LIBRARY

OF THE

University of California.

No. 6108

Division

Range

Shelf

Received January 1875

NEW
BOOK OF FLOWERS.

BY
JOSEPH BRECK.

NEWLY ELECTROTYPED AND ILLUSTRATED.

NEW-YORK:
ORANGE JUDD COMPANY,
245 BROADWAY.

have been embodied in its pages, where it was thought no improvement could be made.

To the publishers the author is greatly indebted for many corrections in the botanical portion of the work, in making it conform to the present state of botanical science.

While this work has been made as simple as possible, and not encumbered with technical terms, it was thought to be important to give the true scientific name to every plant as well as the common one.

To all lovers of flowers we would recommend the study of Botany, especially to all who have time, and almost every one *can find time* if there is a will to do it.

A description of hardy and evergreen trees, as in the old book, has been omitted, as we consider the work as a Book of Flowers complete without it.

The number of pages exceeds nearly one hundred more than in the old book.

There may be many interesting ornamental plants known to some of our readers, that have been omitted.

It has been the object of the writer to confine himself to such plants as can be cultivated without much difficulty, in the open ground in this climate.

The author hopes, that his "New Book of Flowers" will meet with as much favor as the old one has done, and be instrumental in increasing the pleasure of those, who take delight in contemplating the exquisite beauty which, a God of Love, has been pleased to bestow upon flowers.

————— "Who can paint
Like nature? Can imagination boast,
Amid its gay creation, hues like these?
Or can it mix them with that matchless skill,
And lose them in each other, as appears
In every bud that blows!"

"In the sweet-scented picture heavenly artist!
With which, thou paintest nature's wide-spread hall,
What a delightful lesson thou impartest
Of love to all?"

Boston, March 28, 1866.

TABLE OF CONTENTS.

The Utility of Flowers	13
The Lily of the Field.	22
The Vitality of Seeds, and Remarks on Planting.....	25
Selection of Flowering-Plants.....	33
Plants for Bedding.....	36
Double Flowers	37
Color of Plants and Flowers.	40
Construction of Bouquets.....	47
Protection of Plants.....	50
Support and Training of Plants	52
Laying out the Flower-garden.	53
On Lawns	62
Rock-work.....	63
Aquarium, Plants for, etc	69
Cultivation of Parlor Plants	72
Potting of Plants.....	79
Insects injurious to Plants.....	82
Flowering out of Bulbous Roots in Pots and Glasses.....	93
On the Culture of Perennials, Biennials, and Annuals	96
“ “ Hardy Deciduous and Evergreen Shrubs.....	103
Descriptive List of Perennial, Annual, and Biennial-flowers.....	108
“ “ Hardy flowering Shrubs, Suitable for the Shrubbery.....	395

INDEX.

Abronia.....	110	<i>Aloysia</i>	421
Achillea.....	111	<i>Althæa</i>	116
Aconitum.....	111	<i>Althæa</i>	415
Acroclinium.....	112	Alyssum.....	119
Actæa.....	161	Amaranth	119
Adam's Needle.....	392	Amarantus.....	119
Adders' Tongue, Yellow.....	209	Amaryllis.....	121
Adlumia.....	113	Amelanchier.....	395
Adonis.....	113	American Centaury.....	346
African Hibiscus.....	241	“ Cowslip.....	205
African Rose.....	309	“ Holly.....	416
Afternoon Ladies.....	291	“ Laurel.....	418
Ageratum.....	115	“ Woodbine.....	396
Air.....	81	Amethyst, Blue.....	139
Alder, Black.....	416	Amethystea	121
Alder-leaved Clethra.....	405	Ammobium.....	123
Alleghany Vine.....	113	Amorpha	395
Almond.....	396	Ampelopsis.....	396
Alonsoa.....	115	Amsonia	123

Amygdalus	396	Box	402
Anagallis	123	Box Edging	59
Anemone	124	Brachycome	138
<i>Anemone</i>	361	Bracted Poppy	319
Anchusa	124	Bramble	466
<i>Androsæmum</i>	245	Briza	138
Animated Oat	136	Brompton Stock	280
Annals	99	Broom	468
Anthemis	128	Browallia	139
Antirrhinum	128	Buckthorn	429
Aplos	129	Buffalo Currant	436
Aquarium	69	" Tree	467
Aquilegia	130	Bugbane	161
Arctotis	132	Bugloss	124
Argemone	133	Bulbous Perennials	97
Aristolochia	398	Bulbous Roots in Pots	93
Armeria	134	" " Glasses	93
Asclepias	134	Burning Bush	413
Aster	135	Bush Honeysuckle	411
" China	141	Butter-Cup	337
Astrantia	136	Butterfly-weed	135
Auricula	334	Buxus	402
Autumnal Crocus	176	<i>Cacalia</i>	355
Avena	136	<i>Calampelis</i>	207
Azalea	398	Calandrinia	139
Balloon Vine	153	Calceolaria	140
Balm, Moldavian	206	Calendula	140
" of Gilead	207	California Poppy	209
Balsam	247	Calliopsis	173
Balsam Apple	291	Callirrhoe	140
" Pear	292	Callistephus	141
Baptisia	136	Caltha	144
Barbary Box-Thorn	424	Calycanthus	403
Barberry	401	Calystegia	145
<i>Bartonia</i>	283	Campanula	146
Basil	299	Canary Bird Flower	366
Bean-Hyacinth	205	Candytuft	245
Beauty of the Night	291	Canna	151
Bedding Plants	36	Canterbury Bells	147
Bedstraw	218	Carolina Allspice	403
Bell flower	146	<i>Cantua</i>	222
Bell-wort	378	Caper Spurge	211
Belle de Nuit	291	Cardamine	152
Bellis	137	Cardinal Flower	267
Benzoin	400	Cardiospermum	153
Berberis	401	Carnation	193
Berberry	401	Cassia	153
Bergamot	292	Castor-Oil Plant	345
Biennials	98	Catananche	153
<i>Bignonia</i>	474	Catch-fly	355
Bindweed	145-171	Caterpillar	283
Birth-wort	387	Ceanothus	404
Bitter-Sweet, Climbing	404	Celastrus	404
Bitter Vetch	302	Celosia	154
Black Alder	416	Centaurea	155
" Cohosh	161	Centaury, American	346
" Snake-root	161	Centranthus	156
Bladder Senna	406	<i>Cerasus</i>	428
Bleeding Heart	201	Cerastium tomentosum	69
Blood-root	348	Cercis	405
Blue Amethyst	139	Chalcedonian Iris	251
" Bottle	155	" Lily	260
" Flag	253	Chamomile	128
Boneset	210	Cheiranthus	156
Bouquets	47	Chelone	157
Bouvardia	138	<i>Chelone</i>	315

Chequered Lily	213	Dacotah Potato	129
Cherry	428	Daffodil	295
China Aster	141	Dahlia	178
Chinese Chrysanthemum	157	Daisy	137
" Primrose	334	" Swan	138
" Wistaria	478	Dalibarda repens	67
Chionanthus	405	Dame's Violet	239
Christmas Rose	236	Daphne	410
Chrysanthemum	357	Datura	187
" Chinese	157	Day-Lily	215-237
<i>Chryseis</i>	209	Delphinium	188
Cimicifuga	161	Descriptive List of Flowers	108
Cinquefoil	331	Dentzia	411
Clarkia	161	Devil-in-the-Bush	298
Clematis	163	<i>Diamond ficoides</i>	285
Cleome	165	Diamond-Plant	285
Clethra	405	Dianthus	193
Climbing Bitter-sweet	404	Dicentra	201
Climbing Fumitory	113	Discipline des Religieuses	120
<i>Clintonia</i>	206	<i>Dictytra</i>	201
Clove Gilly-flower	195	Dictamnus	202
Cobæa	166	Didiscus	203
Cocks-comb	154	<i>Dielytra</i>	201
Cohosh, Black	161	Diervilla	411
Coleus	168	Digitalis	203
Collinsia	168	Dirca	413
Collomia	169	Dodecatheon	205
Colutea	406	Dog's-tooth Violet	209
Columbine	130	Dogwood	406
Comfrey	359	" Poison	435
Commelyna	169	Dolichos	205
Composit	74	Downingia	206
Cone-flower	207	Dracocephalum	206
Conoclinium	170	<i>Dracocephalum</i>	324
Convallaria	170	Dragon's Head	206
Convolvulus	171	Dropwort	358
<i>Convolvulus</i>	146	Dutchman's Breeches	202
Coral Berry	472	" Pipe	397
<i>Corchorus</i>	419	Dwarf Almond	396
Coreopsis	173	" Convolvulus	171
Cornel	406	Eceremocarpus	207
Corn Flag	224	Echinacea	207
" Poppy	309	Edgings	59
" Sedge	224	Elder	467
Cornus	406	Elder-scented Iris	252
Coronilla	406	Elegant Madia	276
Corydalis	174	English Cowslip	332
<i>Corydalis</i>	113-202	" Holly	416
Cowslip	332	" Iris	232
" American	205	" Ivy	414
Cranberry Tree	478	Epigæa repens	66
Cranesbill	221	Epilobium	208
Cratægus	408	Erysimum	208
Crepis	175	Erythronium	209
Crimson Balm	292	Eschscholtzia	209
Crocus	175	Enonymus	413
Crow-foot	337	Eupatorium	210
Crown, Imperial	212	<i>Eupatorium</i>	170
Cuckoo Flower	152	Euphorbia	211
Cuphea	176	<i>Eutoca</i>	318
Curled Mallow	277	Evening Beauty	291
Currant	435	" Primrose	300
Cydonia	409	Everlasting Flower	234
Cypress Vine	335	" Pea	256
Cypripedium	177	False Dragon's-head	324
Cytisus	410	" Indigo	136-395

False Orchis.....	324	Golden Chain.....	410
Fennel-flower.....	293	Golden Eternal Flower.....	234
Fenzlia.....	222	Golden Rod.....	356
Fever Bush.....	400	Golden Senecio.....	354
Fever-few.....	160	Golden-striped Lily.....	264
Figio del Inferno.....	133	Gomphrena.....	232
Flax.....	266	Gooseberry.....	435
Florentine Iris.....	253	Grand flowering Malope.....	276
Flower-de-Luce.....	251	Grape Hyacinth.....	292
Flowers, Arranging in Vases.....	47	Grass, Quaking.....	138
" Color of.....	40	Great Laurel.....	430
" Descriptive List of.....	108	Great Snowdrop.....	217
" Double.....	37	Great Throatwort.....	150
" Utility of.....	13	Greek Valerian.....	326
Flower-garden, To lay out.....	55	Ground-nut.....	129
" Situation of.....	54	Groundsel.....	354
" Soil for.....	54	Haage's Lychnis.....	274
Flowering Almond.....	396	Halberd-leaved Rose-Mallow.....	240
" Dogwood.....	407	Halesia.....	414
Flowering Plants, Arrangement of.....	32	Hardhack.....	469
" Selection of.....	32	Hare-Bell.....	146
" Raspberry.....	466	Hawthorn.....	409
" Spurge.....	211	Hearts-ease.....	387
Forget-me-not.....	294	Heart-seed.....	153
Forefather's Cup.....	350	Heath Pea.....	302
Four o'clock.....	290	Hedera.....	414
Foxglove.....	203	Hedgehog.....	283
Fragaria Indica.....	68	Helianthus.....	233
Fraxinella.....	202	Helichrysum.....	234
Fringed Gentian.....	220	Heliotrope.....	235
Fringe Tree.....	405	Heliotropium.....	235
Fritillaria.....	212	Helipterum.....	236
" Persian.....	213	Hellebore.....	236
Fuchsia.....	214	Helleborus.....	236
Fumitory, Climbing.....	113	Hemerocallis.....	237
Funkia.....	215	Hemerocallis.....	215
Gaillardia.....	216	Hepatica.....	67-237
Galanthus.....	216	Herb d'amour.....	343
Galium.....	218	Hesperis.....	239
Garden Anemone.....	125	Hibiscus.....	240-415
" Balsam.....	247	High Cranberry.....	478
" Chamomile.....	123	Hobble Bush.....	477
" Hyacinth.....	241	Holly.....	416
" Poppy.....	308	Hollyhock.....	116
" Rocket.....	239	Holly-leaved Barberry.....	402
" Tulip.....	371	Honesty.....	271
Gaultheria.....	67	Honeysuckle.....	422
Gaura.....	218	" False.....	433
Gazania.....	219	Hoop-petticoat Narcissus.....	296
Gentian.....	220	Horned Poppy.....	230
Gentiana.....	220	Horn-stalked Datura.....	187
Georgina.....	181	Horse Mint.....	292
Geranium.....	221-310	Houstonia.....	66
German Iris.....	253	Hyacinth.....	241
Giant Solomon's Seal.....	329	Hyacinth-Bean.....	205
Gilia.....	222	Hyacinth, Grape.....	292
Gilliflower.....	280	Hyacinthus.....	241
Gladiolus.....	224	Hyacinth, Star.....	353
Glaucium.....	230	Hypericum.....	245-415
Globe Amaranth.....	232	Iberis.....	245
" Globe Crow-foot.....	370	Ice-Plant.....	285
" Flower.....	370	Ilex.....	416
" Ranunculus.....	370	Immortal Flower.....	234
Glycine.....	478	Impatiens.....	247
Goat's Beard.....	359	Indian Cress.....	366
Godetia.....	231	" Currant.....	472

Indian Shot	151	" Persian	213
" Tobacco	270	" of the Field	22
Indigo, False	136	" of the Valley	170
" Shrub	417	Lilium	257
Indigo Morning-Glory	250	Limnanthes	265
Indigofera	417	Linaria	129-265
Ink Berry	416	Linum	266
Insects on Garden Plants	82	Lippia	421
" House Plants	76	L'Iris de Constantinople	251
Intermediate Stock	280	" de Suse	251
Ipomæa	249	Liver-wort	237
Ipomæa	335	Loasa	266
Ipomopsis	222	Lobelia	267
Iris	251	Locust Tree	436
Italian Bugloss	124	London Pride	351
Ivy	414	Lonicera	422
" Poison	435	Loose Strife	275
Ivy-leaved Morning-Glory	250	Love-grove	296
Jacoea	354	Love-in-a-mist	298
Jacobean Lily	121	Love in a Puff	153
Jacob's Ladder	326	Love Lies Bleeding	120
Jamestown Weed	187	Lunaria	271
Jasmine	417	Lungwort	284
Jasminum	417	Lupin	271
Japan Globe-flower	419	Lupinus	271
" Lily	261	Lychnis	273
" Quince	409	Lycium	424
Jimson Weed	187	Lysimachia	275
Joe Pye Weed	210	Lythrum	275
Jonquil	295	Madia	276
Joseph's Coat	119	Magnolia	424
Judas Tree	405	Mahonia	402
June-berry	395	Mallows	277
Kalmia	418	Malope	276
Kerria	419	Malv	277
Kidney Bean	319	Many-flowered Sunflower	234
Laburnum	410	Marigold	359
Lady's Ear Drop	214	" Marsh	144
Lady's Slipper	140-177	" Pot	140
Lady's Smock	152	Marsh Marigold	144
Lamium	254	Martynia	278
Lantana	254	Marvel of Peru	290
Large Bell-flower	325	Maryland Cassia	153
Lark's-claws	188	Mathiola	280
Lark's-heel	188	Matrimony Vine	424
Larkspur	188	Maurandia	282
Lasthenia	255	Meadow Lily	263
Lathyrus	256	Meadow-Rue	361
Laurel	418	Meadow-sweet	357
Laurus	400	Medicago	283
Lavandula	479	Medick	283
Lavatera	257	Medusa's Trumpet	296
Lavender	419	Melolontha subspinoso	88
Lawns	62	Mentzelia	283
Layers	99	Mertensia	284
Laying out Flower-garden	54	Mesembryanthemum	285
Leather Wood	413	Mexican Cobæa	166
Le Glaieul	224	" Sage	347
Leptodactylon	222	" Tiger-flower	303
Leptosiphon	222	Mezereum	410
Leucojum	217	Mignonette	341
Light	81	Milkweed	134
Ligustrum	420	Mimosa	285
Lilac	472	Mimulus	288
Lily	257	Mirabilis	290
" Chequered	213	Missouri Currant	436

Mist-flower.....	170	Petunia.....	316
Mitchella repens.....	66	Phacelia.....	318
Mock Orange.....	427	Phaseolus.....	319
Moldavian Balm.....	206	Pheasant's Eye.....	113
Momordica.....	291	Philadelphus.....	427
Monarda.....	292	Phlox.....	320
Moneywort.....	275	Physostegia.....	324
Monkey-flower.....	288	Pickereel-weed.....	71
Monkshood.....	111	Picotee Poppy.....	308
Morning Glory.....	249	Pied d'Alouette.....	188
Moss Pink.....	320	Pimpernel.....	123
Mountain Laurel.....	418	Pink.....	193
Mourning Bride.....	352	Pink Mullein.....	275
Mullein.....	379	Plants, Bedding.....	36
Mullein Pink.....	275	" Color of.....	40
Muscari.....	292	" Protection of.....	50
Musk Plant.....	289	" Supports for.....	52
Myosotis.....	294	" Training of.....	52
Narcissus.....	295	" For the Aquarium.....	69
Nasturtium.....	366	" For Ornamental Ponds.....	69
Nemophila.....	296	" Cultivation in Parlors.....	72
New Jersey Tea.....	404	" Re-potting.....	79
Nicotiana.....	297	Platanthera.....	324
Nierembergia.....	298	Platycodon.....	325
Nigella.....	298	Plum.....	428
Nine-bark.....	469	Poet's Narcissus.....	296
Nolana.....	299	Poison, Dogwood.....	435
Nua's Whipping Rope.....	120	" Ivy.....	435
Nuphar.....	71	" Sumach.....	435
Nuttall's Weed.....	174	Polemonium.....	326
Nymphæa.....	70	Polianthes.....	326
Oat.....	136	Polyanthus.....	332
Ocymum.....	299	Polyanthus Narcissus.....	296
Oenothera.....	300	Polygonatum.....	329
Oplum Poppy.....	308	Pompone Lily.....	260
Orange Lily.....	259	Pond Lily.....	70
Orchis.....	301-324	Pontederia.....	71
Oriental Poppy.....	309	Poor Man's Weather-glass.....	123
Orobus.....	302	Poppy.....	308
Oswego Tea.....	292	" California.....	209
Pæonia.....	303	" Prickly.....	133
Pale Corydalis.....	174	Portulaca.....	329
" Daffodil.....	295	Potentilla.....	331
Palestine Mustard.....	208	Pot Marigold.....	140
Palma Christi.....	345	Potting.....	79
Pansy.....	387	Prickly Poppy.....	133
Papaver.....	308	Prim.....	420
Parlor, Plants for.....	72-77	Primrose.....	332
Pasque Flower.....	124	Primrose Peerless.....	295
Pea, Everlasting.....	256	Primula.....	332
" Heath.....	302	Prince's Feather.....	120
" Sweet.....	256	Prinos.....	416
" Wood.....	302	Privet.....	420
Peach.....	396	Protection of Plants.....	50
Pelargonium.....	310	Prunus.....	428
Pentstemon.....	313	Pulmonaria.....	284
Peony.....	303	Purple Cone-flower.....	207
Perennials, Bulbous.....	97	Purple Everlasting.....	391
" Herbaceous.....	98	Purple eyed Crepis.....	175
Perilla.....	316	Purple-leaved Perilla.....	316
Periwinkle.....	384	Purslane.....	329
Persian Fritillary.....	213	Pyrethrum.....	160
" Lilac.....	473	Quaking Grass.....	138
" Lily.....	213	Quamoclit.....	335
Petilium.....	213	Queen of the Meadows.....	357-469
Petit Muget.....	218	Ragged Robin.....	274

Rag-wort.....	354	Shepherdia	467
Ram's Head.....	178	Shooting Star.....	205
Ranunculus.....	337	Shot Plant.....	151
Raspberry, Flowering.....	466	Showy Lady's Slipper.....	178
Red Balm.....	292	Shrubby Althæa.....	415
Red Bud.....	405	Shrubs, Culture of.....	103
Red Lily.....	263	" Season for Planting.....	104
Re-planting	79	" Soil for.....	106
Reseda.....	341	Slide-saddle-flower.....	350
Resede d'Egypte.....	343	Silene.....	355
Rhamnus.....	429	Silver-bell Tree.....	414
Rhodanthe.....	343	Sky-blue Commelyna.....	169
Rhododendron.....	430	" Didiscus.....	203
Rhodora.....	433	" Iris.....	253
Rhus.....	433	Smoke Tree.....	434
Ribes.....	435	Smooth Lungwort.....	284
Ricinus.....	345	Snails.....	283
Robinia.....	436	Snake-root, Black.....	161
Rock Work.....	63	Snap-Dragon.....	128
" Plants for.....	66	Sneezewort.....	111
Rocket, Garden.....	239	Snow Ball.....	476
Roots, Division of.....	99	Snowberry.....	472
Rosa.....	436	Snowdrop.....	216-414
Rose.....	436	Soap-wort Gentian.....	220
Rose Acacia.....	427	Solidago.....	356
Rose-bay.....	430	Solomon's Seal.....	170-329
Rose Bug.....	88	<i>Sophora</i>	136
Rose Chafer.....	88	Spangled-beaut.....	285
Rose Champion.....	275	Spanish Iris.....	252
Rose-Mallow.....	240	Spartium.....	468
Rose of Sharon.....	415	Specularia.....	356
Rose Slug.....	83	Speedwell.....	384
Rubus.....	466	Sphænoogyne.....	357
Rudbeckia.....	345	Spider-wort.....	364
<i>Rudbeckia</i>	207	Spindle Tree.....	413
Rue-Anemone.....	361	Spiræa.....	357-469
Sabbatia.....	346	Spoon Wood.....	418
Sage.....	347	Spring Crocus.....	175
Sagittaria.....	71	Spurge.....	211
Salpiglossis.....	346	St. John's-wort.....	245-415
Salvia.....	347	St. Peter's Wreath.....	469
Sambucus.....	467	Stag-horn Sumach.....	433
Sanguinaria.....	348	Staff Tree.....	404
Sarracenia.....	350	Star-flower.....	135
Saxifraga.....	68-351	Star Hyacinth.....	353
Saxifrage.....	351	Star Petunia.....	297
Scabiosa.....	352	Star-Thistle.....	155
Scarlet Geranium.....	310	Starry Morning Glory.....	250
" Lychnis.....	273	Steeple-bush.....	469
" Morning Glory.....	337	Stock.....	280
" Runner.....	319	Stone Crop.....	354
" Tassel Flower.....	355	Strawberry Tree.....	413
Schizanthus.....	352	Suckers.....	99
Schizopetalon.....	353	Sugar Pear.....	395
Scilla.....	353	Sumach.....	433
Scorpion Senna.....	406	Sun-flower.....	233
Sea Celandine.....	230	Superb Lily.....	263
Sedum.....	68-354	Supports for Plants.....	52
Seeds, Depth to Sow.....	29	Swan Daisy.....	138
" Vitality of.....	25	Sweet Basil.....	299
Selandria rosæ.....	83	Sweet Pea.....	256
Senecio.....	354	Sweet Rocket.....	239
Senna, Wild.....	153	Sweet Scabious.....	352
Sensitive Plant.....	285	Sweet Sultan.....	155
Shad-Bush.....	395	Sweet William.....	198
Sheep Laurel.....	418	Sword Lily.....	224

Symphoricarpus	472	Two-leaved Lady's Slipper.....	177
Symphytum	359	Unicorn Plant.....	278
Syrian Mallow	277	Uvularia	378
Syringa	427-472	Valerian	379
Squill.....	353	Valeriana.....	379
Squirrel-Corn	202	Variegated Spurge.....	212
Swamp Honeysuckle	398	Venetian Sumach.....	434
Swamp Pink.....	397	Venus' Looking-glass.....	356
Sweet Pepper-bush	405	Verbascum	379
Sweet-scented Shrub.....	403	Verbena	380
Sweet Verbena.....	421	Verbena.....	421
Tagetes.....	359	Veronica	384
Tamarix.....	473	Vervain.....	380
Tamarisk.....	473	Viburnum.....	476
Tartarian Honeysuckle.....	422	Vinca.....	384
Tassel Flower.....	355	Viola.....	67-386
Tecoma.....	474	Violet.....	386
Ten Week's Stock.....	280	Virginian Dragon-head.....	324
Thalictrum	361	Virginian Convolvulus.....	249
Thistle, Star.....	155	Virginian Creeper.....	396
Thorn Apple.....	187	Virgin's Bower.....	163
Thoroughwort.....	210	Wahlenbergia.....	325
Thready Yucca.....	392	Waks.....	57
Thrift.....	134	Wall Flower.....	156
Throatwort, Great.....	150	Water.....	80
Thunbergia.....	362	Water Lily.....	70
Tiarella.....	68-362	Wax work.....	404
Tiger-flower.....	363	Wayfaring Tree.....	477
Tiger Lily.....	260	Western Wall-flower.....	208
Tigridia.....	363	Whale Oil Soap.....	86
Toad Flax.....	265	White Lily.....	258
Tobacco.....	297	Whitlavia.....	391
" Indian	270	Whip-poor-will's Shoe.....	177
Tradescantia.....	364	Wicopy.....	413
Training of Plants.....	52	Wiegela.....	411
Treacle Mustard.....	208	Wild Senna.....	153
Tree, Box.....	403	Willow-herb.....	208-275
" Cranberry.....	478	Wind Flower.....	124
" Hibiscus	415	Wistaria.....	478
" Mignonette.....	342	Wolfsbane.....	112
" Peony.....	304	Wood Anemone	125
Trillium.....	364	Woodbine.....	422
Tritoma.....	365	Wood Fringe.....	113
Trollius.....	370	Wood Pea.....	302
Tropæolum.....	366	World's Wonder.....	291
Trumpet-flower.....	474	Xeranthemum.....	391
Trumpet Honeysuckle.....	422	Yarrow.....	111
Tuberose.....	326	Yellow Adder's Tongue.....	209
Tulipa.....	371	Yellow Horned-Poppy.....	230
Tulip.....	371	Yellow Lady's Slipper.....	177
Turk's Cap Lily.....	259	Yucca.....	392
Turtle-head.....	157	Zauschneria.....	392
Tutsan	245	Zinnia.....	392

BOOK OF FLOWERS.

THE UTILITY OF FLOWERS.

THE HAPPY INFLUENCE OF THE PURSUIT OF HORTICULTURE ON THE MIND OF MAN.

“Not useless are ye flowers ; though made for pleasure,
Blooming o'er fields, and wave by day and night
From every source your sanction bids me treasure
Harmless delight.”—*Horace Smith.*

Flowers are the expression of God's love to man. One of the highest uses, therefore, which can be made in contemplating these beautiful creations, in all their variety and splendor, is, that our thoughts and affections may be drawn upwards to Him who has so bountifully spread over the face of the whole earth, such a vast profusion of these beautiful objects, as tokens of his love to us. The more we examine flowers, especially when the eye is assisted by the microscope, the more we must adore the matchless skill of the Great Supreme. We must be ungrateful indeed, not to acknowledge his unspeakable goodness in thus providing so liberally for the happiness and pleasure of His children here below.

The Saviour of men, while on earth, often retired to the gardens about Jerusalem to spend a quiet hour with His disciples, or alone, and no doubt took pleasure in contemplating flowers. We all know how He spake of the lily : “Behold the lilies of the field, how they grow ; they toil

not, neither do they spin; and yet I say unto you that Solomon in all his glory was not arrayed like one of these." How surely would Solomon himself have agreed with this beautiful speech! that his wise heart loved the flowers, the lily especially, is evident from the numerous passages in his song. The object of his love in claiming a supreme dignity of beauty, exclaims: "I am the rose of Sharon, and the lily of the valley."

The Emperor Dioclesian preferred his garden to a throne:

"Methinks I see great Dioclesian walk
In the Salonian garden's noble shade
Which by his own imperial hands was made;
I see him smile, methinks, as he does talk
With the ambassadors, who came in vain
T'entice him to a throne again.

'If I, my friends,' said he, 'should to you show
All the delights which in these gardens grow,
'Tis likelier far that you with me should stay,
Than 'tis that you should carry me away;
And trust me not, my friends, if, every day,
I walk not here with more delight,
Than ever, after the most happy fight,
In triumph to the capital I rode,
To thank the gods, and to be thought myself almost a god.' "

Cowley's Garden.

There is a class of men who would pare down every thing to the mere grade of *utility* who think it the height of wisdom to ask, when one manifests an enthusiasm in the culture of flowers, "of what use are they?" With such we have no sympathy. We will not say with the late Henry Colman, in case such an interrogatory being put to us that "*our first impulse is to look under his hat, and see the length of his ears,*" but we are always inclined in such cases to thank God that our tastes do not correspond with their's. "Better," (say these ultra utilitarians,) "devote our time to the culture of things useful and needed to sustain life, than to employ it on things, which, like flowers, are intended only to look at and please the eye." 'But why,' would we ask, 'why should not the eye be

pleased?' What pleasures more pure, more warming to the heart, more improving to the mind, more chastening to the affections, than those which come through the eye! Where are more luminously displayed the perfections of the Creator, than in the star spangled heavens above, and the flower spangled earth beneath?

"Your voiceless lips, oh flowers, are living preachers,
Each cup a pulpit, and each leaf a book,
Supplying to my fancy numerous teachers
From the loneliest nook."—*Horace Smith.*

Nonsense,—sheer nonsense to tell us it is useless to cultivate flowers. They add to the charms of our homes, rendering them more attractive and beautiful, and they multiply and strengthen the domestic ties which bind us to them. We would not advocate the cultivation of flowers to the neglect of more necessary objects. Attending to the one, does not involve neglect of the other. Every man engaged in the culture of the earth, can find time to embellish his premises who has the will to do it, and we pity the family of the man who has not. "Rob the earth of its flowers, the wondrous mechanism of the Almighty, and we should lose the choicest mementos left us that it was once a paradise."

"Ye bright Mosaics ! that with storied beauty
The floor of nature's temple tessellate,
What numerous emblems of instructive duty
Your forms create."—*Horace Smith.*

"We have no sympathy with those, who would desecrate and pare down the loveliness of earth to the grade of mere utility—who can discover no beauty in the opening bud and blushing flower, and whose exertions are limited on all occasions by a parsimonious idolatry and worse than idiotic privation of sensibility to the maddening love of Gold." The love of flowers is a sentiment common alike to the great and little; to the old and young;

to the learned and the ignorant ; to the illustrious and the obscure, while the simplest child may take delight in them. They may also prove a recreation to the most profound philosopher. Lord Bacon himself did not disdain to bend his mighty intellect to the subject of their culture.

The great men of our own age as well as those of the past, have given in their verdict in favor of the great utility of the practice of horticulture in refining and elevating the mind. I cannot refrain from alluding to some of the remarks made by Daniel Webster, Caleb Cushing, and other distinguished guests at the remarkable and interesting festival, held by the Massachusetts Horticultural Society at Faneuil Hall, in September 1845. At this grand festival six hundred ladies and gentlemen sat down to a sumptuous feast. The tables, fourteen in number, were arranged lengthway of the hall, while at the end was a raised platform, where were seated the president of the society, Marshall P. Wilder, with the numerous invited illustrious guests. The tables were loaded with every delicacy ; but their crowning glory was, the great profusion of delicious fruits and a magnificent display of gorgeous flowers, and the absence of all intoxicating liquors. The scene was exciting and brilliant, enlivened by a band of music, interspersed by appropriate songs, while the eloquent remarks from the distinguished guests, with the numerous sentiments in praise of horticulture, produced a scene never be forgotten.

The Hon. Daniel Webster made the following remarks :
"I congratulate you, Mr. President, that our flowers are not

"Born to blush unseen
And waste their sweetness on the desert air."

"The botany we cultivate, the productions of the business of horticulture, the plants of the garden, are cultivated by hands as delicate as their own tendrils, viewed

by countenances as spotless and pure as their own petals, and watched by eyes as brilliant and full of lustre, as their own beautiful exhibitions of splendor.

“Horticulture is one pursuit of natural science in which all sexes and degrees of education and refinement unite. Nothing is too polished to see the beauty of flowers. Nothing too rough to be capable of enjoying them. It attracts, delights all. It seems to be a common field, where every degree of taste and refinement may unite, and find opportunities for their gratification.”

The Hon. Josiah Quincy, senior, remarked, “that in the Horticultural Hall, he had witnessed the wonders wrought by the florist’s hand; he had seen there what man could do, by labor and taste, to enlarge, beautify, and multiply the bounties of nature; he had seen how art and wisely employed capital were permitted by heaven, to improve its own gifts, and felt how impossible it was by language, to express the beauty of fruits and flowers, which nature and art had combined to improve. Nor could he refrain from reflecting that all was the work of well directed industry.”

The Hon. Caleb Cushing, who had just returned from his mission to China, made the following remarks in relation to woman and flowers: “I am, Mr. President, most thankful for the opportunity to look on a spectacle like this—on the delicate and beautiful fruits and flowers before us. All our associations of beauty and taste are blended with flowers. They are our earliest tokens of affection and regard. They adorn the bridal brow at the wedding; they are woven in garlands around the head of the conquerer; they are strewn on the coffins of the dead. And here is another of their most grateful and beautiful uses—ornamenting the table at a festival, and enlivening the scene and enchanting the eye. In that ‘central flowery land,’ this is the case at all festivals; flowers there adorn

the table, and meet the eye in every direction, on all festive occasions; but they are not there accompanied by what we here enjoy. Here alone—here and in Christian lands—WOMAN enchants and beautifies with her presence, the festive scene. Woman—our equal—shall I not say our moral superior. It is only here, that such a scene can gladden the human eye. I regard this exhibition as a striking proof of the point which education and intellectual refinement have reached in our country; that we have got beyond mere utility, and ceasing to inquire how far it is incompatible with beauty, have found that the beautiful is of itself useful. We have learned to admire art, to appreciate sculpture and painting, and to look upon fruits and flowers, as models of delicacy and beauty.”

The Hon. Robert C. Winthrop remarked, that, “he had never cultivated flowers, not even the flowers of rhetoric; as to the sentimentalities of the subject, Mrs. Caudle had quite exhausted them in a single sentence of one of her last lectures, when she told her husband how ‘she was born for a garden! There is something about it that makes one feel so innocent! My heart always opens and shuts at roses.’ Shakespeare had pronounced it to be ‘wasteful and ridiculous excess, to paint the lily, or throw a perfume upon the violet.’ And so it would be. The violets had been called, ‘sweet as the lids of Juno’s eyes or Cytherœa’s breath;’ and of the lilies it had been divinely said, that ‘Solomon in all his glory was not arrayed like one of these.’ Both had already a grace beyond the reach of art. But to multiply varieties of fruit and flowers; to increase their abundance, and scatter them with a richer profusion along the way-sides of life; to improve their quality, coloring and fragrance, wherever it was possible to do so; this, the great poet of nature, would have been the last person to call wasteful. Its utility would only be questioned by those who counted it useless

to extend the range of innocent recreation and virtuous enjoyment; useless to brighten and strengthen the chain of sympathy which binds man to man; or useless to excite a fresher or more frequent glow of grateful admiration in the human breast, towards the giver of all good."

