" of that show (not by the confines with nors) tended them as carefully on they

did this auriculas Their carnetins the aur Wiglas v Digitized by Hunt Institute for Botanical Documentation

# Rigidella

Until works was commenced on the preparation of this books manuscript I had never heard of Rigidella and now 1 know it only from books and book illustrations, but it so intrigued me that it goes into this test in the hope that some one, tou ist of whomsoever, who may travel into its realms may look and see if it should not be brought back for summer gardens.

Apparently it comes close to minumminimum tigridia and there are many who will lose interest straightway; but it minimum farman differs from Tigridia in that it grows taller an apparently clambers up into some shrubby thing for support. The species are assigned to merice but Hostus II lists a variety from Guatemala, <u>Rigidella flammes</u> v. <u>guatamalensis</u>. The notes give 5 feet for <u>A</u>. <u>flammes</u> with lesser heights for <u>R</u>. <u>impaculata</u> which is not white but just its name. The basic colors in all seem to be red and black!

Digitized by Hunt Institute for Botanical Documentation

Rigidella These notside of books have I seen or heard & Rigidulla ! staining they lince from tigridian, it's near relative, there is still a hankering to goor all of the inemediate allies, Everyone of Them In all probability perfectly render to cold. all this species are assigned & mexico, and the brief restances are intripring - In example. Ripidella flammea in vaid to here stems up to I feet. K. immoculate does not form to tall. Sealled and black are the tasic colors Revoite = form up botanical descriptions also a see what Digitized by Hunt Institute for Botanical Documentation I here an error in that 3-5 fr for R. flammen? B.R. 26: 16 - Rijidella flammen dindl. JBR 27:68 " immediate that y (Flore de terres V: 502 ; 21: 2215 In theman II there is ref. IN R. flammen . quetamalensis!

There is no reason to believe that any romulses will ever hold the stage for mass effects, even among the lesser bulbs. The genus with its center of distribution in ....., probably should not fare too well in the Washington D.C. area, though other bulbs from there do well enough.

Romulea

Only one species has been tried and it has to be numbered among the transients. Having read that the plant is less hardy than the crocus, a vague enough statement since there are both very hardy and rather tender crocuses, the bulbs were planted in a slightly sloping spot with both coarse sand and rough humus mini incorporated in the soil for a much larger area than the small bulbs needed. Spring brought the emergence of a group of rather sharppointed ribbed nearly spherical leaves, then a sheathecovered bud not unlike at ground level, it rose on a somewhat flexuous that in crocus/but presently **binomitingeneration** scape and broke open to free the small sixepetalled starry bloom. <u>Homulea bulbecodium nivalis</u> our only victim, is reported white as you would expect from the name, flushed with yellow at the throat and **minime** stained with lilac on the reverse. These

details are correct but the white is dull, the yellow faint and the lilac insipid. The only really diverting thing about the plant is the fast that the scape as it elongates instead of standing erect does its twisting along the ground level.

The bulbs lived several years but never flowered again proving that something was wrong in the culture, site or climate, perhaps all three. One would like to excuse himself by saying there should have been no summer rains and even higher temperatures.

There are other species reported to have rose colored and others with yellow flowers, but the reporters were taxonomists, a group never to be entirely trusted.

In this country one should probably turn to our southwest to find a suitable home but even there the small flowers might not warrant attention as compared with those of more lavish beauties. There is no reason to believe that any romulses will ever hold the stage for mass effects, even among the lesser bulbs. The genus with its center of distribution in ....., probably should not fare too well in the Washington D.C. area, though other bulbs from there do well enough.

Only one species hasbeen tried and it has to be numbered among the transients. Having read that the plant is less hardy than the crocus, a vague enough statement since there are noth very hardy and rather tender crocuses, the bulbs were planted in a slightly sloping spot with both coarse sand and rough humus man incorporated in the soil for a much larger area than the small bulbs needed. Spring brought the emergence of a group of rather sharppointed ribbed nearly spherical leaves, then a sheather overed bud not unlike at ground level, it rose on a somewhat flexuous that in crocus/but presently human themas man incorporated with a starp bloom. Homules bulbécodium nivalis our only victim, is remarked white af you while expect from the mass flushed to the with yellow at the throat and masks stained with like on the reverse. These details are correct but the white is dull, the yellow faint and the like insipid.

The only really diverting thing about the plant is the fast that the scale as it elongates instead of standing erect does its twisting along the ground level.

The bulbs lived several years but never flowered again proving that something was wrong in the culture, site or climate, perhaps all three. One would like to excuse himself by saying there should have been no summer rains and even higher temperatures.

There are other species reported to have rose colored and others with yellow flowers, but the reporters were taxonomists, a group never to be entirely trusted.

In this country one should probably turn to our southwest to find a suitable home but even there the small flowers might not warrant attention as compared with those of more lavish beauties.

# Romuléa

There is no casar to believe that any romules will see how the stage for man seffects, even aring the lesser hulbs. The genus with its center of distribution in \_\_\_\_, probably should not fare too well in the washington the acer though the hells fim that region do well enough. they me species has not been tried and it has to be numbered among the transients. Having read that the plant is less dardy than the crocus - a vague enough statement since there are both by hart + rather Vender crocus species the bills were planted an a slightly sloping sport with both coares rares and rough kumus amply incorporated in a soil area much larger than the pocket for the help. Spring brought the appearance of a prop of rather sharp-toin way rithers, nearly spacing leaves then a shark areas that by Hupt Institute for Botanical Documentations on a scape + bethen & allow the inerquice of the small fix-petalles bloom. Romulea bulbocodium mivilies, our my piction is reported to be white, flushed yellow at the throat and stained lilac on the reverse of the outer segments. Mak is correct but the white is deall, the gellow faint and the Silve insigned. The most diverting hit about the plant is that the spape elongation after flowering to alwork six inches, with our instead of standing ereck, troists about at grow proce, In hills lived devad years but never flowered again proving something wrong in culture, tite a climate. One only like by spense him felf by saying there should have been us summer rains and we higher tuperstores. There are other openies reported to have nove colored and

Jellow flowers but the reporters were Vayonmints, eiginf never to be trusted entirely. For this country are protectly should turn to me southwast to find a smitche matrical medium but ever there the mall fences might not warrant attention as compared or moore Christ beauties. Digitized by Hunt Institute for Botanical Documentation

# Schizostylis

Once more we have a plant for the Californians and for such southewestern to Texam gardens as may allow the use of a winter-growing and flowering bulb. Like several other genora mentioned it is not a bulb but a rhizome that behaves much like some of the irises, except that it becomes entiroly dormant The flowering stalk makes up most of the plant with folded ghandhadds gladiolus-like leaves and scarlet flowers from the uppermost green bracts, that are not unlike gay scarlet gladiolus flowers, curved forward in the manner of a montbrotis. There is a pink flowered form know as Mrs. He Hegarty that is often illustrated mannemental mannementations. In a general way, the treatment is as for gladiolus outside and for winter-flowering gladiolus inside if planted in pots.

# Digitized by Hunt Institute for Botanical Documentation

Jehn Jostylis

Ones more we have a plant for the Californians and for vach south western to Ferrar facture as may allow the use of writer-Fronty + flowering bulls, I hile several other genera mentioned it is and a bulk, lus has a shizoma that apparently tehores like There of some irises save that it teames competely leafless when dormant. The flowering stalk makes up most of The plant with folded gadisties like leaves and scaled fervers fime the upperment frem bracks that are not while gay scalet glower, curved forward in the manner of a montheatin! There is a prich flowerer form known as this Hegarty that is yren; thus noves.

Digitized by Huht Institute for Botanical Documentation 18m 1422 -Ethne de Jone 16:1637

Bh 5422 " XX it inhearly caster rives of South Africa, called Kabousie + Keir- Kamme, in Kaffin-land. Later- mad Drackensberg mountain x. British Caffrania etc., hatel, de Stubb with ( Seares (uction), classing inforcicle, talk stach, mati as in plasistus, flat cinus flis ique perialth tegnents."

Beillas have long been cultivated in gardens, though the species that comes first to mind is the Siberian squill, <u>Seilla siberica</u>, relatively a newcomer when one remembers the English bluebell S. <u>nonscripta</u> of song and story and the old herbals with pictures of S. <u>peruviana</u> tender for most gardeners and not a native of Feru but of the Mediterranean area. The bulbs are as diverse in form and character as the plants themselves, with small hyacinth-likebulbs for the Siberian squill, cull white almost potato-like bulbs for the English bluebell and its continental relative S. <u>hispanica</u> more often listed as S. <u>companylists</u> to the large tunicated bulb of S. peruviana.

Dr. Harshberger's treatment in <sup>B</sup>ailey's Cyclopedia lists some eighteen species of which the writer has grown only seven, <u>S. aonscripta, S. hispanica,</u> <u>S. chinensis, S. bifolic, S. sibirica, S. Tuborgiana, S. amothistina</u>, and <u>S. amoena</u>. <u>S. peruviana</u> he has only seen.

In this climate and even under the rather casual garden practices followed, all of these are probably fool proof. Two things only appear not to be to their liking, too dense shade and too heavy a layer of fallen autumn leaves. Possibly if the latter were not mostly oak leaves and slow to decay, the difficulty of pushing up in the spring would not be maxama so acute.

The group of early flowering species of which the Minimum Siberian squill is the best known, gives smallish bulbs that here increase such more rapidly by natural seeding than by the production of offsets. No attempt has been made to gather and plant seed or even to conserve the seedlings that appear in much too crowded masses for ideal or rapid development. The result has been that the original twenty-five bulbs are now the center of a large colony that pushes down hill a little farther every year.

### Scilla

### Scilla - 2

This has not been true for its lovely white form and to a much lesser degree for the very early and very charming <u>S</u>. bifolia which is represented is the planting only by its purplish blue form. <u>Scilla amoona</u> which here blooms after the first two mentioned, is a much less distinguished plant, not unlike the Siberian squill but taller, sparser and less well colored. Whether or not the two sites chosen were poor, one dry and sunny, the other more moist and sunny, this species has not prospered in the sense that it is taking its place in competition with native plants. All of them have small, six-petalled face downwards somewhat starry flowers, that tend to <u>dumandommanum</u> on the scape, except perhaps <u>bifolia</u> that may look you in the eye. <u>Scilla siberica</u> is a ravishing blue, somewhat on the green side as compared with the more common lavender blues of the spring season.

Although not mentioned in Bailey(1.6.), another early squill has been grown here for several years, Soilla tuborgani. For us, it has the serious disadvantage of coming too early, so that its levely flowers are ruined by frosts. In general its style is not unlike that of the Siberian squill but it is larger and lusher. Its great distinction lies in the color of the flowers, which is white faintly it overlaid and definitely veined with a pale greenish blue. Here/is contemporary with <u>Groous Sieberi</u> in flowering but is much less frost resistant than the crocus. Possibly a little seeding would produce a strain entirely adjusted to our weather or a change in site would help. The coloring is unique among the squills known here, and approximes the lovely hue of the many much later flowering Puschkinia.

Although there are several species of scilla that normally flower in the autumn, the only one known here is <u>B</u>. <u>chinensis</u>, for which no absolutely happy site has been found, so that my own planting has eventually perished. The bulbs came from north China and were grown at the U.B.Plant Introduction Garden at Glenn Dale, Md., could not have been tender to cold, but eventually most of them died out in the frames. It is possible that they did not quickly adjust to our weather and that the loss of the premature growths of foliage is to blame.

# Scilla - 3

The leaves are few, 2 or 3, possibly 4, and rather lax, somewhat tinted with dull rose or bronze as they push up. They die off by mid-summer and the often foot high flower scapes appear in the late summer or early autumn, each with many small dull pink starry flowers arranged on the upper part of the scape somewhat like the inflorescence of an old-fashioned mignonette. The delicacy of the flowering would call for some happy garden combina ion to cover the bare earth. Hightly or wrongly one thinks of it as the kind of plant that might grow in a measow with grass and other flowering horbs for company.

Except for the collector it is probably no great loss,

The English bluebell, <u>S</u>. <u>nonscripts</u> and the Spanish squill, <u>S</u>. <u>hispanica</u> are both vigorous and showy, with many horticultural races that vary chiefly in the color of the flower. Typically the color is a pale blue lavender, but there are good whites, and various lines that are called pink and rose, terms that should be interpreted in terms of iris colors rather than rose colors.

Although the initial plantings will look rather sparse, it is quite safe to Digitize plant pulled singly and whicely spaced as in moist good garded or woodham soil in the multiplication soon makes a clump. The leaves come up rather like those of the hyacinth, but the flower scape is slower to appear, rising quickly thereafter to about a foot high. From the pash pictorial p int of view, the English types are a little more slonder and have nodding tips to the scapes that show a very characteristic curve, once known. Personally the writer prefers the lavender white and palest pink forms with first choice always in the type color. In using them one may establish groups in the forefront of any border or in quantity in woodland or meadow, but not in lawns. If one needs a particular inspiration, and can visit a good museum showing tapestries, he will recognise squills as plants that will glorify the flowery mead or the forest floor.

> In these parts, they flower with the yellow and orange deciduous asaleas of <u>mollis</u> and <u>japonicum</u> blood and make an excelent foil for those more elementary colors. Unfortunately flowering dogwood has gone by, so that the white canopy is not possible. In other places this might be available in planning.

Scilla - 4

The writer's own plantings have been in place for nearly fifteen years and still flower well in spite of no further attentions. Increase is slowing up and no seedling have ever been found except those that came up about the English bluebells. They are quite slow to mature in the woodland planting here. Seeds set on the Spanish varieties so they must be more impatient of the woodland litter.