"Flowers," says a writer, "flowers of all created things, the most innocently simple, the most superbly complex, playthings for childhood, ornaments of the grave, and companions of the cold corpse! Flowers, beloved by the idiot, and studied by the thinking man of science! Flowers, that unceasingly expand to heaven their grateful, and to man their cheerful looks; soothers of human sorrow; fit emblems of the victor's triumph and the young bride's blushes! Welcome to the crowded ball, and grateful upon the solitary grave! Flowers are in the volume of nature, what the expression 'God is love' is in the volume of revelation! What a desolate place would be a world without a flower; it would be a face without a smile—a feast without a welcome. Are not flowers the stars of earth, and are not our stars, the flowers of heaven? One cannot look closely at the structure of a flower without loving it; they are the emblems and manifestations of God's love to the creation, and they are means and ministrations of man's love to his fellow creatures, for they first awaken in his mind a sense of the beautiful and good. The very inutility of flowers, is their excellence and great beauty, for they lead us to thoughts of generosity and moral beauty, detached from, and superior to all selfishness, so that they are sweet lessons in nature's book of instruction, teaching man that he liveth not by bread alone, but that he hath another than animal life."

Who, that was blessed with parents that indulged themselves, and children with a flower garden, can forget the happy, innocent hours spent in its cultivation! O! who can forget those days, when to announce the appearance

of a bud, or the coloring of a tulip, or the opening of a rose, or the perfection of a full-blown peony, was glory enough for one morning. With tender emotions do I remember the old white rose-bush, trained up to the top of the house by the hand of a dear mother, the abundant and fragrant flowers of which gave delight to all the household, as well as to the neighbors, who received them as expressions of neighborly friendship and good-will. How many pleasant reminiscences, crowd upon the memory of one who at the age of three-score and ten, as he looks back on the scenes of his childhood and youth, when from his sainted mother he received lessons of morality and piety, while engaged in the culture of a limited flower garden. Did she forget to love flowers? Were they no source of pleasure to her when old age crept upon her? No, no! At the age of ninety, her table never lacked a bouquet, a pot of fuchsia, or a rose or some other flower, which received her tender care. How many otherwise tedious hours were spent in the contemplation of her little flower garden; and with what cheerfulness did she pass away, from the flowers of earth, to the paradise of heaven, leaving a delightful example, of a happy, cheerful, contented old age, as a rich legacy to her numerous descendants and friends.

But the gratification derived from the garden, is not confined to the young or the old. Who that has been confined to the business of the day, toiling and laboring in the "sweat of his face," does not feel invigorated and refreshed, as he takes his walk in the cool of the evening, with the happy family group about him, and notes the progress of his fruits and flowers? Or, who that breathes the delicious fragrance of the morning flowers glittering with dew, but can look up with greater confidence and love to Him, who has strewed with such liberal profusion in every direction, the evidence of his goodness and love to the children of men!

Man was not made to rust out in idleness. A degree of exercise is as necessary for the preservation of health, both of body and mind, as his daily food. And what exercise is more fitting, or more appropriate for one who is in the decline of life, than that of superintending a well ordered garden? What more enlivens the sinking mind? What more invigorates the feeble frame? What is more conducive to a long life? What can be more grateful to the mechanic or merchant or professional man, than to recreate for a short time in a well selected garden of flowers, neatly arranged and well cultivated?

In reply to the question often asked, "what is the use of flowers?" William Cobbett asks another, "what is the use of anything?" There are many things in this wide world pleasing to the eye of man; many of them expensive and not in the power of all to obtain; but flowers may, without much or no expense, be obtained and possessed by the most humble individual. Their cultivation may be made one unfailing source of happiness to the family. Let parents gather around them every source of innocent amusement and recreation for their children. They should endeavor to make their home attractive and lovely, both within doors and without.

THE LILY OF THE FIELD, or THE WONDERFUL BEAUTY OF FLOWERS.

The contemplation of the beauty of flowers, with their varied tints of exquisite colors, beautiful forms and delightful odors, is a source of never ending pleasure to all who have any taste for the beautiful, even when examined by the naked eye; but when placed under a powerful microscope, we are introduced to the hidden wonders of God's handiworks, where we see the exquisite finish of the most minute parts of the flower, with the adorning of colors that seem to be more splendid than anything earthly; here is no imperfection, and no blemish, but in every part of the most humble flower, we see nothing but the perfection of beauty. I was so well pleased with an article I found in the New-York Observer on this subject, entitled the "Lily of the Field," that I give the article entire, as follows, (believing that it will be read with pleasure and profit):

"In the reign of Solomon, the kingdom of Judah reached the acme of its splendor. He was the wisest, the richest, and the most powerful of kings.

"So widely extended was the fame of his character and magnificence, that distant nations came to add their portion to the sum of his glory. The grandest manifestations of his prosperity, and power, were, when the king appeared, arrayed in robes of finest texture, sitting upon the throne of ivory overlaid with pure gold. It was no mere display of barbaric magnificence, dazzling to the eye of sense, with the glitter of gold, and the glare of brilliant colors. It was the suitable expression of that blessing which crowned the kingdom and its king. All that earth

could furnish and art apply, was centered upon him, who set forth in his own person the glory of the state. When our Saviour desired to impress his disciples with the superiority of the least of the works of God to the greatest of the works of man, He compared the humble beauty of the flowers at their feet, with the utmost that could be accomplished by human taste and skill.

“‘Consider,’ said he, ‘the lilies of the field, they toil not, neither do they spin; and yet I say unto you that even Solomon in all his glory was not arrayed like one of these.’ We need not make a garland of these lilies, nor seek a meadow covered with their varied brightness, in order to find what surpasses the brilliant costume of the richest king. A single one of these frail flowers, is clothed with finer texture, adorned with richer hues, and expresses more of that perfection in form and color, which delight the eye and heart. As he stood before the altar, the royal robes of Solomon hung in graceful folds and shone with the purple blush of Tyre, but no angel’s wings swept in more graceful curves, than that in which this lily of the field upturns its blushing face to the light and dews of heaven.

“In these lilies of the field, there is brightness, not of materials prepared and arranged by human hands, but the living brightness that flows directly from the hand of God. There is life in these flowers: every tint glows with the warmth of the unseen love which gives it being. It is not like the beaming stars, nor the glory of western cloudiness, for it shines with the mysterious power of the living principle, it has a breathing and growth toward the source of all true loveliness in this world, and that which is to come.

“Let us learn another lesson from the lily of the field. How small a portion of its exquisite beauty is within the reach of our vision. Look with a true heart and loving

spirit, study its wondrous mechanism, its faultless form, seek for the secret of its 'tender grace,' and when you have read all that eye can see, and have felt all that heart can receive, remember that you know but in part, that you see the beauty of this flower only through a glass darkly. It has a wealth of beauty that to you is entirely imperceptible. Scientific aids, increasing wonderfully your natural powers of observation, only reveal the fact, that there is an infinity of beauty concealed within the compass of these leafy walls.

"Now, if the God of love, the Father of glory, has concealed such beauty, where He reveals Himself in the light of a single flower, how much has He treasured up beyond the reach of mortal vision within those foundations of precious stones; how much has He concealed in the buds of precious promise, in the flowers of living hope that rise with heavenly fragrance, beside still waters, in those green pastures where He makes His flock to rest at noon.

"Is there a joy unspeakable in the humblest flower that springs up beneath the touch of His finger? What must be the fullness of joy when He reveals the fashion of His own glorious body, according to His mighty power. Let us learn from one of these lilies of the field, that we but know in part, but when that is perfect is come, then that which is in part shall be done away. Then shall we know, even as we are known."

It is not known what particular flower was alluded to, as the "lily of the field;" we should like very well to ascertain. It is not, however, necessary, to know the particular one: the remark is applicable to any flower.

ON THE VITALITY OF SEEDS.—REMARKS ON PLANTING, Etc.

“And the earth brought forth grass, and herb yielding seed after his kind, and the tree yielding fruit, whose seed is in itself, after his kind; and God saw that it was good.”

A seed, when duly considered, shews forth the infinite wisdom, power and goodness of the Almighty. As it was in the beginning, so it continues to be, true to its original creation, never diverging or degenerating from its true character. New varieties are produced from seed, and great improvements attained by the skill of the cultivator; but the properties of the plant remain, and have so remained for six thousand generations of annual plants. Wheat never has, nor ever will turn to chess, as some most ignorantly and persistently affirm to be the case. Nor do potatoes ever grow upon the roots of the Gilly-flower plant. While conducting the New England Farmer many years since, a gentleman from Maine sent me a sample of potatoes, which he assured me were generated and produced, (not from seed) but originated and grew upon the roots of that plant. He called it “the Gilly-flower Potato.” It was in vain that I attempted to show him the impossibility of the thing, he was certain this was the origin of the potato; and what appeared strange to me, was, that he found those who sustained him in the theory that new species of plants might be produced by chance, and that a potato might originate on the roots of the Gilly-flower.

It is interesting to notice the great diversity in various species of seeds, in their shape, size and mode of scattering or spreading themselves abroad. The most minute

seed contains a perfect germ within itself, not to be seen perhaps without the aid of a microscope, but there it is, "the seed (or bud) in itself" as perfect as that of the bean, which is seen by the naked eye: Many seeds have a most beautiful appearance when viewed by the microscope; for example, the quite small seed of *Portulaca*, when thus examined, resembles some splendid sea shell, with all the brilliancy of color, which graces some of these wonders of the sea.

By the sudden bursting of the capsule of some plants, the seeds are scattered some distance around: such for instance as *Phlox*, *Lupin*, and many others. The seed of *Asclepias*, *Thistle*, and others, have a silky appendage, by which they are wafted by the wind to distant parts of the country. The seeds of the *Maple* and other plants and trees are so constructed that they float upon the water and thus find a lodgement upon the banks of a stream many miles from their starting place; others will not germinate until they have passed through the stomach of a bird, and such are deposited wherever the bird flies. Seeds buried in the earth may remain many years, or ages, without germinating, but when brought up by the plow to the surface of the ground and exposed to the air, germinate and bring forth a plentiful crop of weeds. The earth seems to be full of seed. Earth taken from the bottom of deep wells or mines, when exposed to the sun and air, often produces vegetation. Some seeds when excluded from the air and moisture, retain their vitality for almost an indefinite period of time.

It is often asked, how long will this or that variety of seed retain its vitality. In answer to this inquiry, we reply, that it depends very much as to the manner in which seed was cured, and how it has been kept. We have tables stating the length of time the different garden seeds may be considered good.

These tables approximate to correctness. For instance, the Cucumber, Squash, Melons, etc., are laid down as good for ten years, I have, however, known very bright-looking Marrow Squash seed be worthless the first year. This was occasioned, no doubt, by drying the seeds by the fire or in an oven. *Onion seed is sometimes spoiled in consequence of its having been packed away before it was thoroughly dry, which caused a slight fermentation so as to destroy the germ. Onion seed is worthless after the second year, but if the seed has been sunk in water to clean it, as is sometimes practiced, the seed is good only one year. I have known Onion seed that was perfectly dry and corked up tight in a bottle, to vegetate freely when eight years old ; but if the seed should be bottled up in a damp state, its vitality would be lost within one year. Not unfrequently imported seeds, which have a long passage over the water, acquire dampness so as to swell the seed and start the germ ; such seeds, if planted immediately, will all vegetate, but when dried again, very few will start. I have known Peas, Radish, and other seeds to be spoiled in this way.

How much longer than the ten years, laid down in the book, Cucumber seed will retain its vitality, I have not yet learned. About eighteen years since we imported from London a small lot of Sinott's Early Frame Cucumber, which was said to be very fine for forcing. The seed was very expensive, £4 sterling for one quarter of a pound ; we sold only small packages of it, and having most of it left over, concluded to plant it for seed. It proved very productive, and the seed was sold in small parcels for ten years. Thinking it would not be safe to sell from it any longer, it was tied up in a bag and put in a tight bin in the garret, where it remained seven years, when it was discovered one day, and curiosity tempted me to test it. I counted out 14 seeds, 10 of which vegetated. As gardeners

prefer old seed if it will vegetate, it was put up for sale again. The next year, a gardener inquired for old Cucumber seed. He was informed we had some eighteen years old, and if he would test it and report the result, he should be welcome to the seed. He afterwards informed us that he counted out twelve seeds and planted them, and every one vegetated. So I think this seed will be good until it is twenty-one. I once made a trial of Old White Turnip Radish seed, which is set down in the table as retaining its vitality four years. We raised a large quantity of this one season, sufficient for our sales for four years. At the expiration of this time there were a few pounds left, which were tied up in a bag, marked old seed, with the year, and shut up in a tight bin in a loft. After it had remained ten years in confinement, it was taken out to throw away, but I had the curiosity to test its vitality. The result was, every seed vegetated. I might go on and give the result of various experiments made with seeds to test their vitality, but I have given enough to show that no certain rule can be laid down on this subject, as so much depends upon the manner in which the seed was saved, cured, or kept. Flower seeds, like vegetable seeds, vary in the length of time they may be relied upon as good. Balsam seed is good from 6 to 8 years. Larkspur, Pink, and many other seeds will not vegetate freely after the second year; the same is the case with the Aster. Hollyhock seed is good five years; Gilly-flower seed about the same length of time, and it is said the older it is the better, if it will vegetate, as it will produce more double-flowers. I should occupy too much space were I to give the result of all the experiments I have made with flower-seeds. I have found by long experience that the only safe course to pursue in relation to seeds is to test all, new and old, before offering them for sale, by counting out a certain number of seeds, and planting them in pots and

placing them under the glass of the green-house or grapery, and then count the number of plants which appear.

But with all this care, complaints are often made that the seed was not good,—seed that I knew was good, because it had been proved so, under my own inspection, by an infallible test.

There are various causes of the failure of good seed. One of these is, the injudicious manner in which an attempt is made to start it in a hot-bed. In consequence of the seeds having been sown upon the beds in a rank heat, they are prematurely forced up and easily destroyed, by being pent up without air as soon as the plants begin to appear above ground.

I once planted half an acre of Carrots, rather late in the season. I examined the field one morning, and observed the carrots were breaking through the ground finely. The day had been a very warm one, with a scorching sun, and the ground rather dry; at night I examined the field again, and to my surprise could not, at first sight, see any vestige of the young plants I had noticed in the morning, but upon a close inspection, found them all withered and brown, burnt by the sun. In this way the plants are often destroyed before any notice has been taken of them. Young flower-plants are often destroyed in the same way as were the carrots. Many young plants are destroyed by a minute black fly, or some other small insect, just as they emerge from the ground.

Small seeds are often planted so deep that they cannot push through the soil, while some large seeds are not planted deep enough. A friend has suggested the importance of giving some directions in this work, relative to the subject of planting seeds as to their depth, time of planting, and the time required for the plants to appear above ground. In answer to these inquiries, it may be stated, that in regard to the depth of planting, something de-

depends upon the soil. In light soils, the seeds should be planted deeper than in heavy ones; but the following directions may be a guide in soils of a medium texture, viz.: Sweet Peas, Lupins, Morning Glories, Four-o'clock, and other large seeds, should be planted about one inch deep. Balsams, Asters, Centaureas, etc., about one-half an inch. Cockscombs, Amaranth, and many other seeds of like size, one-quarter of an inch. Many of the very small seeds should be sown on the surface with a little fine earth sifted over them, just so as to cover the seeds, and then gently pressed with a piece of board. Great care must be taken with these minute seeds, to keep the surface of the ground moist if the weather is dry, and watch carefully for the first appearance of the plants, when they should be shaded in the middle of the day by spruce boughs, or a gauze covering, such as is used to keep off the insects from cucumber vines. They should be thus cared for until the plants have acquired strength to resist the scorching rays of the sun.

Cypress Vine, Indian-shot, and many other hard-shelled seeds, require a long time to vegetate in the open ground, unless first prepared by pouring scalding water over them, in which they should remain until the water is cold. When planted, thus prepared, the last of May, these seeds will appear above ground in about one week, if the weather is warm.

The Three-thorned Acacia seed will sometimes remain in the ground a year before it vegetates, and I have known Asparagus seed sown late in May, remain in the ground until August, before the plants appeared; but if treated the same as recommended for the Cypress Vine, they will vegetate in a week or ten days.

Globe-Amaranth seeds, (*Gomphrena globosa*) and some other seeds enclosed in a cottony substance over a shell, will not readily vegetate unless this outer covering is taken

off, which may be done with a sharp pointed pen-knife; but this is a tedious process when many seeds are to be planted. I find no difficulty without removing this coating or without scalding the seeds mentioned, if pots of the seeds are plunged in a hot-bed, where there is a powerful heat; they will start in a week or less, according to the degree of heat, but great caution must be observed as soon as the plants appear, to see that they have plenty of air, or they will surely be destroyed.

It is impossible to give directions for planting seeds, that will be applicable to all soils, situations, or seasons; but judgment, discretion and care must be exercised under all circumstances to ensure success. Plants, long propagated by cuttings, lose their power to produce seeds. This is the case with many fine perennial plants, with double or single flowers, that have been propagated by divisions of the roots, as well as by cuttings.

It is a great disappointment and vexation, to find, after you have made ample preparations, and planted your seed, that it was worthless, your labor all lost, and probably too late in the season to make trial of other seed. Perhaps the following hints may remind one of the importance of beginning right.

“To raise your flowers, various arts combine,
Study these well, and fancy's flight decline;
If you would have a vivid, vigorous breed,
Of every kind, examine well the seed;
Learn to what elements your plan's belong,
What is their constitution, weak or strong;
Be their physician, careful of their lives,
And see that every species daily thrives;
These love much air these on much earth rely,
These, without constant warmth, decay and die;
Supply the wants of each, and they will pay
For all your care through each succeeding day.”

SELECTION OF FLOWERING PLANTS.

FOR THE FLOWER GARDEN, AND THE ARRANGEMENT OF
THE VARIOUS SORTS ON THE LAWN OR BORDERS.*

"How exquisitely sweet
This rich display of flowers,
This airy wild of fragrance,
So lovely to the eye,
And to the sense so sweet."—*Andreini's Adam.*

"And round about he taught sweet flowers to grow."—*Spencer.*

"The leading faults in all the flower gardens I have seen, are, the want of a proper selection of kinds, and a very bad mode of arranging them. It makes very little difference how elegant or striking a plan you may have for a flower garden, if that design is badly planted, so as to conceal its merits, or is filled in with a collection of unsuitable kinds that have a coarse, or ragged habit of growth, or remaining in bloom too short a time.

* This article was written at my request by Mr. Robert Murray, Landscape Gardener, of Waltham, Mass. I have always admired the exquisite taste he has exhibited in the arrangement of the flowering plants and shrubbery, in the garden under his management on the "Gore Farm," as it is called, in Waltham, of which he had the sole charge for many years, while it was in the possession of the late Hon. Theodore Lyman, and afterwards S. C. Green, Esq.

For a number of years past, Mr. Murray has devoted himself to the study and practice of landscape gardening, in which profession he has been eminently successful. Where ornamental grounds are to be laid out, I know of no other person who is better qualified than Mr. Murray to execute the work to the satisfaction of his employer, however refined he may be in his taste on this matter. I have oftentimes been pained to see places beautifully situated by nature, and susceptible of great improvement by artistic skill, almost ruined by the unfortunate mistake of employing a person without skill or taste in laying it out. Better that the place should have remained in a state of nature, than to have employed an ignoramus, in such an important work. A work of this sort is a work for an age, and if badly planned and executed, cannot be corrected, without much expense and loss of time. Beware then of being "penny wise and pound foolish."

A flower garden that deserves the name, should resemble a rich picture, where the artist has all his colors nicely contrasted and blended together; rejecting almost every kind that does not afford a continual display of beautiful colors, and sweet odors, and have a neat and agreeable habit of growth. I know that it is difficult to restrain a passionate lover of flowers from having a great variety of species, but the most beautiful flower gardens that I have seen, and had the management of, were those where but very few kinds were introduced, and those kinds possessing the qualities I have already mentioned. And it will, likewise, add very much to the effect of the selection, to give up the old method of mixing and intermingling the species and varieties in all the beds, and adopt the modern style of grouping and massing the colors in separate figures, selecting the most delicate and beautiful shades of pink and white, light blues, and straw-colored yellows, with the soft tones of crimson and vermillion. These beautiful colors, when boldly brought into contrast, so as to form a pleasing attraction to the eye, make a more immediate and forcible impression than a confused mixture, not distinct enough anywhere to give a decided effect to the whole. The system of massing plants has another great advantage, of preventing you from seeing any bare surface of soil, or parts of figures not covered with foliage and flowers, the parched appearance of such bare surface, when seen, tends to impair the air of freshness and beauty of the flowers, and when beds are planted with a large mixture of different varieties, such as straggling and spreading, tall and short, it is almost impossible to prevent large portions of the soil from being seen.

I would recommend, not to have the flower beds scattered promiscuously over a lawn, without any connection with each other, but a simple group of regular beds or figures of various sizes, such as circles, or ovals neatly cut

out, and occupying about the centre of the lawn; when these are well kept, the freshness and verdure of the green turf, gives a fine contrast to the flower beds, and adds very much to the brilliant colors of the flowers themselves. In some of the beds, I would aim at producing splendid masses of one color, and in others, such as the largest beds, a mixed and choice collection of annuals, which would give a variegated mass of colors throughout the season: in other beds by themselves, I would fill up with exotic flowers, or flowering shrubs, such as are brought forward under glass for bedding out, such as Heliotropes, Lantanas, Bouvardias, Geraniums, Fuchsias, Ageratums, Verbenas, etc.

The following collection and arrangement for a large oval bed will be found to give a brilliant display of colors from July to November. In the first row, Mignonette to be sown all round the border, eighteen inches from the edging; after the seed is through the ground, plant all the various colors of *Portulaca* alternately, one foot apart in the same row. The second row, three feet from the edging, plant all the fine mixed colors of *Phlox Drummondii*, eight inches from each other. The third row, four feet from the edging, sow with white Candytuft, planting all the fine varieties of China Pink three inches apart in the same row. The fourth row, five feet from the edging, plant with Purple Globe Amaranth eight inches apart, with a German Ten Week Stock between the Amaranths. The fifth row, six feet from the edging, plant alternately, all the various colors of fine double German Asters, six inches apart in the row. The space remaining in the centre, fill with all the different colors of the *Petunia*, planting one foot apart amongst the *Petunias*, bulbs of all the fine colors of the Hybrid *Gladiolus*, which, when in bloom with their long densely flowered racemes of blossoms, varying from white to salmon and carmine, scarlet

and crimson, standing up among the creeping Petunias, will make a fine display.

The annuals that I have been in the habit of sowing in separate beds, are as follows: The splendid collection of German Asters, German Ten Week Stocks, Double Chinese Pink, all the varieties of Phlox Drummondii, Petunias, Coreopsis Drummondii, which makes a fine yellow bed, Purple Globe Amaranths, and Mignonette. I do not wish any one to imagine that I decry and discard all the other annuals and tender bedding-out plants, not mentioned here, they are all very pretty, and some of them curious, but they should, in my opinion, only be planted in borders along side of gravel walks, or amongst flowering shrubs.

The variety and beauty of many tall growing plants should secure them a place in every garden of large size, that has long lines of borders along side of gravel walks, especially when the borders have a back ground of green trees and shrubs; they are then set off with a beautiful and charming effect. The following is a select list of a few of the most showy perennials, biennials, and annuals: The tall growing ones for the back ground, viz., Dahlias, Hollyhocks, all the tall growing Phloxes, *Digitalis alba* and *purpurea*, *Spiræas*, *Delphinium elatum*, etc., *Campanulas* and *Salvias*; in addition to these there should be light frames for a few choice climbers, such as the *Mau-randias*, purple, white, and pink varieties, Sweet Peas, Cypress Vine, *Tropæolum* of sorts; mixed Morning Glories; *Thunbergias*, mixed. Then should come the plants of middle height to be gradually sloped off with masses of Petunias, *Gladiolus*, French and African Marigolds, Asters, Balsams, Globe Amaranths, Canterbury Bells, blue and white, *Coreopsis* in variety. *Delphinium Sinensis*, *formosum*, etc., all the varieties of *Helichrysums* or Eternal Flower, African Hibiscus, *Mirabilis* in variety,

Dwarf-rocket Lackspur in variety ; all the beautiful *Nemophilas*, etc. With good taste in their arrangement so that all the colors are well blended, these flowers will make a very brilliant show through all the summer."

PLANTS FOR BEDDING.

There is no more pleasing or tasteful arrangement of certain flowers than disposing of them in masses upon the margin of a lawn, or in a grass plot in figures cut out in the grass. These figures should not look stiff and set, as they will, if laid out in squares, parallelograms, or triangles, but there should be ease and grace in their appearance. Figures with gentle curves should be adopted, fern-leaved shaped scrolls, or any other fanciful form which may be adopted by a person of taste, and no one should be employed for laying out these beds, who has not an eye to the beautiful.

No disposition of plants can be made which will be so satisfactory and pleasing as flowers massed in this way, provided the grass be kept smooth and close.—The figures are first marked out with stakes ; the sods carefully taken out, and the edges of the beds pared true with a sharp spade or turf-parer. The space should be filled up with rich garden mould, and compost, sufficient, after it has been dug and settled, to raise the beds in the centre—so as to have them crowning. They are then ready for the reception of the plants. As a general rule, one variety or one color should be in each bed ; but where there is a limited extent of ground, two or three colors may be disposed in one figure, for example red, rose, and white will harmonize, or purple dark blue, light blue and white ; blue and scarlet, bright red and yellow ; orange, yellow, sulphur and white, and many other combinations and shades harmonize. But blue and yellow should not stand side by side, nor dull red and yellow. It will be found a very interesting study

to learn the art of arranging the flowers for the lawn or garden; and such as have a correct taste for the colors, will probably be the most expert.

The most suitable plants for bedding are the following: *Portulacas*; white, lemon, orange, scarlet, and crimson. *Verbenas*; scarlet, rose, white, purple, and blue. *Heliotropes*; lilac, and blue. *Petunias*; pure white, crimson, and variegated. *Eschscholtzia*; orange. *Drummond's Coreopsis*; yellow. *Geraniums*; scarlet. *Pyrethrum*, or Double Fever-few; white. *Mexican Ageratum*; pale blue. *Dwarf Coreopsis*; dark brown, brown with yellow edge, yellow. *Drummond's Phlox*; crimson, scarlet, rose, and white. *Stock Gilly-flowers*; *Dwarf Phloxes*, and many other plants of taller habits appear to great advantage when planted in masses in the shrubbery border or lawn, where the latter is extensive.

DOUBLE FLOWERS.

Many botanists do not approve of double flowers or hybrids: they see no beauty in them, it brings into confusion the regularity of their classification, and therefore regard them as monsters, as indeed they really are. By high cultivation, the stamens of the flower are converted into petals, to the great delight, in most cases, of the florist. In what estimation, in the eye of the florist, would a single rose be held, in comparison with a full double perfect variety, or a single Aster beside an improved Pæony-flowered one. The fragrance would be the same in the rose, double or single; but it would be like going back to

barbarism to prefer the single flower; thus ignoring the culture and skill of the florist for past generations. Adam and Eve were put in possession of a truly botanic garden: God gave wild flowers as he made them, and left it with them and their successors in horticultural pursuits, to find their pleasure in making improvements.

But all flowers are not improved, even in the eye of an amateur, by the multiplication of the petals.

The efforts of man to improve certain flowers are futile. Being perfect in themselves, any attempt to improve their beauty is almost impious, and results in failure. Take for example the white garden lily, a flower so perfect, pure, and comely, with its parts so distinct and lovely. What an abortion and failure is the double flower: the upper leaves of the flower stem are transformed to petals, and we have the flower contorted into a lengthened assemblage of green leaves, passing into white, without form or grace, a ridiculous transformation of beauty into ugliness: it is a monstrosity indeed, and can only be retained in a collection for its oddity.

The *Petunia* is not improved in its double varieties. A few years since, they were all the rage; but are now generally discarded, as the fine improved single varieties are considered far superior.

The double *Campanula media* has no merit; it may be likened to a nest of tubs or boxes. The large bell is filled with smaller bells in the same way.

The double *Nasturtium* or *Tropæolum* is another example of a failure to improve; the centre of the flower is filled up with numerous contorted petals, and one not acquainted with it would not suppose it to be a *Nasturtium*.

The *Zinnia*, one of the most unlikely flowers to be improved, has within a few years become quite a favorite in its double varieties. Instead of the rough and stiff form of the flower, with the ugly high disk in the centre, it has,

in its double state, been converted into a flower, that is graceful, and regular in its shape; the whole disk is now filled out full with closely imbricated petals, and is of the form and nearly the size of a moderate sized Dahlia.

The double *Hesperis matronalis* or Sweet-rocket is one of the most ornamental flowers of the garden. The principal double varieties are the white and purple; the former quite hardy, the latter more delicate and hard to keep through the winter.

The double Stock Gilly-flower or *Matthiola* is far superior to the single, and constitutes, in its endless varieties, one of the most desirable ornaments of the flower garden. As all the strength of the flower is concentrated in its numerous petals, it produces no seed. It is necessary to plant one or more single plants, by the side of the double ones, that they may impregnate the single ones, which produce the seed from which double flowers are obtained, and from this seed, if from a good variety of plants, one half may be expected to be double.

The Double Balsam is well known to all, to be one of the most showy of the floral tribe. The flowers resemble Roses or small Camellias.

Double *Portulaca* have been introduced within a few years and are great novelties. The brilliancy of the colors, and perfection of shape, are very charming. When cut, they are often judged to be scarlet, orange, or white roses, by persons who have not been acquainted with them. One great drawback to their extensive culture, is the paucity of seed they produce, as hardly a capsule of seed is to be found on a plant. I suppose that by hybridizing, more seed might be produced; but one thing is sure, they can never become troublesome like the single varieties which fill the ground with seed.

We all know that the Dahlia, Aster, and numerous others, are wonderfully improved in their double varieties.

The genus *Dianthus* in all its species, except Sweet William, and a few others, are greatly improved in their double state. The Carnation and Pink are examples of the perfection to which flowers may be made to attain.

The *Datura* and other funnel-shaped as well as salver-shaped flowers, when double, lose their beautiful simplicity, and are monsters without beauty or perfection of shape; the same may be said of the Tulip, although some of the varieties are passable. The double Fuchsias, Azaleas and many other double flowers are no improvement.

A multitude of other flowers might be named, which have been improved in the double varieties, as the *Pæonia*, *Camellia*, *Lychnis*, *Tuberose*, *Larkspurs*, etc.

ON THE COLOR OF PLANTS AND FLOWERS.

We are often asked why there should be such a diversity of color in plants of the same species, produced from seed of one flower when grown in the same soil, or what is the process by which it is produced, or the cause of any color in plants. A question more easily asked than answered. I once put this question to a celebrated chemist, supposing he might throw some light upon it. The answer was, "that there were many theories upon the subject, but nothing satisfactory had been discovered, and probably never would be." It is the secret working of the God of Nature, and unexplainable. In turning over the files of the *Horticultural Journal*, published in 1835-6-7-8, I find the following article upon the subject, from which, as it may

be of interest to the Lovers of Flowers, I insert the following extracts :

“The curious and striking varieties of color in flowers, their metamorphoses, the delicate pencilling of the veins in many, and the beautiful hues of striped petals, which have from time immemorial attracted the attention even of the listless observer of nature, have of course not been left unexamined by the philosopher of every age; and although there is sufficient reason to believe that the usual methods of rigorous examination into cause and effect have been applied with all the ingenuity that a love of nature, or an ambition of distinction could suggest, these labors have not yet led to any very satisfactory theory on the subject of the cause of color, and its variation of flowers.”

“Those who are not conversant with raising varieties of *Tulips* from seed should be informed that what is technically called *breaking* of a seeding tulip, is the sudden change which takes place one year in the color of the flower; for instance, from a dull purple it will change to a fine clear white with brilliant red stripes, or from another dull color to a bright yellow with dark stripes, and this bulb, with its progeny of bulbs, if properly managed, will always remain of the same colors. This process often takes six or twelve years, and cannot apparently be foreseen or accelerated, some never break or change at all. The person who raised or broke the famous tulip Polyphemus, told the writer that it was nine years before this effect was produced.”

“There are also many other curious proceedings of nature on this subject, which must have been generally remarked; the flower of *Cobæa scandens* is green the first day and violet the next—the *Hibiscus mutabilis* is white in the morning, pink at noon, and red at night.”

“M. DeCandolle, whose opinion on all subjects relating to the laws of vegetable structure is entitled to the great-

est attention, has divided the colors of flowers into two series, the Xanthic, and the Cyanic as follows:

Xanthic or oxidized series	{	red
		orange red.
		orange.
		orange yellow.
		yellow.
		yellow green.
Color of leaves,		GREEN.
Cyanic or deoxidized series	{	greenish blue.
		blue.
		violet blue.
		violet.
		violet red.
		red—

founded on a memoir of Messrs. Schubler and Funk, published at Tubingen, in Germany, in 1825, where it is stated that all flowers may be divided into two classes, one having the *yellow* color for its type; these are incapable of passing into blue, but into every shade of red and white; the other having the *blue* color for its type, which can also pass into every shade of red and white, but never into yellow; thus, for instance, the *Potentilla*, a little yellow flower like the butter-cup, which abounds everywhere, trailing along the ground, has been found of different shades of red, but never blue; the *China Aster* which has every tinge of red, blue, is never yellow; the *Dahlia* is never blue, but often yellow and red."

"It will have been remarked that white is omitted from these two series. It may be doubted, indeed, whether it really exists in a state of purity in flowers, and it seems to be rather some other color reduced to an exceedingly light tint. Redouté, the French flower-painter, is said to have availed himself with great advantage of this fact. He always placed the flower he wished to represent before a sheet of paper like that on which he had made his draw-

ing, and he uniformly found that the flower would differ from the paper in being more yellow, or more pink, or more blue, or in some other way. White *Campanulas* become blue when they are dried; infusions of white flowers in alcohol have always a perceptible tinge. Flowers which are white, verging upon yellow, yield infusions which alkalies bring to a more positive brown; infusions of those which are white, tending to blue or red, become light red by the action of acids, and greenish by the action of alkalies."

"Infusions of yellow flowers in alcohol are of a clear yellow, without the flowers losing much color. Acids produce no other effect in these infusions than to weaken their color slightly. Alkalies make them more brilliant or browner."

"Blue flowers produce, in alcohol, infusions either of a clear blue, as those of flax, or very dark, as in the case of the *Aconite* and the *Larkspur*. By the addition of acids they become red, and of alkalies green. Those which are colored red by acids, will not recover their blueness by the addition of alkalies, as sometimes happens to infusions of red flowers. Macaire having seen a red infusion of violets regain by degrees the natural blue of those flowers, by the addition of a vegetable alkali, such as quinine or strychnine, suspects that the color of the violet depends upon the combination of their chromule with some alkali. Schubler and Funk assure us that the infusion of the Blue Day Lily (*Funkia coerulea*), treated with an acid, will present, in the same glass, all the tints of the colored spectrum. Blues are among the most changeable colors in vegetation, passing freely to white, and to different tints of violet and red."

"From what has now been stated, it appears to result that modifications of chromule are the cause of the diversity of colors; and that these modifications depend

principally upon the degree of oxygenation. In leaves fully developed the chromule is green; it gains a tendency to yellow or red when it is more oxidized, as one perceives by the changes of the color of leaves in autumn, by the effect of acids; and it appears to verge to blue when it is less oxidized. We know that the flower of the *Hydrangea* becomes blue in a soil sufficiently impregnated with iron."

"The nature of this work does not admit of a very extensive discussion of this subject in its pages, but it may be well to show that plants do contain metallic oxides."

"Dr. Sprengel, in a German publication called *Der Land und Hauswirth*, or the Agricultural and Domestic Economist, states that in almost all plants analysis discovers more or less iron, and as the atmosphere does not contain any sensible quantity, it must be admitted that it is derived from the soil."

"In Sir Humphrey Davy's Agricultural Chemistry, it is stated that the only metallic oxides found in plants are those of iron and manganese, but there is little doubt that copper exists in the Rose, as may be verified by leaving a clean linen rag in rose water or in the water in which rose leaves have been steeped; after some days it will turn green, and copper may be detected, even when the rose water has been distilled in glass or new tin vessels. I remember to have seen a scientific account in some French publication, of gold being extracted from the sage plant, although in very small quantities. Iron and manganese would however be sufficient to produce almost every variety of color known."

"Immediately after the flower withers, a change in the juices of most plants takes place, by which change the fruit or seed is matured; this is very perceptible in the eatable fruits, and proceeds until acidity becomes obvious to the taste; after this saccharine juice is formed—now if

iron in a low state of oxidation be the coloring substance of a flower, it is clear that as soon as the juice of the plant becomes more acid, a farther oxidation takes place, this would cause a change in color."

"I would instance the Lilac. Iron in a low state of oxidation combined with manganese and carbonic acid, form component parts of a mineral called Pearl-spar, which is of a brilliant white—it may therefore exist in the same state in the white Lilac; and the manganese is often found, particularly in the Tircé marble, to be the cause of lilac color—as the juices ripen and grow more acid, the iron is farther oxidized, the flowers fade, turn of a rusty brown, and finally the seed vessel ripens of a dark brown."

That Iron is able to produce almost every variety of color we may learn from the fact that the native minerals, Phosphate of iron is of all shades of blue. Sulphate and arseniate of iron, are green, brown, yellowish red, brownish green. Humboldtine or oxalate of iron is bright yellow, etc., etc.

Manganese is also found of most colors, from the greenish blue of the *Horn Mangan* to the rose red of the Tircé marble.

"The amethyst is supposed to be colored by iron and manganese, the emerald by oxide of chrome; the topaz, the sapphire and the ruby by iron."

"It is well known to the florist that over manured soil deepens, or spoils, as he calls it, the colors of his tulips and other favorites, and that from this deterioration it is difficult to recover them.

"Strong manure contains a large proportion of alkali, and this always deepens and rather deadens many colors, particularly of the red and purple tinge, while acids on the contrary lighten and enliven them; this consideration may be experimentally applied to the subject."

A number of years since I sold to a Tulip amateur a bed

of choice varieties of this flower, which had bloomed in my own garden the previous year, which I knew to be very fine. At the time of their flowering in his garden, he came to me in a great rage, bringing with him a handful of the Tulips, and accused me of selling him a lot of inferior bulbs for the very best. They were indeed inferior, except in shape. I examined them, and found the ground color to be a dull brown, with stripes a few shades darker. I could not believe they were identical with those I sold him, but had some suspicions they might be the same, but had not received proper treatment. He invited me to visit his garden and judge for myself. The journey of 25 miles I cheerfully undertook, and found to my surprise, that not only my own Tulips, but also those obtained from two other sources, were indeed a sad sight, all pretty much in the same style and worthless. But I was not surprised when the mode of their cultivation had been detailed. He had not only prepared his beds with a large quantity of strong manure, but to cap the climax, he covered the bed in autumn with four inches of tanner's hemlock bark as a protection. The leaching of the hemlock bark, and heavy manuring, satisfactorily explained the cause of the disaster, not only to myself, but to the gentleman also, when we presented the facts before my friend, Mr. Teschemacker, who affirmed that their treatment was sufficient cause of their deterioration. The inquiry was then made, how the flowers could be brought back to their original beauty. The answer was, that it was doubtful whether that could be done, but it was suggested, that the only probable means would be, to form a compost of virgin soil from a pasture without any manure, with sand and lime rubbish.—It, however, was not successful.

THE ART OF CONSTRUCTING BOUQUETS; ARRANGING FLOWERS IN VASES, Etc.

FOREIGN FLOWER FASHIONS.

I have been requested by a number of the readers of my first "Book of Flowers," should I publish another work or a new edition of the old one, to give some directions in constructing bouquets, showing how to arrange the colors, etc. Now this is about as difficult a task, as it would be to direct how a beautiful painting could be executed; such an art cannot be communicated by writing. It requires taste, skill, and practice to become a good artist, and to know how the colors should be blended to form a perfect picture. It is somewhat so in arranging flowers in a bouquet. There is very bad taste exhibited in many of the bouquets that are offered for sale in the flower shops, which to the eye of an amateur is about as annoying as discords are to the ear of an educated musician. I must, however, confess that I cannot communicate the art of arranging the color of flowers in a bouquet that would be satisfactory to myself, and must give as a substitute, some hints which I find in a late London paper from a report of a gentleman who gives an account of what he saw on a visit to Paris, in an article entitled, "*Flowers and Foreign Flower Fashions.*" The article is a long one and I give only the following extracts:

"Much green with a little color is a rule that has a wide reign; and also it is remarkable how rarely one sees *one* color; but crimson and buff roses, violet and pink,

pale sea green and rose color, or any of these, with white. This seems the prevailing thing, as much in dress as in flowers, and as much in rooms as anywhere. But then, Parisians do compose room, and toilette, and flowers, all as a sort of picture.

“But to go on to vases and to flowers in general. The great idea now in arranging them, is to show each flower separately (not in that horrid way, of all others most objectionable, when, having a crowd of flowers, each flower tries to be seen, thus making up a result of a mass of excited petals, like faces turned up in a crowd)—but where the view is to let each flower repose quietly and calmly upon a bed of green. That is, after all, the natural view of flowers; but I never saw it done perfectly till a few days ago, at Paris.

“Bouquets for the hand are not made up abroad like “the run” of English ones. The prettiest mode this year is to have a kind of fern shaped spray of green going down the bouquet between each little group of flowers. It seems to me that in composing a bouquet, there are five or six separate bunches of green arranged first separately—some fern, for example, or sprays of rose leaves (to mention things, that every one has at hand), and then these sprays are fastened to the centre, formed, one after each little group of Azaleas or Geraniums. The effect is exceedingly good. The flowers would not be mixed much—perhaps red and white in one place, and only pink in another; or perhaps blue would be alone here, and next door to it buff. The art is, not to seem to think the flowers unsuited to each other. Flowers for hair and dress are now very rarely mixed. You have some one flower and its own buds for all. Then, if more green is wanted, there are always sprays of ivy, drooping fronds of fern, long ribbons of delicate grass. As a general thing, however, one flower with its own leaves is enough for one per-

son's ambition; and the result is once more, much grace and little heaviness.

"For actual use on dinner tables, the prettiest fashion I have ever seen by far, is that of the large open vase supported on gilt branches, always so arranged as to look wide and low in proportion to its height.

"The dish or vase, I should mention, was of plain frosted glass, shallow and wide, and rested on twisted supports of bright and frosted gilding.

"The dish was itself filled up with bright dark green moss—one of the beautiful green-house lycopods might well be used here. *Lycopodium denticulatum* is, perhaps, best of all for the purpose, and is easily grown anywhere, in a shady corner of the green-house, or in a window that will not suit many flowering plants because of want of sun. The moss was raised in the centre—not a heap, but curved upwards. The flowers were as follows: one deep red Rose, one of the palest Blush white, a spray of white Convolvulus, just touched with pink, a cluster of red drooping flowers (I thought of the Rose acacia), one spray of pale wild Rose, one bright pink Rose, a cluster of white Acacia, and a drooping branch of the pink Convolvulus.

"It is to be remarked, the colors were *all* shades of rose and white. The whole thing was most perfectly bright, and fresh, and beautiful. Each flower was simply laid down on the green, fairly round the vase, no attempt being made to fill up the centre at all. The flowers just touched, and had each its own green leaves; the stems, of course, were just hidden slightly in the moss. I give this to show the style of thing, but, of course, other flowers can be used for any of those named. The great thing is, it seems to me, to have *some* idea to work to; and there certainly are such ideas to be picked up, sown broadcast abroad; where nobody is ashamed of trying to make themselves and everything else look their prettiest!

"Another thing that struck me was the great use made of green in everything, and the immense effect thus produced. A stand of flowers would really have very few plants indeed. There would be green and moss—and perhaps two plants in flower. Setting off one gem is far more the fashion than collecting a crowd that detract from each other's beauty. Each flower is thus allowed to be distinct. And then things are on a large scale. I have passed under a flower vase often in going to dinner—a tall vase on a side-table, with really gigantic flowers—Sunflowers and Dahlias, with great Roses and Gladioli, and with such large green leaves, and the flowers cut with such long stalks, that each seemed well detached—and the strange selection was Oriental, and beautiful in its strangeness. Of course all things of this kind must suit the rooms they are in; but in immense lofty rooms, and with the large massive style of most of the French furniture, nothing can be in better taste than some of these brilliant vases. Then the beautiful feathery grasses are very much used in Paris; and nothing can be more graceful, on a large scale, than are these white plumes."

PROTECTION OF PLANTS.

In our variable climate it is necessary to protect many of the herbaceous plants before winter sets in, especially in the vicinity of Boston and other places upon the sea coast. Farther back in the country, where the ground is covered with snow from December to April, it is not so important, as the snow is the best protection they can have. Many Alpine, Siberian, and other plants from high

latitudes, are not hardy when exposed to the vicissitudes of our winters, but in their own localities they are snugly stowed away under deep snow, all ready to burst into flower as soon as the snows are dissolved, where summer succeeds winter, without any spring. But when exposed here to the hot suns of February and March, succeeded by cold freezing nights, when the ground is bare, by the process of freezing and thawing, the plants are thrown out of the ground, and soon perish. Even many quite hardy herbaceous plants are thus destroyed. The only remedy to prevent this damage is to give all herbaceous plants a slight protection, which should be done before the piercing cold winds of December set in.

Leaves afford the best protection, and of these I prefer oak leaves, although any other kind will do very well. A thick covering of manure from the stable is injurious for many plants. Deep covering with any material is to be avoided. A covering of leaves three or four inches thick, is sufficient. A little brush laid over the leaves, will prevent them from being blown off by high winds. Do not be in a hurry to take off the covering before the first of April, and if the weather is severe, let it remain a few days longer. Some of the hybrid Roses, denominated pillar Roses, are best protected by laying down and covering with earth, in the same manner as we protect Raspberry canes, but care must be taken to prevent the stems from being broken. When taken up in the spring, strong stakes or poles should be substantially fastened into the ground, to which they should be tied to prevent the action of the wind, and keep the bushes in shape. Thus treated, I have seen pyramids of Roses, twenty feet high, which, without this protection, would have died down to two or three feet of the ground. Roses will bear any quantity of manure, and should receive a heavy dressing of stable or any other coarse material, applied to the roots in No-

vember, and spread and dug lightly into the ground in April. This affords the best protection to Roses and herbaceous Pæonies.

Tree Pæonies, which though very hardy, may have an additional protection of straw neatly tied over their tops, the flower buds are sometimes injured without it. Young Altheas, some of the Spiræas, and all tender shrubs may be treated in the same way. The Chinese Wistaria will receive much benefit by laying down, and covering with earth, the same as recommended for pillar Roses, as not unfrequently the flower buds are destroyed by the severity of the winter, and it is a great disappointment to lose the bloom of this, the most elegant of all ornamental climbing plants.

Having all the plants protected, much relief will be afforded to the amateur, as he thinks of his pet flowers, securely covered and safe from the effects of the extreme changes which so often occur in our climate.

SUPPORTS FOR PLANTS, TRAINING, Etc.

That the plants in a garden may at all times present a neat and orderly appearance, it is important to give them proper support and training as the season advances, otherwise heavy winds and severe storms will create great disorder and havoc in the pleasure ground. Stakes and rods, for this purpose, should be prepared in the winter or spring, and laid by for use, as they may be required. It will require some judgment and a little taste to prepare and affix these supports to plants of different habits. What would be most proper for a Dahlia, would not be appropriate for a Petunia. A strong stake, the size of a

hoe-handle, about six feet long, should be prepared for the Dahlia; it should be painted, if white, with a dull brownish green. No rods or supports should be painted a bright green; they will not require painting with any color if they have the bark on. Hazel rods, Buckthorn trimmings, or any other straight growing stick will answer for one year. Stout painted wire is more durable, and will answer for many years, if carefully preserved. Put down Dahlia supports before planting the tubers, as it can be done then in a more substantial manner than when the plant has grown a foot or two high. It is then all ready to tie the plant to as it advances in height. The best material for tying, is the bass from the West Indies; it is the bark of some tree, and is kept by most seedsmen, and is much used by nurserymen for budding. This is very strong and pliable if wet, and can be split up very fine, and looks neat, if all hanging ends be cut off.

When tall plants are in masses, they may be kept in shape by supports concealed as much as possible by the foliage, using strong brown twine, fastened to these supports, to surround the mass, but care must be taken that the stake or twine be invisible if possible. Morning Glories and many other climbing plants may be trained on twine to some object, and will require a little assistance to give them a start, after which they will take care of themselves; or in some corner they present a fine appearance when trained to common bean poles.

Petunias, in a mass, look best when left to themselves, as they naturally incline to a spreading position requiring only a little clipping when they grow out of shape. A single plant will make a handsome pyramid when trained to a supporting rod with an occasional trimming and tying.

A few plants, well trained and supported, produce a much finer effect, than a multitude of them when left to take care of themselves.

LAYING OUT THE FLOWER-GARDEN.

“ And the sinuous paths of lawn and moss,
Which led through the garden along and across ;
Some opened at once to the sun and the breeze,—
Some lost among bowers of blossoming trees,—
Were all paved with daisies and delicate bells,
As fair as the fabulous asphodels ;
And flowerets which, drooping as day drooped too,
Fell into pavilions, white, purple, and blue,
To roof the glow-worm from the evening dew.”

SITUATION.—As to the situation of a garden, it is not always in our power to choose. A level plot, however, is to be preferred ; for, if there be considerable descent, the heavy rains will wash away the soil. A southern aspect, sheltered from the north and west winds, is a proper situation for most plants. An inclination to the north, or west, or any any point between them, should, if possible, be avoided. It should be situated contiguous to or near the dwelling-house, and well exposed to the sun and air, that the more curious and valuable flowers may be treated with the best success.

SOIL.—The soil should be a deep, rich loam. If not naturally so, it must be made rich and deep by trenching and manuring, by carting away poor soil and bringing on good. If naturally heavy, it should be made light with a more sandy soil ; or, if too light, it should be improved by a mixture of that which is more heavy.

The ground should be trenched two spades deep, or from twelve to sixteen inches, according to the quality of the subsoil. If the subsoil is poor, the depth of the mould must be made by carting on such substances as are most needed to correct the bad qualities of the soil. A compost, made of decomposed green sward from a past-

ure, and old, rotten manure, would, in most cases, be the best application to increase the depth of the soil.

If the ground allotted for the flower-garden is inclined to be wet, or springy, it should be thoroughly drained by ditches, or drains, so deep underground as not to interfere with cultivation. A location having a gravelly subsoil and exposed to drought, should be avoided, if possible. In a word, what is wanted is a deep, rich soil, natural or artificial, not too wet, nor too dry.

LAYING OUT THE GARDEN.—In giving directions for laying out a flower-garden, it must be borne in mind that it is not the design of the writer to give elaborate plans for extensive pleasure grounds; those who are able or disposed to indulge themselves in this great luxury, will, probably, consult the professional landscape gardener, or derive their information from other sources within their reach, rather than from a work written particularly for the multitude, whose means may be more or less limited.

“Neatness should be the prevailing characteristic of a flower-garden, which should be so situated as to form an ornamental appendage to the house; and, when circumstances will admit, placed before windows exposed to a southern or south-eastern aspect. The principle on which it is laid out ought to be that of exhibiting a variety of colors and forms, so blended as to produce one beautiful whole. In a small flower-garden, viewed from the windows of the house, this effect is best produced by beds, or borders, formed on the side of each other, and parallel to the windows from whence they are seen; as, by that position, the colors show themselves to the best advantage. In a retired part of the garden, a rustic seat may be formed, over and around which honeysuckles, and other sweet and ornamental creepers and climbers, may be trained on trellises, so as to afford a pleasant retirement.”

In laying out a flower-garden, it is best to have the

work all completed by the middle of October, that it may be in readiness to receive bulbous, and many of the herbaceous and other plants, and such shrubs as are hardy enough to set in autumn.

The work may, therefore, be commenced at any leisure time during the months of August and September; or, if it is more convenient not to commence the work until spring, it should be accomplished as early as possible. If thus deferred, the proprietor must necessarily be deprived of the pleasure of having anything in its greatest perfection, except annuals, and tender bulbous, or tuberous plants, for that season. I should, therefore, advise, by all means, to have the work done in autumn.

The quantity of land to be devoted to the object may be small; but however limited the space, it is necessary that some order should be observed in the general arrangement.

As to the style of laying out, it will be difficult to propose any plan that would be likely to give satisfaction to all, for most of our readers have a fancy of their own; and, though they might be disposed to ask advice, yet would, probably, after all, follow the guidance of their own taste, whether it be good or bad. It may not be amiss, however, to throw out a few hints. And, in the first place, if any considerable extent is to be improved,—or if small, and it is desirable to have the business done neatly, and in a substantial, workmanlike manner,—we should recommend that a thorough-bred, intelligent gardener be employed to execute the work; for the beauty of a garden depends very much upon the manner of laying out, the proper consistency and richness of the soil, the make of the walks, and laying the edgings, whether of box, grass, or anything else.

The form of the ground may be either square or oblong, somewhat circular or irregular. The interior part may be

divided into oblong four-feet beds, or in the manner of a parterre, in some fanciful style; the former being more convenient, particularly for most of what are called florist's flowers, but the latter more pleasing to the eye. In either method, a walk should be carried around the outward boundary, leaving a border to surround the whole ground. This outward border will be the most appropriate place for choice flowering shrubs, and tall herbaceous biennial and perennial plants. If the border be a wide one, groups of ornamental trees, of low growth, may be planted in the background, especially on the northern and western quarters, which will greatly protect the plants from cold winds, particularly if evergreens be planted there. Large trees should not be set so near the garden as to injure it by their roots or shade. Every fine garden should be well secured by a fence or hedge, if at all exposed to the public road. A hedge is far the prettiest, and if well managed, neat and ornamental.

“The plan of the garden, be it either large or small, generally pleases when it is so constructed as to give a variety in the design. Formality, though often the leading feature, seldom gives that ease that is requisite. The planting of the ground should also bear the nicest consideration; by which, I mean, that such shrubs and plants should be selected as will form a pleasing contrast, and be appropriate in the different places assigned to them.”

GARDEN WALKS.

WIDTH OF WALKS.—The main walk, or walks, of a garden, should be laid out on a liberal scale. Nothing detracts so much from the pleasures of the flower-garden as contracted walks. When we wish to enjoy the company of a friend, in the flower-garden, it is much more agreeable to have him by our side, arm in arm, than to be under the necessity of making the tour of the garden in In-

dian file. The main walks should, therefore, be calculated so as to admit two persons to walk comfortably in a social manner, and, if wide enough for a little one in addition, so much the better. From five to six feet will not be too wide for the main avenue. The internal compartments, of course, should have much narrower walks, the width of which must be graduated, in a degree, by the size of the garden.

The walks of the flower-garden should be constructed of such material as will make firm and dry walking at all seasons of the year. The best walks are composed of small stones, oyster-shells, coarse gravel, or broken bricks, covered with five or six inches of fine gravel. As to the color of the gravel, or coating, you must be governed by fancy and convenience; but as to quality, it should be coarse and lively, containing a due proportion of light sandy loam, to make it bind close and firm at all seasons; but not so redundant of loam or clay as to stick to the feet in wet weather, nor so sandy as to be loose and open in dry weather.

Ground oyster shells are sometimes used, also granite chips, from a stone-cutter's, which make fine, hard walks; but these substances are too brilliant for the eye in a sunny day, and on that account are objectionable. A redish free-stone color has a better effect.

Agreeably to your design, stake out the width of the walk, and proceed to level the boundary on each side, corresponding with the adjacent ground, and form the cavity of the walk for the reception of the gravel,—observing that the whole space, to make a good and permanent walk, should be dug twelve or fifteen inches deep, to allow a proper depth for gravel, to prevent the weeds from rising from the ground below, and worms from casting up the earth thereof. The earth dug out from the cavity of the walk, may be used to raise and level any hollow parts on

each side, or contiguously situated, which, with the edging, if of box, should always be completed before you begin to lay the gravel.

The walks being thus laid out, you may first lay any stony rubbish,—such as broken bricks, small stones, etc.,—for several inches deep in the bottom, which will drain off extra moisture, and thereby prevent the surface from becoming mossy or foul; the proper gravel is then to be laid on, six or eight inches thick. As you proceed in laying, observe to rake off the coarse parts into the bottom, and to raise the middle of the walk higher than the sides, in a gradually rounding form, just as much as is sufficient to carry off the water to each side.

The proportion to be observed is,—a walk of four feet wide should be one and a half inches higher in the middle than at the sides, and for every foot of increase in width, add one-fourth of an inch to the elevation of the centre. Rounding the walk too much would make it very uneasy to walk upon, and of an unpleasant appearance. No more gravel should be laid in one day than can be finished off and rolled effectually. Clean, hard gravel walks add much to the beauty and comfort of the garden.

A garden roller is indispensable where there is much extent of walks, and it should be applied as often as once a week, and particularly after a rain.

PLANTING BOX AND OTHER EDGING.

The surface of the garden having been levelled, and the walks dug out, according to the plan, and partially filled with stones and coarse gravel, the operator may now proceed to plant the box edgings, or any other plant he may substitute for that purpose, or grass if that is preferred.

Box, of all other plants, makes the neatest and most beautiful edgings. This may be set in September or October, but will require protection, as it is very liable to be

thrown out by the frost, or winter-killed, without it. It may also be planted in the spring, and also in June; but when late planted will require shading and watering.

Box takes root freely from cuttings, and is sometimes used without root fibres; but, unless great care is taken, some of it will fail to grow, thereby making the edging uneven and full of gaps, and it will be found difficult to get it into good shape again. If it is to be raised from cuttings, it should be done in a bed by itself, where it can have the benefit of shading and watering.

To make neat edgings, you should get some short, bushy box, and let it be slipped or parted into moderately small slips, of not more than six or eight inches in length, dividing it in such a manner that each slip shall have more or less roots upon it, rejecting such as are destitute of them, for planting by themselves. If any have long, straggling roots, they should be trimmed off, and the plants should be made pretty much of a length.

It is to be premised that the margins of the beds have all been properly levelled or graded; then they should be trodden lightly and evenly along, to settle them moderately firm; if for a straight edging, stretch the line along the edge of the bed or border; with the spade make up any inequalities of the surface, according to the line; then, on the side of the line next the walk, let a small, neat trench be cut, about six inches deep, making the side next the line perfectly perpendicular, turning the earth out toward the walk or alley.

For a curving margin, a strip of board, an inch wide and twelve or fifteen feet long, with pegs attached by screws or nails, at various distances along its length, so that it can be made fast in the ground, to correspond with the design, may be used instead of the line; but some workmen are so expert, that, having the design transferred to the ground, they will proceed with accuracy without such

a guide. At any rate, the trench is to be dug out as directed for a straight line.

The box is to be planted in the trench, close against the straight side, against the line, or strip of board, placing the plants so near together as to form immediately a close, compact edging, without being too thick and clumsy, and with the tops of the plants as even as possible, all at an equal height, not more than an inch or two above the surface of the ground; and, as you proceed in planting, draw the earth up to the outside of the plants, which will fix them in their due position; and when you have planted the row out, then with your spade cast in the earth almost to the top of the plants, and tread neatly and closely thereto. When the edging is planted, let any inequalities of the top be cut as evenly and neatly as possible, with a pair of shears.

Grass makes a very neat edging if kept in order, but it requires so much attention to keep it in its place, so much edging and cutting, that I would not recommend it. If, however, it is made use of, it should be obtained from a pasture or road-side, where it may be easily cut in strips to suit, of three or more inches wide, according to fancy. The sward should be fine and tough, so as not to break in cutting and removing. The mode of laying will suggest itself to almost any one:—the surface of the grass should be on a level with the earth, and but slightly raised above the walk.

Thrift, if neatly planted, makes handsome edgings to borders or flower-beds. This may be planted as directed for box, slipping the old plants into small slips and setting the plants near enough to touch one another to form a tolerably close row.

Thyme, Hyssop, Winter-savory, and pinks are frequently used for edgings, but they are too prone to grow out of bounds, and therefore not to be recommended.

Many other plants are often used for edgings, but there is nothing that makes so neat and trim an edging as box.

It is a good time to clip old box edgings in June. They should never be suffered to grow tall, but be kept down low.

It is best to give some protection to box in the winter, by coarse litter, or by throwing up a few inches of the fine gravel on one side and the earth of the border on the other.

ON LAWNS.

No flower-garden can be complete without some grass. There are but very few, however, who can afford the luxury of an extensive lawn; but every one wishes for a few rods, at least, about the house; this may lie between the house and garden. When there is but a small surface to grass over, it may be done with turf, if it can be obtained of a good quality, which is not often the case. The best way is to begin at the beginning, and do the work up thoroughly. First, see that the ground is well prepared by deep digging or trenching; for it is in vain to expect the lawn to preserve its greenness in summer, unless the soil is pulverized so that the roots of the grass may penetrate two feet deep. After the soil is thus prepared and levelled, it should be left to settle a week or ten days; then it is to be raked off smooth, and it will be ready for the seed. The New England Red-top, or Bent-grass, alone, makes the finest lawn for this climate; but if it is desirable to give immediate effect to the lawn, there should be a mixture of White Clover. Three bushels of Red-top to ten pounds of White Clover, or four bushels of Red-top without it, is none too much for an acre. This may seem a heavy seeding, but it is none too much. After sowing the seed, it should be rolled with a heavy roller.

To have a fine lawn, it is necessary not only to mow it often, but roll it also, especially after a rain. By doing thus, a close texture and fine velvety turf may be obtained.

REMARKS ON ARTIFICIAL ROCK WORK.

There are many plants that succeed best when planted among rocks, and for their accommodation and to show off their beauties to the greatest advantage, it is common in large gardens to have an appendage, called a rockery. This is made of a collection of stones in the rough, or natural state, laid up without much order, with soil, which should be concealed as much as possible by the fragments of rocks.

As some plants succeed best in the shade, a portion of the rock work should be partly surrounded by trees.

Trilliums, Orchids, Cypripediums, and many other wild plants found in the woods and swamps, with an appropriate soil, would succeed very well in such a locality. I find an excellent article on this subject, written by my late friend J. E. Teschemacker, Esq., in one of the back numbers of the *Horticultural Journal*, which, as it is appropriate, I insert. He says:

“There are many plants with rather small flowers which possess exquisite colors and elegant forms; the charm of these is in a great measure lost by their being planted in the bed where the pitiless shower defaces their delicate tints with earthy splashes, or their distance from the eye causes their minute yet elegant characters to pass unnoticed; other plants run over the surface of the flower border to great distances, interfering with their neighbors, which would look much better hanging pendant from the crevice of a rock, or covering the sunny bank with their numerous blossoms.

“Nature, who is always an interesting and instructive teacher, points out such facts plainly, by often exhibiting

these her treasures inhabiting and flourishing in the cracks of her wild mountain scenery, making it as interesting on a near approach, as it is astonishing at a distance.

Near Boston there are several glens, on a small scale, where the naked rock is beautifully ornamented by the Columbine, the *Thalictrum*, (Meadow-rue) the Violet, ferns and many other plants of great interest; they always appear to me more captivating in these their natural situations than when formally planted in the parterre.

In Europe, few gardens are considered complete without their compartment of rock work; and even where the spot is of the smallest size, a little piece of this device is frequently seen, filling up and concealing an ugly corner; nay, in the immediate vicinity of large towns where the kitchens occupy the places of the cellars in this country, the way down is sometimes metamorphosed into a rocky glen where *Polypodiums*, *Aspleniums* and other ferns flourish—one friend of mine near London has a place of this kind, where there is a collection of more than two hundred varieties of fern, many of them natives of this country, he writes to me—‘This I have turned into a rocky glen, planted all over with every variety of fern I could collect, and there are about 200 of them, in the several interstices between one piece of rock work and another, all growing beautifully, and presenting a singular and interesting contrast to the other surrounding species of vegetation. I am quite sure that if any horticulturist who has the least feeling for the beauty of form were to see it, he would not be long without taking the hint; the effect surpasses much what I expected.’

The nurserymen in the vicinity of London, drive a considerable trade in these rock plants, as they are called, and generally keep them in small pots in appropriate mould, so that they may be purchased and transplanted at any time of the year; so great indeed has been, and I

believe is still, the demand for them, that any one acquainted with the subject will know that the Alps, the Appenines, and every mountainous chain in the moderate climates have been ransacked for the purpose of adorning these faint imitations of nature's stupendous piles.

The first and great care in erecting rock work is to see that it does not resemble a pile of loose stones, the next that it is not built in a regular form, such as the segment of a circle or right line, as I have seen recommended in some works—then that the fragments of rock be of widely different sizes—for instance, a few small stones may fill a large interval between heavy masses, but there must neither be a mass of immense blocks together, nor a number of small ones piled on each other. It is by no means requisite that the whole rock work should constitute one mass; on the contrary, more variety is produced by having it in separate masses, with passages occasionally narrow and ruggedly rising, so that it is necessary to climb over a slight impediment to make the circuit—some art is required in arranging the crevices, so that the soil fit for each plant be not washed out by heavy rain, and the roots laid bare; the moss which grows on the surface of barren rocks is excellent for filling the lower part of these interstices, and in cases where plants that love a damp soil are cultivated, a garden pot with the hole stopped to hold water, and another with the plant placed in it, may be easily concealed—where there is water which might be made to trickle over the rock work this aid is not required. Due attention must also be paid to the aspect. Some flowers only open in the sunshine, others are only half hardy, for these the south and sheltered side is appropriate; ferns and many others, love the shade, and will not support the parching rays of the sun, these may clothe the northern aspect.

I have already made the remark in a former communica-

tion that the clear and bright atmosphere of this section of the United States seems particularly adapted for collections of this nature; for many delightful plants which luxuriate in the colder yet purer air which prevails in the higher regions of the Alps, will not bear the humid and foggy atmosphere of England; these are often introduced, but as often perish; here they would probably be permanent.

I may possibly have enlarged more on this subject than can be interesting here, where few of these artificial structures exist, yet as it is almost certain they will be shortly introduced, and if once introduced, are sure to become common, especially as the materials both for their erection and ornament are in plenty, I may be pardoned for endeavoring, while opportunity is mine, to create an interest in a pursuit which has afforded me so much pleasure.

I conclude with a list of some of the most showy and conspicuous plants for this purpose, beginning with those which are found in this immediate vicinity.

Houstonia cœrulæa, and **longifolia**, bluish and long-leaved Houstonia. The former blossoms from middle of May to the middle of June in clusters so thick, that no stem can be seen, about three inches high, and may be gathered plentifully at Cambridge and Dedham, it is only annual; the long-leaved variety is perennial, an inch or two taller than the cœrulea, but is a much rarer plant, I have only seen it near the granite quarry at Quincy, it was then in blossom in August.

Mitchella répens, the Checkerberry, this is almost too well known to require description, but its beautiful hairy white flowers which are extremely fragrant, and the bright scarlet fruit which succeeds them, would be greatly ornamental to rock work; it abounds every where.

Epigæa répens.—Ground-laurel. I do not know that this beautiful plant grows any where in this immediate

vicinity, but it covers the rocks at Gloucester, Cape Ann, Plymouth, and a variety of other places, it is held in the highest estimation in Europe, and well deserves it. The fruit is rarely seen, nor do I remember a description of it any where; it is about the size of a small wood strawberry, white, pulpy, with divisions like those of an orange, the interstices filled with beautiful small black seeds, the flavor of this pulp is of a most delicate sweetness, which only remains an instant on the tongue, and appears as if formed for the food only of an ethereal humming bird.

Gualthéria procumbens.—Partridge berry. This is more ornamental in its red-berried fruit than in the flower—it is found every where in the neighborhood.

Dalibárda répens and **fragrariíoides**, the white and yellow Dalibarda, very lively little creeping plants, somewhat resembling the strawberry, but the flowers much more elegant from the delicacy of the stamens. Dr. Bigelow says they are found in woods in Princeton and in Hanover, N. H.; I have not been to these places, but found them plentifully creeping over rocks imbedded in moss in Maine, flowering there in August, here rather earlier. [*Dalibardia fragarioides*, is now called *Waldstenia*.]

Hepática trilóba.—Liver-leaf. This beautiful flower which appears before its leaves in April and May, is found plentifully at Mount Auburn in all its variety of colors, blue, white and pink; it is indispensable in rock work.

Thalíctrum anemonóides.—Rue-leaved Anemone, and *Anemone nemorosa*—Wood Anemone. The first, which is from 8 to 12 inches high, is found in plenty at Dedham, the other everywhere in woods; they are white and very ornamental.

Vióla pedáta, and others.—These are well known, and as they are early, are extremely desirable to satisfy the impatience of those amateurs who are constantly on the look-out for signs of the approach of their season of en-

joyment. Many other plants of this description abound near Boston, but I must pass on to those of other climates.

The first are almost the whole tribe of Saxifrages, one of which, *vernalis*, though not sufficiently showy for our purpose, is the earliest flower that blows near Boston. *Saxifraga granulata*, which may be purchased here, I recommend as most conspicuous.

The next are a tribe of thick-leaved plants called *Sedums* and *Sempervivums* or House-leek, amongst these the yellow stone-crop and the *Sedum ternatum*, both ornamental, are well known here.

The family of *Campanula* afford a liberal subscription towards our design. *C. pumila*, white and blue, *erinus* and many others adorn the rocky places bordering the Mediterranean.

Several creeping *Geraniums* which blossom throughout the summer are appropriate plants. *G. sanguineum*, *Lancastriense* and *Wallichianum* are to be had at the nurseries in this country.

Diáanthus montánus, Mountain pink, with several others of this tribe, are extremely pretty.