The only other species that has been tried, is <u>S</u>. <u>amethystina</u> which is said to be 'possibly a form of <u>S</u>. <u>Aratonsia</u>'. The growth and leaves are much like those of the Spanish squill but on a somewhat smaller scale. The flower scape reached 10 inches and the small starry flowers are crowded about the upper portion to make a dense raceme. The color is hight bayender Violet of immy Ridgway fading darker, to Lavender Violet. The flower faces out from the scape and the accents of the dark anthers are conspicuous. 't is, nevertheless, a sceendary bulb and with me here, one that has not shown any inclination to be at home as have the others.

Digitized For milder dimites the bulbe of the Peruvian squill so-called would entation be worth while, for the inflorescence is large, wide at the base and gradually extending. The color is the usual squill lavender. White forms have been reported, but 1 have never seen one. The tendency to make some foliage growth in autumn will probably determine the planting ranges, for the leaves would not telerate frosts of any severity.

Scillas have long been familiar in forkens, though on must gardiners the species that first ones to mind is the Siberian Agnill, relativel a newcomer among and value plants since the Suglish blue bell, Sailla mitans it for has long been legendary and old herbals show Stilla personana, tender for most of he and not notive to Peru but to the hediterranean drea, The bulls are as diverse in form and character as the plants with small hyacinth-like hells for The Siberian squill, dull white, almost polats like bulls for the original bluebell and the continental. S. hispanica more often histed in catalogues as S, campane ulata to the large timicate bull of S. perusiana. Builton's Dr. Harshbergers treatment in Bailey's Digitized by Hunt Institute for Blotanical Downser Attion of which the writer has grown may 7, S. nonscripta S. hispanica, S. clinensis, S. bifolia, S. sibinica- tubuler. S. amolena. S. perussianin he has my seen-In this climate and even under the rather carnal garden practices followed, all of theme are practically for proof. Two things is appear that to be I then liking, too dense shade and too hear a layer of auturn leaves. Prosibly of the latter were not chief oak and start to decay, the difficulty of pushing up into in the spring wood no be so acute The group of early flowering species of thick the Liberian Agrill is the task known, are smallish hulls that muder my enditions here, increase much more rapidly by natural seeding than

I the production of offects, ho attimpt has been made to gather & plant the seed or svere to conserve the Seedlip that appear in much too coorder masses for ideal or rapid divelopment. The remet has been that the original trants- pre hells of the Siberian squit are now the cuter of a large colony that pushes down hill a little further tack year This has not been true of its loved white form and for a much lesser degree for the boy early and chaming I. bitilia which is represented in the planting one by its purplish blue form. Sailla' anveha which here blooms often these last is a much less distinguisted plank, not mlike the Siberian Ignill but Taller, sparser and lin well colored, Mather or zel btilling Issilet uteliger Borgnidat Doounderstation sunny the other nine most and sunny this species has not prospered in the sense that it is taking it's place in competition with notive plants. alternation not mentioned in Bailey, another sail spiele has been from here for several years, namely Scilla Tubergeoni, For us, it has the serious disadvantage of coming too early, so that its love fenders are minst by foost. In general Style it is not milike this Siberian squill but is larger & hisper. Its great distinction her in the color of the florers, which is white faint washed and definited when with a pole greenish blue. Here it is contemporary in M Crows Sieber in flowering but is much less

~ Scilla for resistant than the croces. Ponily a Wittle searching would purduce a tite articles It its liking for the coloring is unique being approached one to the its relative Puschkinia Indanotica of which more later. although there are several species of scilla that normall flower in the autumn, the no absoluted happy tite has been formed, so that all the stock has perished; The stock which came fim north China and was from at the U.S. Planet Introduction Sachen as Glenn Dale, hed, could not have been tender to cold, but eventual no hills remained in the frames. It is possible that they had Digitized by Hacabitation the Blotant ab Dorarable and go and that the los of the premature growthes of foliage is the answer. The leaves are few, 2,3 pombly 4, and rather lax, Somewhat tinked with dull rose is brongs, They die 86 & mid-summer and the often foot high flower Scapes appear in late summer or early autumn, each with may small dull proch strang flowers arranged on this upper part of the rape inwithen The delicacy of the floring would call for some garden empiration to cover the south , kight a hight grow in a meadow with pass and the night grow in a meadow with pass and the flowing herbs for company. Except for the collector, it probably is no greators,

The mytich bluebell, S. monscripte and the Sparins & Ignill S. his france are both orgonous and sharry with many hort weburally propagated races that vary chiefly in the hive of this formers. Typically the color is a pale blue lovender, but there are good white forms and various lines calles pink and rore, terms that should be interpreted in terms 2 inis colors rather than me colors. although the initial plantings well look ratices sparse, it is quite safe to prant the bills singly and widely spaced as in most good gardin a wordland toil the multiplication soon makes a clump. The leaves come up to the like three of a hyacinth, but the flower of the is slower to appear, nising quickly to about a zood in Hatzatisti Arton forth Boparios about a printer jaties The Suglish types are a little more slender and have modding tips of the scape that show a very characteristic curre. Personal The writer prefers the lavender white and palest pink forms with first choice for the type color. In using them, one may ostablish groups in the frequent of any border a in quantities in wordland no meadow - but not lawn areas. of The needs a particular inspiration, and can whit a museum shining good tapestnies, he will recognize three squilks as plauls that is'll flower the for a meadow. In these parts, they flower with the yellow me orange decidions agaleas of mollis or aponicium blood and make an excellent for

3 - Scilla to their more elementary colors of the ajaleass importantly line, finiting dogwood has gove boy so that canopy is not possible. In other places, however, it might be available. The writers can planting have been in place to reard is years without feeding or dintim and the finiter will, moreas is storing up, and no seedling have ever appeared except on the forms of the highish threshell, They are guite slow how. Digitized by Hunt Institute for Botanical Documentation

Lee Aten sheets Scilla Byn Jul. 1538 Jeilla amethystina, finite a for 7 5. prateusis I worth & leaves like small by aciath on Spani the spently Scapes - 10" - fer male - starry - Light Las. Violet (R.) froig Karker, hav. Violet (C.) \_ tegmants dy about The devel. seed ford. Her become Dark Sull Violes Blue (R.) - by tide ! Each fl. stary & the stamens with sach authors just as stang + slingy ? Has not passister ? , - netice tr. - Sursp. ?, Where? Digitized by Hunt Institute for Botanical Documentation Bu 749 Scilla peruviane\_ a native probagel: four des :- the field of the Olgerienne & Funitian territories by the fortained - not Peru

# Sarazis

Although one is likely to think of Ixias and Sparaxis in the same moment, since both are really quite useless out-of-doors in the East, except with great trouble, their dimensions and some of **mammanishs** the details of structure. bring to mind <u>Tritonia crocata</u> and its allies, rather than Ixis, though all are South African and tender to cold in winter when they would like to push t eir growth.

The corms send up a fam of leafves somewhat like those of gladiolus on a much smaller scale, with a slender central scape furnished atop with papery bracts somewhat like those of certain <u>pallida</u> irises, and a few flowers reflexed with short tubes and flat faces made from the irregular/limbs of the 6 conspicuous perianth segments, often set off by a <u>manufacenum</u> dark colored blotch at the turn of the throat, the six taken together making a stunning dark central zone.

The trade here usually offers only mixtures and since the botanical texts admit that there is a wide range of color variation in each of the several Digitize opecies. That matters share claim that fill belong to one Bocies, Sparatistation tricolor. This has a yellow throat, 'petalss' that can be practically have any color save blue and yellow, and central dark markings that may be blackish, dark brown or very deep marcon, nover blusish. S. grandistora, if one might find it, offers a range of colors somewhat more limited perhaps but still wide enough, no blotch at all, and no yellow throat.

> Treat as for ixia where that would be hardy and as for freesia under glass. Since they are irids, they can be raised from seed and certainly there should be some investigation of the possibilities. It would be helpful also if there were experiments in the Gulf Region, to see if they could not be persuaded to live happily there, where low temperatures in winter are usually not of long duration. The problem would be in relation to the resistance of the leaves, for flowering would not come till March.

Sparayin

Di

althingh one is likely to Mink of this and sparaxis in this vane breath\_ vince bitte are really quite useless out - 7doors in the Sast, except with great trouble, their dimensions and in other ways her closely, brings to mind Tritmia circata and its allies rather than Dria, Janth African and touter to cold. The corner send up a fan of leaves somewhat like there of padiolus with a sluder en tral scape furnished at op with papery hads somewhat like those of certain pallida inices, and few flowers with short tubes a flat faces made from the refleger limbs of the perior the segments offer set of by a conspicuous dark colored blotch at the turn makes a stanning dark In trade here me usually can find only mix tures and times the boranical hat's admit that there is a wide range y colo variation in the foods species, that matter, Some claim hat all belong of by foods of period, that matter, Some claim hat all belong the species, paraxiv fucolo thid bas a yellow throat, the taile marking referred to be they blackish, dark brown or very deep marcon and "petals" of practically any color vare the and yellow J. grand flora of it were to be had . Here a range of colors, somethet have limited partafes but still considerable, no blotch at all and no yellow therat. Treat as for there hardy and as for freesin under glass. for up branical rests - recent. S. bulbifera Bm 545 (as ) xin hillsfero) BM. 1482 S. Knicola (B.Y. S.) cola variants: wither annaging: The dark purple with yellow use a black patter almost in gay as Striptanthera! - all how barrants

# S rekelia

This interesting plant, <u>5 rekelis formossissima</u> with a long history of amusing illustrations even in the olu days when it was figured in woodcuts, is usally the only species listed. It hals from Mexico.

as I have grown it, it has mine curious bulb with a much greater length in the vertical axis than in breadth, and a terrifically long 'nock', though one supposes that all this may be affected by the planting methods. The bulbe purchased were fully eight mones long, most of it in the neck. The sneathing bulb coats are distinct in my experience, a warm dark brown color, and paper thin. Since my bulbs were destined for a pot, most of the neck was left out of the soil which made no trouble, though the neck minume shrank a little in time. Possibly they had once been planted desper down in a good soil.

The leaves commence to grow almost at once and in the one-sided light of a house window, soon grow lax and flopping. They are a decidedly yollow or more green in color, perhaps a half-inch wide and certainly twelve, inches long inf to grow either time. The flower scape appears from and state outside the leaves but within the the white sneathes of the neck, or from the axil of an outer leaf. The flower faces one, as do those of many amaryllids, but instead of the regular arrangement, the three uppermost segments stand upright, the central the largest, the three other segments lie upon one another like a tube, and flare apart only at the tips. In the trough formed by the lower three, lie the showy stamens and pistil. There is a fine contrast between the velvety red of the inner surfaces and the matt outer surfaces of the segments.

Under dwelling room conditions the flowers begin to fade the evening of the second day.

A neighbor assures me that the plant is hardy out-of-doors here with him. Since my own plants never abandon their leaves until I stop watering the pot, it seems difficult to believe that it could become dormant and leafless in our climate. I should like to be wrong for it could be most impressive in mass more so than in pots for in my experience no two bulbs bloom at precisely the same time.

Sprekelia - 2

This year, several firms are listing a form that they claim has larger and more brilliant flowers, as if that were possible.

It is hard to guess just where in this country it would be most happy in gardens. Although it is reported as 'from "exico' there are no notes available to me as to what part of Mexico, and that country has as many climates as our own.

On plate 3672 in the Curtis Botanical Magazine there is a drawing of <u>Sprekelia cybister</u> that shows a plant even more astonishing though less lovely. The flowers show the same structural arrangements, but are more slender in all their parts. The great difference is in the fact that there are several on the scape and that they are all arranged as if some one had pushed them down, making the masses of stamens and pistile hug the scape. The color is mostly washed over with green, so that the glorious red is lost, but the total effect is amazing. The scapes are said to rise naked from the gamean ground, the leaves coming later. Should this ever get into cultivation, the 'flower arrangers' would doubtless give it as much of as rush as they have anthuriums or strelitzia, though not for as long a time, for it does not have the timpy endurance of those flowers.

Spretelia

# 6m 47

Sprekelia formosi ssima

This interesting plant , in the a long history of amusing illustrations when he old days when it was of gured in stordents, is the my member I dis tomo fenus and is matine to Mexico. To what reating, I do with turne, it is usually tister as Jacobean tily - a singularly unsaitable Verus. les I have from it, it has a curious with with a much prester hight in its sectical ages than in diameter, Reough this may be allered to the manner of planting. The bills purchased were fully Sight indies long, nest fit a slender neck. The sheathing hills coals are distinct or this my experience, a warm from color + paper this. Ince by bulls were destined in a pir, must ythe neck was left above grows which make no Vimble, but the neck thrank as time went on and not it is help its former vige. Pomity og hills had mere been planter deep down. The places commences to for almost at mee and in the me-sided light of a house window soon frew lax and flopping. My and a decint villen free perhaps a hat industrie and centame 12 and by Hint Institute for Botanic table cumentation but with in the shike sheatthe of the neck, or fim the axed of an outer leaf. It is hollow + bears a tingle billiant crimen ferrer That is distinguished over all its time by the inregularities of "Tis perioreth. The flower faces me, as do those of amonglis, but instead y a regular arrangement the three uppermost Legments stand upor ght, the central the largert, the three remaining and he upon me another like a pibe, that and apail of at the tips, in the trough formed by the lover three tig the shory stremens & pishil. There is a price outrast between the related high the shory stremens & pishil. upper surfaces & the matter meter surfaces builder dwellig room enditions, the planer commerced to take the Evening of the second day. I reighton assures me the plant is hard mt. of don's other him. Since my own places never attantion their leaves while I stop watering the pro, it seems have brachere that it could become

dormant and heafters in my dimate. I should like to be wing, por it could be impressive in mans, more to that in poli, for in my experience, no tro fulls bloom at precisely that I are time. This year one firm is listing shall they claim is an improved . form with larger and if it sere possible more brilliant flowers. Just where if might to happiest mt. 7 doors is have a till. in hereis It is reported as notice of form up "Horn y Mexico -Digitized by Hunt Institute for Botanical Documentati funtastic flore that is precised like our other species in form save that all parts are more slender but differs strikingly in Carriage in all the fervers und to that the stamens keake a frest comprision about the scafe. The color is nersh wasked over with prean to that the plaines red is lost. The tapes are vais I rise maked from the carthy; the leaves later. Showly this over come to cultivation the "flaver anagers" would fire it a rush as They have anthuriums on Shelitis (Art 2 hill sell for long since while them it has no tinny inducance.

## Sternbergia

All efforts to get bulbs of species of sternbergia other than the recently abundant <u>Sternborgia lutes</u> have ended in failure. We once though we had <u>S. macrantha</u> but this is ext\_remely houbtful for it flowered in the autumn with the leaves, which is not proper at all, even making due allowance for the upset that overtakes many amaryllids under cultivation far from home.

The present day taxonomist admits ... species, that differ from one another chiefly in the season of bloom, some in spring, most in the autumn to winter.

The only species cortainly availabile, in American gardens at present, **15 S.** <u>Intea</u>. This one orders in mid-summer and receives in early autumn, plants at once and if all goes well, within a month there should be the beginnings of the mass of strap-shaped leaves, if you planted inclumps, which will prove to be evergreen and to last through the winter till may. After the leaves are well on their way, there push up short scapes that lengthen to eight inches, with a terminal papery sheath that breaks and sets free a clear yellow flower not unlike a crocus in shape but with the samens and pistif suited to an amaryllid and not an irid.

The flowers may be several to a bulb and here usually appear in succession, each lasting several days, with precocious examples in early September and laggards as late as early November. In my gauden climate there is no chance for the successful ripening of seed.

Hardiness is finally determined apparently by the amount of winter damage to the evergreen leaves. These have considerable body and here are rarely hurt save at the tips. How cold it must be to cause them to freeze and rof, I do not know. There are records of successful flowering in Massachusetts, but not at any point far inland, and no later report to tell of now long the bulbs pandates persisted. Strenbergia- 2

From experience in the gulf-Coast Mississippi garden, one must believe either that it is not cold enough there or that the bulbs will not tolerate the endless rains in that sandy soil no matter how fortified. Good bulbs taken from this area have finally languished and mostly died out. Here I can maximum definitely report that while bulbs will persist and increase in shade, they will not flower, but look much like clumps of some unhappy marcissus.

Some call the plant autumn daffodil, some autumn crocus. Both names should be shunned. There are autumn flowering daffodils and crocus and they should have exclusive right to their mamps names. Sternbergia is quite easily pronounced and has a rather pleasant sound, even if one knows nothing of the name whose botanical interests it commemorates.

The common species has been long incultivation and is mentioned as having been 'in gardens in the time of Gerard and Parkinson'. The rest seem of be of that great company of plants that have been in and out of cultivation. Often this is a bad sign meaning either that they are mag uglier than any one would amit or that they ware attempted in places where they had no chance to grow and thrive. I should still like to see bulbs and flowers of <u>S. macrantha</u> which 'from the west of Persia and southward to derusalem and the Siniatic peninsula' probably would not like my climate or gardening methods. Its flowers by report rise naked from these of and the leaves follow in the spring; this last would be of advantage if the bulbs themselves would tolerate the foozen earth.

Stembergia

all efforts to get bulls of species other than the reasonaby common Neurologica luter have ended in faiture with the possible exception of B. Machantha deal this is extremel doubtful vince the flowers certainly appeared thile livres were will preser and in good form.

the present day taxonomist admits species that differ chiefs in the verson of bloom, some in spring, Thees in the autimm The one species certains available in America is S. leten, This one proclases in late vummer as a near bull while a moder naioistus. It is planket at area. A all goes well, within a month there should be at least the beginnings of a mass of Nap shaped leaves (if you have planter in a clumps) which prove or be evagueen and destined to last through They in these puls. after the leaves are well on their way, there push up that shalls that lowers are well on their way, there push up its after the strates of file a clust splanning of the terminal papers in these of the set file of the strates of the set of the public that the set file a clust splanning of the set of the a crocus in character but of the strates of the set of the main an amaryllic to the set of the best of the set of the set of the set of the the a crocus in character but of the set of

The florers may be several to a bill and here usually appear in succession, pastry several days, with the precordings stamples in lang Deptember + laggart as lake as pormber. In michings, here is no chance At successfully open sect.

Hardiness is finally determined apparently by the anomaly prive damage to the weight leaves. These have considerable body and here are varily damaged save at the tips. How coll it must be for cause then to freege to obt, I do not know. There are record by successful flowing of sternbergias, was to massachuretts, his not island. From experience in the attreme touther part of mississippi me

must believe a the that there is not cold enough a that the

bulk in any tolerate the sand soil no matter how for pied. From in mappenience I can day definitely that the plant do not like shade, although the hills persist and multiply much as do there of unhappy narcivtus. Some call the plant automn doffedil, some automn crocus. Bith momen should be preder abandoned since there are true autumn defodils ( hearth with for was) and many true autumn crocus. The name Stembergie is quite casil prononces and has a pleasant sours, some forme terms little of this man shore toranical interests it commencerates. both up Comt laspar Stemberg 1761-1838. Digitized by Hunt Institute for Botanical Documentation + the Simail's permitale." No lige the then of S. leter, by per. tate. leaves in Spen; No Scart purstaces in autom, scape late? Cut shows over, at Noil line. 18M. 290 Stembergia luter (as anon lis l.) " x x is a hand perennial bulbaro plant, a notive y span o Others of the more souther philo of histor, I was cult, in gardes in The Dine y Gerard & Parki som

### Tigridia

The tigridias are gorgeous summer-flowering bulbs of the Iris Family, gorgeous in the same sense that Oriental poppies are gorgeous or the umbellatum lilies. They are less than the poppies for their flowers must wait for daylight to open and curl up the first evening, but they finally out number poppies as they keep on blooming until frost. It may be that this is true only of <u>Figridia pavonia</u> the only species likely to be found in trade for no one seems to have made a job of collecting the others which is rather a pity as they are all of this hemisphere.

The common species is credited to Mexicon and unatomala but all the stocks seen by the writer have been of Mexican origin save those roots purchased from the inevitable Netherlands in order to study the clonal segregations of color, all of the one species named. A great quantity of seed, from Mexico, sent by the late Mrs. Zelia Muttall long resident in Mexico and pussionately devoted to Mexican plants, provided bushels of bulbs hit the plant introduction Garden. From which we had here of from billion the color variations. There resulted the usual series of flowers essentially scarlet to vermilion, others starting nearer orimson came closer to rose, but none was pink. A very few produced yellow instead of scarlet or crimson, but never a white.

The bulb is a rather shabby thin, as compared to the neat polished bulb of the tulip but when planted about 4 inches deep in good rich soil, after the soil is really warm, warm enough for corn planting, it will soon send up plicate long and beautifully gambasi leaves, folded iris-like about the rising flower stalk frequently with one lateral branch, and with a succession of flowers from the terminal bracts, followed in time by almost cylindrical seed pods, well filled with seed that will carry on the race almost as swiftly as offsets from the oase of the mother bulb.

#### Tigridia - 2

The flowers are six-parted, the three outer segments large and making up most of the bloom; the inner three smaller and closing the spaces between the outer segments. These outer parts are made up of a large concave almost shell like base and a flat sp eading blade. The inner three are narrow fitting over the spaces in the bowl formed by the bases of the three large petals, and ending in a small claw often very highly colored. The ground color of the concave portion is always yellow save in the one none too vigorous clone that is pure white. Over the bowl there are spottings and marblings of color usually dulled reds, red pumples to almost enocolate purples, with no two plants quite alike. In some there are few spots, in fact there are clones in which the color is pure yellow thoughout the entire flower and another in which it is yellow in the bowl and white on the blade. These like the self-white are not quite as vigorous as the reds. The spots themselves may be few or many, large or small, sharp in outline or bluered on the margins as if the color had 'run' a little on the ground. In some, there may be a few dots that have wandered up onto the blade nearly always along the central vein.

In general the color pattern and pigmentation of the smaller inner segment is similar but deeper and more intense.

In the center of this showy flower rises the long staminal column with its three anthers near the top, encircling the divided stigmas of the inclosed but exserted pistil. Curiously enough this column is rarely patterned, even at the base. And very little pigmentationis wasted on the outside of the segments that are often almost dun-colored. Tigridia - 3

All this splendor is but for one day, the flower withering like the irids and dropping off more neatly than some, all of which makes it a poor thing for cutting as flowers rar by follow one another on succeeding days. It is quite mans easy to learn the look of a flower that will open on the following day and this, if cut, will open perfectly in the house, whether one cuts the whole stalk or almost dissects out the single gaudy bloom. It will glow as garishly as any red hibiscus, if floated in the modern footless fashion in any one of the Flat bowls from which heads stare up like John-the-Bapty ist from summry occasional tables.

The writer never saw the plant in its native mamma, but he did see in Golombia a rough meadow where the commonest red form had established itself. In the drier soil, as compared with his own garden, the plants were more dwarf; and as there was no need of the annual lifting and storage they had remained in place to form olumps, which are a great improvement over what one gets from a solitary bulb. Since, under bedding conditions, **Digitized** hyperbolic bulk to for uBoutean itself. At attion trifle more deeply than most by ooks recommend, in borders where its somewhat uncertainly upright stems can lean against a stronger persimial. Timid souls could sink it in a mass of artemisis 'Silver King' but no one, not the most valiant will forget there is colors will dominate ev rything in the garden scone just as do some of the newer species tulips, to already mentioned Oriental poppies and oup-shaped lilles. Tigridia - 4

The usual advice about lifting for winter storage is to wait until severe there is 'danger' of/frost. Since 'danger from severe frost' is about as specific as ' a pinch of seasoning' for cooking, the experiment was made of leaving one whole lot of plants in the garden until the tops were frozen. One half were lifted, the tops cut off, the bulbs dried and all soft bits of frozen leaf and bract cut away. They were stored as for gladiclus and with the same sort of results. Of the remaining half, left in the ground over winter, at least half survived with no other protection than the untidy litter from their own tops. They lived, but had not liked the experience, grew poorly and gave few flowers.

During storage one must be sure that no mice can reach the builds which appear to be much to their liking. No report has ever come to notice of such damage during the growing season but one shouldbe on guard.

beed should be sown in the spring, early under glass if available and the young plants pushed along as rapialy as they will take for the longer they grow the larger they will be before autum and the loss and much thation wait for flowering which should come at the end of the second summer.

Tigridia. The tignidias are jorgeous summer fervering balls of the Dris Fring - progenes in the same sense as when applied to Disinke poppies. They are less than poppies in that their fervers must wait for day or spen & curl up by the first evaning but key finally intrumber the poppies as they ferver mitil first to be ture this may apply chiefy or my + The liquidia parmia, the my species likely to be found in trade for no no seems to have made a job of collecting the others spaces, thick is nothing a pity fince the are all of this hencisphere. The common species is credited to mexico and Justempla but all the stock seen by the writer was of Mexican origin save those roots purchased from the inciritate hetherland the in order to see the cloud segregations of color all of which belong to the one species. A great quartity of seed, send by the State Miss Jelia huttall, 200 By that the mention and a planately deep about the sign notice Didplant provides at the US Plant Introduction Tacklen, at Them I all a Mo. bushels goulds with almost rime of the life for variations in orthe animy the flowers. There were the discus series of flowers essentially scarled to vermition others starting nearer crimin come closer to note but red fink. A very fut produced flowers with yellow indicad of scalet on common but never a thing. but by the details the bulk is a more or len shably thing as compared with the next polished bubbs of only sha planter about 4 inches deep in good rich dost after the sort is warm, warm trough to use for com planting. it will tom send up long + beautifully plicate leaves, folded ins-like about the vising ferring stalk frequently with the dless me laterse tranch, all grin inis like with a succession of fenners from Each the pair of track, followed in time by long Annal antintrical had pools - usually will filler with seed that

Lill carry on the take plant abunt as twift as the normal offsels that form sparingly at the tax of the mother hulb. the flowers are six parter, the three outer segments large & making up nost attre fender; the inner three traller and bying over the closing the spaces between the not onthe three. These latter are made up of the encare almost shell shope face + a flat - spreading blade. The inner three are renover, fitting the "cracks" in the bowl forme by the three inter bases + ented "it that mall, ofthe billiout colored clar. The grand color of the concare inner portions is always yellow save in that one, none too robust clone, that has flowers. of seve white throughout, breather concare portions there are spottings and mattings of color usually dulled reds, not purples, to almost chocolake pupiles, with us two plants quite alike. In time there are few shots in fact there are cloner in thick the the and it in another the vame yellow and the these like the set white flower are less orgonous. The shots may be few in number or many, sharps in onthing or fin Nine cases where they are many, towered on the margins as if the signments had "run" a little over the grows. In many of there there may be some few dob' that have wandered up onto the level blade, nearly always doing the cutoal vein. In quere the colo pattom + figmentation of the maller The segments is deper + more intense. In this center of this strong flower rises the long column with the 3 milliers at the the encircling the dividers stigmes of the inclues hat executed pistil. Curious lungh this column is rarel patterent, over at the base. And very little Ely pigmentation is washed on the intride of any part of the flower which is often almost due colored.