Verbéna, of different varieties, eclipsing every other flower by its brilliancy; this, however, requires protection in the house during the winter.

Lysimáchia nummulária.—Money Wort. This requires a damp soil to flourish, but must be kept in subjection, or it will overrun all the rest.

Lobélia bicolor and **crinóides**, with several others of this tribe, small bright blue flowers, very lively.

Tiarélla cordifólia, a pretty plant with spikes of elegant small greenish white flowers, a native of the older woods in this State.

Fragária Indica, or Chinese Strawberry. The bright red strawberry-like fruit of this is very ornamental to the rock in autumn.

Cerástium tomentósum, Mouse-eared Chickweed, has a small white woolly beautiful leaf, and for this genus a large white flower.

I have given a list of enough for a beginner, and shall be happy to continue it if these structures at all increase.

There are many other plants, not referred to in this article, which will be found in the body of this work, under the heads of their respective genera, that are recommended for rock-work.

PLANTS SUITABLE FOR THE AQUARIUM OR ORNAMENTAL POND.

When a garden is so situated that it can be supplied with living or running water, a collection of aquatic plants in an aquarium, in connection with a fish pond, will be an object of additional interest to the pleasure ground. But on no account would I advise an appendage of this sort to a garden, unless it be fed by a stream of water or spring. A *dug-out*, even if water can be obtained the year round, without an outlet or inlet, is a great nuisance, and only fit for raising frogs, mosquitoes, and for the growth of green confervæ upon its stagnant surface. With a stream or never failing spring of water, an aquarium can be made without much expense, if not on too large a scale. It should be at least three feet deep, and lined with a substantial stone wall; it should have a margin of grass, or be edged with rough or dressed granite or free-stone, surrounded with a nice gravel walk. The portion of aquarium designed for most plants, should be three feet deep, in addition to a good depth of rich soil, while the bottom of the other section should be laid

over with small pebbles, that the fish may be more distinctly seen; a few large shells will add to the interest of the pond. The most interesting aquatic plant of our country is the well known and universal favorite, the *Nymphaea odorata*, the Water Lily. Its botanical name signifies "the Nymph or Naiad of the Streams." Few plants possess more exquisite fragrance than the common Water Lily. When floating upon the surface of the water, its open petals spread out to receive the genial rays of the sun; it is an object of great interest, and may be truly considered the embodiment of purity and loveliness. It is generally found in deep water, where its roots are secured from the frosts in the winter by a sort of natural hot-bed being thus provided for it. In my experience, two feet of water is amply sufficient to protect it. The roots creep through the muddy bottom of ponds to a great extent. They are very rough, knotted, blackish, and as large as a man's arm, and difficult to extract from the bottom of deep water, but when taken up there is no more trouble. Tie stones to the roots, and throw them in to the part of the pond prepared for them, and they will soon establish themselves. There appears to be two common varieties, one with stout green stems, green calyx and white within, and the petals without any tint of pink or purple; the other has brown stems, more slender; flowers with brownish green calyx and pinkish white within, the outer petals tinged with red on the under side. While I resided in Lancaster, Mass., I found a beautiful variety, in a corner of a pond in that town, with pink petals, which I transferred to a small pond in my garden, where it flourished until I left the place. The pond was afterward drained, and I suppose the root was destroyed. Mr. Wm. E. Carter, formerly of the Botanic Garden, Cambridge, procured from the same pond a root which flourished many years in the aquarium there, but in clear-

ing it out by one of his successors, I understand this rare variety was destroyed. I fear that no more of it can be obtained, as there was but one spot in the pond where it was found, and I thought at the time that Mr. Carter and myself took possession of all the roots.

N. odoráta minor, is a rare variety with very small flowers and leaves, which I have found in some ponds, but cannot remember where. These varieties of the white lily will be sufficient for a small aquarium—but if it be of larger dimensions, there are a number of other species of native aquatic plants, which may be introduced.

Núphar advéna, or Yellow Water-Lily, has roots similar to *N. odorata*; it has a very curious flower, but the odor of it is the opposite of that flower, for the smell is anything but agreeable.

Pontedéria cordáta, or Pickerel-weed, is found in shallow water; its tall spikes of blue flowers are quite ornamental. For this plant the soil should be raised to within one foot, or foot and a half, of the surface of the water.

Sagittária sagittifólia, is a handsome plant found about the margin of ponds and brooks in shallow water. Its white flowers arranged in whorls of three, are produced in July and August; the depth of water over these roots need not be more than 3 or 4 inches. A portion of the soil on the margin may be raised a few inches above the water level, which will be a suitable place for the beautiful *Lobelia cardinalis*, of our meadows, for the curious *Sarracenia* or side-saddle flower, and for many other bog or swamp plants.

ON THE CULTIVATION OF PLANTS IN THE PARLOR.

"Descending snow, the golden leaf and sear,
Are indications of old Time's career ;
The careful florist tends his sheltered plants,
Studies their natures, and supplies their wants."

A FEW plants in the house are desirable, or even indispensable to the female portion of the family, or to invalids who have a taste for flowers.

A choice collection of plants, in the sitting-room or parlor, will add much to the charms of home; but as we often see them, weak, straggling, drawn up, crowded together, and infested with insects, they give pain rather than pleasure.

The clear sunlight through the window, is far preferable to a congregation of coarse earthen pots and saucers, with their sickly occupants. Judging from what we too often see, cultivators in parlors have very erroneous ideas of what is necessary for a perfect development of their plants. In fact, the plants are often killed with too much kindness; too much heat, too much water, want of light and air, or want of water, are the general causes of the sickly state of plants, to which may be added, unsuitable compost or mould. Saucers under the pots, if water is suffered to stand in them, are injurious, though necessary for the sake of neatness; never, therefore, suffer the water to stand in them, nor to be poured into them. The water should always be given on the surface, but never unless the surface is dry, and then for most plants, only in moderate quantities. Rain water only should be used, and that of a mild temperature, but not warm. When

water is necessary, it should be applied in the morning of a mild sunny day.

Manure water may be resorted to, to stimulate the plants occasionally; but an over-dose may be injurious, if not destructive.

It is useless to expend time upon plants in rooms where the windows face to the north. South, south-east, or south-west exposures are the best; of course a south window is the very best, as it admits the sun all day.

Light is more important than great heat; indeed, plants are frequently ruined, by keeping the room excessively hot. The hot, dry air of most sitting-rooms of the present day is so injurious to the *Camellia*, (as well as to some other plants) that it can hardly be made to flower, as the buds will fall off long before the time of flowering. But I have seen as fine blooms of the *Camellia* in an old-fashioned sitting-room in the country, as I have in the greenhouse. The room was so cold at night that the thermometer would fall nearly to freezing, with a plenty of air from the old window casements during the day. A good temperature for the *Camellia* is a range of 40° by night, to 60° during the day. I do not mean to be understood that this should be the highest range in the sun; but at the back side of the room, in the shade. This temperature will also do for most plants; some will thrive better with a higher range, but their cultivation should not be attempted in a sitting-room.

Where there is too much heat, without a proper exposure to light, the plants will spindle up, and make feeble, sickly growth, and if they produce flowers, they will be so weak and pale as to excite the pity of the beholder.

Unless the pots are turned every day, the plants will grow one-sided; every plant should receive as much light as possible.

A stand for flowers should have rollers attached to the

legs, so that the plants may be readily turned round to the light, or wheeled into the middle of the room at night, when the weather is severe.

COMPOST FOR PLANTS.

The most important requisite, for the successful cultivation of plants, is to have a stock of suitable compost for the various kinds. A plant in unsuitable mould cannot be healthy. The following materials should be obtained:

1. Good garden mould.
2. Mould from decayed turf, from a pasture or field.
3. Mould from decayed leaves.
4. Decomposed stable, or cow-yard manure.
5. Sea or river sand, free from salt.
6. Peat, from the meadows, that has been exposed to frost.
7. Coarse sand or gravel.
8. Broken flower-pots, charcoal, or oyster-shells.
9. Old mortar or plastering.

Garden mould will not be needed if there is a supply of fine decayed turf mould, and will be wanted only in case of necessity. Turf mould, for a basis, is probably the best ingredient for a compost for plants. The broken pots, charcoal, etc., are used for drainage, to be placed in the bottom of the pot at the time of potting. About one-fifth of the depth of the pot may be filled with the broken up drainage materials. A little meadow moss over this will prevent the mould from washing down.

Leaf mould is not always to be obtained; but it is a precious ingredient in a compost, and many plants thrive much better in it than in anything else. It takes a long time to decompose leaves so as to be suitable for compost.

To have compost in perfection, the different ingredients should be mixed in advance of the time when they are wanted. They should be thoroughly mixed together, and

put in heaps, in the shade or under cover, and turned over every five or six weeks during the summer, as it will be wanted in August or September, when the plants are re-potted.

Compost for Camellias, Pelargoniums, Roses, and most plants may be made of the following ingredients:

- 1 part river or sea sand.
- 1 " leaf mould.
- 1 " well rotted manure from old hot-beds.
- 1 " peat.
- 2 " turf or garden mould.

Or, if no leaf mould,

- 1 part sand.
- 2 " well rotted manure.
- 1 " peat.
- 2 " turf or garden mould.

If there is no peat, substitute turf or garden mould.

For Cactuses:

- 2 parts coarse sand.
- 3 " leaf and turf mould.
- 1 " peat, and a little broken plaster.

For Azaleas, Ericas, and most New Holland plants:

- 4 parts peat.
- 2 " sand.
- 1 " garden or turf mould.
- 1 " leaf do.

After the plants have done flowering in the spring, and as soon as the frosts are over, the pot should be plunged in the ground in a shady place, and watered sparingly during the summer. The great object during the summer will be to keep the plants at rest, so that they may bloom with greater vigor in the winter. They must not be suffered, however, to dry up, excepting the bulbous roots; these may remain in the shade without water, as the moisture would start them prematurely.

Washing the leaves of Camellias, Oranges, and some other plants, with a soft sponge, gives a healthy look to the plants, and is of great service to them.

Geraniums, or Pelargoniums, should be cut in very close, as they will make much finer plants, and start with greater vigor, and give a greater profusion of bloom, than if this were neglected. It will not be necessary to repot the Roses quite so early as the Geraniums, Camellias, and some other plants; they may be kept out much longer and exposed to severe frosts before they are potted. The branches should then be reduced to three or four buds, and the pots stowed away in the cellar for a couple of months.

Fuchsias may be treated in the same way. When brought into the room, in January, they will grow with great vigor, and give a finer bloom than if started earlier.

It is better to keep most of the plants rather cool during the months of November and December, and all the hardier kinds should be kept out of doors as long as possible. A slight frost will not injure a great majority of parlor plants; but a hard frost, although it might not destroy them, would weaken them very much. Geraniums, Heliotropes, Begonias, Salvias, and others of like tenderness, should be housed as soon as even moderate frosts are expected.

INSECTS.

There is a variety of insects which infest parlor plants, and, unless looked after rather closely, will destroy their beauty. The green fly is a great pest to parlor and greenhouse plants; but is easily killed in the green-house, by filling the house thoroughly with tobacco smoke at the close of the day, and then shutting it up tight for the night. For parlor plants, it will be necessary to put them in large boxes, or barrels, and fill them with smoke, and cover up tight. This will effectually destroy this destructive and disgusting insect. By immersing the plants in a tub of soap-suds they may be freed from the fly. To

do this, a piece of pasteboard should be made to cover the top of the pot, cutting a side slit for the stem; then, holding the hand over the pasteboard, the pot may be inverted without disturbing the mould, and, by the immersion, the foliage will be effectually freed from the insect.

The red spider may be detected by examining the leaves, which look yellow and sickly; but they are so small it will require good eyes to see them. This minute, ugly customer is not so easily got rid of as the green fly. Plants from neglected green-houses are often infested with it. The most effectual way of destroying this insect is to give the plants repeated syringing with sulphur and water, or a solution of whale-oil soap water. The plants can be taken out of doors in a mild day, and the operation performed upon them, remembering that it is important to syringe the under side of the leaf as well as the upper side, as the red spider will be found in greater abundance there.

There is another insect more difficult to get rid of than either of those named. It is the mealy bug, which may be found in the axils of the leaves, and on the stems of Oranges, Camellias, Heaths, etc. It looks like little specks of cotton; but, upon picking it off, a disagreeable, ugly-looking insect will be found imbedded in this glutinous, cottony substance. It is sometimes very troublesome in graperies, and requires much care to get rid of it. It is only to be destroyed by industriously picking it off.

PLANTS SUITABLE FOR PARLOR CULTURE.

THE parlor can be made very gay, during the month of November and part of December, by a choice collection of Chrysanthemums. If they are kept out of the mid-day sun, their beauty will be greatly prolonged.

Some of the new varieties of Pompones, or Button Chrysanthemums, are very beautiful, and add much interest to a collection. One dozen each of the best large

varieties, and as many of the new Pomponne sorts, will make up a good assortment. The colors of the last are more brilliant than those of the others. On some of them the flowers are not much larger than fine double Daisies, but are produced in great profusion. After flowering, cut off the tops of the plants, and stow them away in a dry cellar, where they may remain till spring. For the most successful mode of cultivation, see page

There is a great variety of plants that succeed well in the house, besides those already named. The Cactus Family embraces a great many varieties, which succeed well in very warm, dry rooms. The *Daphne odora* requires but little care, and is one of the most highly odoriferous plants in cultivation. The *Diosma*, *Heliotrope*, Sweet-scented *Verbena*, Double sweet-scented *Violets*, *Jasmines*, *Perpetual Pinks*, *Gardenia*, or *Cape Jasmine*, Sweet-scented *Geraniums*, *Mahernia odorata*, *Lemon*, *Orange*, and many other plants, are highly prized for their delightful odor.

Azalea Indica in its varieties, *Acacias* of many beautiful sorts, *Begonias*, *Fuchsia*, *Myrtles*, *Oleanders*, *Primulas*, *Daisies*, *Geraniums* (scarlet, rose, and variegated leaved), *Pelargoniums*, *Verbenas*, *Oxalis*, *Stevias*, and many plants, succeed very well in the parlor. I wish it could be said that the *Ericas*, or *Heaths*, so beautiful, would succeed equally as well;—they want a moist atmosphere, and neither very warm nor very cool.

The double *Stocks* and *Wall-flowers* are also suitable for the parlor, and are very simple in their cultivation. These are raised from seed, which, if of a good quality, will produce plants half of which or more will have double flowers. As they are difficult to transplant when large, without severely checking their growth, it is best to pot them in the smallest sized pots, as soon as they show six or eight leaves, and, as they advance in growth, shift them into

larger sized ones. When the flower buds show themselves, it will be easy to detect those that will be single, which should be rejected. Hyacinths, Polyanthus Narcissus, and many other bulbous-rooted plants, flourish in the parlor.

I have named more kinds of plants than are commonly cultivated in parlors, but the directions given in this chapter apply equally to small conservatories, connected with the sitting-room, where professed gardeners are not employed. For such appendages a greater variety of plants will be required than for the parlor.

REPLANTING OR POTTING PLANTS.

By the middle of August, or the first of September, the plants will require to be re-potted; this must be done with care and judgment. The following directions are minute and to the point:

To ascertain if a plant wants fresh potting, turn it carefully out of the pot, with the earth attached to it, and examine the roots. If they are matted about the sides and bottom of the ball, the plant evidently requires fresh potting. Then carefully reduce the ball of earth, to about a third of its original bulk; single out the matted roots, and trim away all that are mouldy and decayed. Probably the same pot may then be large enough, but, if it requires a larger one, it should be about two inches broader for a middle-sized plant; three or four for a large plant. If the roots are not matted, but the pots are filled with fibres, keep the ball entire and carefully plant it in a

larger pot. At the top of a large pot, an inch, and of a small one, half an inch, should be left for the reception of water, without danger of overflow. A little gravel, charcoal, or pieces of broken pots should always be placed at the bottom for drainage.

A plant newly potted must never be exposed to a strong sun. It should be watered and placed in the shade immediately, and there remain till it is rooted, which may be known by its starting to grow.

Plants are frequently destroyed by re-potting, merely from the careless manner in which it is done. Where the roots spread, plenty of room should be left open, a little hillock made in the centre of the pot, and the plant being placed thereon, the roots should be distributed around it in a regular manner, observing that they are not twisted or turned up at the ends. The earth should then be filled in, a little at a time, and the pot gently shaken to settle the earth to the roots all the way down. When filled, it should be pressed down with the hand. It is very common to fill in the earth at once, and press it hard down, which not only wounds the tender fibres, but often leaves a hollow space around the lower roots, and deprives them of their proper nourishment. But the thing most necessary to be observed is, *that the roots be allowed their natural course.*

All plants should be kept clear of weeds, not for neatness alone, but because these exhaust the nutriment which should feed the plant.

WATER.

The best water for plants is undoubtedly rain water; if this cannot be obtained, river water will do, pond water is not so good; but worst of all is hard spring water. In winter, and for delicate plants, even in summer, water should be placed in the sun until it becomes tepid before it is used.

The water should never be allowed to remain in the pan under the pot, as it tends to rot the roots. It may be well to observe that plants should be watered with a rose on the spout of a watering pot, and the more finely it is perforated the better, so as to sprinkle the water lightly over the flowers and leaves, without bending them down with its weight.

Many persons think it sufficient to water the roots, which is a great mistake. It materially contributes to its health and beauty to sprinkle the whole plant:

—"Comforting the garden, woods, and flowers
With the cool spray of artificial showers."—*Garcilasso*.

Of such plants as are succulent, it is generally advised to water the leaves but seldom, lest a redundancy of moisture should rot them. The best way in watering all plants, is rather to cast the water at, than to pour it on them, as it falls more lightly. It will be observed that more water, as well as more shelter, must be necessary for potted plants than for those in the open ground.

AIR AND LIGHT.

Flowers must not be denied the light, towards which they naturally turn; the want of it will injure their health as much as the want of water, air, or warmth.

They must also be allowed air, even those that will not bear the outer air must have the air of the room frequently freshened by ventilation, to preserve them in health. Care should be taken not to let plants stand in a draught, for, when so situated, one strong gust of an easterly wind will often prove sufficient to destroy them.

A DESCRIPTION OF SOME OF THE INSECTS THAT ARE INJURIOUS TO PLANTS IN THE FLOWER-GARDEN.

To give a description of all the insects that infest the plants of the flower-garden, it would be necessary to write a volume, so numerous are the voracious tribe that prey upon the roots, stems, foliage, and flowers of the floral kingdom. The depredation of insects is one of the greatest offsets to the pleasures of the garden. To nurse some favorite plant, watching over it from day to day, anticipating its opening beauties, and then, just as one's hopes are upon the point of being realized, to see the plant suddenly smitten with some mysterious disease, or as suddenly destroyed by some noxious vermin,—perhaps dying in a night, like Jonah's gourd,—who can help feeling a little ruffled, or even like justifying good old Jonah, who thought it “well to be angry for his gourd?”

The knowledge we possess of the habits of the various insects is very scanty. We are indebted, mainly, to that excellent work, “A Treatise on some of the Insects of New England, which are injurious to Vegetation,” by Dr. T. W. Harris, of Cambridge, Mass., for all that is important in relation to them, and have freely quoted from it in the following pages. Dr. Harris' Treatise should be accessible to every one who has anything to do with the cultivation of the farm or garden. His descriptions are so plain, that almost any person may get all the desirable information of all those insects of which he treats.

Some of the most annoying insects of the flower-garden, are the Rose Saw-fly, or Rose Slug, and the Rose Bug.

ROSE SLUG.—The Rose Slug has, within a few years, proved very destructive to the Rose, in the vicinity of Boston, and probably in other parts of the country; so much so, that many persons have almost abandoned the cultivation of this most desirable of all flowers. Several years since, the Massachusetts Horticultural Society offered the liberal special premium of \$100 for an efficient remedy. An application of diluted whale-oil soap was discovered, by Mr. David Haggerston, to be a complete remedy, when seasonably applied, and the premium was awarded to him. We insert on a subsequent page his communication to the Society, in which he details the mode of preparation and application.

The Rose Slug, if not checked in season, destroys the foliage, and the plants look as if they had been scorched by fire. We have known delicate growing roses killed to the ground by these small, but destructive insects.

One great objection to the use of whale-oil soap is the disagreeable odor it gives to the plant, and, if applied at the time the roses are in bloom, it spoils them entirely. When the insect is in the fly-state, it may be found in great numbers on the under side of the leaves. The whale-oil soap will destroy it in that state, if it is applied with a syringe, or garden engine.

If the application is made in season, and followed up, every two or days, till the roses begin to open their buds, the slug will either be exterminated, or so far checked as to preserve the foliage till the bloom is about over, when a new attack must be made upon the surviving vermin, which by this time have acquired their full size. It takes two or three days to rid the plants of the disagreeable odor, after the application. We give Dr. Harris' description of the insect entire:—

“The Saw-fly of the rose, which, as it does not seem to have been described before, may be called *Selandria rosæ*,

from its favorite plant, so nearly resembles the slug-worm saw-fly as not to be distinguished therefrom, except by a practised observer. It is also very much like *Selandria barda*, *vitis*, and *pygmæa*, but has not the red thorax of these three closely allied species. It is of a deep and shining black color. The first two pairs of legs are brownish-gray, or dirty white, except the thighs, which are almost entirely black. The hind legs are black, with whitish knees. The wings are smoky, and transparent, with dark-brown veins, and a brown spot near the middle of the edge of the first pair. The body of the male is a little more than three-twentieths of an inch long, that of the female one-fifth of an inch or more, and the wings expand nearly or quite two-fifths of an inch. These Saw-flies come out of the ground, at various times, between the twentieth of May and the middle of June, during which period they pair and lay their eggs. The females do not fly much, and may be seen, during most of the day, resting on the leaves; and, when touched, they draw up their legs, and fall to the ground. The males are more active, fly from one rose-bush to another, and hover around their sluggish partners. The latter, when about to lay their eggs, turn a little on one side, unsheath their saws, and thrust them obliquely into the skin of the leaf, depositing, in each incision thus made, a single egg. The young begin to hatch in ten days or a fortnight after the eggs are laid. They may sometimes be found on the leaves as early as the first of June, but do not usually appear in considerable numbers till the twentieth of the same month. How long they are in coming to maturity, I have not particularly observed; but the period of their existence in the caterpillar state probably does not exceed three weeks. They somewhat resemble the young of the Saw-fly in form, but are not quite so convex. They have a small, round, yellowish head, with a

black dot on each side of it, and are provided with twenty-two short legs. The body is green above, paler at the sides, and yellowish beneath; and it is soft, and almost transparent, like jelly. The skin of the back is transversely wrinkled, and covered with minute elevated points; and there are two small, triple-pointed warts on the edge of the first ring, immediately behind the head. These gelatinous and sluggish creatures eat the upper surface of the leaf in large irregular patches, leaving the veins of the skin, beneath, untouched; and they are sometimes so thick that not a leaf on the bushes is spared by them, and the whole foliage looks as if it had been scorched by fire, and drops off soon afterwards. They cast their skins several times, leaving them extended and fastened on the leaves; after the last moulting, they lose their semi-transparent and greenish color, and acquire an opaque yellowish hue. They then leave the rose-bushes, some of them slowly creeping down the stem, and others rolling up and dropping off, especially when the bushes are shaken by the wind. Having reached the ground, they burrow to the depth of an inch or more in the earth, where each one makes for itself a small oval cell, of grains of earth, cemented with a little gummy silk. Having finished their transformations, and turned to flies, within their cells, they come out of the ground early in August, and lay their eggs for a second brood of young. These, in turn, perform their appointed work of destruction in the autumn. They then go into the ground, make their earthen cells, remain therein throughout the winter, and appear, in the winged form, in the following spring and summer.

“During several years past, these pernicious vermin have infested the rose-bushes in the vicinity of Boston, and have proved so injurious to them as to have excited the attention of the Massachusetts Horticultural Society, by whom a premium of \$100, for the most successful mode

of destroying these insects, was offered, in the summer of 1840. About ten years ago I observed them in gardens at Cambridge, and then made myself acquainted with their transformations. At that time they had not reached Milton, my former place of residence, and have appeared in that place only within two or three years. They now seem to be gradually extending in all directions, and an effectual method for preserving our roses from their attacks has become very desirable to all persons who set any value on this beautiful ornament of our gardens and shrubberies. Showering or syringing the bushes with a liquor, made by mixing with water the juice expressed from tobacco by tobaccoists, has been recommended; but some caution is necessary in making this mixture of a proper strength, for, if too strong, it is injurious to the plants; and the experiment does not seem, as yet, to have been conducted with sufficient care to insure safety and success. Dusting lime over the plants when wet with dew has been tried, and found of some use; but this and all other remedies will probably yield in efficacy to Mr. Haggerston's mixture of whale-oil soap and water, in the proportion of two pounds of the soap to fifteen gallons of water. Particular directions, drawn up by Mr. Haggerston himself, for the preparation and use of this simple and cheap application, may be found in the 'Boston Courier,' for the 25th of June, 1841, and also in most of our agricultural and horticultural journals of the same time. The utility of this mixture has already been repeatedly mentioned in this treatise, and it may be applied in other cases with advantage. Mr. Haggerston finds that it effectually destroys many kinds of insects; and he particularly mentions plant-lice of various kinds, red spiders, canker-worms, and a little jumping insect, which has lately been found quite as hurtful to rose-bushes as the slugs or young of the Saw-fly. The little insect, alluded to, has been mistaken

for a species of Thrips, or vine-fretter; it is, however, a leaf-hopper, or species of *Tettigonia*, much smaller than the leaf-hopper of the grape-vine (*Tettigonia vitis*), described in a former part of this essay, and, like the leaf-hopper of a bean, entirely of a pale-green color."

"To M. P. Wilder, Esq., President of the Massachusetts Horticultural Society:

"Sir,—Having discovered a cheap and effectual mode of destroying the *Rose Slug*, I wish to become a competitor for the premium offered by the Massachusetts Horticultural Society. After very many satisfactory experiments with the following substance, I am convinced it will destroy the above insect, in either of the states in which it appears on the plant, as the fly, when it is laying its eggs, or as the slug, when it is committing its depredations on the foliage.

"WHALE OIL SOAP, dissolved at the rate of two pounds to fifteen gallons of water. I have used it stronger, without injury to the plants, but find the above mixture effectual in the destruction of the insect. As I find, from experiments, there is a difference in the strength of the soap, it will be better for persons using it, to try it diluted as above, and if it does not kill the insect, add a little more soap, with caution. In corresponding with Messrs. Downer, Austin & Co., on the difference in its appearance, they say: 'Whale Oil Soap varies much in its relative strength, the article not being made as soap, but being formed in our process of bleaching oil. When it is of very sharp taste, and dark appearance, the alkali predominates, and when light-colored and flat taste the grease predominates.' The former I have generally used, but have tried the light-colored, and find it equally effectual, but requiring a little more soap,—say two pounds to thirteen gallons of water.

"*Mode of Preparation.*—Take whatever quantity of soap you wish to prepare, and dissolve it in boiling water, about one quart to a pound; in this way strain it through a fine wire or hair sieve, which takes out the dirt, and prevents its stopping the valves of the engine, or the nose of the syringe, then add cold water, to make it the proper strength, apply it to the rose-bush, with a hand-engine or syringe, with as much force as practicable, and be sure that every part of the leaves is well saturated with the liquid. What falls to the ground, in application, will do good in destroying the worms and enriching the soil, and, from its trifling cost, it can be used with profusion. A hogshead of 136 gallons costs forty-five cents,—not quite four mills per gallon. Early in the morning, or in the evening, is the proper time to apply it to the plants.

"As there are many other troublesome and destructive insects the above preparation will destroy, as effectually as the *Rose Slug*, it may be of benefit to the community to know the different kinds upon which I have tried it with success.

"The *Thrips*, often called the Vine-Fretter,—a small, light-colored or spotted fly, quick in motion, which, in some places, are making the rose-bush nearly as bad in appearance as the effects of the Slug. *Aphis*, or Plant Louse, under the name of Green or Brown Fly; an insect not quick in motion, very abundant on, and destructive to, the young shoots of the Rose, the Peach Tree, and many other plants. The *Black Fly*, a very troublesome and destructive insect, that infests the young shoots of the Cherry and the Snowball Tree. I have never known any positive cure for the effects of this insect, until this time. Two varieties of insects that are destructive to, and very much disfigure, Evergreens, the Balsam or Balm of Gilead Fir in particular, one an *Aphis*, the other very much like the Rose Slug. The *Acarus*, or Red Spider, that well-known pest to gardeners.

"The disease *Mildew*, on the Gooseberry, Peach, Grape Vine, etc., etc., is checked and entirely destroyed by a weak dressing of the solution.

"The above insects are generally all destroyed by one application, if properly applied to all parts of the foliage. The eggs of most insects continue to hatch in rotation, during their season. To keep the plants perfectly clean, it will be necessary to dress them two or three times.

"I remain, Sir,

"Your most obedient Servant,

"DAVID HAGGERSTON.

"Watertown, June 19th, 1841."

THE ROSE BUG.—"The Rose-chafer, or Rose-bug, as it is more commonly and incorrectly called, is also a diurnal insect. It is the *Melolontha subspinosus* of Fabricius, by whom it was first described, and belongs to the modern genus *Macrodactylus* of Latreille. Common as this insect is in the vicinity of Boston, it is, or was a few years ago, unknown in the northern and western parts of Massachusetts, in New Hampshire, and in Maine. It may, therefore, be well to give a brief description of it. This beetle measures seven-twentieths of an inch in length. Its body is slender, tapers before and behind, and is entirely covered with very short and close ashen-yellow down. The thorax is long and narrow, angularly widened in the middle of each side, which suggested the name *subspinosus*, or somewhat spined; the legs are slender, and of a pale-red color; the joints of the feet are tipped with black, and are very long, which caused Latreille to

call the genus *Macroductylus*, that is, long toe, or long foot. The natural history of the Rose-chaffer, one of the greatest scourges with which our gardens and nurseries have been afflicted, was for a long time involved in mystery, but is at last fully cleared up. The prevalence of this insect on the rose, and its annual appearance coinciding with the blossoming of that flower, have gained for it the popular name by which it is here known. For some time after they were first noticed, Rose-bugs appeared to be confined to their favorite, the blossoms of the rose; but within thirty years they have prodigiously increased in number, have attacked at random various kinds of plants, in swarms, and have become notorious for their extensive and deplorable ravages. The grape-vine in particular, the cherry, plum, and apple trees, have annually suffered by their depredations. Many other fruit trees and shrubs, garden vegetables and corn, and even the trees of the forest and the grass of the fields, have been laid under contribution by these indiscriminate feeders, by whom leaves, flowers, and fruits, are alike consumed. The unexpected arrival of these insects in swarms, at their first coming, and their sudden disappearance, at the close of their career, are remarkable facts in their history. They come forth from the ground during the second week in June, or about the time of the blossoming of the Damask Rose, and remain from thirty to forty days. At the end of this period the males become exhausted, fall to the ground, and perish, while the females enter the earth, lay their eggs, return to the surface, and, after lingering a few days, die also. The eggs laid by each female are about thirty in number, and are deposited from one to four inches beneath the surface of the soil. They are nearly globular, whitish, and about one-thirtieth of an inch in diameter, and are hatched twenty days after they are laid. The young larvæ begin to feed

on such tender roots as are within their reach. Like other grubs of the Scarabæians, when not eating, they lie upon the side, with the body curved so that the head and tail are nearly in contact. They move with difficulty on a level surface, and are continually falling over on one side or the other. They attain their full size in the autumn, being then nearly three-quarters of an inch long, and about an eighth of an inch in diameter. They are of a yellowish-white color, with a tinge of blue towards the hinder extremity, which is thick and obtuse, or rounded; a few short hairs are scattered on the surface of the body; there are six short legs, namely, a pair to each of the first three rings behind the head; and the latter is covered with a horny shell of a pale rust color. In October they descend below the reach of frost, and pass the winter in a torpid state. In the spring they approach towards the surface, and each one forms for itself a little cell, of an oval shape, by turning round a great many times, so as to compress the earth and render the inside of the cavity hard and smooth. Within this cell the grub is transformed to a pupa, during the month of May, by casting off its skin, which is pushed downwards in folds from the head to the tail. The pupa has somewhat the form of the perfected beetle; but it is of a yellowish-white color, and its short stump-like wings, its antennæ, and its legs, are folded upon the breast, and its whole body is enclosed in a thin film, that wraps each part separately. During the month of June this filmly skin is rent, the included beetle withdraws from it its body and its limbs, bursts open its earthen cell, and digs its way to the surface of the ground. Thus the various changes, from the egg to the full development of the perfected beetle, are completed within the space of one year.

“Such being the metamorphoses and habits of these insects, it is evident that we cannot attack them in the egg,

the grub, or the pupa state; the enemy, in these stages, is beyond our reach, and is subject to the control only of the natural but unknown means appointed by the Author of Nature to keep the insect tribes in check. When they have issued from their subterranean retreats, and have congregated upon our vines, trees, and other vegetable productions, in the complete enjoyment of their propensities, we must unite our efforts to seize and crush the invaders. They must indeed be crushed, scalded, or burned, to deprive them of life, for they are not affected by any of the applications usually found destructive to other insects. Experience has proved the utility of gathering them by hand, or of shaking them or brushing them from the plants into tin vessels containing a little water. They should be collected daily during the period of their visitation, and should be committed to the flames, or killed by scalding water. The late John Lowell, Esq., states that, in 1823, he discovered, on a solitary apple-tree, the Rose-bugs 'in vast numbers, such as could not be described and would not be believed if they were described; or, at least, none but an ocular witness could conceive of their numbers. Destruction by hand was out of the question,' in this case. He put sheets under the tree, and shook them down, and burned them. Dr. Green, of Mansfield, whose investigations have thrown much light on the history of this insect, proposes protecting plants with millinet, and says that in this way only did he succeed in securing his grape-vines from depredation. His remarks also show the utility of gathering them. 'Eighty-six of these spoilers,' says he, 'were known to infest a single rose-bud, and were crushed with one grasp of the hand.' Suppose, as was probably the case, that one-half of them were females; by this destruction, eight hundred eggs, at least, were prevented from becoming matured. During the time of their prevalence, Rose-bugs

are sometimes found in immense numbers on the flowers of the common white-weed, or ox-eye daisy, (*Leucanthemum vulgare*,) a worthless plant, which has come to us from Europe, and has been suffered to overrun our pastures, and encroach on our mowing lands. In certain cases it may become expedient rapidly to mow down the infested white-weed in dry pastures, and consume it, with the sluggish Rose-bugs, on the spot.

“Our insect-eating birds undoubtedly devour many of these insects, and deserve to be cherished and protected for their services. Rose-bugs are also eaten greedily by domesticated fowls; and when they become exhausted and fall to the ground, or when they are about to lay their eggs, they are destroyed by moles, insects, and other animals, which lie in wait to seize them. Dr. Green informs us, that a species of dragon-fly, or devil's needle, devours them. He also says that an insect, which he calls the enemy of the Cut-worm, probably the larva of a *Carabus* or predaceous Ground-beetle, preys on the grubs of the common Dorbug. In France, the Golden Ground Beetle (*Carabus auratus*) devours the female Dor, or Chafer, at the moment when she is about to deposit her eggs. I have taken one specimen of this fine Ground-Beetle in Massachusetts, and we have several other kinds, equally predaceous, which probably contribute to check the increase of our native Melolonthians.”