all this splandor is had for me day, the ferrer withering She litre irids and dropping of more nearly than some, all of Which makes it a for thing as cutting as the flowers werely follow one another in vaccessive days. It is guite say to learn The look of a flower but about to open and this of cut will for perfect in the house, whether me and the whole stalk, or almost dissects out the single gaves bloom. It will glow as gasished as any new hitiscus, if floater in the frothen modern fashion in any one of the flat bould the shech head stare up goth. the Baptiet-like from Jundy "occasional" tables The writer never vary the plant in its native scone, but he did Lei a rough meadow in Colombia there the commones red form has apparently made itself at home. In the drier soil as com-Pares Thiat mistifander for Bland iver Inserten E Auguston there was no next for annual, white storage, They had remainer in place to form elimps; which are a preak impersment one what are gets form planting a volitary balt. Fince under bedding conditions it makes no great root run, it will undoutrely look best of planter, a tofle more deeply than nist boths recommend in orders where its smewhat irregulary Meright stems can lean againt a stronger perennial. if they insh. Timis touls can tink it in the stree fray matter of Antenesia "Silva King" but no me, wit the most valiant three forget that its erlos will dominate way thing in the garden scene, just as do red Oriental poppies on the brassy orange colors of Nome of the (Thurbergianum ) Klics. took up geness a see of them are this that soul as mice as I buccifered in Rules Good

The usual advice its about lifting for winter storage, is to Whit while there is danged from sever frost. Since danger from port is about as specific as "a prach of seasning" for cooking, the experiment was made of leaving one whole set of plants in the garden with the tops were tilled by freezing. The half were lifted, the tops cut of about an inch above the bult. the rook haid out to day & all the soft forgen bils y leaf + sheath tase carefully semand: The where stried as for gladisties & with the vame vort & remelts. of the remaining help, at last half survives the winter with no protection This that the milidy littles from this an tops. They did rul like it; grew poor + few ferreres. During strage, one must be tare that us mile can reach the help which appear to be much to their taste. ho report has Even come to artice of damage during the graving season Leer stime be soon in spring, carly under glass if available Digitizedter gaugentilles i pugher along ag takill og dimentate for the longer they give the larger they will be before autumn out the les time me will have to wait for forwaring which Should certain of come by The End of the second summer BM 2599 - Tipidri desberti & Egfelle? Buenos Quies

Tritelia

This small bulb from the argentine has been the subject of many notes taxonomic and horticultural, and usually comes out with rather short notice from the taxonomie's and often with almost sentimental notice from the gardeners, who touch an uncertain note. One finds the poetic touch in Farrer', the torse in Bailey's Oyelopedia, but in the latter, rather than the former, one finds the most signifigant line: 'Hardy in most of the northern states, although it does not persist long'. But alas, neither gives the clue in plain hard words. Coming from the Argentine, it makes an autumn leaf growth, rather soft foliage that does not always come to full maturity before frost has damaged it, with the usual inevitable damage that follows through into the bulb.

For all parts of the country where frosts hold off until mid-November or later, there should be no trouble in any well drained soil that warms up in summer when the bulbs are more nearly dormant. From personal experience it is evident that it does not enjoy even partial shade in my garden. Digitized by rom the gardener's ipolate of for Radia noi con and any brodiaca, tation nor any Milla, seen so far in picture or optnerwise; how close it may come mt to the South American Brodiaeas, Millas and Tristageas, i shall probably never know, but shall wonder, about Mills uniflora which must be another name for the same thing, another of those batenist's jokes, of the same ilk as allium unifolium. It is therefore in its own right a smallish bulbs (plant three inches down) with flat bright green leaves that smell of onion if crushed, that will soon make a sward of green thanks to its mabit of spreading underground. Above this will rise the on single stems the solitary manual stars; These vary in color from clear white to deep violet, but always with a darker throat and often with a tinting over the white, from the edges and along the central axis of each lobe.

Some will think this too moun attention for one of the lesser bulbs, but they will probably live in massachusetts or Minnesota. For the warmer states in the South and on the Coast, attention should be paid, to this fine introduction, long a resident, and happy enough to carpet large areas as would snowdrops in the north or crocus, and persist there as neither of the cold loving bulbs would do.

Presumably it makes seed, but I have nover found it though I have not specially looked. Increase by matural offsets is enough.

# Digitized by Hunt Institute for Botanical Documentation

Tribelia uniflora

This truck halt from the Argentine has been the belied of many notes tox origine and host inland and unally comes out, rather short notice from the texporomists and glow rather sentimental water from gardness that touch an uncertain rate One finds the portic truch in Farres: the tense, in Bailey's Cyclopedia, but in the latter, rather them the former, one finds the most significant line: "Hardy in most of the northern states, allength it does not persist long." but also nother gives the chee, in plain word is the presist long." but also nother gives the chee, in plain word is the most of foliage, that toes and always erme to full mathing that soft foliages, that toes and always erme to full mathing that follows theoreman to the bulb. the unal invoited damage that follows theoreman to the bulb.

to all parts of the country where ports hold of at list Zoch & mile monoperint a later Botheri I and beins trouble m D121 any well desined soil that warms well in Imma The the bulls the domant. them personal experience, I is evident that it does with my even partial thade the the triter's parten. From the partmens point of view it does not resentle any Brodiaca, nor any miles seen to far; how dense it may erme to the South American Brodiacas and Millas and Taistagmas, Schell while ever throw but shall wonder my about hike in flora when mat betainst joke of the same ilk as allium unifolium, It is therefore in it own night a smallish bulk (plant 3 inclus dam) with flat bright frem loves that smill of anim if cushed, that soon make a swart thanks to the habt of spread, underground, above which nice a single stress, the solitary stars, these vary from eline white to day virlet, but always is the a dark throat a after with a tinting one the whiter, from the edges & along the cubral axis of each of the lix lotes.

Some will hink this to much attenting for one of the lesser bulls - but the protate live in monochusette a minnesota. For the warmer statis in the South, attention should be paid , to this fine introduction, long a resident, and happy enough to carpet lage areas as would Inordering in the horth, or erocus and presist three as neither the ods errige a crown would do. Digitized by Hunt Institute for Botanical Documentation

#### Tritonia

In this section tritonia is limited to <u>tritonia crocata</u> and <u>T</u>. <u>hyaline</u> which are probably showy enough representatives of the genus but not indicative of all the possibilities; they are, however, the only species that I have grown.

Living outside the area where these South African corms can be grown in the open, they were planted in man bulb pans and left to do about as they pleased in the pit greenhouse that had just enough heat to keep off chill in cold weather. This is a fairly good situation for all the factors save light for it would seem that the foliage grows a little longer here than it should to meet the standard descriptions. Flowering comes on slowly and colors seem excellent.

Rach corn sends up a fan of freesia-like leaves about a central scape to 14 inches high with several flowers alternately arrang d and all facing in one way as in gladiolus. They are almost two inches across and wide-open. The twpe in books is described as "Dent reavita furtheties of various fueson some redder and to purple in one direction, and human toward angess orange in the other. All our plants, supposedly typical, look golden orange to me, but I dare say it is a most point where orange ceases to be orange and becomes light red. Since noither the 'books' nor my own notes, record the color chart name, the record stands incomplete. This much can be said, all the colors are brilliant.

The characters that distinguish <u>T. hyalina</u> from <u>T. orogata</u> are definite enough but are not the sort of thing that quickly meets the eye, and even less the eye of the garden visitor for whom so muchic sacrificed. Tritonia - 2

Containly there must be areas in the southern part of the Pacific Coast where these species can be grown in permanent plantings in the garden, where presumably they would be what we Easterners lack, winterblooding, and one woulders, basing the conjecture on the behavior of the plants in pots whether or not the foliage would begin to ripen, which is another way of saying, get shabby, before the flowers had finished blooming. Many native Californian bulbs have the same habit in nature, doubtless born of the necessity of blooming before the rains cease. Perhaps th se plants, the tritonias of lesser stature, ixias, sparaxis, antholyzas and their ilk, are for the African spring scene, the dotted bits of color on the young and coming greens.

Old books show plates of other species; all quite charming and brilliant in the same fashion. Whether means their names are still in good standing I do not know, but some as shown certainly look more like ixias than britbillas, and the shratener who will try them all trop sees should have tion rich reward. If they grow as easily as most irids do from seed, it should not take long, and if in California they will establish themselves and self sow as do freesias in many old gardens according to my friend Mrs. Saunders, they should add much to the galety of their adopted spring.

"to this presail both tritmia is limited to Tritmia croata ant. I. hyalina which are probably shorry enough upresentatives of the genus but not indicative of all the possibilities. diving antido the area where these Just African Cape common Can survive and g. dons, they were planked in townspatt ball pols a left to do about as they pleased in a pit free house that had but me pipe + return, with migh hear to keep the temperature firm disping below the to's in the cold months . This is a fairly good situation for all factors save the light and it would seem that all poliage provos a little longer here than deenhere. Howening comes on story and colors seem excellent. Lach com sends up a fan y freesia. Like leaves with a contral stath about 14 inches tall with - to - fences alternated arranged + all facing me way as in gladistus. They are almost to by Hunt Tristitute to reBotanizte Doctine entation Dioas hight net, with varieties of various here, some redden + I purper in one direction + toward groups in the other. All me placets, Infpriesh typical look golder orange to me, but I have vay it is a most point there orange ceases to be orange and be comes light red and since neiter "the books" not this one records the oler chart color, the record remains insettled. This can be vaid, the huer are billiout. The Characters that distinguish I by alina fem T. erocata are definits enough but are not the vort of thing that quicks metts meets the gardness eye due to less the eye of "the guide vivilors" for Mion to much is racificed. Certains there must be areas on the southern part of the Pacific coal where then species can be used as permanent plantings in the garden. There preservates they would be that He sasterness, winter bloomers - and one wonders, taking the

conjecture on the behavior of the plants in pols, whether or not the foliage would begin to ripen, which is another way of varying for shatty, before the flowers had finished blooming. Trace Many matire california bills on have the same habit in noture, doubten born of the necessity of blooming before the rains case. Perhaps these plants this timas of lesser stature, ixias, sparaxie, authologies and all their ilk, are for the African spring veldy, shak we have for our own spring mead, the dotted hits of Color on the your & coming greens -Bon 678 lon 747 lineater Mr 447 (as 91ad. Ren) ate for Botanical Documentation Digitized by Hurt Instit 13 hr 1275 \_ lots tike ixia to Bom Bh Tritonia aure - how like a for water what a facture where call a montbehin. We completel upward facing, but nearly so! Bh. IEl T. squelika. line white funker carmine - hut? Ixin? Bh bog T. minister ( ) separts dule may 3 uppermost with release of of artime ( ) in dull red? Correct? Rh 618 - T. caparsis - me of the long-taked ixins. Bh 622 - T. deusta - much like crocata fes tawn, may with black Spor I take of 3 miles segnals (acc. drawy.) 18m 599 - Daia erispia - see work theet under ixin of this is included or mentioned a

? Dia? 18m 1275 Tritmie biridis Intraquing picture - no picture N description of bulk a com. Ho preciesh shite - long tube pickish Segments distraught - wind flows ! Grain y Steep suggests a Michen Non than is likel? Shira. H Keys by 7. Mason Fe 1758 - Speime :- Baukia husen 18th 1502 Tritania Ingilina (B. ?).) any opn - This longifton How Kew 158 1. terriflora Vahl, Snur. 266:2,36 11 Ing. Jens Blidd op. Pl. 1:203 Digitized by Hunt Institute for Botanical Docum BM. 1503 T. Rochensis (a) This also must be another long the total it in

#### Tropacolum

Once more I shall override my own determination to stick to bulbs and corms, in this text and let in a gonus that has had **himtuchumm** little attention in this country, perhaps for the best of reasons, though there have been a few offerings of the genus in the Pacific Nort west.

American readers of British gardening journals are often intrigued by the pictures and accounts of the tuberous species of nasturtium, especially of <u>Tropeaolum tuberosum</u> so frequently shown clambering through an evergreen hedge and tumbling out in short sprays of five-lobed leaves and brilliant though small yellow and red flowers. The nearest we can some to simulating this effect in Eastern gardens, so far, has been to use the annual and non-tuberous, <u>T. percarinum</u>, the <u>T. Canariensis</u> of gardens that shows similar slender growth, lobed leaves and small brilliant yellow flowers, quite unlike those of the modern annual nasturtium, <u>T. majalis</u> that of late has become even more lush and has suffered a revival of

# Digitized by Huflaversistitute for Botanical Documentation

altitude plants with distribution related to the equator so that they know a different pattern of day andnight lengths/ than anything we have in this country and a temperature range that admits no extremes of heat or cold, it is not likely that meny will be of much use to us in their pristine state. There are reports of their successful culture in the Puget Sound area out even there they do not seem common nor are they regularly offered for sale.

The only species attempted in the greenhouse was <u>T</u>. <u>acureum</u> but we had no devices that persuaded it to more than feeble growth with never a flower or even a blasted bud. It would be curious indeed if the color were good wwen if a lave der blue, but it would constitute one more example of one 'blue' member of a family or group that mostly belonged in the yellow-red series of colorings. The illustrations are delightful and make the failure more man painful. Tropacolum - 2

To tuberosum is in fact as lovely in English gardens as one could imagine from pictures but when one first sees it he is surprised even after having known the annual Cahary Creeper, for the flowers are not like that but much less like those of the annuals,/all gay red calyx and spur with very small and unimportant yellow petals. This is the species that provides the edible roots, the inevitable starchy root that humans seem to crave wherever they live, although tropacolum has a more important trival in anomanachimap the potato and a minor rival in an exalis, all for indean stews and soups.

It would seem, however, that it is less showy than some of the other species from Chile, home of the blue flowered species as well, but whether T. polyphyllum or T. tricolor would like us any better seems doubtful. We might persuade them, with winter culture and extra hours of artificial light into seed production to pollinate some of the more tolerant species and modify their characters? The advantages would be open to discussion of course. The characters that seem desirable would come in the changes that might be a effected in the leaf snapes and sizes, whether to the lobes that distinguish, T. pentaphyllum and T. prachyceras the first obovate, the latter almost truncate; T. tricolorum merely palmate, or T. undellatum that suggests the wayward ivy, I would not know. Possibly there would be other difficulties in mating. It would be int resting also to guess how a public would react to flowers in which the emphasis was thrown almost entirely on the gay calyr, with very little emphasis on the corolla. My personal choice would be for T. brachyceras which is known in Chile as 'Flor de erdig' the quail's flower, perhaps from the perky fashion in which the spur stands up!

Inspacohum

T. Futorosum Ruiz + Pavon. Per Belivia Ban 3714 Raises. " : 45 I. pentaphyllum dem. argentina 18m 3190 I. Tricolor Smeet Chile. Ran. 3167 B.R. 1935 Fldeler 9-369 T. aqueen Thisis Chile BR 28:65 Res Hol. 1843 - 300 T. brachyceras Hock. + arn. 18m 3851 BR 1926 Hacker 4=368 T. leftophyllum Don. and. P. M. 90127 T. Lindemi Wallis Colombia 9. H. : 41:17

american

Readers y British gardening journals are often intrigues by the fictures and accounts of the takenons officies of nasturbium, specially of it takenon that is prequently figured elambering theory correspond hedges and spilling and with draw officies of its five lobes leaves a britisant through trall yellow and net flowers, The nearest we can come to simulating this effect in Eastern gardnes, so far, has been the use of the anoral and non-takenos. To here grinnon the Til canariters of polantical theory finited there is for and the theory of the modern and non-takenos. To the flowers, the theory of the modern and with the theory of the least blooms of the modern annual northerman, Timajus that of the least blooms of the modern annual northerman, Timajus that of the least blooms of the modern annual nerviced of double of the least blooms of the modern annual nerviced of double of the least blooms of the modern annual nerviced of double of the least blooms of the modern annual nerviced of double

flowers. Interest save perhaps T. pentaphyllium are altitude plants Since all the species save perhaps T. pentaphyllium are altitude plants with distribution relates to the squator so that they note different day and noper patterns than anything we have in this county and a traper ature range that atraits no sphremes sither of freat or 2 cold, it is ult likely that they will be y much use to us ever in their pristine Jtali. There are reports of their specersfue culture in the Regul and region, but even their stage to rol seem common nor are they regular fored in brade.

The only there attrusted in the prembruce was a appression but there were no devices that permades it to more than the next buble growth with never a ferrer vin sven a blaster bad

I' would be carious indeed if the color were good even if a larender thee, In it would constitute one more example of the Nomenshar common officiente finding of one "blue" hearber in a family a group that has belonged in the yellow-new deries is alonings. I. Auberosum is in fact as lovel in highish garons as me could imagine from the produces but when me first sees it he is surprised Even aftis having kumm the annual Canany creeper, for the flowers are not like that not son less the like these of the annuals -welling quy ned and the and spen with one tomall and unimportant retals. This of course is the species that provides elible tabers, the meistable starchy work that humans the practically pleaser Musy are, although the wastering tropaeolum has a more important roval in the potato and a minor rival in an exalis all p andran stews and soups. I would seen however that it was less short than some y the presies fin Chile for Shence the blue there's comes but on the by Hunt Institute for Botanical Documentation We might kersunde them, with winter culture and stice hours of art ficine light into see perduction to pollen of more tolerant sals?

Tropacolum Bm 316g Tropaerla hickorum Root "tuberous"\_ - deep lande ) for a yelem -Por 3190 T. partaphyllicom Buenos aries in heres Brth above the affarent clamber up hooking heaved by het les het in # 3190 class sutvine Digitized by Hunt Institute for Botanical Documentation Tellowy carm BM 3714 Tropeole Juberonn. Ford specie, Peruria And - 52 16m. 3851 Tropacolin brack cera hiceN glor dule yelen fenser red lines on V upper lobes corolla: frances x yellow the to tube. Chilen andes, not far for Valparaito "Als de Pardiz" (ova)

Mr 4337 T. umtellatum -Puito Leurdr, m' Mrt. B Pilzhum (') 7000fr lauge tutasans w. Ley Lauge - J'acron Ho red - 3-7 (usually 5) is unchel E E A TA Digitized by Hunt Institute for Botanical Documentation

#### Tulbaghia

This of course, is no bulb, but it has a way of a pearing in the autumn lists man and deserves a word as much as do some of the onions that forget to make a bulb and content themselves with a thickened base that is almost a rhizome.

Tubaghia violages the only species commonly not with is not sufficiently unusual to morit pot treatment in the North and may have to find its proper place in the Bouth and West Coast before it establishes its worth. Normal increase is like that of any perennial, from offshoots at the base, so that in time the plant forms a clump not unlike some of the alliums. Through the masses of stiff upright leaves that appear to be evergreen in Mississippi, rise the scapes some and 12 to 14 inches tall, crowned with a rairsized umbel of rosy like flowers, that have a superficial resemblance to those of some of the brodiaeas. Bummon Brodiaea convests might serve as a model save that in the African tubaghia, each flower has its pedicel and termot crowded against his fellows, in the way the Decrnet the matter brodiaea its name.

As grown in the cool greenhouse in the North, the poor South African second a little uncertain of its flowering season; as seen in the deep South, it is May blooming with an occasional afterthought. In the latter place it makes no great stir as yet and one can only wonder if it needs a fatter soil that the coastal sand-humas, that must be eternally fed. Frosts to 15°F. do not seem to damage the foliage there, but it must be proven whether the chilling will suit the plant.

Inebaghia. This of emese is no ball hir it has a way of affecting fine in autumn catalogues and deserves a worst as much as do some of the mins that we longer make bulls but Hickened lief bases hen I a nine or lin fermanut shi Jone. Inlaghin rolacea, the my species commonly met, is not hifficiently musual to merit pot treatment in the dotte and may have I find its proper place in the south before it establishes its with, normal increase is like that of any perenaial, from Hickords at the error to that in time the plant forms a clump I narrow tathen upright everyseen leaves, not white three of Nome of the better alliums, Thingh there rite - the leaflers Scapes some 12 or 14 miches tall, convoied with a fair tops unbel of my like florers that give a supericial suggestion of some if the bordiaeas, B, congesta, & example save that in This Digitize date verten the strant of fed Belganical un errord intation feshion that samed the brodiace it nome. As grown in a cool greations in the write the South African seemed a little uncertain of it's flowering time a times : as seen in a dech South gardon, it is than blooming is the moccasinal after thought. In the letter place it makes no great show yet and me can only wonder if it might beer a sicher fatter soil than the coastal tour hermes that must be Wernally fed, cherty all we sport for the former

Tulipa

Gardeners who like map tulips vehemently and sometimes quite irrationally are as much set apart in their way as are gardeners whose passion is fixed on the dahlia. One who cannot fully enter into that particular understanding is not likely to be admitted to their group or to be expected to report dispassionately on their flower.

In my childhood, excitement centered upon the group of Early-flowered Tulips, for the only other varieties known in the village were some not much cherished sorts that must have been Picotee and her contemporaries, not to mention some old broken tulips mostly chestnut colored bizarres, all of course without names. This was not the case with the early flowered sorts. Chrysolora, and I can well remember Artus Cottage Maid, Dr. Moore and othors but the village itself fixed its full attention on Kaiserkroon! Several men. ancients to me then, were rivals and their circular, hand lawn-breaking beds of this gaudy.scarlet, yellow-bordered tulip were compared bitterly each season. The Dud van Thols came along presently and others forgotten non-with samples of some of the double-flowered forms that came to their peak later on in Murillo and its progeny, but through it all Kaiserkroon reigned. Its bulbs were dug tenderly in early June, the bed refertilized and replanted; my contemporaries will guess with what succeeding horrors that I shall not record for the sneers of younger gardeners! Some parrot tulips were known, but, none by name in so far as I recall.

Just how or precisely when the Darwin tulips came to us, i do not recall, nor whether the purists who prefer the Cottage tulips preferred them then or not. Now of course, a local show will be timed for the late tulips with never a thought for the earlies that persist in a few gardens though they are dying out with their gardeners who cherished them. The sweet-scented flowers that so often opened in a ruff of leave, almost at ground level if the Spring was not too propitious may some day suffer a revival. Tulipa- 2

It is not wase to attempt in a brief space to do more than suggest

comething of the May-flowering tulips as they are now called. There was a time when one could tell hem off, Darwins, Cottage, Bizafres and Bybloemen; soon Bre ders appeared, a little later the Lily-flowered; and now one garden race after another mays may be looked for particularly since the wild tulips are contributing to the mass.

When one purchases well grown bulbs of any of these races, he is purchasing a plant, to be sure, but it is also something so uniform in its production in its content, mm that given any kind of decent care, it mmmmm seems as constant and as uniform as a canned soup or a potted meat, and for some of us, as dull.

There is no denying, however, that these tulips are the bulb above all others for formal bedding in the spring, If one buys good stock and it is absurd to do less in planning a formal effect, each boring leaf will push up at the same moment, each leaf will rise symmetrically about the axis that bears up to 15 or 20 inches, first the green bud and then the colored flower, stiff at first, above the sun, closing at night, finally full blown. Then, if the gardener is good, up come the tulips to be heeled in elsewhere to make as much of a new bulb as possible from the torn roots and bruised foliage. The more tenderhearted will 'line them out' in the garden for recovery, the prudent will compost them and start afresh, it still being understood that we are concerned only with formal style plantings.

The chief asset of the tukip-in-flower as an element in garden design is that . it looks precisely alike from all angles. It never turns its back on you, nor do you have to concern yourself as to how it relates to eye-level. From a distance the bloom appears egg-shaped, bowl A, bhalice, beeker, or whatever; nearby, you may look down into its patterned center. Tulipa - 3

The second great asset is the great diversity of color at ones command. Long forgotten are the days when only clear reds and yellows were availables the days when 'tender' rose meant a lilac pink; now among the Darwins, one may have practically any hue he wishes from whites through both lilac and salmon pink series minim their respective deep black purples and marcons, or through a less ample range of yellow, oran e, scarlet. In the Breeder Tulips these colors are confounded by overtones, washes and shadowings, most often of bronze or thin purple, that make amazing flowers for the myopic but less striking for garden effects. The Cottage tulips, with their more slender shapes rounded at the base and slim pointed at the tips, as compared with the squarebuttressed flowers first mentioned, are truly best in their white to not too deep yellow colors, after that the form remains as chaste but the colors are more usual, though not in the deepest hues. From the Cottage, have been such lifted than oldsters as the pale lemon retroflexa, and the ivory white but Blushing Picotee, to make the newer race of Lily-flowered thips, in which fatton the strongly pointed segments reflex as do the tips of lily petals. These are lovely things, especially in the paler hues. So doubtless it will be continued ad infinitum.

If the garden is not formal, there is always the chance that by planting the bulbs very deeply, even to twice 'what the books say', you have a fairish chance of tulies permanently in the borders match or even in man grass; where they will increase decently as a plant should, with unflowering small fry about them, each coming to bloom in its own time and not by 'line production flow'.

If you are an intelligent gardener, however, you will remember that although the Metherlands produces marvellous bulbs by the hundred of thousands and other areas are now contenders, these plants came originally from another part of the world and at least part of their docile acceptance of the tepid climate of the Low Countries, is compensated for in the rich food and regular handling and curing of the crop.

#### Tulipa - 4

No one has said better than the late Sir Daniel Hall what all of us should remember and by permission of The Royal Horticultural Society, I quote from pages 10-11 of his 'The Genus Tulipa'(1940) a book that deals with the wild tulips in those phases that concern primarily the taxonomisy but in which pages are many things that a quick gardener will not miss.

'In the main / Tulipa is an Asiatic genus, having its focus in the hilly regions of Asia Minor, the southern Gaucasus, Persia, Turkistan and Bukhara. The genus gradually dies out in min North-East Asia, one or pessibly two species extend into China and Japan though they have recently been assigned to a separate genus. On the southern side of the central massif one group of species is found in Afghanistan and Upper India as far east as Kashmir, another group is common in Iraq Syria and Palestine. Cyprus and Crete possess endemic forms which may be regarded as species. Westward, Greece and the Balkans possess certain characteristic species, and as mentioned above, T. australis is native along the northern Mediterranean as far as Portugal and mangangaranthe is to be found in the foothills of the Atlas from Morocco to Tripoli. Generally the genus is an inhabitant of hilly country and has been found up to elevations of 12,000 feet in the Himalayas. As a rule is is associated with an extreme climate of great cold in winter, assignt a short period of growth and flowering, followed by a resting period of heat and intense dessication. . . . . . . . .

Even those of us, whose years for reciting geography have long been passed

or for whom the last bitter and stupid years have not recreated certain areas of our earth into sorrowful reminders, will realize that the portions of the earth where we garden do not boast climates like these. We can take heart, to be sure, recalling that the garden races may have forgotten most of their birthright and that here are always 'gardener's devices/ and tricks' for approximating summer heat and drought, though there be none practicable for a pretense at winter.

Perhaps Sir Daniel's summary suffers a little, as must all summaries, from the breadth of its generalizations and perhaps there may be found in time, some tulips, somewhere, so amenable to winter warmth and summer wet, that we could grow them further south than now.

Tulips do not make a place in my own gardening although at various times I have grown series in order to know them, even going so far one time as to buy all the Violet Bybloemen varieties that I could find and feast for a season or two on their lovely feathered and flamed flowers, before they were banished as pestilential carriers of mosaic wirus.

with the wild tulips

A similar experiment/was made some years ago and reported in mam pictures at least, in the <sup>M</sup>ational Horticultural Magazine for 193., Many of the bulbs planted then, are still in the garden, overgrown by tougher things with never a flower save from an occasional <u>fulips Kaufmannians</u>, though now and then the preading colony of <u>T. sylvestris</u> yields a flower or two and in old years both <u>T. Clusians</u> and <u>T. stellats</u> send up a galaxy of white manyshham, blueviolet centered, peppermint candy stars. <u>T. chrysantha</u> tried it once but never since, which is too bad as it is a mate to <u>Clusians</u> but with a yellow ground. <u>T. presstans</u> usually thinks about it but the bud dies aborning. <u>T. Gelsians</u> once <u>T. persics</u> lived and increased for years as did the charming but less strong <u>T. tards</u>, once <u>T. dasystemon</u> but my favorite of all, <u>T.violaces</u> in its form pallids bloomed once and disappeared forever.