DIRECTIONS FOR FLOWERING DUTCH BULBOUS ROOTS IN POTS AND GLASSES.

Hyacinths may be planted in pots from the first of October to the first of November. The soil used, should consist of one-third each, of white or river sand, vegetable mould, and rich loam. The pots should measure about six inches across the top. When the bulbs are planted, the pots are to be lightly filled with earth; the bulb may be placed in the centre, and pressed into the earth, so that it may be about half covered. After this the earth should be made solid all around the sides of the pot, to secure the bulb in place. When the bulbs are thus potted, they should be removed into a cool place, in order that they may become well rooted before the tops shoot up. Much light is not necessary at this period; indeed, the deprivation of light causes them to root more quickly, than they would otherwise do. For the first two or three weeks after potting, they may be placed in a shed or a cellar, or in any other convenient place, provided it be cool. Little water is also required; once watering, immediately after they are planted, being sufficient, if the situation is tolerably damp where the pots are placed.

If the stock of bulbs, such as Hyacinths, early Tulips, Narcissus, etc., be large enough to occupy a small frame, the pots may be put within it after planting, and they may be covered a few inches deep with rotten tan, or any other light material. The pots will soon become filled with roots, and the shoots produced by bulbs previously well rooted will be stronger, and the flowers larger, than if they had been put in a warm and light situation.

When they are rooted, a few may be introduced occasionally into the room or window, or on the mantle-piece, if there be sufficient light. Light is quite essential when the tops begin to grow. By this means a succession of flowers may be had during the greater part of the spring.

If it is wished to bloom Hyacinths in water-glasses, the glass should be filled up with water, but not so high as to come in contact with the bulb. Too much moisture before the roots protrude might cause the bulb to decay. The glasses may be put in a light, but cool situation, until the roots are grown half the length of the glass, at least. The longer the roots are before being forced into flower, the finer the flowers will be; and when rooted they may be kept warm or cool, as flowers are required in succession. The flowers will not put forth, even when the glasses are filled with roots, if they are kept in a cold place. The water should be changed about twice every week, and rain or river water is better than spring water. Although the practice of growing bulbous roots in water is common, it is by no means preferable to growing them in earth. There are many failures when bulbs are grown in water, which are chiefly caused from their being more liable to rot before they begin to emit roots, than when grown in soil. Keeping the bulbs quite clear of the water is a partial, but only a partial, preventive. Another cause is, that when the roots have attained some length, they frequently decay, and the loss of the flowers is the consequence. Should success attend the growing and blooming of the greater part of those placed in water-glasses, the bulbs will be good for nothing afterwards; but those grown in pots might be planted the year following in the garden, and they would make pretty border flowers for several years.

Similar treatment to that now described is required for the large-rooted Narcissus, whether in pots or glasses.

To force early Tulips in pots, they should be placed about three or four in each pot, just within the earth, which may be of the same sort, and the management the same as recommended for Hyacinths and Narcissuses.

Crocuses will force well. They should be planted near together, say from ten to twenty in a pot, according to its size. Let them root naturally after planting, before they are forced into flower. They require similar treatment to the preceding.

In order that the bulbous roots, which have been forced, shall not be quite exhausted, they may be planted in the garden, with the ball of earth entire, as soon as the flowering is over, if the weather is favorable. They will thus mature their roots and leaves, and be strengthened sufficiently to bloom again the following season. If bulbs are neglected when their flowering season is over, they will not recover such neglect for a considerable time; but if carefully placed in the garden till their leaves become yellow, when the root will be matured, they may then be taken up and kept in a dry, cool place, until they are wanted the following season for planting.

THE CULTIVATION OF PERENNIALS, BIENNIALS, AND ANNUALS.

"A flowery crown will I compose—
I'll weave the Crocus, weave the Rose ;
I'll weave Narcissus, newly wet,
The Hyacinth and Violet ;
The Myrtle shall supply me green,
And Lilies laugh in light between ,
That the rich tendrils of my beauty's hair

May burst into their crowning flowers, and light the painted air."

Those plants which do not in their growth form either trees or shrubs, but which lose their tops, wholly or in part, every year, the roots continuing to live for several years successively, are called perennials.

Biennials are those plants that flower the second and sometimes the third year from the time the seeds are sown, and then perish, as the Sweet Scabious.

Imperfect Perennials continue three or more years, and then die, as the Sweet William or Fox Glove, but which, with a little care in dividing the roots every year, can be kept many years.

Perennials are hardy, half hardy, and tender. Hardy perennials stand the coldest winter without protection ; half-hardy require to be well protected ; and tender perennials must be kept through the winter in the greenhouse.

Perennials are of two kinds, *bulbous* and *herbaceous*, which, differing materially from each other in habits, require, consequently, a different kind of treatment. Such being the case, a few remarks will be made on each kind separately.

BULBOUS PERENNIALS.

They are of three kinds,—viz.: hardy, or such that grow in the open border; half-hardy, such as will not stand out over winter, or requiring a frame or the greenhouse; and stove, or those that will not grow to perfection without artificial heat. Of these last we shall have nothing to say. Many of the half-hardy are perfected when planted in the open ground in the spring, and are sometimes called spring bulbs, as the *Gladiolus*, etc.

The *Anemone* and *Ranunculus*, are half-hardy, requiring the protection of a frame or otherwise.

Hardy bulbs, with few exceptions, are remarkably easy of cultivation, and, if planted in proper soil and situation, seldom fail to produce plenty of offsets and seeds for propagation.

The best kind of soil for their growth is a light loam, rather sandy than otherwise, yet not too light, or the bulbs will be injured during the heat of summer, and, if it be adhesive, they invariably grow weakly, and seldom flower.

As to the depth the different bulbs require to be planted in the ground, no certain rule can be laid down, as some species require to be planted from three to five inches, while others not more than one and a half deep. The different depths will be given as each variety is described.

Encourage as much as possible the growth of the leaves, by giving them free exposure to light and air; for on the full development of these depends the flowering of another year. If the leaves grow strong, a good quantity of nutriment is stored up in the bulbs and a good bloom is the consequence.

Never, if it can be avoided, disturb the roots by removal during their growth; but if obliged to do so, select a wet day, and take them up with good balls, so as not to injure the fibrous roots.

The only time to remove them with success, is during the time of their dormant state, at which time the offsets may be separated, and planted where the cultivator may judge best.

The season of rest, for most bulbs, happens shortly after they have done flowering. Tulip and Hyacinth bulbs are generally ripe in about one month from the time of flowering. As soon as the foliage of the Tulip turns purple and begins to dry, the bulbs may be taken up; and, with the Hyacinth, before the foliage is fully decayed. As a general rule, when the tops have quietly died down, the bulbs may be taken up and separated.

With the exception of Tulips, Hyacinths, Narcissus, and some others, most hardy bulbs, as the Lily tribe, Crown Imperial, etc., are injured if kept long out of ground. It is best to plant offsets of bulbs, of every description, immediately, for if kept long out of ground they become exhausted and perish. Bulbs that have commenced growing, before planting, are always weakened; yet ignorant purchasers will frequently select such because they look more lively. If they have made much growth, the bulb will not flower at all.

Some tuberous roots are classed with bulbous roots. Strictly speaking, it is not correct, but for convenience sake we shall so consider them. The Dahlia and Peony are, properly, tuberous roots. Directions for cultivating these will be given when they are described.

HERBACEOUS PERENNIALS AND BIENNIALS.

The mode of cultivating this class of plants is perfectly easy; three things chiefly have to be attended to. *First*, the manner of propagation. *Second*, the most suitable soil. *Third*, the requisite temperature. There are five methods of propagation practised: by divisions, suckers, layers, seeds, and cuttings.

DIVIDING THE ROOTS.—This may be done either with a knife, if the plant is small, or by a spade, if it is strong and large. The best time for doing it is when the tops are just beginning to grow after having been cut down.

The roots may be divided in the spring, or (with some species) almost any time during the summer, after flowering. The month of August is a proper time for many kinds, as the divisions will become well rooted before winter, and be prepared to flower strongly the next year.

SUCKERS.—These may be taken up at any time when they appear, but the most usual time is when the plant is beginning to grow.

SEED.—Sow, for the most part, in early spring, in light soil, and plant out in the following autumn in the situations where they are to flower. Many of the fine double and other varieties never produce seed.

LAYERS AND CUTTINGS.—Thrifty, succulent shoots, if partly cut through, and pegged down, and covered with earth, will take root, as is the case with the Pinks and Carnations. Cuttings of many plants will take root, with proper care.

SOIL.—Different species of plants require rather different kinds of soil; but a light, rich loam, will suit the greater number.

TEMPERATURE.—Hardy, half-hardy, and green-house plants require similar care, but they differ as to the amount of protection or quantity of heat they need.

ANNUALS.

The plants generally known as annuals, are raised from the seed, perfect their flowers, mature their seed the same season, and then perish. There are some flowers, however, cultivated as annuals, that are such only in a northern climate, being in their own more congenial region pe-

rennials or biennials. Among them are the Verbena, Eschscholtzia, Commelina, Mirabilis, and many others. This class of plants may be kept through the winter in green-houses or in any light cellar. Annuals are most appropriate for those who are changing their abode from year to year, as from these alone a fine display may be kept up the whole season, with the exception of the vernal months, and this deficiency may be supplied by having a choice collection of perennials, grown in pots, which can be plunged in the ground, and thus removed at any time when it is necessary to change the residence.

No collection of plants can be complete without an abundance of annuals, as they can be disposed of in such a way as to succeed the perennials, and keep up a continuous bloom in all parts of the garden through the season.

Annuals may be divided as follows :—hardy, half-hardy, and tender.

Hardy annuals are such as may be ^{Sown}sworn in autumn or very early in the spring, as all the Larkspurs, Clarkia, Asters, Candytufts, etc. Half-hardy are those which will not bear a hard frost, and therefore not proper to plant in the open ground before the middle or last of May, as the Balsam, Cocks-comb, Marigold, etc. Tender annuals can hardly be brought to perfection without starting them in artificial heat, in a hot-bed or otherwise, and are very sensitive to cold, as the Cypress-Vine, Thunbergia, Ice-Plant, Sensitive-Plant, etc. Many of these, in a very warm season, will succeed tolerably well if planted about the 1st of June; but to have them in perfection they should be raised in a hot-bed, in pots, and turned out into the ground about the middle of June.

Before sowing annuals, the soil in which they are to be grown should be made light and rich, and very finely pulverized, as many of the seeds are very small, and require

every advantage and care to get them up. The small seeds must receive but little covering, and that of the finest earth. In sowing these, my practice is to sow them in patches six or eight inches square. The soil having been well prepared, I settle the ground gently with the foot or a small piece of board, so as to make an even, somewhat firm, surface. The seeds are then evenly strewed over the surface. Then take some very fine soil and sift or strew over them, covering the seed not more than one-eighth of an inch deep, after which press the soil again gently with the board. It is now of great importance that the seeds, as they vegetate, should be protected from the scorching sun; an evergreen bough is as good as anything to shade them. The soil must not be permitted to get dry until the young plants have acquired some strength; after which they may be left to take their chance from the effects of sun or dryness. When the plants are of a proper size, and the weather suitable, they may be taken up with a transplanting trowel, and set where wanted. A small patch of this description will afford plants enough for any common garden. In removing them, a number may be taken up together without disturbing the roots; but when the plants have become established, all may be cut off except the strongest ones. As a general rule, a single plant gives better satisfaction than when a number are grown together, except when planted in masses, or where there is to be a group. The beauty of many annuals is completely destroyed by huddling them together. Give every plant room according to its habits. A single plant, well trained, may be made very beautiful; while a number of the same species, grown together, without sufficient room, would be worthless.

Larkspur, and many other seeds, should be sown where they are to remain. A bed of Double Rocket Larkspur, well managed, is almost equal to a bed of Hyacinths, when

in bloom. This succeeds best when sown late in autumn or very early in the spring. The seed may be sown in drills, eight or ten inches apart, in beds, and the plants well thinned out. Larkspur, and many other hardy annual seeds, if sown late in autumn, lie dormant all winter, and give much stronger plants than the same kinds of seed sown very early in the spring, notwithstanding those sown in the spring may appear above ground as soon as those sown in autumn. The reason probably is, that the autumnal sown seeds are so prepared, by the action of the frost, that they start with greater vigor, and consequently are more robust than the spring sown seeds.

Some seeds are difficult to germinate. Cypress-Vine is an example, the seeds of which require scalding, to facilitate germination; or, if the hull is carefully taken off with a penknife, so as not to injure the germ, the object is effected, and it will immediately vegetate. The seed of *Gomphrena globosa* (Globe Amaranth) is encased in a thick coating of woolly substance, which greatly retards vegetation. If this be taken off with the hull, the germ will push immediately; or, if the seed is soaked in milk twenty-four hours before planting, it will soon start; but, if planted with the coating on, or without soaking, very few will appear above ground.

As a general rule, the depth of planting flower seeds is to be governed by their size. For example, the Sweet Pea and Lupine may be planted an inch deep, and so in proportion. Annuals have a pleasing effect when planted in masses, particularly when the pleasure-ground is extensive. For this purpose, the Verbenas, of various colors, Portulacas, Nemophila, Phlox Drummondii, Coreopsis Drummondii, Candy-tufts, and many other dwarf plants, are desirable. Beds of any of these, or others of similar habit, in a well-managed lawn, are very ornamental. The beds should be either round, oval, starry, or irregular; but never square, dia-

mond shape, or triangular. Masses of annuals may be so arranged as to make a grand display in the common flower-garden. We have seen the walks of an extensive flower-garden deeply edged with a wide border of crimson and scarlet Portulacas; and, throughout the whole garden, all the annuals, and other plants, in fact, were planted in masses. We have never seen a better managed garden than this one. It contained about an acre of ground. Not more than twenty or thirty kinds of annuals were cultivated in the garden, and of this class of plants more than one-half of the ground was filled. They consisted of every variety of Double Balsams, German Asters, Drummonds, Phlox, Coreopsis, Amaranths, Verbenas, Portulacas, Double China Pinks, Petunias, Mignonette, Cock-combs, Gilli-flowers, etc.

ON THE CULTURE OF HARDY DECIDUOUS AND EVERGREEN SHRUBS.

"I like a shrubbery too, it looks so fresh;
And then there is some variety about it.
In spring, the Lilac and the Snowball flower,
And the Laburnum with its golden strings
Waving in the wind; and when the autumn comes,
The bright red berries of the Mountain-ash,
With pines enough, in winter, to look green,
And show that something lives."

The flower-garden will be incomplete without a shrubbery. A collection of shrubs and trees, embracing the different varieties to be obtained at our nurseries, will add much to the interest of the pleasure-ground. They should not be planted at regular distances, or in straight lines, as in that way they look too set and unnatural; but, when grouped together, the various sorts gracefully intermin-

gled, with the taller species in the background, they present, at all seasons of the year, an interesting sight.

Shrubs are divided into two classes—Deciduous and Evergreen. Deciduous shrubs are those which lose their leaves in autumn. However uninteresting the naked branches of this class of shrubs may appear, to the careless observer, when denuded of their foliage, they are not devoid of beauty to the lover of nature; and, when mingled with evergreens, are pleasing even in winter. The twigs of some species are red; others yellow, or various shades of brown; and then many are covered with a profusion of berries, of different colors, which, contrasting with the evergreens, give a lively look to the shrubbery, even in the most dreary months.

The culture of hardy shrubs is, in general, simple and easy. The chief things to be noticed are,—the proper season for planting, the situation in which the plants will thrive, the kind of soil best suited to their growth, and the encouragement to be given to enable them to thrive afterwards.

The proper season for Planting.—As soon as the leaves begin to fall, in October, deciduous trees may be planted with safety, with few exceptions. Althæas, and some other sorts liable to be winter-killed, had better not be removed until spring. The spring planting, of all deciduous trees and shrubs, should be done as early as possible,—as soon as the ground can be worked to advantage, and before the buds begin to expand.

Evergreens, in general, if carefully taken up, may be planted with success during most of the spring and summer, provided dull and dripping weather be taken advantage of for that purpose. There are particular seasons, however, when they will thrive much more readily than at others. I have been as successful about the first of June as at any other time, and have also succeeded in

planting, the 1st of July, and in August; but, as a general rule, when they commence their growth, the last of May is the best time. It is indispensable that all large trees and shrubs be removed with good balls, and that the roots be uninjured. In planting evergreens, (and the same may be said of deciduous trees,) whether it be done on a dull day, a wet day, or a dry day, endeavor to keep the plants for as short time out of the ground as possible,—if only a few minutes, so much the better. If any quantity are to be planted, the plants should be “heeled in,” as it is termed, (that is, the roots covered with earth,) and taken out, as they are wanted. I have generally been successful, without watering at planting; but others think it necessary, and one writer says:—

“In all seasons, situations, and soils, the plants should be well soaked with water as soon as the earth is put about the roots. Where the water is not at hand, so that it may not be easily carried or wheeled by men, a horse with a water-barrel on wheels should be used. As soon as the plant has been put into its place the earth should be filled in, leaving a sufficient hollow round the stem, and as far as the roots extend, to hold water, which should then be poured on in sufficient quantity to soak the ground down to the lowest parts of the roots; in short, the whole should be made like a kind of puddle.

“By this practice, which is particularly necessary in spring and autumn planting, the earth is carried down by the water, and every crevice among the roots is filled. Care must always be taken to have as much earth above the roots of the plants as will prevent their being exposed when the water has subsided. The best plan is to take an old birch broom, or anything similar, and, laying it down near the root, pour the water upon it; this breaks the fall of the water, and prevents the roots from being washed bare of such earth as may adhere to them. In

this way time is saved, for the water may be poured out in a full stream from the pail, a watering-pot, or even from a spout or pipe in the water-cart or barrel, when the situation is such that this can be brought up to the plant.

"After the first watering is dried up, the earth should be levelled round the stem of the plant, and as far out as the water has been put on, but not trod. If the plants are large, a second watering is sometimes necessary; but in ordinary sized plants, one watering is quite sufficient. And, after remaining twenty-four hours, more or less, according to the nature of the soil, the earth about the stem and over the roots should be trod as firm as possible, and, after treading, should be dressed with a rake."

The Situations in which the plants will thrive.—With regard to the situation in which each shrub should be planted, little can be said here. To form a correct judgment of this, a knowledge of the natural habits of each is required. This knowledge may be easily obtained by referring to a botanical catalogue and other works treating on the subject. Some shrubs love a dry and elevated situation, and will not thrive, crowded with others; some are rather tender, and must have warm and sheltered places; others are very hardy, and will thrive if planted anywhere; others, again, will not grow freely, unless they are placed in low damp ground; and others, do not flourish if much exposed to the rays of the sun.

The kind of soil best suited for them.—With respect to soil, hardy shrubs may be divided into two kinds, viz.:—*first*, shrubs requiring common soil; and *second*, those shrubs which require a peculiar soil. A rich, light, hazel loam, undoubtedly suits the greater part of this first class of plants, although many of the stronger-growing kinds will make fine bushes on almost any kind of soil. The "American plants," *Kalmias*, *Rhododendrons*, *Andromedas*, etc., etc., will make the finest plants and the best

show, if they are planted in a soil composed for the most part of sandy peat; but, in the absence of this, a very good compost may be made for them of light hazelly loam, river sand, and vegetable or leaf mould, equal parts. This may have a little peat earth mixed with it. After having taken out the original soil from the proposed border to about a foot and a half deep, substitute the above mixture in its place.

To encourage the growth of Shrubs after being planted.—Whilst the plants are small, constantly keep down all rank-growing weeds, and clear off all rubbish that would otherwise retard their growth; also they receive much benefit by the surface of the ground being often stirred with a Dutch hoe, as it prevents the surface baking hard in dry weather.

Watering shrubs,, except in peculiar situations during dry summers, appears to be of very little if any benefit; on the other hand, it takes up much time, and is the means of the ground baking hard when dried by the sun again. When they have advanced to a large size, all the care that is required is to cut off the overhanging branches, so as not to allow them to smother each other, or the stems of those overhung will become naked and unsightly.

**DESCRIPTIVE LIST OF PERENNIAL, BIENNIAL,
AND ANNUAL FLOWERS, WITH DIREC-
TIONS FOR THEIR CULTIVATION.**

“Not a tree,

A plant, a leaf, a blossom, but contains

A folio volume. We may read, and read,

And read again, and still find something new,”

Something to please, and something to instruct.”

To cultivate all the species and varieties of flowers described in this section of the work, will require a greater extent of land than most of my readers will be disposed to appropriate to a flower-garden, even if they have the time and requisite skill to devote themselves to its cultivation.

It must be left to the judgment of each one to select from this list such plants as they have space for, and time to attend to. There are many other interesting ornamental plants which might be noticed, but should I attempt to describe all that are known, it would require a number of volumes like the present one, to complete the list.

Such have been the diligence and perseverance of collectors of plants who within the last fifty years, have been sent out to all parts of the world, under the patronage of wealthy individuals and associations in Europe, that one would suppose that every nook and corner of the globe had been explored, and that nothing more of interest could be garnered up to gratify the eye of the florist.

But such is not the fact. Every year brings to light “something new, something to please, and something to instruct,” in the floral kingdom. But, however rare and interesting many of these newly discovered plants may be

to the florist, their value for ornamental purposes cannot be compared with that of some of the improved old standard varieties of the flower-garden. The science, skill, and perseverance, of amateur gardeners and florists, have transformed many comparatively inferior species of flowering plants from a state of simplicity and inelegance, to that of gorgeous magnificence. We can hardly believe our senses, as we call to mind the great improvements that have been made in many of the races of ornamental plants, with which we have for years been familiar.

Let us look at the *Verbena*, hardly known twenty years ago, now sporting into every conceivable color and shade, excepting yellow, always in bloom, and never tiring. Or the *Portulaca*, with its shining scarlet, purple, yellow, orange, white, and variegated blossoms, ever bright and beautiful, making itself perhaps too common, but certainly very gay and lively, and forming an indispensable appendage to the flower-garden. But these single varieties are now eclipsed by the recently introduced double sorts, as large and as double as a *Rose*, with all the brilliant colors of the single.

That awkward flower, the single *Zinnia*, has been transformed into a full double flower, as large and as perfect in shape, as the *Dahlia*, with greater brilliancy of color.

Who would recognize the *Aster*, the old-fashioned China *Aster*, since, by the florists hands, it has been transformed into the variety called "*Pæony*-flowered," a class unsurpassed in brilliancy of color, perfection of shape, and in size equal to the *Dahlia*; or, into the other beautiful varieties of Pompon shape, Imbricated, Bouquet, and many other styles of beauty, unknown only within a few years?

Then the *Dahlia*, the Gilly-flower, *Petunia*, *Balsam*, *Chrysanthemum*, *Phlox*, *Hollyhock*, and other old denizens of the flower-garden,—how have they been transformed, their beauties made more beautiful, and their varieties multiplied!

What an unlimited field for future improvements opens before us! We shall never arrive at perfection, but great improvements are yet to be made in many of the new as well as in the old flowers. We do not hold that the excitement and pleasure incident to the improvement and cultivation of a flower-garden, will wholly remove the ills and troubles of life; but it is an occupation that has a tendency to remove many disquietudes of the mind, and gives employment for many odd moments, that would otherwise be spent in brooding over some real or imaginary evil. We think Cowper came near the truth when he said:

“The spleen is seldom felt where Flora reigns;
The lowering eye, the petulance, the frown,
And sullen sadness, that o’ershade, distort,
And mar the face of beauty, when no cause
For such immeasurable woe appears:
These Flora banishes, and gives the fair,
Sweet smile and bloom, less transient than her own.”

ABRONIA.

[Name from the Greek, signifying *delicate*.]

Abrónia umbelláta. — A beautiful annual, with long trailing stems, bearing clusters of elegant flowers in dense umbels; color, delicate lilac, with white centre, highly and deliciously fragrant.

The seeds are enclosed in a husky covering, and look very unpromising, but they vegetate freely. They may be sown as early in the spring as the ground is ready to receive seed of any kind. It appears to be quite hardy, and easily cultivated, and has the advantage of sowing itself, as there will be found in the spring an abundance of young plants on the ground where the plants of the last year were grown. The leaves are light green, of a long oval shape; the stem rather succulent or fleshy, two or three feet in length, lying prostrate on the ground. It

is very pretty when trained to neat sticks, or when left to its natural mode of growth. Being ever in bloom, enduring light frosts, beautiful and sweet, it will, we think, become a great favorite.

ACHILLEA.—YARROW.

[Named after *Achilles*, a disciple of Chiron, and the first physician who used it for healing wounds.]

Achillea millefólium.—A native, and like the other species a hardy perennial, common along road sides; I have found a quite pretty rose-colored variety of this. A handsome variety with red flowers, sometimes called *A. rubra*; is in bloom all the season and worthy of a place in the garden.

A. Ptármica.—Sneeze-wort, a name given it because the dried powder of the leaves, snuffed up the nostrils, provokes sneezing. This is a desirable border-flower, particularly in its double variety, as it continues in bloom most of the season, throwing up a succession of its double white flowers in corymbs, on stems about one foot high. The foliage is dark, shining green. It is very hardy, and easy to cultivate in almost any common soil.

A. áurea, or golden-flowered, has rich golden-yellow flowers, but not so hardy as the others named. All the species produce their flowers in corymbs.

ACONITUM.—MONKSHOOD.

[So called from growing about *Aconi*, a town of Bithynia.]

The species are robust, free-flowering plants, of some beauty and consequence. The stems rise from 2 to 6 feet in height, upright, strong, furnished with many digitate or palmate leaves, and terminated by panicles or loose

spikes of blue, purple-blue, and white or yellow flowers. There are many species, all handsome perennials.

All of them are violent poisons when taken into the system, but harmless to handle. The root is more active than the other parts of the plant, and has sometimes been eaten by mistake, with fatal effects, and death has occurred from eating the young shoots in salad. The plants are used in medicine.

Aconítum Napéllus.—Wolfsbane, or Monkshood.—Is a well-known inhabitant of the garden, flowering in July and August. It is increased by parting the roots, which are of a tuberous character, every piece of which will grow. This should be done soon after they have finished flowering; the stalks should be cut down at the same time. They like shade and moisture.

A. variegátum.—Is a beautiful species, throwing up spikes with branches, continuing in bloom a long time. Flowers, light-blue, edged with white; 3 feet high.

A. Japonicum, from Japan, has dark-blue flowers, in spikes 3 or 4 feet high; a handsome plant.

A. Sieböldi, has large blue flowers, which are produced on spikes two feet high, and one of the latest flowering.

A. rostrátum, is a very tall growing species, 4 or 5 feet high, with dark-purple flowers on lax panicles.

A. uncinátum, a North American species, except in foliage resembles *A. Japonicum*. There are many other species, all hardy and handsome.

ACROCLINIUM.

Acroclínium róseum, and its varieties *atro-roseum* and *album*, are very pretty half-hardy annuals; with light rose, dark rose, or pure white flowers. These are "im-

mortelles," which flower in August and September, and quite an acquisition in the composition of winter wreaths or bouquets.

ADLUMIA.—CLIMBING FUMITORY.

[A name given by Rafinesque in honor of Major *Adlum*.]

Adlúmia cirrhósa.—Climbing Fumitory, Wood Fringe, Alleghany Vine.—In the older books this plant is called *Corydalis fungosa*; it is an elegant, indigenous, biennial, climbing vine, growing frequently, in rich ground, from fifteen to thirty feet, in one season; with pink and white flowers, which are produced in abundance during the three summer months; handsome foliage. Propagated from seed, which should be sown in April. The first year, the plant makes but little progress; but the second year, it is of more vigorous growth. The young plants will do best to be transplanted where they are to remain in July and August, but will bear moving in the spring, if done with much care.

ADONIS.

[This owes its classical name to *Adonis*, the favorite of Venus; some say its existence also, maintaining that it sprung from his blood when dying. Others again, trace its pedigree to the tears which Venus shed upon her lover's body.]

Adónis autumnális.—The flowers are globular, dark blood-red, not very large; it is known by the name of *Pheasant's eye*, from the resemblance it has to that bird's eye. The foliage is many parted and delicate; the flower and foliage together are beautiful but not showy; a hardy annual which flowers in August and September.

ADLUMIA CIRRHOSA.—CLIMBING FUMITORY.

A. vernális, is a hardy perennial border-flower, blooming in May, of easy culture. The flowers are yellow, large and rather cup-shape; one foot high.

AGERATUM.

[A name employed by Dioscovides, and probably applied by him to some plants similar to what we call "everlasting."]

Agératum Mexicánum, is a handsome, half-hardy annual, with light-blue flowers, in compound corymbs. It continues to bloom through the summer; also through the winter, when kept in the green-house, and is desirable for bouquets. There is also one with white flowers, but it is not so free a bloomer, and one with variegated foliage.

ALONSOA.

[Named by the authors of the Flora Peruviana, after Zanoni *Alonzo*, at the time of the publication of that work, Spanish Secretary for the Kingdom of Santa Fe, and a great patron of Natural History.]

Beautiful green-house plants with scarlet flowers, but bloom finely in the open ground, when treated like other tender annuals.

A. incisifólla.—Nettle leaved Alonsoa.—It has nettle shaped foliage, but delicate and pretty; it flowers all the season.

A. grandiflóra has larger flowers. which are also scarlet; plants one to two feet high.

ALTHÆA.

"And from the Nectaries of Hollyhocks
The humble bee, e'en till he faints, will sip."

The humble, or bumble bee, as it is usually called, revels in this flower and is generally found in great numbers extracting the honeyed sweets from its nectaries, to the great amusement of naughty boys, who take wicked delight in confining the poor bee, by infolding it in the flower for the pleasure of hearing him sing.

Althæa rosea, the Chinese Hollyhock, is a very handsome plant in its double varieties, and continues in beauty during July and August. It flowers the second year from seed and the year following, and then dies; but if the stalks are cut down in August of the second year, by dividing the roots carefully with a sharp knife and planting them out in a warm, light soil, they may be continued from year to year; or they may be raised from cuttings of the young stalks, about six inches in length, taken in summer. They should be inserted half their depth, and, if a glass be placed over them, it will facilitate their rooting. Plants so raised, will flower early the following summer. Seed saved from fine improved double varieties, will generally produce a large proportion of double flowers; this is the easiest, and most sure method of obtaining plants. The seed should be sown in May or June, half an inch deep, and when the plants have put out six or eight leaves, they should be transplanted to the place where they are to remain. If the soil is very moist and wet, they are subject to be much injured or destroyed in winter; in that case, it is a safe way to take them early in autumn, pot them and preserve them in frames until spring. Only the choicest varieties will pay for this trouble. The Hollyhock succeeds best when planted in light, rich soil, that has been well drained. There is no flower which makes a greater show, when planted in mas-

ses, than the different varieties in all their numerous colors and shades. Its proper locality is in the front of the shrubbery, or in the back ground of the border. A great improvement has been made in this old-fashioned, ordinary flower, within a few years, that has brought it before the public under a new phase; and it now bids fair to become as popular as many other flowers that have been taken in hand by the florist. We give the experience of an European cultivator, found in an English paper, to show what can be done in the improvement of this flower.

“If I were not afraid of advancing a horticultural heresy, I should say that many amateurs prefer Hollyhocks to Dahlias. The Hollyhocks of Belgium and Germany had a great celebrity long before they appeared among us. The collections of the Prince of Salm Dyck, and of M. Van Houtte, of Ghent, have been much admired. In other places varieties have been obtained with leaves more or less lobed, more or less entire, more or less palmate, all with flowers large, full, or colored differently from those of other plants, being sometimes of a more or less dark mahogany color, at others of a delicate tint, and varying from the purest white to the darkest glossy black. Some progress has also been made in the cultivation of those plants by themselves. Since 1830, M. Pelissier, jun., a gentleman of Prado, has cultivated Hollyhocks, and from the seeds of a pink variety has succeeded in obtaining plants with flowers of a delicate rose color, and which, in consequence of the extreme delicacy of their tints, and regularity of form, may serve both to encourage perseverance and as a good type for seed. In the following year, from the seeds of pink flowers, he obtained a beautiful, brilliant, clear, sulphur-colored specimen, perfect in every respect. It is from the seeds of those two plants that he has obtained all the other beau-

tiful and remarkable varieties which he now possesses, after a lapse of ten years from his first attempts. As a general rule, M. Pelissier prefers flowers with six exterior petals, with entire edges, well open, well set out, of a middling size, of a pure, clear, brilliant color, and forming a perfect Anemone. As the flowers expand, M. Pelissier removes whatever is not conformable to the type he has chosen, or is not of a marked color, and like a perfect Anemone. It is by doing this every year that he has obtained twenty remarkable varieties, the names and characteristics of which have been kindly furnished by him, and are given below."

I omit the names, as these particular varieties cannot be obtained here, and besides, the named varieties are often lost, it being very difficult to perpetuate them for any great length of time. "Delicate rose, very full flower; red, very full; pure white, flower full; rose, flower very full; dark-yellow, flower very full; clear red, flower beautiful, perfection; cinnamon-colored, shaded, flower very full; nankeen-colored, very full; dark-red, very full; dark rose, streaked, flower full, very perfect; fleshy white, flower full, beautiful; clear cherry, full; clear yellow, flower very full; beautiful white, flower well rounded; yellow, with a tint of pink, flower very full; dark violet, spotted with white; white, the middle yellow; very dark-red, flower very full; black, flower very full."

Hollyhock seed is imported from France and Germany every year, from named varieties, in packages of from 10 to 20 fine sorts, from which many kinds equal to those described above may be obtained. Semi-double and single flowering plants should be pulled up as soon as their character is determined, or the seed from the fine double sorts will be deteriorated by their proximity. As the flower-stems begin to advance, they should be strongly staked, as it is very slovenly to permit the plants to be prostrated in every direction by storms and wind.

ALYSSUM.

[From Greek, words signifying to prevent rage. The Alyssum passed among the ancients as a plant which possessed the properties of allaying thirst.]

Alyssum saxatile.—Rock or Golden Alyssum.—Is a desirable vernal flower, of dwarf habit, proper for rock work, or to be planted in masses. The flowers are of a brilliant golden-yellow, completely covering the plant, which is not more than 8 or 10 inches high; a hardy perennial. It is a suitable companion for the *Phlox stolonifera* with its red flowers, *P. subulata* with pink flowers; all of which appear together in May. Raised by seeds or by laying the branches as is done with the carnation.

A. maritimum.—Sweet Alyssum.—This is a desirable hardy annual, flowering from June to November, when planted in the spring; and all winter in the green-house if sown in August. One foot high, with flowers in long prostrate racemes, which continually extend themselves during the season, producing flowers until killed by frost. It is quite effective when planted in masses. The plants should not be put out nearer than one foot from each other.