The cause of failure I am sure in every case was my own lack of skill in providing a sufficiently well drained site, so that all of the rain that falls in our summer thunderstorms would drain out almost as if it had never fallen. Dight deat we have built is not dry heat. It is for this reason coubtless, that so ation as many species tulips are recommended from rock garden // plants.

> It is unseemly pe haps to digress here to refer to the construction of rook gardens, but it must be done since there are still too many persons who forget that a rock garden is not a mere gard n decorated with rocks, but rather a place that simulates correctly or in principle the conditions in nature where rock formations provide conditions for cool root run and for what we should normally consider as excessive drainage. To aid altitude plants particularly, the smount of fine rock material, coarse sands small broken rock bits and the like are in greater proportion than 1/2 the soil. This type of mixture can be used also for plants that need a summer baking, plarticularly if the area be raised above the natural soil levels. Such contriving is a matter of garden practize and the difficulties of fitting it into the garden picture in our climate an area that may be and doubtless should be almost barren by midsummer, is a nice task for the garden maker whether professional or amateur.

one may come upon As yet I have found no texts to suggest the scene in which/the tulip in the wild or if there are suggestions they are notes of the spring scene when all is green and blooming. Nowhere have I found a note from collectors who described the landscape when they went to dig the bulbs. However, I do recall, the gash glass houses in Haarlem with trays of species tulip bulbs spread out to bask in the increased heat, ma the June sunlight would give them.

For theperson who wants to know the genus as a whole, the best book to consult is Sir Daniel's already cited work.

For those of us who have to depend on what we may be able to find in the market, there is perhaps no more simple way than to say that among the many species now available, some are robust and coarse in scale, while others are fragile and delicate. One must procede with some caution, for example, in the placement of <u>T</u>. Fosteriana and any of its forms. Its broad gray green leaves make a dominant note even before its massive flowers open their glistening, almost polished scarlet flowers with the dark blotches at the base of each segment, each outlined in gold. There are many other red-flowered tulip species

none perhaps so large, that make equally dominant notes in any garden, so if the catalogue tells you that the flowers are red, remember that tulip reds are uncompromising and must be placed properly in the scene with rocks, shrubs or evergreens that will keep them in place. If the flowers are yellow and large, the problem is the same but in lesser degree. Recall always that the foliage will count in the design!

For mother type of tulip flower whether it is the slender Lady fulip, T. <u>Clusiana</u> of others of that build,<u>T. tarda</u> that looks best when gamman grown old and clump-forming, or the fragile things like <u>T. saxatilis</u> or my own beloved <u>T. violacea pallida</u>, (the deep colored <u>T. violacea</u> is another problem ) you have to design as you might spangle stars over low herbage, their own foliage in some cases, a supplement in others. A few of these last are so slender, often so sinuous in their twisted growth, so flat-faced in their open stars, that you will not think of tulips.

Somewhere between is the delightful <u>T</u>. <u>linifolia</u> with its almost grass-narrow leaves, its scarlet flower set off with black not outlined in gold, and in good seasons you will find its yellow counterpart, <u>T</u>. <u>Batalini</u> from Bokhara, ah even more wonderful thing.

If by some miracle that did not call for too much contriving on my part, for I am suspiceus of miracles, I could grow tulip species in my garden that is now no longer suited to them, T. violades pailids would come first, T. Batalini second, with T. pulchells, T. Aucherians, T. saxatilis, T. Dolychroms, T. Clusians and T. chrysanths in quick succession thereafter. After them, the grand red ones, though I do not care so much for red in the spring.

No word has been said about %. Kaufmanniang one of the species that seems most tolerant of garden conditions. All gardeners should see it at least once and decide for hemselves whether they wish it as a garden plant. It is a dwarf as tulips go, but large flowered. As it used to come to us, it was abreamy innor gitize white with golden yellow sufficiences at the bases of the segments, the autor atto three segments stained on their backs with varying degrees and amounts of cherry reds. Later there were forms in which the whole ground color was a tender yellow. Of late it has become a garden plant, first offered in a variety of colo forms raised from seed and more secently in races cross bred to other tulips. These last I do not know, but it would seem that the range and warieties. or stature of color are increased without losing the form minimum that is typical of the wild plant. Never forget that one clocks down into the open flowor.

> Aside from being hardy to cold and amenable to garden conditions, even casual offers gardening like my own, this species mass the advantage of very early blacm. Here it comes in with grape hyacinths, and other small bulbs, delicate in scale and color. For the designer it offers a stunning accent without having to resort to strong color. As a matter of personal preference, it seems to me to fare best if kept away from any crocus or grape hyacinth that comes closer to red purple than to blue mass purple in their hues.

Tulips can be raised from seed with no especial difficulty especially if the seed can be my gathered from the home gardeh. There is no trick so out it save the sconer sown, the better, so that the seed may over\_winter as if fallen in Nature. Refrigeration may be used instead but whybother? If one keeps a cold frame for growing bulbs from seed, a few more pots mean very little. It is a slow business, of course, and the gardener will have torecall all the literature about tulip 'droppers' which appear early in many cases. For this reason, seed are best sown in pots, so that the entire contents of each can be examined carefully and no part broken or lost from its downward growth.

particula

More often one must depend upon natural increase which may include 'droppers' or even bulbs formed at the end of stolons as in <u>T. sylvestris</u> which here makes masses of flowerless leaves to shame our native erythronium of similar habits.

Tulips respond to feeding but one must procede with caution in feeding <u>Remember</u> species tulips. For garden strains one may well recall the reported European rotation, manure and potatoes, hyadinths, tulips**pin**, marsissus and repeat. For Digitize formal gardens, feeding can easily be arranged remembering only that organistatic manures furnish happy homes and for fungus diseases that may be the functing of the tulips. Watchfulness and a good fungicide are needed.

> One must watch also for any sign of virus disease, betrayed most quickly in striped or blotched colors in the flowers. Dig and burn, and spray all other bulbs with a contact insecticide to destroy mam vectors, usually aphids.

> As was intimated in the very beginning, no varieties are mentioned here. Nearly everything offered in the trade represents the highest standards of the current perfections. You must choose the varieties in the colors and forms you prefer. Any list of to-day will be outmoded to-morrowand my own preferences have no virtue save for myself.

Nothing has been said about what to plant for ground covers in t e formal tulip bed. The standard practice is a winter annual such as <del>demonstrangetermentanget</del> forget-me-nots of pansies, that can be bedded after the bulbs are set out. Carefully chosen, the contrast between the sneets of color of the ground cover may be either delicate or striking. Where they can be used, English daisies make an alternative and violas may be substituted for pansies. The vital public point is that you have courage enough to dig them up when the tulips are dug and start afresh.

What one should plant near species tulips, I do not veture to suggest. mmmashmashham A contrasting bloom is not needed but where gray foliage can be given, for the big red tulips it makes a happy foil. The still winter-bronzed foliage of <u>Mahonia anuifolium</u> is splendid in those non-wheat growing states where it is permitted, a clump of the dwarf <u>Hedera minima</u> might serve inits stead. These are all local matters. The first task is to please the tulip përmanently, for there are not enough stocks of most species to be mahadam Digitiz wasted as annuals.

Mardeners who like tulips rehementy mis sometimes quite matimally are as much set apart in their way as are garteness shore patrim is fixed on the deblig. the One who cannot what fully into that particular understanding is likely to be admited to their group on to be affected to report dispassionately in their flower! In my childhood excitement centered upon the group of Early toward sols, for the only other resisties known in the village were some not much cherished later sols that must have been Picotee and her contemporaries; not to mention some do orden tulips, north cleastand color bizarres - all y course Lottom names. This was not the case with the sail flowering Jobs, and I can well remember Artus, Chinysalora, Cottage Mais, Dr. More and their but the village itself fixed its full attaching m Taiser trom! Leveral men, quarents & me then when wills D1011 Jellow bordered whip were emiparet bitterly each season. The due van thols came along presents and Stheir forgotten uns, with samples of some of this double ferrices formes that came to their peak later in murillo and its progeny, he through It all the haiserkroom nules. It's help were dug teacherly in carl June, the bed refertilized and repearited : my contactorranies will know with what succeeding horrors, that I shall not record for the yough quitmens incers. Some parish dulips were Kurn Then also but none by name in so far as I recall. Just hove or precisely when the Jamin tulites came to us I do rill recall, un illiettre the purists the prefer attage they preferred them always a not. hav of comes a local show will be timed for the late onliges with never a thought In the early sorts that shill persist in a few gardens

Though they are diging mt along with the gardeners the cheished them. Their street scenter flowers that to given pienes in a mill of linnes, almost at grows level of the spring was not too perficions, may some to onfor a revoal! It is not inde to attruft in triaf space & do more than suggest something of the May forvering the po as the are called. There was a time them me could thank Tall them of -Darwins, Cottage, B.Janes + Bibloens; soon Breeders appendit, a little laken the tip Huscient = and uns me garden race after another an to looked for, particulary fince this wild theips are contributing to the mass. Then one purchases well grown hills of any of these races, he is purchasing a plank, to be ture, hit it is also smething so minform in its production, in its contruct. and finger an chance its perduction that it deems as ed by Hunt Institute for Botanic ald Documentation Dig some of us in time, as dull + There is no denying, however, that these theips are the halt above all others for formal kedding in the spring. I me mys good stock and it is abourd to do less in planning a formal Effect, each boring leap top will push up at the vame norment, each leap with rise symmetrically about the win that bears up to the 15 or 20 indies, first the preen tond, then the colores flower stiff at first, opening to the sum, closing at night full full bloom. Then if the gardner is fort, up enne the bullips to be healted in elsewhere to tuske as much I a new full as possible from the torn rooks and brister foliage. The studen haster will "line them out" elsewhere on recovery: the Indent will compost them and start afresh, it still being understord that we are concerned

my with formal style plantings-The chief asser of the flatening theip in flaver as an demail in garden design is that it looks precisely alike from all augles. It never turns its back an you, vior & you have to encern morself as to how it relates to eys-head. From a distance it appears - bord, chalice, beeken a Materier: nearby - you may look down into its patterned center -The seems freak asset is the great diversity of color at me's command. Dong forgotten are the days when my elear aeds and fallows were available : the days then "tender" rose meant a lilac pink are passed; now one may have practically any have be wishes from white through both lilac and saluren pink series to their respective deep black purples & maroons, or through a les ample range of wellow, orange, scalet. In the Greeder tulius there colors are enfounded by over trees, we has and Missing , ment green of time a firm purple, that thouse  $D_1$ amaging flowers for the my opic but her striking goedon effects. the Cottage tulips, with their more sluder shapes - rouder bases and pointed tips, as compared to the square buttresses fensus fint neshtined, are truly best in their white & not for deep yellow colors, after that the form remains as charte but the colors are more nearly the usual, though more to deep. tann the Cottage, have been lifted such oldstees as the pole lowm retroplana kent the wory chite, one blushing Picotee, to make the new race of hig floweres theips, in Shide the strongh pointer Regments reflex as do the tips of lig- petals, These are lover things, specially in the poler hues. To doubtern it will out me ad infinitum I me the many toke the saider is not formed, there is chorys the chance that by planting the hills very deeply

Even to trice "That the books say" you have a fairish chance of tul ps. permanents in the borders or even rough grass; there they will increase decents is a plant should with anglewering small for about them, cach are coming to floom in its own time and with by "line production". If you are an inkelligent gardener, however, you will remember that although the netherland produces maindlows hills by the hundred of thems and and ther areas are now contenders, these places plants come on finally firm another part of the world and at least part of their, acceptance of the third climate of The Low Combries, is comparated for in the rich ford and regular handling and curring of the curp. The me has said better than the falle fir Daniel Hall And all of us should remember and by parisition of The Koyal How inline Society & quote fin pages 10-11 of his "The "Jenus Inlips" a both that deals with the with onlips in Those phases that concerns primaril the tax morning to this Zen by roles are man things a gride garomer nus. " quota) (Copy attached " -

"In the main Tulipa is an Asiatic genue, having it focus in the hilly regime of Asia minor, the southern Caucasees, Persia, Turtistan and Bukhara. The genus gradually dies out in North-East Asia, one a the possibly two species extend into China and Japan though they have recently been assigned to a separate genus. On the southern side of the central massif one group of species is found in Afghanistan and Upper India a far east as Kashmirs another group is common in Iraq, Syria and Palestine. Cyprus and Crete possess endenic forms which may be requested as Species, Westward, Greece and the Balkans possess certain Characteristic species, and as mentioner above, T. australis is mative along the northern medi Verrarean as for as Portugal and is to be found in the foothills of the Atlas from morocco to Tripoli. Generally the genes is an inhabitant of hilly country the by Hunt Institute for Botanical Documentation Dip climate of great cold in winter, a short period of growth and fervering, followed by a resting period of hear and intense dessication. . Sin A. Daniel Hall, K.C.B., LL.D., Disc., F.R.S., V.M. H. "The Plenus Tulipa" The R.H.S. London, 1940 pp. 10 -11.