AMARANTUS.—AMARANTH.

[From the Greek, meaning *unfading flower*, as the flowers of some species do not wither.]

A genus of annuals, some of which are ornamental, and others are coarse and troublesome weeds.

Amarántus tricolor.—This is a tender annual, an old favorite of the flower-garden, and is in some places called “Joseph’s Coat;” its only beauty consists in its variegated leaves. Miller, in ancient times, says:—“There is not a handsomer plant than this in its full lustre.”

Gerarde thus speaks of it:—

"It farre exceedeth my skill to describe the beauty and excellencie of this rare plant, called *Floramor*; and I thinke the pensil of the most curious painter will be at a stay, when he shall come to set it downe in his lively colours. But to colour it after my best manner, this I say, *Floramor* hath a thicke, knobby root, whereon do grow many threddie strings; from which ariseth a thicke stalke, but tender and soft, which beginneth to divide itself into sundry branches at the ground, and so vpward, whereupon doth grow many leaves, wherein does consist his beauty: for in few words, euerie leafe resembleth in colour the most faire and beautifull feather of a Parot, especially those feathers that are mixed with most sundry colours, as a stripe of red, and a line of yellow, a dash of white, and a rib of green colour, which I cannot with words set forth, such are the sundry mixture of colours that Nature hath bestowed, in her greatest jolitic, vpon this floure. The floure doth grow betweene the footstalks of those leaves and the body of the stalk or trunk, base, and of no moment in respect of the leaves, being as it were little chaffie husks of an ouerworne tawny colour; the seed is black, and shining like burnished horne."

A. hypochondriacus.—Prince's Feather.—A hardy, well-known annual, four or five feet high, with numerous heads of purplish-crimson flowers, suitable for the shrubbery. *A. superbus* is an improved variety of this; flowers dark-red; three to four feet high; from June to September.

A. melancholicus.—Love-lies-bleeding.—This is also a well-known hardy annual, from three to four feet high, with blood-red flowers, which hang in pendant spikes, and, at a little distance, look like streams of blood; in July and August. It is sometimes called, in France, "*Discipline des religieuses*,"—the Nun's Whipping Rope. There is a variety, with straw-colored flowers, but it is too mean-looking for the flower-garden.

A. melanchólicus var. rúber, is a new variety, with blood-red leaves, pyramidical growth, $1\frac{1}{2}$ foot high, of excellent habit, and will supersede the *Perilla*.

AMARYLLIS.

[The name of a nymph celebrated by the poet Virgil.]

This is a superb genus, nearly all of the species are green-house or stove-plants; some few may be planted out in the garden, but none of them will stand the winter.

Amarýllis formosíssima, Jacobean Lily, is a flower of great beauty. It is a tender bulb, but succeeds well when planted in May, in the open border, in a rich sandy soil. The top of the bulb should hardly be covered with earth. The flowers are large and of a very brilliant dark crimson; when the sun shines upon them, they look as if sprinkled with gold. The under petals hang down, the upper curl up, and the whole flower stands nodding on one side of a stalk, about a foot high, making a fine appearance. The bulb rarely produces more than two flowers, and more frequently but one; flowers in June or July. Upon the approach of freezing weather, the bulbs must be taken up, and put away in dry saw-dust, secure from frost. It is a native of South America.

AMETHYSTEA.

Amethýstea cœrúlea.—A tender annual with pretty blue flowers, and a variety with white; grows about $1\frac{1}{2}$ foot high; not very common in gardens; in flower from July to October.

AMARYLLIS FORMOSISSIMA.

AMMOBIUM.[From the Greek, meaning to live upon *sand*.]

Ammóbium alátum.—Winged Ammobium.—A pretty, half-hardy New-Holland annual, with dry, white, involueral scales, like a *Gnaphalium*. The flowers, when gathered before they fully mature, retain their shape and brightness, and are fit companions for *Helichrysums*, *Amaranths*, and other everlasting flowers for winter ornaments. Height, two feet. The stems have a curious winged attachment their whole length.

AMSONIA.[Named after a traveller, Mr. Charles *Amson*.]

Amsónia Tabernæmontána.—Broad-leaved Amsonia, and has been called *A. latifolia*, but the name here given is the oldest. A hardy perennial, about two feet high, with leaves somewhat like those of the peach and pale-blue flowers in terminal clusters.

A. salicifolia.—Willow-leaved Amsonia, has narrower leaves. Both are easily cultivated native plants, which succeed in almost any soil, and flowers in June.

ANAGALLIS.—PIMPERNEL.

[From the Greek, *to laugh*; the name expressing the medicinal qualities of the plant, which, by removing obstructions from the liver, removed a cause of low spirits and despondency. So at least say Pliny and others.]

Anagállis arvensis.—Pimpernel, or *Poor man's weather glass*, one of the *Floræ horologicæ*, opening its flowers regularly about eight minutes past eight o'clock in the latitude of England, and closing about three minutes past two o'clock. It also serves as an hygrometer, for, if rain fall, or there be much moisture in the atmosphere, the flow-

ers either do not open, or close up again. So says London. It is a handsome trailing weed of England, and is found in some parts of this country.

Anagallis grandiflora carnea, *A. lilacea* and *A. fruticosa*, are pretty annuals.

ANCHUSA.—BUGLOSS.

[Derived from the Greek, meaning *paint for the skin*; one of the species having been used in early times to stain the skin.]

Anchúsa Itálica.—Italian Bugloss.—Is a tall-growing hardy perennial, with coarse, rough leaves, but bearing a multitude of small brilliant blue flowers all the season. There is another species with parti-colored red and purple flowers; and still another with red flowers. All the species are tall-growing plants, from two to three feet high. Easy to cultivate and perfectly hardy, desirable only in large collections.

ANEMONE.—WIND-FLOWER.

[From the Greek, *anemos*, wind; some say because the flower opens only when the wind blows; others, because it grows in situations much exposed to wind.]

“Youth, like a thin Anemone displays
His silken leaf, and in a morn decays.”

This poetical allusion is in reference to the fragility of the Anemone, which applies to the Wood Anemone of Europe and this country, and not to *A. coronaria*, a florist's flower, which has already been described under the head of bulbous roots.

Anemóne Pulsatilla, Pasque Flower, is an old-fashioned English perennial border-flower, easily cultivated, and described by Gerarde, the herbalist, in his book written two hundred and fifty years ago, thus:—“It hath many

small leaves, finely cut or jagged, like those of carrots, among which rise up naked stalkes rough, hairie, whereupon doe grow beautiful floures, bell-fashion, of a bright delaied purple color; in the bottom whereof groweth a tuft of yellow thrumbs, and in the middle of the thrumbs it thrusteth forth a small purple pointell. When the whole flower is passed, there succeedeth an head or knob, compact of many gray hairy lockes, and in the solid part of the knob lieth the seed, flat and hairy,—every seed having his own small haire hanging at it. The root is thicke and knobby, of a finger long, running right down, and therefore not unlike those of the Anemone, which it doth in all its other parts very notably resemble, and whereof no doubt this is a kind.”

A. nemorósa, or Wood Anemone, is one of our earliest flowers in spring, appearing in April, and continuing through May; found in company with violets and other vernal flowers, in woods and pastures, and by the side of walls and fences. It grows in spreading clusters, sending up its stem, bearing three leaves, which is crowned with one single white flower, the external part of which is of a reddish-purple. It requires care in transplanting and to be set in a shady and moist place. The Rue-leaved Anemone is placed under *Thalictrum*.

A. horténsis, or Garden Anemone, is the species from which all the fine varieties of the florist's flowers originated.

“See! yon Anemones their leaves unfold,
With rubies flaming, and with living gold.”

Very little attention has been paid in this section of the country, to the cultivation of this most beautiful flower, from the fact, probably, that it will not stand our winters, unless planted in a frame, or otherwise protected. With this precaution, and some little attention, it will

abundantly repay all the labor that may be bestowed upon it.

I have succeeded very well, in its cultivation, by keeping the roots out of ground until March, and then planting them in a bed prepared in the fall, that had been kept covered till the time of planting. The roots of the Anemones are solid, flattened masses, like those of ginger, and are multiplied by dividing them.

More than one hundred and fifty choice varieties are enumerated in some of the Dutch catalogues of the present day, classed as follows:—red, or blood color; rosy and white, flamed with purple; sky blue; purple or ash color; rosy, with green; and white, and agate.

A fine double Anemone should stand upon a strong, elastic and erect stem, not less than nine inches high. The blossom or corolla, should be at least two and a half inches in diameter. The outer petals, or guard leaves, should be substantial, well rounded, at first horizontally extended, and then turning a little upwards, so as to form a broad, shallow cup, the interior part of which should contain a great number of long, small petals, imbricating each other, and rather reverting from the centre of the blossom. There are a great number of small stamens intermixed with these petals, but they are short, and not easily discernable. The color should be clear and distinct when diversified in the same flower, or brilliant and striking if it consists only of one color, as blue, crimson, or scarlet, etc., in which case the bottom of the broad exterior petals is generally white; but the beauty and contrast are greatly increased when both the exterior and interior petals are regularly marked with alternate blue and white, or pink and white stripes, etc., which in the broad petals should not extend quite to the margin.

Propagation.—By dividing the roots for the fine sorts, and by seed for new varieties.

Soil and Situation.—The situation should be open, but not exposed to currents of air. As to the soil to grow them in, various composts are prescribed by florists. They require a fresh, strong, rich, loamy soil. Hogg recommends fresh loam, with a considerable portion of rotten horse or cow dung. The bed should be dug eighteen inches deep, and filled with the rich compost, a little above the level of the walk; then lay a stratum of good rich mould, two inches deep, over the compost, on which to plant the roots, as the dung or very rich compost in contact with the roots would prove injurious rather than beneficial.

Planting.—After the bed is thus prepared, and has stood long enough to settle, the frame should be placed upon it. Fall planting is much the best, if the bed can be kept from very severe frost, or if not kept so warm as to start the foliage. Late fall or early spring planting is the best.

The roots should be planted in rows six inches apart, and the same distance from each other in the rows. A little care is necessary, in planting, to place the roots right-side up. By close examination, the eyes, from which the stems and flowers are to proceed, can be distinguished, which, of course, must be planted uppermost. After the roots are placed on the bed, they must be carefully covered two inches deep with good sound garden mould. When the bed is all completed, the surface should be three or four inches above the walk. They will be in flower in June, and, if shaded from the sun, will continue to display their beauties a long time.

Taking up the Roots.—When the foliage begins to turn brown and dry, the roots should be taken up and dried in the shade. When properly dried and kept from moisture, they may be kept out of ground two or three years without injury.

ANTHEMIS.—CHAMOMILE.

[From a Greek word, signifying a *flower*, on account of the multitude of flowers with which the plants are covered.]

Anthémis nóbilis.—Garden Chamomile.—Is in considerable repute, both in the popular and scientific *Materia Medica*. The flowers are well known or should be well known to every housekeeper, on account of their valuable medicinal qualities. In its double variety it is quite handsome, and a mass of it with its pure white flowers, springing from their bed of mossy-like foliage, are certainly quite charming. It is easily propagated by dividing the roots. A bed of Chamomile is improved in its appearance if occasionally rolled or pressed down. The flowers rise from the bed three or four inches high.

ANTIRRHINUM.—SNAP-DRAGON.

[Derived from words in Greek, which express "similar to a nose."]

The flower bears a perfect resemblance to the snout or nose of some animal; by applying the thumb and finger to the side of the corolla, it opens and shuts, as with a spring.

Antirrhinum május, the Great or Purple Snap-Dragon, is described by Gerarde in his *Herbal*, thus:—"This purple Snap-Dragon hath great and brittle stalks, which divideth itself into many fragile branches, whereupon do grow long leaves, sharp-pointed, very greene, like unto those of wild flax, but much greater, set by couples and set one opposite against another. The flowers grow at the top of the stalkes, of a purple color, fashioned like a frog's mouth, or rather a dragon's mouth, from whence the women have taken the name Snap-Dragon. The seed is black, contained in round husks, fashioned like a calf's snout,—whereupon some have called it Calf's snout,—or

in mine opinion it is more like unto the bones of a sheep's head that hath been long in the water, or the flesh consumed clean away."

Since Gerarde's day, the Snap-Dragon has sported into many varieties, not only purple, but rosy, crimson, yellow, red and white, white striped, mottled, tipped, etc. It is an imperfect perennial, and is apt to die out every few years, particularly in a moist soil—in fact I have been unable to keep it through the winter in some seasons. The varieties may be propagated from cuttings, or division of the root. It is raised abundantly from the seed, flowering the first autumn; but not so strong as the second year. Many beautiful varieties are in cultivation. It flourishes best in a dry, loamy soil; is in flower in June, July, and August. *Linaria vulgaris*, which grows profusely by our road sides is a closely related plant; the flowers, yellow and orange. This was formerly cultivated in the garden, but it has a propensity for running about the ground where it is not wanted, and soon becomes a troublesome weed.

APIOS.—GROUND-NUT.

[From the Greek word for *pear*, in allusion to the shape of the tubers.]

Apios tuberósa.—Ground-nut, Dacotah Potato.—Indigenous and common in rich moist woods and thickets, produces flowers in axillary, crowded racemes, of a blackish-purple color, which would make a pleasing acquisition to the various ornaments of the border or shrubbery. Its roots are strings of oblong cylindrical tubers, frequently known by the name of pig or Indian potatoes; when roasted or boiled, they are eatable, and said to have made an ordinary part of the vegetable food of the aborigines.

The leaves are pinnated, each consisting of from five to seven ovate acuminate leaves. Stems round, twining from six to eight feet high, in July and August.

AQUILEGIA.—COLUMBINE.

[From *aquila*, an eagle. The inverted spurs of the flower have been likened to the talons of a bird of prey.]

Aquilégia vulgáris, and its varieties, are too well known to require description. They are all beautiful, and interesting when planted in beds or masses. They are of every shade of blue, purple-white, reddish-brown, rose, striped or variegated, with single, semi-double and full double flowers. Some of the single sorts are more desirable than the double; particularly the large single blue and purple varieties, with white centers. In bloom in June and July. Propagated by dividing the roots, or from seed from choice varieties. All are perennial.

A. Canadénsis, is one of the finest species; indigenous, common in rocky situations, flowering early in May and June. It has pendulous scarlet flowers, yellow inside. I have seen a pure white variety, growing in the crevice or seam of a rock, but, in my attempt to extricate it, the root was broken off and ruined, to my great sorrow. I have also seen a straw-colored variety at the Botanic Garden, Cambridge. This elegant vernal flower is much improved when cultivated, the stool increasing in magnitude, throwing up many more stems, and the flowers enlarged. If some florist would undertake the task of impregnating the flowers of this variety with some of the fine garden species, no doubt, but very satisfactory results would be obtained.

A. glandulósa, is a splendid and newly introduced species from Siberia. The plant is more dwarfish in its

AQUILEGIA CANADENSIS.

habits than the common Columbine, the leaves are more finely divided; it is about one foot high, producing its beautiful flowers in June. The flowers are large and rich sky-blue; the inside and margin of the corolla pure white. It is one of the most desirable of the genus, propagated from seeds, or dividing the roots soon after flowering and not in the spring. This splendid species is lost to me and I cannot obtain it from Europe; the seed which has been sent me for this, has proved to be something else. Many of the Siberian plants are protected by the deep snows of that climate, and our open winters are fatal to many plants from that region, and I suppose I lost my bed of this elegant flower on account of its being half-hardy. It should have been kept in a frame through the winter.

A. alpina, is a very handsome species with rich, deep blue flowers; which, instead of drooping as in other species, has its flowers erect.

A. Skinnérii, raised from imported seed, it has large red flowers; the spurs are of deep green color, singular and beautiful, this also is lost in my collection. I do not know its origin. *A. bicolor*, is a beautiful hybrid. Most of the species and varieties are at home in any good garden soil.

ARCTOTIS.

[Named from Greek words, signifying *bear*, and *capsule*, because its fruit is shaggy, like a bear.]

Arctotis breviscápa, a new annual. I do not know the origin of this plant, but received it, with other seeds, from Paris. The flowers are *composite*, like the *Calendula officinalis*, or Pot Marigold, and have some resemblance to that flower, but the foliage is quite different. The

flowers are of a brilliant yellow, and open to the sun, but close at night. There is a succession of flowers through the season, which makes it a desirable border-plant.

ARGEMONE.—PRICKLY POPPY.

[From *agema*, the name by which the cataract of the eye was known, and was thought to be cured by this plant.]

Argemone Mexicana, is a troublesome weed in the West Indies, with a fig-shaped capsule, armed with prickles, and thence by the Spaniards, called *Figo del inferno*. The whole plant abounds with a milky juice, which turns in the air to a fine bright yellow. It has handsome poppy-shaped yellow flowers. It is sometimes found in the garden, but that is not a proper place for it, for one cannot touch it without being wounded with the spines which are upon the leaves as well as the capsules; nor break it without soiling the hand, and when the flower is gathered it is not suitable for the bouquet. *A. grandiflora*, like the last, is an annual in our climate, but the thick fleshy roots may be taken up in the fall, kept in the cellar, and planted out in the spring. It has a very large, showy white flower, with numerous yellow stamens and quite ornamental; but, like *A. Mexicana* is only to be looked at and not meddled with. *A. ochroleuca*, has pale-yellow flowers. The leaves, capsules, and the whole plant are armed with formidable spines; having had the hands or any part of the body in contact with the plant, it will be forever after viewed with feelings far from pleasureable. *A. Barclayana* is equal to the others in its powers of annoyance, but its more showy, brilliant yellow flowers, will, in some measure, make amends for its repulsiveness. I cannot recommend this genus of plants, only where large collections are desired.

ARMERIA.—THRIFT.

This genus contains a number of ornamental plants, generally well adapted to rock work.

Arméria vulgáris, is the common Thrift of the garden, and next to box most desirable for edgings. It is rapidly multiplied by divisions of the root. It produces pink flowers, in little heads or clusters in June and July; six inches high.

ASCLEPIAS.—MILKWEED.

[The Greek name of the *Æsculapius* of the Latins.]

This genus is mainly North American, many of the species are well-known as common road-side weeds; nearly all are tall-growing perennial plants, some of which are worthy a place in the garden. We have about fifteen or more indigenous species. The flowers of this genus produce their flowers in umbels; all are very attractive to butterflies and other beautiful insects, and for this reason a few of the most ornamental should find a place in the flower-garden.

Asclépias Cornúti, formerly called *A. Syriaca*, is a very common plant, highly odoriferous, especially in the evening. The stems, when broken, give a copious discharge of milky, viscid juice, and for this reason it is often called Milk-weed. Parkinson calls the plant Virginian silk, on account of the great quantity of silk, like cotton, which the capsules contain. This silky substance is an attachment to the seed by which it may be carried to a great distance in a windy day. This silk is characteristic of all the species, and has been used for domestic purposes, such as filling for pillows, beds, and other uses.

A. tuberósa. — Butterfly-weed. — Root large, fleshy, branching, somewhat fusiform, but it is only by comparison with other species that it can be called tuberous; stems numerous, growing in bunches from the root, hairy and dusky red; flowers numerous, erect, and of a bright orange color; blooms in August. This fine ornamental plant for the garden grows two feet high. *A. purpurascens*, *A. variegata*, and others, are also ornamental; all the species would be interesting in large collections.

ASTER.

Nearly one hundred species of Asters, mostly perennials, are described by botanists as indigenous to North America. Many of them are without much beauty, and may be considered as weeds. But some of the species are quite beautiful, and would add much to the interest of the border or shrubbery, if introduced into the garden. The flowers are star shaped (hence the botanical name) and it is often popularly called the *Star-flower*. The color of the flowers varies, in the different species, from white to light-blue, dark blue to purple; some of them are quite small as in *A. multiflorus*, and *A. diffusus*, which, however, are handsome from the great profusion of their flowers. *A. Novæ-Angliæ*, has large showy purple flowers. *A. puniceus*, has fine sky-blue flowers. A collection of the different species may be successfully made when in flower, if the flower stems are cut off and the roots planted in good soil. They will flower well in the following autumn and will richly repay all the trouble, provided there is plenty of room in the garden. I have found that great improvement can be made in them by cultivation. The China Aster does not belong to this genus, but to *Callistephus*, under which name it will be found.

ASTRANTIA.

[From Greek words, signifying similar to a *star*; so called in reference to the beautiful star-like dispositions of the involurum of all the species.]

Astrántia májor and **A. mínor**.—Hardy herbaceous perennials, with pretty green and pink, star-like flowers, or clusters of flowers; in bloom most of the season. The flowers are fine for bouquets.

AVENA.—OAT.

Avéna stérilis, the Animated Oat, is sometimes grown as an object of curiosity, on account of its singular hygrometrical properties. After the seeds have fallen off their strong beard is so sensible to alternations of dryness and moisture in the atmosphere as to keep them in spontaneous motion, when they resemble some grotesque insect crawling upon the ground; or, if when dried, the seed is moistened in the mouth and then placed upon a table, will throw itself over as if it had life.

BAPTISIA.—FALSE INDIGO.

[From *bapto*, to dye; in allusion to the economical properties of some species. A blue dye may be extracted from the leaves.]

Baptisia austrális, formerly *Sophora australis*, is considered a handsome border-flower of the easiest culture, is exceedingly hardy and indigenous to some parts of North America. It produces its blue flowers in terminal spiked racemes in June. Leaves ternate, stalked, leaflets cuneate-lanceolate, stipules longer than the stalk, lanceolate. A variety has white flowers; another, with brown and yellow. They are hardy perennials of easy culture.

BELLIS.—DAISY.

[The name is derived from the Latin word *bellus*, handsome. The word Daisy is a compound of day and eye, Day's-eye, in which way it is written by Ben Johnson.]

Bellis perennis.—The Common Daisy.—No flower has been more frequently celebrated by English poets than this. Burns' address to the Mountain Daisy will undoubtedly be remembered by many, beginning

“Wee modest crimson tipped flower.”

A native of England and Scotland, a well-known perennial, in bloom most of the season, in a cool sheltered place, but will not succeed in a warm sunny spot. There are several varieties in the improved cultivated sorts, as the double red, white, blush, red-quilled, white-quilled, variegated, etc.

This beautiful little flower will not stand our winters without protection. It is best kept in a frame, where it can be preserved from the extreme cold weather, but will require air in pleasant weather.

Daisies may be propagated abundantly, by dividing the roots; also from seed, which is imported from Europe. If seed from double flowers is sown, the product will be single, semi-double, and a few full double sorts, with a variety of colors and shades.

The seed should be sown in the green-house or in a hot-bed, with very little bottom heat; the young plants must be very carefully attended to, or all the labor will be lost.

BOUVARDIA.

[Named after Dr. Charles Bouvard, formerly a Superintendant of the *Jardin du Roi*, at Paris.]

The species and varieties are all shrubby green-house plants, but, when raised from cuttings and planted out in the open ground, flower all the season; and small plants, three inches high, will begin to bloom and continue to grow and blossom until they have attained the height of two feet by October, forming fine bushy plants; the flowers are rose, crimson, and scarlet. Their dazzling richness of color, and pleasing form of flower, make them the most useful plants we have for cut-flowers or bouquets. I think there can be no difficulty in preserving the plants by taking up and potting them, after the foliage is blackened by frost, and placing them in a dry cellar through the winter.

The species *B. triphylla* and *B. versicolor* are Mexican and South American plants; the former with scarlet, the other with red flowers. There is no bedding plant more desirable for the borders than this.

BRACHYCOME.—SWAN DAISY.

Brachycóme iberidifólia.—This is a beautiful hardy annual, in flower from July to September; of dwarf habit, eight or ten inches high. Flowers, various delicate shades of blue, lilac, and white, with brownish-black centre. A suitable plant to be grown in masses; foliage also delicate.

BRIZA.—QUAKING GRASS.

[From a Greek word, to nod, in allusion to the hanging spikelets.]

Bríza máxima, is cultivated as a border-flower; the spikelets of the grass are curious and elegant, and when dried help to make up a bouquet of immortal flowers.

BROWALLIA.—BLUE AMETHYST.

[Named by Linnæus, in honor of John Browallius.]

Browallia elata.—A tender annual from Peru. It grows one and a half foot high, and bears an abundance of small brilliant blue flowers, from July to September. There is also a variety with white flowers.

To have it in perfection, it should be sown in hot-beds, and transplanted into the border in June. The plants are quite minute when they first make their appearance, and unless protected from the sun, are liable to be destroyed. The same be said of nearly all plants with very fine seed. In the open ground, about the middle of May, is a suitable time for planting.

CALANDRINIA.

[Named after Calandrini, a German botanist.]

Calandrinia grandiflora.—Great-flowering.—This is a half-hardy annual; grows two feet high; blooms from June to October. It is a fine plant for growing in masses. When the fine, rosy lilac flowers of this very beautiful plant are fully expanded, being produced in vast profusion, and continuing for so long time in bloom, they make a pleasing appearance, and never fail to give ample satisfaction. To have it in its greatest perfection, the seed should be planted in pots, and placed in a hot-bed early in the spring. In June the plants should be turned into the ground. The soil should be a rich sandy loam.

C. discolor is in habit very much like the other; the foliage is purple on the under side; it requires the same treatment. *C. Burridgii*, *C. speciosa*, and *C. umbellata*, are all handsome species or varieties, but rather delicate, and not perhaps desirable except in extensive collections.

CALCEOLARIA.—LADY'S SLIPPER.

[From *calceolus*, a slipper, in allusion to the shape of the corolla.]

Calceolária pinnáta.—This species, a native of Peru, may be raised from seed in a hot-bed in spring, and transplanted to the borders with other tender annuals. The regions of Chili and Peru abound in many splendid species, from which very beautiful hybrids have been produced; but all are too tender and delicate for out-door culture, unless planted in a sheltered situation.

CALENDULA.

[So named because it may be found in flower during the *calends* of each month, or, which is the same thing, during every month of the year. This cannot be the case in our climate.]

Calendula officinális.—Pot Marigold.—A hardy annual, common to the gardens time out of mind, and formerly much used in soups and broths. Flowers deep orange, and continue all the season. Some of the double varieties are very handsome. *C. ranunculoides superba*, and *C. sulphurea*, are highly improved varieties; one with bright orange, the other with sulphur-colored flowers, very large and double; as they are always in bloom, they are a great addition to the flower-garden.

CALLIRRHÖË.

Callirroë pedáta, a handsome annual, introduced from Texas, two feet high, with crimson mallow-shaped flowers. *C. verticillata*, is double the size of *C. pedata*, and very beautiful; a perennial or biennial.

CALLISTEPHUS.—CHINA ASTER.[From the Greek, meaning *beautiful crown*.]

Callistéphus Chinénsis.—The China Aster.—Is the only species with which we are acquainted, and of this the varieties are almost infinite, embracing in color white, blue-purple, red, variegated red and white, blue and

CALLIRHOE PEDATA.

white-purple, and white, etc. ; also in variety of shapes as the Pompon, Chrysanthemum, Pæony, Imbricate, Crown, Globe, etc. ; of different heights as the Tall, Semi-dwarf, Dwarf, and Pigmy, also in the different arrangements as

the bouquet, etc. All these varieties, as now cultivated, have full double-flowers. No others are tolerated. The improvements that have been made in this flower within the last dozen years, are wonderful. The French call the China Aster *la Reine Marguerite*, which has been rendered in English, the Queen Margaret. By this name they are sometimes called; also the *German Aster*, from the improvements which have been made by the florists of that country. Some of the very finest are called French Asters or the Truffaut Pæony Aster, from a Mr. Truffaut, a celebrated florist at Versailles, who has produced some of the most superb varieties, nearly the size of Dahlias, of most brilliant colors, and very double and full.

These varieties cannot be too highly recommended. No class of Asters surpasses them in splendor, perfection, softness, brilliancy and variety of their colors. It would seem hardly possible that such a wonderful transformation could be made from the original, inferior, single flower; but Mons. Truffaut has made this a specialty, and his perseverance and skill have been crowned with complete success; he has the honor of introducing a class of flowers which must stand in the first rank among the ornamental plants of the flower-garden. His packages of these grand Asters embrace from ten to twelve varieties. The flowers are so full and double that they produce very few seeds, hence they will always command a high price.

The double German Globe Aster forms another distinct class, embracing all the variety of colors found in the Pæony Aster. The flowers are large and very full, of a globular shape; plants about two feet high. Boltze's Miniature, or Pigmy Dwarf Bouquet Pyramidal Asters, are a great curiosity as well as very beautiful. A bouquet of Chrysanthemum-shaped Asters, of five to ten finely shaped flowers, with very rich colors, and of good size, spring directly from the ground, not more than six

inches high, with very little foliage, presenting a very pleasing sight when planted in a bed or groups by themselves. These varieties are new; perfected by Mr. Boltz, of Germany.

Newest Chrysanthemum-flowered Dwarf Double Asters.—This new tribe of dwarf Asters is highly recommended as a very important acquisition to the flower-garden. They flower rather later than the other varieties, attain the height of about ten to twelve inches, and produce clusters of flowers nearly as large as the Pæony, flowered so abundant, that very few leaves are seen; they sport into all the colors of the other classes.

New Double Corcadeau or Crown Aster.—This class of Asters have very large flat flowers, with white centres; the colors are violet, blue, crimson, and deep scarlet. The contrast between the rich colors of the outer petals, and the pure white centre is very fine. The varieties are very double; height, two feet.

Double Dwarf Pyramidal Bouquet-flowered Aster.—This is also an interesting class of about twelve varieties of colors; height ten or twelve inches. They produce immense bouquets of quilled flowers, when planted in rich soil.

Double Pyramidal-flowered German Aster.—This division of Asters grows about two feet high, flowers in pyramids, Chrysanthemum shaped, with all the colors of the other sorts; some of them are beautifully striped or ribboned with blue, rose or red, on white ground.

New Giant Emperor Aster.—A beautiful Aster, flowers of great size, very double, and well up in the centre; style of growth very distinct, in about ten distinct colors; height one and one-half foot.

Victoria Aster.—Color carmine rose; an extra fine double variety of a globular shape, well up in the centre; of the size of the Giant Emperor Aster, having a fine

pyramidal habit of 1½ foot, covered with ten to twenty flowers; of this there is as yet but one variety.

Imbricated Pompon Aster.—This class embraces twelve or more varieties of exquisite shaped flowers, very full and double, with narrow petals closely imbricated, forming a most perfect pompon.

Asters, styled Bombee, are convex shaped, and are included among the Pæony-flowered.

Imbricated, like the Pompons, are closely imbricated with an immense number of petals, having larger flowers and more flat and spreading; some of the varieties have a rich metallic lustre; height 1½ foot.

To have Asters in perfection, the ground should be dug deep and highly manured. For early blooming plants, the seed should be sown in frames with a little bottom heat in April. But for late-flowering plants, they succeed full as well when sown in the open ground, from the 1st to the 10th of May.—Asters have the most pleasing effect when planted in beds. The tallest growing plants should be placed one foot to fifteen inches apart; the dwarf-varieties from six to ten inches. The plants, when covered with flowers, will require a little support, with light rods, as a heavy rain or wind often prostrates them unless thus protected. Asters are in perfection from the middle of August to the middle of September.

CALTHA.—MARSH MARIGOLD.

[*Caltha* signifies in Greek a goblet, and refers to the appearance of the flower when not fully expanded.]

Cáltha palústris.—Marsh Marigold.—This is a handsome indigenous perennial, seen in the early part of May, ornamenting the margin of brooks and wet places with a great profusion of its yellow blossoms, by which the course of a stream may be traced a great distance by the

abundant bloom in the green grass. This plant, in its tender state, is gathered for greens and is brought to market under the name of *Cowslip*. It is a plant well remembered in our juvenile days as being one of the most conspicuous May-day flowers, and for wet feet, caused in gathering it. It is also a native of England, and the north of Europe, where it makes the same brilliant appearance in their meadows as it does in our own. The flower buds, gathered before they expand, are said to be a good substitute for capers, and their juice, boiled with alum, stains paper yellow. In Lapland it is the first flower that announces the approach of spring, although it does not appear there till the end of May. There is a double variety which is quite ornamental, and succeeds very well in garden soil, if not very dry. It flowers most of the season, and is more dwarfish than the wild single variety. The flowers are very full double, and have some resemblance to the *Trollius*. It is propagated by parting the roots; it likes the shade, and if in a wet place, so much the better, for its natural place of growth is—

—"Not the sunny plain,
But where the grass is green with shady trees,
And brooks stand ready for the kine to quaff."

—◆—

CALYSTEGIA.—BRACKETED BINDWEED.

[From the Greek for *calyx* and *to cover* in reference to the bracts which enclose the calyx.]

Calystégia sépium.—Hedge or Large Bindweed.—A native species which climbs over fences and bushes in low grounds. Stem twining, a little angular, smooth; leaves large, arrow-shaped; the upper ones with the lobes mostly cut off. Flowers large, white or rose color, blooming in June and July. A beautiful perennial, which,

were it not for its propensity to fill the whole ground with plants from its abundant suckers, would be very desirable.

C. pubescens.—Downy Bindweed.—A Chinese species with elegant double rose-colored flowers, which was introduced into our gardens a few years ago, but which has proved a great nuisance. In my garden, it would throw up young plants at a great distance from the old one; in fact, it would establish itself everywhere, and it required several years of vigilance to eradicate it.

C. spithamæ.—Low-Bindweed.—A native perennial species of dwarf habit, growing in dry sandy woods. It is about a foot high, with leafy branches which never twine. From the lower part of the stem arises a long peduncle (sometimes two) bearing a large white flower of much beauty. It is found from Maine to Wisconsin and southward, in rather barren localities, but not very common. This was formerly called *Convolvulus stans*, and the other species were also included in *Convolvulus*, from which they are separated on account of the two broad leafy bracts which surround the calyx.

CAMPANULA.—BELL-FLOWER.

[A diminutive of *campana*, a bell; on account of the form of the corolla, which resembles a little bell.]

This is a large genus of plants, mostly handsome, hardy perennials, with a few annuals; some of them very beautiful and nearly all suitable for ornamenting the borders.

Campánula rotundifolia.—Hare-Bell.—An indigenous species, which is very pretty and worthy of cultivation; It is found on the banks of the Merrimac river, above Lowell, and in many other places. It has nearly round, heart-kidney, crenate radical leaves, from which the spe-

CAMPANULA ROTUNDIFOLIA.

cific name is given, and linear entire cauline ones, with drooping, solitary, fine blue flowers; those of the English plants being rather the largest. In flower, in July; a perennial one to one and a half foot high. It is known by the name of Hare-bell in England also, and Sir Walter Scott speaks of it by that title;

“What though no rule of courtly grace
To measurel mood had trained her pace?
A foot more light, a step more true.
Ne'er from the heath-flower dashed the dew;
E'en the slight Hare-bell raised its head
Elastic from her airy tread.”—*Lady of the Lake.*

C. Loréi. — Lore's Bell-flower. — A hardy annual, of considerable beauty, introduced in 1825, from Mount Baldo. It is of easy culture, very hardy, producing seed very abundantly; it grows about nine inches high, flowering freely. Some of the blossoms are of a fine purple-blue color, and others of a pure white. Each flower is two inches and upwards across. When the plant is cultivated in masses, the flowers are very showy and ornamental, and continue in bloom a long time. *C. pentagonia*, or five-angled, is another annual with blue or purple flowers, is also very pretty; from Turkey, one foot high.