then those I us show years for receiting geography dare long passes a for show the last bitter and stapid years have ull recreated certain areas of our earth into source ful reminders, will acalize that the portions of the south where We gooden do not boast clinates like These. We can take head, to be sure, recalling that the guiden races my have frærtter ninst og their birthright and that there are always gardeners "devices & tricks" for affire insting conditions of summer heat and diright, though there be none practicable for a pretense at winter Rechaps, fir Daniel' summary suffers a little as must all summaries, from the tread the of it's generalization and perhaps there may be found in time, some talips, somewhere to amenable to worker warmith and summer wet that we could Digitized by Hunt Institute for Botanical Documentation although at various times I have proven series in order to turns them, even joing so far one time is it by all the Violet 137 floem barie tis tranks find and feast thank for a searm or two in their lovel feathered and flames florers before they were barrished. Such an experiment was made same your ago and reparted in problemes at heart in the national Habiculture hiagafine pi 193- , man y the pills planter then are Will in the gardhe, merfronon but tougher things in the never a flower save from an occasional Intopa Raufmanninga Kingh none and then the spready colong of 1. Silvestris Tielt a flower or two and in odd years both T. Chesiana and I. stillate fait up a galaxy y blue rellars and y blue with conteres perpersion t crust stars. T. chysautha

tried it mee but never since. I. prostans usually Thinks about it has this has the die promotinely and 1. biflow that managed for years has finally fire up. To tarta ma To presica Gives and increased programs as did the dranning had her strong To darystemm but my famile of all, the fregile white form of T. Wolace bloomes once and dis appeared for sirer. The cause of failure This time in every case was my own lack I skill in providing a sufficiently well drained site, so that all the rain that falls in our temmer them decistomes would deain out almost as if it has never fallen. Heat we have but it is not dry heat. It is for this reason doubtless that to many of the species Italips are recommended as & orch garden plants. It is unseemly perhaps to digress enough here to make a The construction of rock quistus but it must be done for since There are It to many persons the forget that a rock gardon Digitized by Hunt Institute for Botanical Documentation there rock formations provide conditions for cool root run and for what we would normally consider excessive dramape. I aid all'itude plants especially the to amount of work material, course Sand, Frield broken with Particles, and the like are in greater amounts than Joil. This type of mixture can be used also for plants that new summer baking, particularly if the area a is naised above the natural soil levels. Such contriving is a mother 2 gardne practice and the difficulties of fitting into a land cope natural to mor climate, an area that may and doubtless shall become almost barren by mid summer is a hice Task for the garden maker, whether professional n amatin as yet I have found no texts to suggest the scene in Which me may come upon these talips in the cold a if

there are suggestions they are notes of the spring scene then all is preen and blomming. he there have I found a notes from allectors the described the landscope when the work to dig hills! Its recall however, this glass houses in Haarlem with trays of species talig balls specad out to bask in the increased hear the fine tunlight would give them! To the person the would to terms the genus as a whole, the best book to consult is it Daniel's alread after work: For those of us when have to depend upon what we may find to purchase, There is perhaps no timpler way than It say that any the many species nor available, some are robust and coarse in scale and there are fragile and delicate. The must for example procede with some caution in the placement of E tosteriana and any it's formes. It's broad gray green Georges Hunt Lastitute for the way before its massive of the finsers of the thes sustering and polical Dearlet ferrers into Dip The dark blotches at the base y cach petal, each blotch ontlined in gold. There are many ther red- flowered trilips, none perhaps to large, that make equally commant notes in the any plantingto if the flowers are red - remember the reds are uncompromising and be sure of the site and of the surrounding rocks, shrub on Trapens. If the flowers are yellow and large, the problem is the same but to a losser degree. and recall that in every case the phase will count in the design. to another type of mein flower shelter it is the slender Lat thip, T. Clusiana and others of that build, I tarka that looks best when grown old and clumforming on the fragile Mings like T. Jaxatilis a y own beloa's To violacca pallika ( The deep colores To violacca is another problem) you have to design as you might shangle stars

over low herbage, their and policipe in some cases, a supplement in others. A few of them last are so plender, often so simuous in their twister growth, so plat-faces in their from stars that you will not think y helps. Somewhere between is the delight ful scalet I limitolia with its almost grass-narrow leaves, it's scarlet set of with black not ontlined in gold and in good seasons you will find 1. Batalini its yellow form from Bokhara. If I same miracle that did not call for the much contriving m any part I could from their species in my garden that is. no longer miter to them, T. Wolacca pallida would can first, To Batalini seems with T. pulchella, T. aucheniana, T. Saxatilis To polychima, T. Clusiana, T. chysantha in dore viccousing; lefter them the grand red mes, perhaps, through personally I do us care on red too early in the spring. he word has been said about T. Kaufmanniana me Digitize by Hunt enstitute for Botanical Los unentation for memorelines whether they with it as a gorden plant. It is droug as talips go, but large flowerer. Is it uses to Come to us, it was a creany white theif with golder yellow Suffusions at the inner bases of the segments, the other three segments stained on their backs with varying degrees of cherry res. the there were formes in which the ground color was a tender yellows. Of lake it has become a genter plant, fint offered in a variety of color forms raised firm seed and more recardly in vaces cross but to other tulips. there last I do not know. And Aside from being hart and amenable to gartens, Even to carnel quitining take is non, this species has The atomstage of very carl flowering. Here it comes with all the bulls that floom with grape lyacinthes, most mall

things, delicate in veale and cost in our. In it the designer has a stunning accent without having to resort to bold color. to a matter of personal perference, it seems to me to fare best of kept away from any croais or prope hyacinthe that comes clover & spinfle than & blue larender in it's trues. the hulips can be raised firm seed with no special difficulty, specially if the seed can be gethered from ones non mbs. There is no trick about it save that the some some the letter so it may over winter as if fallen in nature. Refiguation can be used instead but shy bother if one keeps a cold forme for goming all his bulk from seed? It is a slow business, of course and the gardiner will have to recall all the literature about Theip "deoppers", which appear early in many cases. In this reason seed are best soon in pots a small pans, some in the frames, d by Hunt Institute for Botanical Documentation Dibmore often one must depend upon natural increase. which may include "droppens" a even bulls former at the mit of stolms as in I sylocstris which here makes masses of flowerless leaves to shame our native sugthermium of similar habits. Inlight respond to feeding hit me must procede with coutin in feeding species tulps. In goed helips one my well recall the European rotation, manure and potatoes, ty acinthes, talips, narcistus and repeat. In the formal garden feeding can be easily arranged remembering only that organic manures furnish happy tomes for Botry tis which may be the undoring of the tulips. Watchpleness and a good profinde are needed. The must watch also for any tigh of vinus discases,

betrayed mis' quickly in striped a blotched colors in the flowers. Dig + burn a spray all then helps the with a contact insecticide to destroy vectors, usuall applied as was intrinsted at the beginning, no varieties are mentared here. heard even thing Afered in Trade represents the highest standart of perfections. You must choose the varieties in the colors and forms you prefer among the saiden races. Any and list as y tr-day will be not morded to monow and my an preferences have no write vave for myself! 263 hothing has been said about what to plant in formal Tulip bed as a ground errer. The standard practice is a written annual such as forget ments a pausies that can be bedded after the hills are set. Carefully chosen the contrast between the sheels of color of the formal ever plant one he withen delicate on striking. Where they can be used highish daisess (Bellis) make an alternate raws violas may be substituted Disitized by Hyphinis stitute the particular you when all on to dig them up then the tulips are day and start afresh, What me shall plant near species the ps, I to and vonture to suggest. a contrasting from is not needed but where pray tobrage capilly when for the by red theips it makes a happy for The bronzer foliage of Mahmia agrifolium is peutid in Shore un that proving statis there it is permitted; a clump of dwarf Bedern minima might serve in it stead. These are all local matters. The first task is to please the talip permanently!

## Urceolina

Although to the American tourits, the native andean home of these charming but not too important amaryllids, may seem am cold enough to recall 'Greenlands' icy mountains', the thermometer never bears him out ind the bulbs transported here are certainly impatient of temperatures in the thirties, even the uppermost.

The only species that we have seen, here, not there, is <u>Urceoline miniate</u>, bulbs that same mmm not too far from Cusco, Peru. They are about the size of a small marcissus bulb, say a poor Barrii type, but darkly coated as befits abulb to produce red flowers. Planted, six or seven in a five inch pot, the pot sunk to the rim in peat moss on a bench in a frost free pit house, one must wait only for roots to form before there will rise maked from the soil, a mmhh foot tall scape with usually 3 or 4 modding, almost lantern-shaped flowers of a charming red color, about the color of the coral honeysuckle. We never learned the trick, if there is one, of making all the flowers bloom at one time. Leaves follow in due season, leaves that are not unlike those of other amaryllids of similar dimensions. They must be kept growing well, if flowers are to come Digitize the following year.

> With us the plant in winter-flowering and its leaves have an even later growth cycle than those of Amaryllis Belladonna and others that do not like frozen winters. Bulbs have been sent to California repeatedly but no one seems to offer it at present.

> According to books there is a yellow-flowered species, U. pendult also, credited to Peru. No good fortune has brought it our way which is probably to its advantage.

Urceolina

Rev Delge 23:49

andean

Celthingh to the American traist, the matric home of these charming but not to important amongles, may deen as cold enough to recall " "reculand's icy nonitains" the thermonieter here bears him my and the hills transporter here are certainly inpationt of Imperatures in the thirtes, even the uppermist. the ong there's we have ten, here not there, is tirceolina miniata hills that came not too far fim Cujco, Peru, The bulls are about the sign of a small narcistus tay a pon Barris type, but darks coated as befits a bulls be produces red finices. Placked Six & seven in a fire with how the part time to the rim in prat more on a bunch in a first free pit, me must wait hill rook are formed and Then there will rise maked fin the sort, a foll till scape who usually 3 or 4 modding, for law Ver shaped flowers of a cham ned color. We never learne the trick. I there is ne, due season, leaves that are not while there of other anawillid y the same diameter. They must be kept growing well, filmers are to come this following year. hoth is the plant is writer flowing and is leaves have an was lake porthe cycle than Those y Bonardlis Belladorn and other amonghed that do not like frozen workers. Balls have been tail or Celifonia repeated but no me terms to Her it at present. "acenting in books there is a yellow forward species, Il. pendula, also crudited to Peru. no fortune has trought it on way this is protated to it's advantage.

### Matsonia

The watconias are usually dismissed with the brief note that they are charming South African cormous plants most closely allied to bladiolus differing in their more regular corolls, and suited to the same general cultural treatment. It is usually noted that they are most happily used in California.

When accounts are more extended they disclose that the introduction into Europe was by way of Gre t <sup>B</sup>ritain in the early part of the 19th Century and that the greatest interest was precipitated by the introduction of <u>W</u>. <u>iridifolia</u> or some other such.

What is rarely brought out, in my reading experience at least, is that the plants are not really cormous at all, and that while they have periods of inactivity, they are all evergreen and do not like being frosted very well: In the Mississippi garden, damage is done to the soft portion of the newest leaf when the thermometer falls to the upper 20s, but the leaf is not killed eince it continues to push up from below. But lower Mississippi epparently is in other best place in the world for Wassonias. Possibly there is too much rain in summer.

beardless The majority if not all of the species are quite like some of the/iris in the type of rhizome, that may have a little semblance to a corm or bulby in its newest portions, but even that seems fandoful. The leaves also are much more like those of some of the stronger beardless iris, save that they often show more nerves, and the flowering stalk alone approximates in structure that of the gladiolus. Gertainly from what I have seen of them growing, I should never treat as for gladiolus, in lifting and storing, but perhaps I have not seen enough.

For those who have not seen them, the inflorescence can be described best by saying that the flowers are generally more or less tubular with flaring lobes at the mouth, that they are arranged in two ranks in a rather flat raceme, and that the predominant colors range from the palest pinks and tinted whites through cose to crimson. Watsonia - 2

There was a time when a great number of named clones were offered in California, but that seems no longer true. Possibly the watsonia like some of the beardless iris, dislikes being propagated by cutting up the rhizomes unless it is done at precisely the proper moment. This I do not know, it is pure surmise, but the fact remains that the rage didn't carry on. The moment for division of all difficult rhizomes is that moment when the new roots are just beginning to push into growth, all very easy if one is dividing something at home, not so easy to handle if one must be a nurseryman or receive a shipment from afar.

But watsonias are no bulbs and you as a reader have no need to be concerned unless some one tries to persuade you to buy them as such; don't, buy them as you would buy personnials of ordinary types.

Digitized by Hunt Institute for Botanical Documentation

# Watronia.

aletivoides Ker- Jawl. Bm. 133 v W. Rom 600. W . angusta Ker- gawt. 18m 418 as antholyza meriana W. meriana mill. W. indifelia Ken- Paul, W ... atta O'Brismin h.E. Prv. Jack 17:390;43, p.229 d2. V W. dens flor Baker Rm. 6400 Bm. 1194 (as W. meriana var.) W. Coccinea Nect. Por 631 - also Pom 1193 humilis hill. VU. VW. norea. Kes. Bm. 1072. The Watsonias are usually dismitted othe the brief Nakement that My are channing south african commons pearl' most closely related to gladistics, difering in their hurse regular erroller, the tright to the same & sure allow the property of Institutes for Botanical Documentation the host the property and the the are nort happing used in California. Man accould are neve extended they disclore that the introduction in Surper was by way if theat Britain in the Early part of the 18th century and that preatest interest was become ne enterprising unbruetinist. m. , cad multiplied his stock fim the original communit it could not to lost in Trade." No far as the sorlies lefts are concerned there are none that puts as supphasis upon the reasonal forth of the plant, ponibly because this is & little importance in South Africa itself and because the chill winters in Britain are not chill enough to damage the fors within he species a garden form has been attachter my mon

garden, but in the mississippi garden the plant appears to be energneen. Whether a not this is peculiar to the farden from there is will tarrow, In several localities in Colmbra, large chups of watronic were seen in dooryand fardnes that has all the appearance of being as tocapeen is an time would be with as in the horth. Inquisies usede for of forvers intenthen Californica indicate that Whatever may have been the freaker a minor furore at its first facture introduction of this county, about -, the wateria 7 tid vill make much heading is attract much attraction . whit about 19 - when in California there have dead a factor there of Waterias, his had as Mus. watsomas. how after some 'years, there cal no figure in Trade list though they may have taken their place Digitized by Hunt Institute for Botanical Documentation that sain densifer is said to have a "globor bulo" + in Carto Stanial magazine is refiniled pro Notal + Orange Thee Mate. The near interest fature is that suggested y it name, for the forces and clour packed in the influence making a fire fetters in Then alternate Rome erragent + this whoney brack sat of the othersa Smullet dull pink flowers. By 133 W. atetroides . hor much & look at \_ for hole van test ferra color varies : my te refers to pl. 441 as a. merianella \_ First into abob 1978

18th 60 p - batomia inidifatia v. fulga Said there bee commo is nurseres about town (douton) at time of publicity. Joths like a comment water -18h 601 - W. brevitthe -? later mice dull orange. Bh 608 - W. marginata\_ lovel me prich - fes less tabular + more cup-shipe chines + thite pettom about bare of E:3 stamens. Its said there scent the That I helistrape. Int. Mason 1774. Lew F Atsat. Sometimes called Mia Sciptum 18th. 631. W. humilis also. 1195 (pink at comine takes eye) "Raised niprolly in thes courty for see harder for the Cape Digitized by Hunt Institute for Bataniaal Decumentation tooks like nost - nice no pink - said & be smaller plant 18h 1072 W. anea T. 4 fr - torks like nice full esse frick form. Am 1193 W. Noreo-alta (B) Pale rose, flotched + striper S. & Cormine. Femilia form On 1194. W. meriana (y) "This splendid variety of heriana was imported some year afo & Mr. Wykes, fim Holland xxx We have never seen It in any herbanium, or importation of Cap tallo. J. Its few, by large - crimson - see Britago W. crecinca Hal.