C. médium. — Canterbury Bells. — This species, with its varieties, is one of our oldest ornamental plants, it having for a long time been cultivated in our gardens; it is, nevertheless, a showy plant, and will doubtless always be retained as a prominent ornament of the border. The varieties are rose, blue, and white, double and single. The double varieties, however, are much inferior to the single ones, and will be cultivated only for their oddity. Being biennial, it will be necessary to sow the seeds every year. The young plants must be transplanted to the place in which they are to flower, in August or September, for if deferred until spring the bloom will be greatly

weakened; the same holds good with all biennials, and most seedling perennials.

C. persicæfólia.—Peach-leaved Bell-flower.—This is one of the finest species, containing a number of beautiful varieties, with large, showy flowers, more bowl-shaped than the last. The varieties are single and double blue, single and double white, *maxima*, or large peach-leaved, etc. All of them are perfectly hardy, with handsome foliage, which makes them valuable as border flowers. Stems angular; leaves stiff; obsoletely crenate-serrate; radical ones, oblong-ovate; cauline ones, lanceolate-linear; three feet high; in flower in June and July.

C. pyramidalis.—Pyramidal Bell-flower.—This is a grand ornament, when cultivated in perfection, forming a pyramid from four to six feet high, producing innumerable flowers for two or three months, if shaded from the sun. It was formerly a great favorite in England, but its popularity has long since passed away to give place to other more fashionable flowers, which have in their turn also been succeeded by other rivals more fair. But the old-fashioned Hollanders are not quite so fickle; flowers with them seem to be esteemed, notwithstanding their antiquity. The Pyramidal Bellflower is said to be in demand there still, as an ornament to halls, stair-cases, and for placing before fire-places in the summer season.

Plants raised from seeds are always stronger, and the stalks rise higher, and produce a greater number of flowers. They are to be sown in pots of light earth, soon after being gathered, protected by a frame during winter, and will come up in the spring. When the leaves decay, in October, they are to be transplanted to beds of light, sandy earth, without any mixture of dung, which is a great enemy to this plant. Here they are to remain two years, being protected by rotten tan; they are then to be

removed to their final destination, in September or October; and the year following, being the third year from sowing, they will flower.

Seedling plants, in our climate, will flower the second year generally, some not until the third. A slight protection is necessary during winter. Under our fervid sun, there will be no difficulty in ripening seeds.

C. nóbilis.—This is a handsome, low growing perennial, with creeping roots, with very large drooping bell-shaped flowers; one variety a purplish brown, the other white.

C. Trachélium.—Great Throatwort.—It is a native of Europe. It has purple or white flowers, blooming in June and July. A handsome perennial, three to four feet high. The name of Throatwort was given to these plants, from a notion that they would cure inflammation and swelling of the throat. Increased by dividing the roots, or from seed. It prefers a loamy soil. The Giant Throatwort is a native of England, is mentioned by Sir Walter Scott in the poem of Rokeby:

——“he laid him down,
Where purple heath profusely strown
And Throatwort with its azure bell,
And moss, and thyme, his cushion swell.”

C. Gargánica.—A beautiful perennial alpine plant, with delicate, star-shaped, blue flowers, with distinct white throat; indispensable for basket or rock-work.

C. aggregáta.—Has pale-blue flowers, in a crowded head. *C. grandis*, *C. latifolia speciosa*, *glomerata*, and many others, are fine border-flowers, growing from one to four feet high. There is also a class of dwarf species, growing from three inches to one foot in height, very appropriate for rock-work, as *C. hederacea*, *alpina*, *Caucasica*, *Carpatica*, *pumila*, *rotundifolia*, etc. This genus em-

braces about one hundred species. Several, which were formerly included in it, have been removed to other genera. See *Specularia* and *Platycodon*.

CANNA.—SHOT PLANT.

[From a Celtic word, signifying a *cane* or *reed*.]

The Cannas are mostly tropical plants, from four to eight feet high, with elegant foliage.

Cánna párens, **Indica**, and **coccínea**, are found wild within the tropics on all the continents, and chiefly in moist woods, or spongy, woody wastes. In Brazil and other parts of America, they are known by the name of Wild Plantain, and their leaves are used as envelopes for many objects of commerce. In Spain and Portugal, the inhabitants use the seed for making their rosaries; in the East Indies, the seeds are sometimes used as shot. The seeds of most of the species are round, hard, black, shining, heavy, and about one-eighth of an inch in diameter.

Cánna Indica. — Indian Shot. — This is the most common species, and succeeds well as an annual if the plants are started in a hot-bed. If the seeds are planted in pots, and plunged in the bed when it has its greatest heat, the plants will soon appear; and, if turned into the ground in June, will make large plants, which will flower in July and August. In the green-house, it is a perennial, and may be propagated by dividing the roots.

This is desirable, not only for the beauty of its spikes of scarlet flowers, but also for its elegant foliage. The leaves are of a rich deep green, three feet long and four to six inches wide; very handsome as they unfold themselves; the flower-stem rises five or six feet high.

I have cultivated twelve or thirteen of the different species, all of them characterized by long, broad, and

handsome foliage, with either scarlet, orange, or yellow flowers; but I find *C. Indica* the best for this climate. All the species require a rich garden soil.

CARDAMINE.—CUCKOO FLOWER.

[An ancient Greek name for *Cress*.]

Cardamine pratensis.—Cuckoo-flower, or Lady's Smock, is a native of England and is a common plant in meadows and brook-sides. The *Double Cardamine*, is the only variety cultivated or deserving a place in the borders, and not very common in this country. "This flower has been usually described by the poets as of a silvery whiteness, which shows the season they have chosen for their rural walks to have been a late one; as, in its natural state, it is more or less tinged with purple, but becomes white as it fades, by exposure to the heat of the sun. The various shades of these flowers, with the little green leaves that enclose their unopened buds, have an exceeding pretty effect when a quantity of them are collected; and, if kept in fresh water, and well supplied, they will survive their gathering for a fortnight or more. The height of the plant is about one foot. The double varieties are purple and white; they are increased by parting the roots in autumn. They love the shade, and require a rich moist soil. It is called 'Lady's Smock,' from the white sheets of flowers they display; and 'Cuckoo-flower,' because it comes at the time with the Cuckoo. Shakespeare's Cuckoo buds are yellow, and supposed to be a species of *Ranunculus*. Indeed, he expressly distinguishes *his* Cuckoo bud from this flower":

"When daisies pied, and violets blue,
And Lady's-smocks all silver white,
And Cuckoo buds of yellow hue,
Do paint the meadows with delight."

CARDIOSPERMUM.—BALLOON VINE.

[From Greek words, signifying *heart* and *seed*, in allusion to its round seeds, which are marked with a spot like a heart.]

Cardiospermum Halicábabum.—Balloon Vine.—Heart-Seed.—A half-hardy annual from the West Indies; a climber. The seed should be sown between the first and tenth of May, and the plant supported with brush; four to six feet high.

The plant is remarkable for its inflated membranous capsule, from which it is sometimes called Balloon Vine, or Love in a Puff. The flowers are white and green, without any claim to beauty.

CASSIA.

Cassia Marilandica.—Maryland Cassia, Wild Senna.—A hardy, indigenous perennial, four feet high, with yellow flowers, from August to September. Many of this genus are beautiful plants, but mostly tender; some species are sensitive, and close their leaves in wet weather, or at the approach of night.

CATANANCHE.

Catananche cœrúlea.—Blue Catananche.—A handsome perennial, from the south of Europe, one and a half foot high, with brilliant blue flowers, in July and August. It has not proved perfectly hardy with me; but believe it will stand the winter better in a lighter soil than mine. It grows about two feet high. Vaillant explains the meaning of Catananche, by deriving it from two Greek words, and signifying *necessity*, that is to say, a plant which compels admiration. The name was employed by Dioscorides, to designate a plant used by the women of Thessaly, in philtres and love potions.

CELOSIA.—COCKS-COMB.

[From a Greek word, signifying *burnt*, because the flowers of some of the species appear as if they were singed.]

Celósia cristáta.—Cocks-comb.—Is a well-known tender annual, of which there are many varieties, as in the balsam, and which, like that plant, will attain a large size, and singular beauty by repeated shiftings. Thunberg states that in Japan the flowers or crests are frequently a foot in length or breadth. The following account is inserted, to give some idea of what may be done by artificial means. “Mr. Knight, in October, 1820, sent to the London Horticultural Society a Cocks-comb, the flower of which measured eighteen inches in width and seven in height, from the top of the stalk; it was thick and full, and of a most intense purple-red. To produce this, the great object was to retard the protusion of the flower-stalk, that it might become of great strength. The compost employed was of the most nutritive and stimulating kind, consisting of one part of unfermented horse-dung, fresh from the stable, and without litter, one part of burnt turf, one part of decayed leaves, and two parts of green turf, the latter being in lumps of about an inch in diameter, in order to keep the mass so hollow that the water might escape and the air enter. The seeds were sown in the spring, rather late, and the plants put first into pots of four inches diameter, and then transplanted to others a foot in diameter; the object being not to compress the roots, as that has a tendency to accelerate the flowering of all vegetables. The plants were placed within a few inches of the glass, in a heat of from 70° to 100°; they were watered with pigeon-dung water, and due attention paid to remove the side branches when very young, so as to produce one strong head or flower.”

The color of the scarlet varieties is highly brilliant. None of the other colors are so rich. The yellows are

generally rather dull—some of them dirty-looking. The scarlets and crimsons are the only colors that look well. There are the tall and dwarf varieties, and some that are somewhat branching; but these last should be rejected. To produce fine combs, the soil cannot be made too rich; the plants must also be forwarded in a hot-bed. Very showy plants can be raised by sowing in the open ground the middle of May, but they cannot be raised in perfection. The appellation, Cocks-comb, was given it from the form of its crested head of flowers, resembling the comb of a cock. Sometimes the heads are divided like a plume of feathers.

CENTAUREA.—STAR THISTLE.

[It is said that with this plant, the *Centaure* Chiron cured the wound in his foot, made by the arrow of Hercules.]

Centaurea cýanus, is a popular border hardy annual. It is known by the common name of Blue-bottle. In Europe it is a common weed, in cornfields and on gravelly soils, having blue flowers; but when cultivated, it sports into varieties of white, purple, pink, parti-colored, etc., and is a handsome flower.

C. Americána.—American *Centaurea*.—Is a handsome hardy annual, discovered by Nuttall, on the alluvial soil of the Arkansas and Red rivers. It has large purplish-lilac flowers, somewhat resembling a large thistle; it grows two or three feet high, flowering in August and September. It is of easy culture, and should be sown the first of May.

C. Moscháta, varieties ***pupúrea*** and ***álba***, are handsome border annuals of easy culture, natives of Persia, two feet high, with fragrant flowers; from July to October. It is commonly known by the name of Sweet Sultan.

C. suavéolens.—Yellow Sweet Sultan.—A handsome annual from the Levant, one and one-half foot high, with lively rich yellow flowers; from July to September. Time of sowing and culture, the same as the others. *C. Centaurium*, *Montana*, *splendens*, and others, are among the most ornamental of the perennials. The genus is a very extensive one, embracing more than one hundred species, including many thistle-like, weedy-looking plants.

CENTRANTHUS.

[From Greek words, signifying a *spur* and a *flower*, in allusion to the shape of the corolla.]

This genus comprises several handsome border annuals, with flowers arranged in corymbs, which are either red, rose, or white. *Centranthus macrosiphon* has varieties with all these colors, about one foot high. There are also dwarf varieties of the same colors.

CHEIRANTHUS.—WALL FLOWER.

[So called from the Arabic name of a plant with red, sweet-scented flowers.]

Cheiránthus Cheíri.—Wall Flower.—This is a well-known plant, which, were it perfectly hardy, would be more highly esteemed. It is a native of Britain, where it is hardy; here it is half-hardy, and must be preserved through the winter in the green-house or in a frame. Sometimes it can be kept through our winters in favorable situations with some protection. It grows one and one-half feet high, with various colored flowers in its different varieties. Yellow and orange predominate, but these colors are more or less shaded with rich brownish-red or violet. There are also varieties of all these colors with

double flowers, which are rich and handsome. It is raised from seed; the plants flowering the spring following.

CHELONE.—TURTLE-HEAD.

[A Greek word, signifying a tortoise, to the back of which the helmet of the present genus has been fancifully compared.]

Chelone glabra, also called *C. obliqua*, is a North American species with white, rose-colored or purple flowers. The plant formerly called *Chelone barbata*, is a *Pentstemon*. Handsome border perennials, of easy culture in loamy soil, or loam and a little peat.

CHRYSANTHEMUM.—CHINESE CHRYSANTHEMUM.

[From the Greek words for *Gold* and *flower*.]

Chrysanthemum Indicum.—This is one of the handsomest autumnal flowers, and easily cultivated in almost any soil. It stands the winter without covering, but is best cultivated in pots, where it can receive protection when in bloom, in severe weather in autumn. In warm seasons, it flowers well in October and November, in a sheltered place, in the open ground. The plants may be cultivated in the garden till they are in bud, when they may be safely transferred to pots; but it would be better to commence their cultivation from the slip or cutting, in the spring, and sink the pots into the ground, in a shady place, until the time of taking up. The varieties are endless, early and late, tassel-flowered, quilled, flat-petalled, pompon, etc., with every shade of light purple, yellow, white, lilac, blush-brown, red-brown, etc.

For common culture, divide the roots in the spring, and plant them out, where they are to stand, in a warm ex-

posure, in good rich loam. As they are coming into bud, give them occasional waterings with liquid manure.

To produce handsome, dwarf, bushy plants, the following course may be adopted, as practised by Youell & Co., England, which plan, they say, "if carried out, will ensure dwarf plants from one and one-half to two feet high, covered with rich dark-green foliage, and carrying blooms from five to seven inches in diameter. In the last week in May we select the tops of the strongest shoots for cuttings, putting four or five round the edge of a three-inch pot, and placing them in a gentle warmth. When rooted, they are potted singly in the same-sized pot, and kept in a close frame for a few days, until they have become established. The tops may then be pinched out, leaving five or six joints to remain for lateral shoots. After a few days' hardening off, they are then removed to an open situation, allowing the plants a sufficient distance from each other to prevent their drawing, care being observed that they do not suffer from want of water. About the third week in July, we shift, for blooming, into seven-inch pots, using a small handful of coarsely-broken bones at the bottom. The soil we use consists of equal parts of well decayed (one year old) pig manure, turfy loam, and leaf-mould, adding half a barrowful of peat, and half ditto of road-drift to every four barrows of the above. When potted, they are placed in rows two feet apart, and they require but little attention, except watering, for two months. At the expiration of this period, we commence watering twice a week with liquid manure made with one bushel of fresh pig manure (free from straw) to about eighty gallons of water. This will be ready for use in two or three days. As soon as the plants show flower-buds, we tie each shoot to a stick, and train them fan-shaped. Disbudding ought now to be attended to, reserving only one, or, at most, two, at the top of

each shoot; but where two are left, it is better to take out the second bud, and leave the third, to prevent confusion. As soon as the buds show color, the plants are then removed to the green-house or conservatory, giving plenty of air, and substituting water for liquid manure. We ought to have mentioned that, where a profusion of bloom is required, two or three plants may be inserted in the pots where only one is usually grown. This will afford an opportunity of cutting away the weakest shoots, and reserving the strongest only."

C. coronárium.—The varieties of this annual species are hardy garden plants, of some beauty in their full double varieties of white and yellow; two or more feet high; in bloom most of the season. Easily raised from seed. The single sorts should be pulled up as soon as the blossoms appear. Extra fine double varieties can be raised from cuttings, and kept through the winter in the green-house or setting-room.

Of the Dwarf Yellow variety, Vilmorin, of Paris, says:—

"This new variety has been obtained in our own grounds; it is of a low habit, forming a thick, branchy brush, about 15 inches high on 20 to 24 inches in diameter, and produces on this reduced space about as many flowers as the old variety on its much larger plants. As a bedding and border-plant this new Chrysanthemum will soon be a favorite and reconquer the place which the tall variety seems to have been obliged to give up to other plants, more in consequence of its ancientness than for the superiority of the merits of its younger competitors."

C. carinátum.—Tri-colored Chrysanthemum. — Is a hardy annual from Barbary; one and one-half foot high; in flower all the season. Disk of the flower purplish-brown, inner circle of the rays yellow, margined with white, very pretty. Some of the improved varieties of this flower are *C. venustum* and *Burridgeanum*.

C. Parthénium.—Fever-few.—A plant much resembling Chamomile in appearance, having a strong, unpleasant smell and a bitter taste. The double variety of this plant, known as the Double Fever-few, is a half-hardy perennial, which gives a succession of double pure white flowers, resembling Daisies, from June to November; two feet high. It can hardly be kept through the winter except in frames,* or as is most common in the green-house or conservatory. It is raised from cuttings very readily, or from divisions of the root. When raised from seed, most of the plants will be worthless, not much better than weeds, as there is no beauty in the single flowers.

C. cárneum.—This is also called *Pyrethrum roseum*, but we follow the best authorities and place it with *Chrysanthemum*. Within a few years we have received from France a number of varieties of this species with double flowers, which are perfectly hardy. One variety has carmine, one rose, another with white flowers. There are also a number of named varieties, all hardy perennials, propagated by divisions of the root; in flower most of the summer; about two feet high. The flowers are as large and of the shape of that pest of the farmer, the White Weed, and related to that nuisance, at least as near as second cousin, but I have not noticed that it has any propensity to intrude itself upon good society as that plant has. When propagated from seed, most of the plants will be single and worthless. Like the Double Fever-few, the plant has a strong, unpleasant smell.

* In the winter of 1864-5 it stood without protection.

CIMICIFUGA.—BUGBANE.

[From the Greek, signifying to drive away bugs.—A Siberian species being used as a bugbane.]

Cimicífuga racemósa.—Black Snake-root.—Black Cohosh.—A native plant, not often seen in gardens, but which, from its stately habit, is worth growing where there is room for it. The leaves are large and much divided; the flower-stalk grows to the height of six or eight feet, and produces numerous long spikes of small white flowers. The root of this is one of the many things that have had a reputation as antidotes for snake bites. This is sometimes called *Actæa racemosa*; the *Actæas* have berry-like fruit, while this has dry pods. *Actæa spicata* of our woods, is rather showy for its fruit; there are two varieties, *alba* and *rubra*, with white and red berries, which may find a place in large collections.

CLARKIA.

[Named in honor of Capt. *Clark*, who discovered it in his expedition, with Capt. Lewis, to the Columbia river.]

Clárkia pulchélla.—Beautiful Clarkia.—A handsome dwarf-plant, eight to twelve inches high, with beautiful rose or light-purple flowers; annual, as are all the species. In bloom from July to September. If the seed is planted in April or May it will succeed very well, but the plants will be much stronger from seed sown in August or September. The young plants will stand the winter very well, if protected with a few leaves. The soil should not be over-rich or moist, as the plants frequently damp off if so situated. In a good, rather light loam, it succeeds best. The varieties of this species are numerous, viz.:—*white*, *rose*, *lilac*, with double varieties of the same: Tom Thumb varieties, *marginata*, etc., *integripetala alba*, *fimbriata* and *integripetala*.

C. elegans.—Elegant Clarkia.—This beautiful species was found in California, by Mr. Douglas, and was first raised in the garden of the London Horticultural Society

CLARKIA PULCHELLA.

in 1832. Since then, this and the other species, with their numerous varieties, have been generally disseminated throughout Europe and America, or wherever choice flowers are cultivated. This plant grows one and one-half to two feet high, and is raised from seed. All the

varieties, when grown in large masses, are highly ornamental. The varieties of *C. elegans* are those with purple and rose-colored flowers; also, double-purple, rose, flesh color and white. It is sometimes called *C. rosea*.

C. rhombóidea.—Entire petaled, or *C. gauroides*.—This is also an annual, growing about two feet high. The flowers are an inch across, purple and white, near the bottom of each petal, spotted with white. All the varieties are fine for bouquets, as the foliage, as well as the flowers, is delicate and pretty.

CLEMATIS.—VIRGIN'S BOWER.

~ [From the Greek, for tendril; in allusion to the climbing habits of most of the species.]

The species are mostly climbing shrubs, or herbaceous perennials, of rapid growth, free bloomers, very ornamental, and some are highly odoriferous.

Clématis Virginiána is a native plant, well known as a great climber, growing profusely upon the banks of our rivers and wet places; taking possession and covering all the shrubs in its neighborhood, to which it attaches itself by its petioles, (which are given off, at intervals, in pairs,) twining round objects for support, and serving the purpose of tendrils. The flowers are white, borne in cymes, and make a handsome appearance the beginning of August. The most remarkable appearance of this plant is when in fruit; the long feathery tails of the fruits separating like tufts of wool. It grows twenty feet or more in a season, most of the stem perishes, leaving but a small shrubby portion. It makes an appropriate covering for an arbor or wall; for, whether in flower or fruit, it is ornamental.

C. erécta is strictly an herbaceous plant, growing from three to four feet high, producing large clusters of white

flowers in August. It requires support, as it has the propensity to attach itself to everything in its neighborhood, like the last, by its petioles.

C. integrifolia.—Entire-leaved.—A handsome, upright plant, about two feet high, producing nodding, bell-shaped, blue flowers, most of the season.

C. Viticella is a much admired species, with blue flowers, which are produced from June to September, on long peduncles from the axils of the leaves; rather bell-shaped, and nodding. It is a climber, growing from eight to ten feet in a season, dying down to the ground, in this climate, but otherwise hardy. There is a variety with double flowers, others with brownish-red flowers, and several improved varieties.

C. Flammula is a luxuriant climber, having clusters of small white fragrant flowers, in August and September.

C. flórida has large white flowers; like the last, a luxuriant climber. There is a variety with double flowers.

C. Siebóldii.—Siebold's Virgin's Bower.—This magnificent plant is said to be a variety of *C. florida*, and, till lately, treated as a green-house plant, but it has proved as hardy as the other sorts. The flowers are three or four inches in diameter, the outer sepals, or petals, a creamy white, filled up with others, disposed in many series, the groundwork of the petals is white, suffused with a rich purple. No plant possesses a stronger claim to a place in the flower-garden, from its graceful habit, and from the size and beauty of its blossoms.

The plant thrives best in a mixture of loam and peat, and is increased by layers. It was introduced by Dr. Siebold, from Japan, a few years since. I have kept it two winters, by covering it lightly with coarse manure. *C. azurea grandiflora*, or Great-flowering Blue Virgin's Bower, has still larger flowers than the variety *Sieboldii*.

It has the reputation of being more tender, requiring greater heat to bring it to perfection. With me, it stood near the other species two winters, with the same protection. The flowers are produced only on the old wood; it is necessary, therefore, to lay down, and cover the growth of the season, to insure bloom the next year. The flowers are four or five inches in diameter, of a rich blue, in July; a climber, like the last, but not of so robust growth. *C. Sieboldii* is certainly the most showy of the genus, but since the first edition of my "Book of Flowers" was published, I have found by experience, that it is not so hardy as *C. azurea grandiflora*, which has proved quite hardy when the vines are laid down, producing a profusion of its rich blue flowers. Wherever a lattice is mentioned by the Poets, it is expected the Clematis will run over it:

"In the calmness of a cloudless eve,
How gently dies a long, long summer's day,
O'er yon broad woods, as loth to take its leave,
It sheds at parting its most lovely ray,
And golden lights o'er all the landscape play,
And languid zephyrs waft their rich perfume
Where the wide lattice gives them open way,
And breathe a freshness round the twilight room,
From Jasmine, Clematis, and yellow-blossomed broom."

All the climbing species are shrubby, and if laid down and covered with earth late in autumn, will flower much better than the plants exposed in winter.

C. cirrhósa is a beautiful white-flowered, sweet-scented species. Besides the species and varieties enumerated, there are many others, esteemed ornamental.

CLEOME.

This is an elegant genus of plants, and very curious in their structure. The petals range themselves on the upper side, and the stamens and pistil are protruded a consider-

able length on slender filaments, forming beautiful airy groups.

Cleóme grandiflóra is one of the most showy of the genus. It is easily raised from seed, when planted in the open ground, in April or May, and blooms abundantly from July to September; grows from three to four feet high. Its spikes, continually increasing in length, are always surmounted with a crest of beautiful buds and flowers, which are of a pale pink-purple. It is beautiful in the garden, but withers very quickly when cut.

C. pentaphýlla.—This is also a handsome annual, of the same habit of the last; about two or three feet high; the flowers pure white; the odor of the plant is most offensive.

C. spinósa is a spiny plant, which grows about four feet high, and bears a spike of beautiful white (sometimes pinkish) flowers. All the species flourish in any common garden soil.

However beautiful and curious these plants may be, and desirable for show, they are repulsive to the smell and unpleasant to the touch, and therefore, will not be favorites.

COBÆA.—MEXICAN COBÆA.

[In honor of Bernandez Cobo, a Spanish Jesuit, who wrote upon the subject of natural history in the middle of the 17th century.]

Cobæa scándens.—This is the most rapid growing greenhouse plant known, having been found to grow two hundred feet in one summer, in a conservatory. It is a perennial, but will not stand the winter, and, unless cultivated in a greenhouse, is classed with tender annuals. It flourishes well in the open ground, if it is first started in a hot-bed, in pots, and turned out in June. I have found it to continue blooming after a number of moderate frosts. The

flowers are large, purple, and bell-shaped. The foliage is handsome, and the tendrils, which are fine and silky, will attach themselves to anything within reach, even a cob-

COLEUS VERSCHAFFELTII.

web. If located in a warm place, it will cover a large surface before it is destroyed by the frost. It can be raised by cuttings, but requires care to keep it through the winter.

COLEUS.

Coleus Verschaffeltii.—This is unsurpassed as a leaf-plant. Its peculiar and beautiful marking of crimson, green and bronze, makes a strong and agreeable contrast, in groups, or along the margin of borders in the flower-garden. The beauty of the plant consists entirely in the leaf; the flowers are of no consequence. It is a tender plant, which must be housed in the winter. It is easily raised from cuttings, and is sold by dealers in bedding plants in the spring. If planted out the last of May, or 1st of June, it forms a handsome spreading plant by September, two feet high. The colors are more brilliant when planted in the shade.

I do not know the origin of this beautiful plant, but from the specific name suppose it was introduced by Mr. Verschaffelt, a German florist.

COLLINSIA.

[Named for Z. Collins, a Philadelphia Botanist of the last generation.]

Collinsia bicolor.—Two-colored Collinsia.—A beautiful hardy annual, with purple and white flowers, which are numerous and pretty; in July and August; one foot high.

C. grandiflora.—Large flowering Collinsia.—This is another beautiful species, with large blue and purple flowers; at the same time and height, but more spreading than the other. There are also many other ornamental species or varieties of the same habit, viz: *carnea alba*, *candidissima*, *heterophylla*, *multicolor*, etc. All are suitable for planting in masses and easily propagated from seed; sow May 1st.

COLLOMIA.

Collómia coccínea.—A very lively flower, growing in heads of bright carmine-red; a desirable dwarf annual, flowering early in June and July. The seeds have, like some of the *Salvias*, the curious property of becoming invested with mucus when moistened with water.

COMMELYNA.

[So named by Plumier, in honor of the brothers John and Gasper Commelin, Botanists and Dutch Merchants.]

Commelyna cœléstis.—Sky-blue Commelyna.—Tender annual from Mexico, or perennial if the roots are taken up and housed. The splendid blue flowers of this plant cannot be excelled, and its profusion of blossoms renders it deserving of cultivation in every flower-garden. The plant blooms from the middle of June to October. The roots are tuberous, and keep well through winter, if taken up after the blooming season, and preserved like Dahlia roots. Plants from the old roots grow, in good soil, from two to three feet high; those from seeds reach only from one to two feet. The following is the mode of management I have practised;—I fix upon a circular bed, eight feet in diameter, and in the first week in May I plant four feet of the center with the old roots, placing the crowns just under the surface of the soil. The outer portion of the bed I plant with *spring-sown* plants, that have been raised in pots placed in a frame. Both the roots and plants should be planted about six inches apart. Thus, the center of the bed being much higher than the outer part, the appearance is that of a splendid blue cone of flowers, scarcely to be excelled in beauty. Seeds are produced in abundance, and may be had of seedsmen at a small cost.

CONOCLINUM.—MIST-FLOWER.

[Name derived from the conical shape of the disk, on which the florets are placed.]

Conoclinium cœlestinum.—Sky-blue Conoclinium, Mist-flower.—A perennial; two feet high. This is the most beautiful species. It grows wild, from the Potomac to the Mississippi. Its flowers, produced very late in autumn, are of a beautiful smalt or sky-blue. The roots of this species are creeping, from which it is easily propagated. It was formerly called *Eupatorium cœlestinum*.

CONVALLARIA.—SOLOMON'S SEAL.

“No flower amid the garden fairer grows
Than the sweet Lily of the lowly vale,
The queen of flowers.”

Convallaria majalis.—Lily of the Valley.—An elegant and delicate, sweet-scented plant, which for ages has been a favorite flower, and highly prized. It succeeds well in the shade in any soil, and soon spreads itself, by its slender, creeping roots, beyond the desire of the cultivator. It flowers in May and June. Gerarde describes it, in his quaint way, thus: “The Lilly of the Vally hath many leaves like the smallest leaves of Water Plantaine, among which riseth vp a naked stalke, halfe a foot high, garnished with many white floures, like bels, with blunt and turned edges, of a strong savour, yet pleasant enough, which being past, there come small, red berries, much like the berries of asparagus, wherein the seed is contained.” That, which was formerly called *C. racemosa*, will be found under *Smilacina* and *C. multiflora* is now *Polygonatum*—which see.

CONVOLVULUS,—BIND-WEED.

[From *convolvere* to entwine.]

Convólulus arvénsis.—This is a perennial from Europe, with small nearly white flowers. The leaves arrow or heart-shaped with acute lobes. Stems numerous, climbing; on account of its twining propensity, covering bushes and fences in its neighborhood, it is called Bind-weed. In Britain it is one of the greatest pests to gardeners and farmers. It is worse than the Hedge Bind-weed; for that, for the sake of climbing, confines its ravages to the borders of the field and garden, while this wanders over the whole ground, and is with difficulty rooted out. And yet it must be acknowledged that this little red and white flower is extremely beautiful; and, if it were a little more modest, would, doubtless, be a general favorite. As it is, it must suffer the consequence of its impertinence, not only in being avoided, but positively turned out. Like the *Calystegias*, notwithstanding its great beauty, it must not be encouraged in the garden.

C. tricolor.—Dwarf Convolvulus.—This is *C. minor* of the catalogues; a native of Spain and Portugal; the flowers are often pure white, but sometimes variegated with blue and yellow, or blue and white; the most beautiful kind is a bright blue, fading by delicate gradations to a pure white in the centre. It resembles the blue atmosphere, relieved by fleecy clouds on a fine summer day.

“ When on high
Through clouds of fleecy white, laughs the cerulean sky.”

Nor is the form of this flower less beautiful than the color, either when spread out in full beauty to the mid-day sun, or when, at the approach of night, it closes its blue eye to sleep. The plant spreads out much in every direction from the center, so that a bed of them, with the plants two feet distant from each other, will interlock. It

CONVOLVULUS TRICOLOR.

is not exceeded in elegance by any plant when profusely covered with its flowers, which continue open all day, if peasant, but shut in case of rain. Sown in March. It affords a large mass of beauty, from July to October.

COREOPSIS.

[The name is from Greek words, signifying a *bug* and *resemblance*. Its fruit is convex on one side, and concave on the other; it has a membranous margin, and it has two little horns at the end which gives it very much the appearance of some insect.]

The genus has been divided, and *C. tinctoria* and its varieties are now classed in the genus *Calliopsis*, but as they are generally known as Coreopsis, I shall consider them under this head. The genus includes both perennials and annuals. The perennials are hardy border-plants, with yellow flowers and most of them quite showy. The most desirable are *C. tenuifolia*, with very delicate pinnated foliage, about one and one-half foot high; *C. lanceolata* with lance-shaped and large flowers; *C. latifolia*, *C. verticillata*, *C. tripteris*, and others, all continuing long in bloom. Propagated by dividing the roots. The following are annuals.

Coreópsis Drummóndii is a fine bedding plant, where a mass of brilliant yellow flowers are wanted; the flowers being very large, and continuing in bloom most of the season. It is about one and one-half foot high.

C. Coronária has flowers of a paler yellow, each petal or ray is marked or penciled with brown at the base. Most of the genus of Coreopsis are natives of N. America. *C. Drummondii*, was discovered by Mr. Drummond, and named after him.

C. tinctoria was introduced by Nuttall, who found it in great profusion in Missouri and other southwestern States.

It is so liberal in scattering its seed, that, unless it is kept under it, becomes so much of a nuisance, that it has received the name of "Nuttall's weed." It is, however, very beautiful when confined within proper bounds. It grows from two to three feet high in rich soil, and its dark-yellow flowers, with rich brownish-crimson centre are very fine. From this many superb varieties have been obtained. *C. atrosanguinea* has large dark-brown velvet flowers, with yellow borders. *C. nigra*, or black Calliopsis is another variety without any border, which, in the sun, assumes a very dark crimson hue. These varieties are all the same height of *C. tinctoria*. But the most beautiful are the dwarf-varieties, which are from six to twelve inches high. Those called Pigmy, are only six inches high, with flowers nearly as large as the taller varieties, among them are the black or very dark; dark with a very small edging of yellow; yellow with dark centre, and mottled; another variety has curious quilled petals. All these varieties are hardy and easily propagated by seed. The Pigmy sorts are desirable for bedding, as they keep in bloom all summer. It must be observed, that all the varieties are liable to sport, and vary from the original plant, but a great majority will be like the mother plant. Plant out rather thick, so that those, which depart from the original, may be weeded out as the flowers appear.

CORYDALIS.

[The ancient Greek name for Fumitory, to which this genus is closely related.]

Corýdalis gláuca.—Pale Corydalis.—An indigenous biennial, growing in rocky places, from one to three feet high, with glaucous leaves; flowers yellow, red, and green, in June; propagated by seed. This, and the less

common *C. aurea*, which has golden yellow flowers, are both pretty plants for rock-work.

CREPIS.

[A name made use of by Pliny, a plant of which he gives no description.]

Crepis barbata.—The Purple-eyed Crepis, is an uncommonly hardy and beautiful annual, of the easiest culture. The flower-stems are prostrate like those of *Convolvulus tricolor*. Grown in masses and the plants thinned out to eighteen inches distant, it makes a fine appearance. It begins to flower the first of July, and continues till October or November, covered with beautiful flowers, the rays of a light-yellow, finely contrasted with the brilliant purple-brown of the centre.