### Zantedeschia

Like the watsonias that lie behind us, the calla or arum lilies are not bulbs though that term is often used in popular writing. Their not too much dried out roots are offered in the same places and the same listings as for true bulbs. In spite of their romantic place in colonial household collections of plants and their common use out-of-doors in frost free areas, they need not be discussed here, more than to say that the best forms are the several white clones of Z. <u>acthiopicfa</u>, the gayest yellow Z. <u>elliottians</u>, that the species with the great black spot at the inner base of the spathe is not too showy, that the so-called pink calla/. Z. <u>Rehmannii</u> is not so very  $O^{C}$  pink and that if the wishes to sigh for the moon, he should aspire perhaps to Z. <u>macrocarps</u> or for some of the hybrids listed at the end of the article in Dr. Bailey's Cyclopedia. Richardia = Lee Jante deschie.

The Calla litics on Arun lities as they are called aborad are rife bulls though they term is gover used in popular winning the the dried roots are first with there of the true balls in the vame places & the same listings. In spike of their nomental place in colonial house had collections and heir common we in from free areas, they need with to described here, when that the remind the the reader that the best forms of the Scathiopick, The gayest yellow is J. Ellistiana, that the spaces with block sport all the base of the spatter are not so very shines, that the pink calla, J. Rehmanni is ust so ver prink that odd-leave, while its Telaps adjust to J. macrocarpa and has he might for some of the lybrid reported at the sur y the article in Dr Briley's cycliped in a close make them anew.

Digitized by Hunt Institute for Botanical Documentation

#### Zephyranthes

bere ??

As commonly known in gardens, this family of emerican amaryllidameous plants displays only a portion of the possibilities that might be had if there were a definite program of introduction and propagation carried out by botanists, nurfserymen and gardeners. Ones desire for such a program is whetted by the study made by Dr. H. Harola Hume and published in the July 1935 National Horticultural Magazine. After careful study of the literature, herbarium material and such living plants as could be assembled, Dr. Hume enumerates about sixty species that come from seven geographic regions: a group from the West Indies, the southeastern United States, a strictly Mexican group, a group from  $\frac{1}{2}$ 'northern South America, a Peruvian-Bolivian group, and a not completely known group from the great River Platte basin with extensions into Chile.'

There is no point pero in discussing the structural differences that separate these groups from one another.

The family is made up of bulbous plants, the bulbs not unlike those of the small marcisaus variations, that produce usually everygroon lawse that tation vary from almost rush-like character to marrow strap-like sizes, that send up on maked scapes, six petalled flowers that open like lilies in some groups and in others hold a more or less crocus-like form. The sizes vary from that of a small crocus to that of a medium sized lily. The colors are white, white tinted with pink or rose, yellow stained with coppery bronze on the outer segments, pure yellows to gold and one a deep scarlet-orimson worthy of any amaryllis.

As seen in our part of the North where they are not cool hardy, sephyranthes are either pot plants carried in a semi-dormant condition through the winter and flowered out in the summer, or are bedded out in summer and lifted in winter for storages as for ismenes, a proceeding not entirely to their liking as they have roots that are not completely annual. The commonest species is probably <u>Zephyranthes carinata</u>, now more properly <u>Z</u>. <u>grandiflora</u>, though it sometimes gets into lists as <u>Z.roses</u> which is quite another thing. <u>Z</u>. <u>candida</u> is sometimes listed as is <u>Z</u>. <u>Atamasco</u> and a garden hybrid Ajax. Zephyrantues - 2

At times attempts are made to plant <u>A</u>. <u>Atamasco</u> in our gardens as a hardy bulb but successes are usually problematical. I myself have always failed possibly becomes I have not had bulbs from the northernmost limits of its natural distribution.

Apparently hardiness will be determined in all cases by the success of the leaves in withstanding frosts in winter. In the Mississippi garden that is quite far enough south, temperatures of 26°P. do not seem to damage the leaves at all, but this may be in part because the leaves grow up through harbaceous foliageof ether plants, and the bulbs are planted in positions where the sun does not touch them early in the day. Of course, there is also a humid air that leaves all green things drenched with mamma moisture each morning.

When one considers the great variety of climates prepresented in the natural ranges of the plants, and the possibly greater variety of soils, it is hardly to be supposed that all species will be equally amenable to garden living. mmbdowsthem If one follows the basic concept for all bulbs and gives them a soil

2117 Orich anough in insure normal development of offsets from the base and CIIIdIIOII perfect drainage/enough to insure a sound root area, one has the insurance of good culture. Since most of the available species do not appear to have simapping sharply defined periods of dormancy, southern gardens in regions without dry summers may have to concentrate on species from similar climates. This will be true also in gardene that are watered all summer to insure continuous bloom from other types of plants. For other gardens that are allowed to go mammant dormant with summer heat, the other group from similar areas will be first choice. What some future hybridist may do to bring about an interchage of colors is a thought to pique the imagination. This future worker will perhaps have some notions as to the development of races that will show somewhat more formalized flower forms, so that the open star-faced flowers will make a more perfect galaxy and the more cup-shaped flowers will be accentuated. Whether or not the coppery yellows of Habranthias mamma Andersoni and its form texans can be carried over into this genus is still to be discovered as is theusefulness of the fine crimson of Z. cardinalis.

Zephyranthes = 3

In garaens where they can be planted freely, the sephyrathes are commonly massed in the forefront of garden beds and borders, and most often are planted so thickly and so uniformly as to make an edging. This may be the best use, but to those of us who like a margin broken in height and contour, these straight lines may become monotonous. If one may judge from photographs and from the few instances known to the minimum writer, it would seem quite possible to use sephyranthes in great masses through open woodlands or in not too heavily growing grass lands to simulate the effects of daffodils in the forthern garden world.

As has been indicated, the bulbs increase by offsets from the base, and can be lifted and divided as can be done for any similar bulb, taking care not to dry off any roots that may seem active. Seed is freely produced in most species, and if sown at once gorminates as easily as seed of any radish. The young bulbs will grow on maximum swiftyl or slowly coording to the amount of care given. In one garden the seed are merely scattered in the borders and on germinating must fight for their existence with whatever else populates the area. Their development is correspondingly slow and irregular buyseems tobe more or less certain in spite of all.

When seed is available under greenhouse manafutions or even cold frame conditions, one keeps the young plants growing as long as possible and when the leaves show any signs of yellowing at the tips, water is gradually lessened until ripening is complete. Then the small bulbs can betaken from the soil, replanted more deeply and set to growing again. We have done this with small amounts of seeds, using shallow flats for the first sowing and deeper glats for the transplants.

No reports many seem available as to natural ensmises, but in the Mississippi gardon, there has been a long and continual warfare against a very handsome species of grasshopper that seems to have a special fondness for Z. grandiflora. With As they feed by night, it is possible to catch them with a flashlight and the usual can of keresene at hand, or the ever ready heel to crush their gaudy beauty.

Zephyranthes.

 $D_1 p$ 

Us commente terror in gardens this family of American amonglidacens plauls displays one, a portion of the possibilities that might be had if there were a definite program persfuel between branist, nurseymen and the purchasing whic, Ohis decire for tuch a program is thether by the Study make by Dr. Hume and published in 1935 in the national Anticultural Magazine. Other careful study of the liberature, hertarium material and tuch living percels as could be brought trigither, Dr. Hime enumerates to some 60 species that enne from # 7 geographic areas in the south taistern united talis, a strictly theyican prop, a group that yten? In Southwesten united States into Mexico, a prop ferm "norther. Just Anerica, a Cermian-Bokism forp, and a and completely kinon from the the break River Platte den Hunt Institute For Botanical Documentation deferences that separate there fomps from one another. the family is made up of bulbons peants, The hulbs not mlibe there of small marcisons varie hes, that perduce usually confree lare that vary from almost reish like Character to fairly broad strap shaped (as in amany lis), that sens up on naked scapes, & petalles flowers hist open like tities in some groups and that hold a nine a las errous like form in others. The sizes vary tomathet colors are white, the whites tinked with pink + nove, fellow, Jellow stand with copper trooms in the reverse (as in some "hemerocallin), fure willing to fold and me a deep sarlet crimos writing of any amonghis. his seen in nor part of the north, Septyranthes are

sittle por plants; carried in a serie domant that thigh the minter and flowered out of dons in tummer, or are bedded out in summer & lifted on winter storage, a proceeding not allogether to their liking wince they have flesh norts and completely annual in techertance that are impossion of dishurbance. The commonest species is probably. Suply ranthes carinata although frequently called 3. rous and so lister in catalogues. J. candida is often listed in catalogues, 1. atamases sometimes and more nardy 3. Ajax a guide hybrid with yellow tinter florers, introduced by the Department y agriculture about 19 - - fim the nether lands norsery firm. "av times stats attracts are made to plant ? Atamesco in martins my threeses and problematical. I myself have always failed. As me goes worth me find it notice. apparent the range of hardiness is determined by the residence to fish think by the everyneen leaves. In the itized by Hunt Institute for Botanical Documentation plants por up through herbacens friage of the plants, and are in positions there sur does not bruch them early in the day, "I course, there is also a humid air that haves all green things dreuched with moisture such morning. When one considers the great variety of climatis represented in the natural ranges of the plants and the prosty freater rarrety of Soils, it is hardly to be supposed that all species will be equally amenater to garden Giving. "> me follows the basic concept for all hells and gives them a soit rich ungen to insure normal development of offsets for the taxe dramage parfect enough to insure a sound root area, me has the rasurance of good allere. Since must of the available species to not appear to have sharpy defined periods & dormany, southern guides

2 - Juple ranthes

in regimes without day summers may have to concentrate on thecies fin timilar climates, that This will be true, in gartons that are walered all temmer & insure continuous blom from other types of plants. In other garding that are allowed to go domant with summer beat, the other prop that comes from similar areas will doubters te better. What some future hybridist may as, tr bring about an interchange of colors, is a thought to frique the imagination. This future worker with perhaps have some notions as to the development of races that will show somethat more formalized flower forms, so that the open star-faces flowers in I make a nove perfect galaxy + the more cap shaped fervers will be accentrated. Meether I not the tronged stainer colors for T. anderson' and trana con be cauried over into the than yellow from the function Botanic and the cumpentation pure scarlet crimism of f. cardinalis can be infused with the yellow if the other species to five mange + bronze 12 also problematic. The garding, the zephenyrauthes are commonly user in the frefinit of guin bed and most often are planted to Thickly and so uniformed as to make an edging. This kay be the best use, but to these gus the like a margin broken in height and continue, There Araight lines may beane mondronoms. If me ma judge fem pleate graphes and fin the few instances Kinnon to this writer, it would seux quite provite to use zaphrauthes in great masses month open wordland an in net too heavil opmoning fran land to trainteet the spects of autodils in the Northern jardons.

as has been indicated, the bulls increase by April's at the base and can be lifted and divided as can be done In any similar bulls. Les is freely produced in most species and if shim at once firminates as easily as feel of any valish. The your bulls will from a sorth a stort according to the animal of care given. In one garden, they are merely scattered in the boders and an ferminaling news fight In their existence with whokever else populates the area. Their development is conceptedingly them and inregular but teens to be more a less certain. The seed is available under free house averan cold frome conditions, one keeps the your plants graning as long as possible I when the leaves white any signs of yellowing at The lips, water is gradually with thele with ripening is Complete. here the small helps can be Valuen fin the sort, replanted more deeply and set or forming again. We have die this is the mall arounds of seed using thallow glads in the first your botton and the first the second. ho uports seen available on & natural enemies, but in the mississippi factor kume to this willer, There has been a long and entire wanfare against a the hand me species of grandulpper, probably -that appears to have a special fonotiens for J. can hata. As they feed at night, it is from the to "Catch the with a flight and the usual can of Kerosene, n the Every ready heel & crush heri gand beant Histor as y Surfe? Surg y spece as in Hume?

BM. 2537 Jephyrauthes onen - nice -Bh 2583 J. Verecunda -" x x consisting q i fu seed + bulls brough a Mr. Bullock p nexico" - Our familian species BM 2593 & shick -The the plant brough & Bullock with 3. verecumba Ahich see -Ho dre av night 18m, 2607 3. candida - Peru Briens ares -Digitized by Hunt Institute for Botanical Documentation