CROCUS.

[*Crocus*, an unhappy lover, whom the gods in pity were said to have changed into this flower.]

“Glad as the spring, when the first *Crocus* comes
To laugh amid the shower.”

Crocus vernus.—The Spring *Crocus* is a bulbous rooted plant, of which there are many varieties annually imported from Holland, and sold at very low prices. The most prominent sorts are the great yellow, deep-blue, light-blue, white with blue stripes, blue with white stripes, white with a purple base, pure white, cloth of gold, etc. It flowers in April, and in warm seasons, in sheltered places, frequently in March. Where there is a plenty of them, they make a magnificent show. The bulbs are small, solid, and flat. They should be planted in September or October, about one inch or one and one-half inch deep, in any good

garden soil. They are very hardy, and the only difficulty is their liability to be thrown out by the frost, when the ground is bare, towards spring. To remedy this evil, some light substance should be thrown over them, to shade them from the action of the sun. After flowering, when the leaves have decayed, the roots may be taken up, and kept, until they are wanted to plant in autumn, in some cool, dry place; or they may remain in the ground a number of years without removing.

“Haworth, who has for thirty years paid particular attention to the Crocus, and raised many varieties from seed, found that the blue, white, and purple flowering kinds ripened their seeds more readily than the yellow, and that the leaves of the latter were narrower through all the species and varieties. When this genus is in flower, the germen is situated underground almost close to the bulb; but some weeks after the decay of the flower, it emerges on a white peduncle and ripens its seed above ground. This extraordinary mode of semination is peculiarly conspicuous in *C. nudiflorus*, which flowers without leaves in autumn, and throws up its germen the following spring like the Colchicum.”

The Autumnal Crocus is supposed to have come originally from the East. The flowers are of a purple, lilac, or pale-blue, blooming in October; the leaves grow all winter. This species of Crocus is also called Saffron, and the medicine so called is obtained from it. It is *C. sativus*, and is rarely to be seen in our garden.

CUPHEA.

[From a Greek word, signifying *gibbous*, in reference to the form of its calyx.]

Cúphea ígnea, commonly but incorrectly called *C. platycentra*.—A fine dwarf plant for bedding out, with scarlet and purple tubular flowers, which are produced in

great profusion through the whole season. It is raised from cuttings, the same as the *Verbena*, and like that plant, must be housed during the winter. All the *Cupheas*, with which I am acquainted, are tender; most succeed well as annuals, of which I have grown a number of species, but believe, those who have seen the one described above, and compare it with any other sorts introduced, will be satisfied with that alone. *C. Zimpanii* is a profuse growing, spreading plant, with dark-purple flowers, which wither soon under a hot sun, and, although very pretty, not worth the trouble of raising.

CYPRIPEDIUM.—LADY'S SLIPPER.

[From Greek words, *Venus*, and a *slipper*, an allusion to the elegant slipper-like form of the labellum.]

Cypripedium acaule, differs from the other species in having no stem leaves. The leaves are two, springing from the root, large, oval-lanceolate, plaited, and downy. This is the most common species, sometimes called Two-leaved Lady's Slipper, or Whip-poor-will's Shoe. It is found in rich and somewhat shady woods. This singular flower has its sepals and petals spreading, green with a purple tinge, except the petal which forms the lip, or purple inflated bag, which is veined, villous, and longer than the other parts of the flower. The flower stems are about one foot high, bearing one solitary flower, in May and June.

C. parviflorum.—Yellow Lady's Slipper.—This is another beautiful indigenous species, not very common about Boston, but found in some localities in this State, New Hampshire and Vermont. The lip of this flower is oblong oval; yellow, dotted inside; its aperture roundish with an inflexed margin; stem erect; leaves alternate, clasping, oval, nerved, downy; blooms in June.

C. spectabile.—Showy Lady's Slipper.—This is one of the most splendid of this curious genus, indigenous and perennial like the others. It is so highly prized in England that a single plant is often sold for one guinea. It is a stout plant, about two feet high, the stem and leaves hairy; leaves oval-lanceolate, plaited. Flowers two or three, large variegated, with stripes of purple and white; found in some parts of Maine, Canada, and Vermont; flowers in July.

C. arietinum.—Ram's Head.—Stem six or eight inches high, with a few alternate lanceolate leaves. Flower much smaller than in any of the foregoing species. Sepals greenish-brown, lip small, inflated, acute, reticulated with red and white. It has been compared in shape to a ram's head, the lateral petals representing the horns. Found in Maine and northward; flowers in May.

Any attempt to cultivate this beautiful genus of plants, will be vain and futile unless they have a peat or leafy soil, and a shady border. The genus is most interesting to botanists, and well worthy a place in the flower-garden, provided a suitable soil and locality are allotted to it.

DAHLIA.

[Named after Andrew *Dahl*, a Swedish botanist and pupil of Linnæus.]

There is fashion among amateurs of the floral kingdom, as well as in matters of dress, and style of living among those who lead in fashionable circles of society. Thus, when a new flower of fancied merit is introduced, it becomes all the rage, for the time being. It is admired, extolled, sold at extravagant prices, cultivated, improved, and disseminated among the multitude. The leaders in floral novelties have seen it in its highest state of perfec-

tion; it is no longer a novelty; they are satiated, and it is discarded for some new favorite, to be in its turn set up and adored as the *Ne plus ultra* of all that is lovely and desirable. One of this class, that has had its day, is the Dahlia, which must now stand in the back ground, and give precedence to the lovely Verbena and the gorgeous Gladiolus. In the first edition of the "Book of Flowers," I confess I was rather too severe upon the Dahlia; I have been criticized and censured by some friends, for the manner in which this once fashionable flower was disparaged. There was, however, some reason why a little ill-feeling should be expressed, when speaking of a flower that had given me more than usual vexation and disappointment, besides that of the ill success which, in some seasons, I had experienced in its cultivation. I am almost ashamed to speak of my folly, in a transaction which took place a quarter of a century ago, in connection with this flower, from which the reader may well imagine the reason why I should have manifested a little spite in my description of it. A proposition was made to me by a celebrated and wealthy florist, to join him in importing from England an invoice of choice, new, high-priced seedling Dahlias, with the understanding, that I was to pay one-quarter of the expense, and receive as my share one plant each of all the varieties thus obtained. So we sat down and looked over some florists' catalogues of new Dahlias, in which was attached to each variety a glowing description of its peculiar merits and beauty, with its price, which by the way was anything but moderate. But they were *new* and *fashionable*, and must be obtained, notwithstanding the high prices. So a list was made out of such varieties as were supposed to be the finest. As one to ten guineas a plant was considered rather extravagant, a few only of this class were ordered; but some latitude was given to the florist, which he took advantage of, and to our surprise,

the bill footed up over eight hundred dollars, where it was expected one-quarter of that sum would cover the expense. But we were in for it, and must make the best of it, and I consoled myself with the thought of the pleasure that would be derived in watching the opening of these gorgeous new varieties. One plant each was received, according to agreement, about the middle of June, raised from cuttings taken from the small tubers; but they were so weak and attenuated, and the season being unfavorable, they proved a perfect failure, and not a single blossom from the whole rewarded me for the expense, trouble, and vexation which I experienced. It is said of a certain Southern Senator, who was violently opposed to the old tariff, and of course to manufacturers of cloth, and to the animal that produced the raw material, so bitter were his feelings, that he remarked in one of his speeches, that "he would go any time a mile out of the way to kick a sheep." I have no such feeling of hatred and spite against the innocent Dahlias, but when I think of these past experiences with it, it produces feelings somewhat akin to those of the statesman as expressed in his speech. However, I will give no more kicks at this flower, but somewhat modify my original article on the Dahlia, and present it in the following shape:—

"In queenly elegance the Dahlia stands,
And waves her coronet."

This flower is so capricious in its flowering, so subject to the ravages of insects, so much influenced by too much heat, too much dryness, or too much wet; and then, just as it begins to give promise of abundant bloom, having escaped all the casualties of the season, is cut down by the frost as it is beginning to give promise of flower, that after so many disappointed hopes, I have sometimes been disposed to say I would not try it again. It must be confessed, however, it is on some accounts desirable; the flowers are

large, showy, gorgeous in color, sporting into every tint except blue. The shape, too, is perfect, although a little too set and prim, as though it was made for the occasion. The habit of the plant is coarse, and the smell repulsive; but, with all its failings, it is or has been a popular flower, and will continue to find favor with many.

It was first introduced into England in the year 1789, was but little noticed, and soon lost. It was re-introduced from Mexico in 1804, as a single purple flower of not much interest. It is only within the last 40 years that it has received the attention of the florist. From the single purple and scarlet flowers, all the numerous varieties of florists' flowers have been produced; a striking example of what may be done by patient perseverance and skill in the improvement of a flower from its native simplicity. Continental botanists call the genus *Georgina*. It is found in sandy meadows in Mexico, and till the peace of 1814, was more cultivated in France than in England. It was not introduced into this country until about 1825. *D. variabilis* is the species from which the innumerable florists varieties have been produced, though there are several other species to be found in European collections.

The root is tuberous and tender. Freezing destroys it at once; it can, therefore, be planted only in the spring.

Propagation.—It is propagated by seeds, division of the roots, and by cuttings.

By Seed.—If the seed is soon in a hot-bed in April or March, and the plants set out in the open ground in June, most of them will flower the first season; and though not one in a hundred may come up to the standard of a perfect flower, yet it is very interesting to mark the curious sports which are often made in these seedlings. Many of them will make a greater show than the more perfect sorts; as what is lacking in shape and size, may be made up in the profusion of bloom and variety of colors.

By Divisions of the Root.—This is the most common mode of propagation, unless it be with the nursery-man, who raises from cuttings to increase his stock rapidly. If the buds have not started, it is best to place the roots, or stools as they are called, in gentle heat, before they are divided; or cover them over with a little earth, in a warm place, the beginning of May, so as to start the buds before the roots are divided. Without this course, it will be impossible to divide the tubers so as to be sure of a bud on each; and without a bud a tuber is worthless. The buds having appeared, clean the roots from soil, and with a sharp knife divide the stool in such a manner that a bud may be secured to each division. The smallest tuber, with a bud, will make a strong plant.

By Cuttings.—This process requires so much care and attention, that I must refer my readers to works on the subject of propagation.

Plants raised by cuttings have never succeeded so well with me as from divisions of the root. The reason may be, that in the propagation of new varieties, in the desire to realize as much as possible, weak shoots are taken, and forced so rapidly, and become so attenuated and weakened, that they never recover. True it is, that, after paying extravagant prices for new sorts, I have frequently been disappointed in not having a single bloom; and, what is worse, the roots may not get strength enough to stand through the winter, even with the greatest care.

Soil and Cultivation.—Too much has been said and written upon the cultivation of the Dahlia. After following the directions given by various amateurs and writers, and after taking much pains and care in cultivation, I have been surprised to find that the refuse of my roots, planted without care, with very little manure, in yellow loamy soil, have far outstripped those on which more abundant pains had been bestowed. The Dahlia likes a humid atmosphere,

such as we rarely have in this country. It frequently begins to flower, and promises well in July, but on the last of that month and in August our scorching sun and arid atmosphere, together with the insects that prey upon it, operate so unfavorably that it hardly recovers before it is overtaken by frost. While I resided in Lancaster, my garden was situated on the banks of a branch of the Nashua River. In hot weather, a damp or mist rose from the river every night, and gave my Dahlia plants a good wetting. I did not have any difficulty then with the Dahlia; it flowered in great profusion, and I have had nearly one hundred blooms upon a plant at one time. The mode of cultivation then was: first, a hole excavated two or three feet across, and about fifteen inches deep, the poor soil taken out, and its place supplied with the adjoining surface soil, then about two shovelfuls of strong manure, partly decomposed, from the stable, thrown in and well incorporated with the soil; the stake for the support of the plant firmly fixed in the ground; after which the surface levelled, and all was ready for planting. If tubers are used without being forced, they may be planted any time after the middle of May, covering the crown of the tuber about two inches, slanting the other end downwards. Plants, raised in pots or cuttings, may be turned into the ground any time in June. I have succeeded in producing fine flowers from dry tubers planted the first of July. As a general rule, let the soil be rich and deep; let the plants be well attended to by tying up to the stake,—which should be strong, and from five to six feet above the surface. As the plants advance, syringe the foliage every night in dry weather; sift over the plants fine air-slacked lime to kill the insects, if you can; mulch the ground about them; give them guano-water twice a week in August; and, if you are rewarded for your pains, it is more than I have been in most seasons.

Dahlias look best when planted in groups, as they hide each other's ugliness, and *if they flower*, and a variety of colors be combined in the group, they make a very imposing appearance.

Taking up and Preserving the Roots.—When the first frost strikes the Dahlias so as to blacken the plant, a few inches of soil should be added to the crown of the plant, to prevent the tubers from being injured by freezing, which might happen unexpectedly some cold night. Taking some pleasant day, the last of October or the first of November, the tops of the plants should be cut down near the ground, and the stakes pulled up; then very carefully lift the roots from the earth. This is best done by two persons, with spades, operating on each side of the roots, as when taken from the ground they are very brittle and easily broken off. Let them then be carefully deposited on the surface, where they should remain during the day, exposed to the sun and air. Before night sets in, they should be removed to a dry, airy cellar, and deposited on shelves raised a few feet from the bottom; here they will remain with perfect safety, provided they can have a little air occasionally, in pleasant weather. They should, however, be placed singly on the shelves; as, when packed close, or one upon another, they are liable to mould and decay. The most danger is to be apprehended from excessive dampness; but sometimes roots, kept in a cellar where there is a furnace, may be injured by the dryness, and the roots become shrivelled and almost worthless, especially the very small ones. The rats or mice will do no injury to the roots, as they will not touch them.

Liliputian or Bouquet Dahlias.—This novel variety of the Dahlia has been introduced within a few years, and, in my opinion, is a great improvement upon the over-grown coarse flowers of the old varieties. Formerly, large-sized flowers were considered as one of the qualifications for a

model or show-flower. But since the Liliputian Dahlias have been cultivated, the precedence has been given to them by amateurs of good taste. The flowers vary in size from two to two and one-half inches in diameter, and some not much larger than a silver dollar. They are not too large for a bouquet of moderate size, while the old varieties are too ungainly for any, except for giant bouquets for tables in large halls. The flowers are compact and neat, sporting into the same variety of colors as in the large sorts. It is impossible to give a list of the most approved varieties of this present time, in either class of Dahlias, that would be likely to give satisfaction a few years hence. Some of the fine new sorts soon run out. The nursery-men, who raise their stock of plants by cuttings, take off a succession of sprouts, the last growth of which is slender and weak; and the plants inherit the feebleness of the cuttings, and soon deteriorate, fail, and are heard of no more.

Dahlias raised from Seed and the estimated value of fine seedlings in 1836.—The following extract of a letter from Mr. Widnall, of England, (in January 1836), a celebrated cultivator of seedling Dahlias, whose object was to obtain fine varieties for sale, will be of some interest to Dahlia fanciers of the present time; showing the extent of the mania for this flower at that period, which may be termed the high-tide season of its popularity.

After describing various fine new seedlings, he says:—“These are the very best seedlings, out of 30,000 plants, which covered more than three acres of ground, and I have about the same quantity of this year’s seedlings, none of which will be sent out before May, 1836. These seedlings, which I now offer to you, obtained prizes at every exhibition they have been shown at. I obtained in ten days last September for seedlings and named flowers, prizes to the amount of £107 (\$535).”

The following descriptions and prices of some of Widnall's finest seedlings, will give some idea of the value attached to them in England at that time:—

“No. $\frac{1}{3}$.—I have just named Juliet, color a rose, inclining to rosy purple; superior in shape to Widnall's perfection; height three feet; price £7 (or about \$35).

No. $\frac{3}{5}$.—Not named. A bright yellow, tipped with orange-scarlet; fine shape; height three feet; price £1.10.

No. $\frac{5}{5}$.—Not named. Ground dark-purple, beautifully shaded and striped with crimson; height five feet; price £2.

No. 281.—Just named Golden Sovereign, a deep gold yellow; height four to five feet; price £5.

C.—Not named. A white ground, edged with the same color as the Queen of Dahlias, and surpasses every Dahlia seen for shape; three to four feet high; price £10 (or \$50).

D.—Just named Marchioness of —; fine white ground, exquisitely edged with beautiful rose; large flowers and very fine shape; three feet high; price £10.

E.E.—Not named. A white, finely margined, with rosy lilac cupped petals; globular shaped; very fine; four feet high; price £5.”

These plants, then in Mr. Widnall's possession, were not to be sent out by him till the following year in May. Probably not one of all his seedlings are in existence at the present time, and if they were, would be dear at \$1.50 per dozen plants.

DATURA.—THORN APPLE.

[Name said to be from the Arabic.]

Datura Stramónium.—Thorn apple, so called in allusion to the capsule, which is as large as a small hen's egg; ovate, and thickly covered with thorns. The poisonous qualities of this plant, as well as its application in medicine, are well known. As a remedy in asthma, it has acquired great reputation. In some parts of the country it is known by the name of Jamestown or Jimson weed. I have heard of a case where a child was poisoned in consequence of eating one seed. Professor Martyn observes, that in the earth brought with plants from any part of America, we are sure to have the Thorn-apple come up. The whole plant has a disagreeable smell. Every part of the plant is poisonous, bringing on *delirium tremens*, etc. The flowers are funnel shaped, with a long tube, five angled; either light purple or white. I describe it here as a warning to beware of the plant, and not for its beauty, as it is a disgusting weed growing abundantly in rubbish. Some of the genus are beautiful and worthy a place in the flower-garden; but all are poisonous. This species has very large handsome flowers, pure white.

D. quercifolia, is one of the finest.—It has very large white flowers, measuring five inches across the mouth; the nerves of a fine pink, shaded with purple. The fruit contained in a smooth capsule, and the leaf is somewhat like the oak (*Quercus*,) whence its name. The manner of growth is very elegant; and as each succeeding blossom burst through its fine calyx, we have thought it more beautiful than its predecessor. We can truly recommend this as an ornament to the garden.

D. ceratocaulon, or Horn-stalked Datura.—This is a highly ornamental and showy species, with large white flowers, shaded with pink, full as large as the last.

D. meteloides, *D. Wrightii* of the catalogues. This species is very splendid, producing large funnel-shaped flowers, pure white, delicately shaded with very pale blue. Before the buds expand, they are curiously twisted or folded, and if cut off in the afternoon and placed in water in the house, they will begin to unfold early in the evening, and by nine o'clock be fully opened, filling the room with a delightful fragrance. All the species open during the night, remain during the next day, and then perish. The plants of *D. meteloides* are two or three feet high, branching, producing a succession of flowers through the season.

There are varieties of double-blue, white, and straw color. These double flowers are curious, but do not have much claim to beauty. The single flower is filled up with other funnel-shaped petals. The double sorts are *D. fastuosa alba plena*, and *purpurea plena*. *D. humilis flava* is a dwarf species, with yellow flowers. All these double varieties are late in flowering. They are all propagated by seeds, being annuals in the open ground, but perennials in the green-house. A plant of *D. meteloides*, which grew on the grape border and securely protected, survived the winter and flowered profusely the next year.

DELPHINIUM.—LARKSPUR.

[From a Greek word signifying a *dolphin*, on account of the resemblance between the shape of the flower and the imaginary figures of the dolphin.]

The French call it *Pied d'alouette*, which is the same as the English, Larkspur, and it is also called Lark's-claws, Lark's-heel, on account of the spur shape projection at the back of the flower. The species are showy annuals or perennials, valuable as border-flowers. The leaves are much divided, and the flowers in terminal spikes, blue,

purple, white or red; never yellow, or any shade of that color.

There are many species and varieties of the perennial Larkspur, which are indispensable in a collection of plants; all hardy and easily propagated from seed, or by dividing the roots of some of the double varieties which produce no seed. The brilliancy of the blue color of some of the flowers cannot be surpassed.

Delphinium Sinénsis pleno.—Double Chinese.—This is one of the most magnificent of herbaceous plants. It can be propagated only by dividing the roots, as it does not produce seed; it is perfectly hardy, enduring the coldest weather without protection; it is best to give a little, however, as it will flower stronger for it. The flowers are of a most beautiful lively blue, in long open spikes, upon graceful, slender, purplish stems, three feet high. From June to October it displays its beauty, and is indispensable in the formation of a perfect bouquet. Foliage palmate, many parted.

D. elátum.—Bee Larkspur.—So called on account of the hairy petals, in the centre of the flower, having a fancied resemblance to a bee.

This species, from its height, which is from five to seven feet, is well adapted to the shrubbery; its long, clustered spike of fine blue flowers making a fine appearance in that department. It is also suitable for the border, but should be planted at the greatest distance from the walk. Leaves downy, five-lobed; lobes wedge shape at the base, trifid cut. Propagated by seed or divisions of the roots.

The plant is covered with soft green down. It sports into many varieties, from pale-blue to dark, sometimes to blue with a white centre, which is very beautiful.

D. Barlówii.—Barlow's Larkspur.—A garden variety, apparently intermediate between the Great-flowered and

Bee Larkspur. It sends up a stem from three to five feet high, much branched at the top, covered in June and July with innumerable dark-blue flowers, partaking somewhat of the character of the Bee Larkspur. Propagated by divisions of the root.

D. grandiflorum.—Great-flowered.—One of the most showy of the genus, sporting into many varieties. Its height is from two to three feet, and continues from June to October to give a succession of flowers, which are large, of a fine light or dark-blue, purple and white, and often spotted or shaded on each petal with copper color on the dark varieties, or with green on the white. Leaves palmate, (hand-shaped,) many parted. It is propagated by dividing the roots in the spring, about the time it begins to vegetate; or it may be divided with success in August. By sowing the seed, new varieties may be expected, which, planted early, will flower feebly and show the character of the flower in autumn. Nothing is more pleasant, than to originate a new variety. It must not be supposed, however, that there will be much chance of any improvement in more than one or two in a hundred plants. It has flourished with me in a great variety of soils. It will, in fact, grow anywhere without difficulty, only requiring to be divided every few years, when the roots become large. This species is a native of Siberia. A seedling of this species was raised by the late Wm. E. Carter, of the Botanic garden, which was named in honor of him *D. Carterii*, and is now in my possession. The flowers are double, sky-blue, a very fine variety. I wish I could say the same of my much admired seedling *D. Breckii*, which I fear is lost. It was perfectly hardy for many years, and at one time I had a large stock of it; it was also extensively disseminated, but now I fear, it is numbered among the things that were, as mine are all lost, and all in my neighborhood have died also. Formerly I had large stools of

it and planted it in masses, producing flowers of a dazzling blue color. There was no blue flower that produced so brilliant an effect. It was more dwarfish than *D. Sinensis*, growing about two feet high, the stems not so flexible, and color much finer; the flowers being double, I could never obtain seed. Another seedling, called Breck's No. 2, color purplish blue, with semi-double flowers and inferior to No. 1, I did not care to propagate, and let it die. I believe the destruction of this beautiful variety was caused by little maggot-like worms, which worked in the roots.

D. Hendersóni is a beautiful variety, raised by Mr. Henderson, a nurseryman of England; probably from *D. elatum*, which it very much resembles in growth and foliage. The flowers are sky-blue, with white centre, and are arranged in long spikes.

D. formósum.—This is a splendid species or hybrid variety, with large lively blue flowers, with the centre white, shaded with reddish-purple; one of the most desirable hardy herbaceous plants in cultivation. It blooms from July to November, giving a supply of the most brilliant blue throughout the season. *A. cœlestinum* is a variety of *formosum*, or a hybrid of *elatum*, with sky-blue flowers, equally hardy. There is also a large number of hybrid *Delphiniums*, partaking of the habit of *elatum*, which are beautiful; but these described, will be sufficient to make up a good collection.

D. cardínalis is found in Southern California.—I should doubt its existence, had I not seen specimens of the dried plant, which were of a brilliant scarlet. I saw it in the herbarium of a gentleman, the editor of a paper in Los Angeles, who gathered it himself. It was advertised by some of the English and French nurserymen at about five dollars a plant. I ordered one from each place, when, to my great disappointment, it turned out to be *D. puniceum*,

a plant from Siberia, which has small dull brick-red flowers; very different from *D. cardinalis*, which had flowers the size of those of *D. elatum*. I also imported seed of it, and had a hundred or more plants, which all turned out to be the common *D. elatum*. After this experience, who can blame me if I did feel a little waspish.

The annual Larkspurs are familiar to almost every one. Some of the species and varieties are among the most common ornaments of the garden. They are all hardy, and flower stronger when self-sown in summer, or planted in beds or borders in August or September. There are two distinct species of Annual Larkspur: *D. Ajacis*, or Dwarf Rocket, with a variety called the tall German Rocket; and *D. consolida*.

D. consórida, or Branching Larkspur.—This species grows from two to three feet high, producing its flowers in spikes, which are continually pushing out from the main stem and branches, affording abundance of bloom through the season. The double varieties are the most desirable. Masses of the different colors appear to great advantage. There are the double white, rose, pale-blue, dark-blue, lilac or ash color, striped red and white, blue and white, and variously mottled.

D. Ajácis.—Dwarf Rocket Larkspur.—A bed of the double varieties of this species is almost equal in beauty, when properly grown, to a bed of Hyacinths; early sown plants are in bloom in June and July, but do not continue in bloom so long as those of *D. consolida*; grows a foot high. We import them in packages of ten to fifteen varieties. To have them in the greatest perfection, the seed should be sown in autumn.

D. Ajácis major.—Tall Rocket Larkspur.—Appears very much like the last described, except the flower-stems are a foot and one-half to two feet high. In flower at the

same time ; perfectly hardy like the others. This is imported in about ten varieties ; colors similar to the last, viz : pink or rose, white, grey, violet, blue, striped, spotted, etc.

DIANTHUS.—PINK.

[The name of *Dianthus* is of Greek origin, and signifies the Flower of Jove ; which name is, according to some, bestowed upon the flower for its beauty ; others say from its fragrance. That distinction is surely just, which excites a doubt only for *which* of its good qualities it is conferred. French, *œillet*.]

Most of the species of this genus are highly valued, not only for the beauty and fragrance of the flowers, but also as being evergreens ; their foliage during winter, being as abundant and as vivid as in summer. The fragrance of some of the species is peculiarly grateful, and no plant in this respect surpasses the Clove, and some other varieties of the Pink.

Diañthus Caryophýllus.—Clove Pink and Carnation.—There is no flower more desirable in the flower-garden than the Carnation. A well-grown, superior variety, cannot be surpassed in elegance, beauty, or odor, by any other flower ; yet we scarcely ever see it in perfection. Its cultivation in our climate is attended with many difficulties, which may account for its rarity. Our winters are too severe, and springs too changeable, to keep it in perfection in the open ground ; and then our summers are too dry and hot for the full development of its beauties. Seedlings stand the winter and spring without difficulty, with a light covering of leaves and evergreen boughs, and flower very well ; but then not one plant in a hundred will be considered worth saving by the florist, although they will all be interesting as single, semi-double, or irregular flowers, and richly repay all the labor. Valuable varieties are generally propagated from layers, which often keep

very well in the open ground by letting them remain with the parent plant, and covering them with leaves and pine boughs; but the most certain way is, when the layers have taken root, to pot them, and at the approach of winter put them in a frame where they may be kept with perfect safety, provided air is given them in mild weather, and they are not exposed to the sun when in a frozen state. The mice are very destructive to all Pinks; therefore the frame must be tight.

Carnations are arranged by florists into three classes, viz: *Flakes*, *Bizarres*, and *Picotees*. *Flakes* have two colors only; their stripes are large, going quite through the petals. *Bizarres* are variegated, in irregular spots and stripes, with not less than three colors. *Picotees* have a white ground, spotted or pounced with scarlet, red, purple, or other colors. The finer sorts are regularly edged with these colors, on a clear white or yellow ground. The petals of a perfect flower should be rose-leaved, or with entire edges; the flower should be filled up in a regular manner with petals of this description. It flowers in July. On a strong plant the stem will be three feet high.

The propagation of the Carnation by layers is a very simple operation. When the plant is in perfection of bloom, lay around it one and one-half or two inches of compost, first gently stirring the surface so that it may mix well; remove the lower leaves of the shoots selected; pass the pen-knife, slanting upwards, half through the joint; fasten the shoot, where so cut, about two inches under the surface, with a small hooked peg, bending carefully so as not to break it at the incision; then fix it firmly by gently pressing the earth around with the fingers, and finish by cutting off about half an inch of the upper extremities of the leaves with scissors. The sap soon begins to granulate at the wound, and throw out

roots. In about a month or six weeks, if the soil has been kept moderately moist, the layers may be severed from the parent plant and established for themselves; or they may remain where they are, if the stem to which they are attached be carefully cut off.

The Carnation requires a rich, generous, deep soil. A compost of three parts of good, strong garden loam, three parts hot-bed manure, two years old, three parts of coarse river sand, two parts dry manure from a hen-house, sifted, and two parts of soot from a wood fire, has been recommended for the Carnation.

Clove Pink is more hardy than the Carnation, of which it is the parent; the petals are more fringed, and the fragrance more powerful, resembling that of the Clove. In France it is called the Clove Gilly-flower. "Some suppose this latter name to have been corrupted from July-flower, July being its flowering time. Drayton so names it."

"The curlious choice July flower,
Whose kinds hight the Carnation,
For sweetness of most sovereign power
Shall help my wreath to fashion;
Whose sundry colors of one kind,
First from one root derived,
Them in their several suits I'll bind,
My garland so contrived."

Perpetual Carnation Pink — Tree Carnation, or Winter-flowering. — The great improvement in this tribe has added an invaluable feature to the section of winter-blooming plants for the drawing-room, conservatory, or green-house. The delicately rich and grateful odor, in connection with the brilliant color and good outline of the flowers now offered, will secure for them a prominent place in the forcing department, and, ere long, be regarded as an indispensable requisite in the portable drawing-room flower vase.

The flowering period of these plants may be prolonged beyond the winter by retaining the terminal, or upper growth, but to ensure a fine early autumn or winter bloom, the upper growth should be shortened or pruned back (where requisite), in the spring or early summer months, and the plants placed in a cool, airy green-house, or cool east or south pit throughout the summer, to mature the requisite vigor of growth for bloom. During the warm summer months, the plants should not be placed in any position where a free ventilation of air cannot be afforded by day and night; and when the requisite growth is obtained, they may be exposed in the open air until autumn, with the usual daily attention given to plants in pots.

D. hortensis.—Garden Pink.—This species is in perfection about the last of June. The foliage is more grass-like, and the plant much hardier, than the Carnation. The double varieties are very desirable, not only for their beauty, but also for their fragrance. They may be propagated by dividing the roots, by layers, and by pipings. The surest mode of propagation is by layers, but piping is generally resorted to for Pinks. These are shoots cut from the plant at the second or third joint, according as they are more or less woody or juicy, and inserted, close to each other, in a bed of well pulverized proper compost; water moderately, so that the earth may adhere closely about the shoots; when the moisture has somewhat evaporated from the leaves, cover them up with a hand glass, which must be forced a little depth into the ground so as to confine the air. This need hardly be removed until the plants have taken root; they must be shaded, however, the first fourteen days, with mats over the glasses, when the sun is very hot. If properly managed, not one in twenty will miss, and between one and two hundred may be planted under one glass; in a month or six

weeks they will be sufficiently rooted to move. Carnations are sometimes raised from pipings, but they are not so sure as Pinks to take root. This variety is often called the Paisley Pink, on account of its having been raised in the highest perfection among the weavers near Paisley, in England. A good Pink should have a strong, elastic, and erect stem, not less than one foot high. The petals should be large and broad, with very fine-fringed edges, the nearer rose-leaved the better. The ground-work of the flower should be pure white, or rose-colored, with a dark, rich crimson, or purple eye, resembling velvet; if nearly black, so much the richer. A delicate margin, or lacing, round the entire petal, if of the color of the eye, increases its beauty. The flower should be from two to two and a half inches in diameter.

D. Chinensis.—China Pink.—This species is a biennial of dwarf habits; of great beauty, but without fragrance. The foliage is of a yellowish green. It flowers from seed the first year; it is perfectly hardy, and flowers strong the second year. The colors are exceedingly rich; crimson, and dark shades of that color approaching to black, are often combined in the same flower, with edgings of white, pink, or other colors. Seed, saved from double flowers, will produce a great portion of double varieties. In beds where there may be a hundred plants, scarcely two will be found alike. They are in flower a number of months. Of this species a number of fine dwarf varieties, not more than six inches high, have been obtained. *D. latifolius*. Broad-leaved Pink, is a variety of *D. Chinensis*, very ornamental; it has oblong-lanceolate leaves; flowers crimson and various shades of red; in bloom all the season; an imperfect perennial. A Pink, called *Cook's mule*, is a beautiful hybrid, somewhat like the Broad-leaved Pink. The flowers are of the deepest crimson, very double, and appear in succession through the season.

D. barbátus.—Sweet William.—Is an old inhabitant of the flower-garden, and was much esteemed in Gerarde's time, "for its beauty to deck up the bosoms of the beautiful, and garlands and crowns for pleasure." It is an imperfect perennial, but fine varieties are perpetuated by dividing the roots, soon after flowering in June and July. It is easily raised from seeds. A bed of fine sorts presents a rich sight; it sports into endless varieties, viz.: white, pink, purple, crimson, scarlet and variously edged, eyed, and spotted. There are also double varieties, but in my opinion, no improvement over the single.

D. híbridus.—There is a large class of these beautiful flowers, produced from crossing the different species of China, Broad-leaved, Imperial, Sweet William, and other species, which are worthy of cultivation; the seed can be obtained at some of the seed stores. The greatest novelties that have appeared in the Pink line for many years are the celebrated Heddewigii varieties raised from seeds obtained from Japan. The following description is from a seedsman, in Erfurt, Prussia:—

D. Chinénsis-Heddewígii, D. Chinensis giganteus,—(Heddewig). These superb pinks are splendid beyond expectation. The raiser, Mr. Heddewig, 'received the golden medal,' in Petersburg, in 1858, and besides there was a prize set on them by the Horticultural Society and by the Botanical Society in Regent's Park. The plant is very prolific (free flowering,) and of a dwarf compact size. The flowers are very large, and have a diameter of nearly three inches; they are of different colors and shades; rose-colored, crimson, brown, dark-brown and white, marbled-flamed, etc. An excellent acquisition."

D. Chinénsis-laciniátus (Heddewig).—Described by the raiser, Mr. Heddewig, as follows:—"I had the fortune to raise from Japan seed, a new splendid Pink, which Dr.

Kornicke describes already in Regels Gartenflora as *Dianthus laciniatus*. I raised last year 800 seeds from it, which I sowed early; and already at the end of May they commenced to display their most magnificent flowers, of a diameter of four inches. I was greatly rejoiced to see a part of them of splendid, dense, double flowers, in the greatest variety of colors, viz.: pure white, rose, lilac, carmine, crimson, purple-violet, the darkest black-brown, spotted and striped; a splendid sight, far beyond description. August 3, 1859, I exhibited 18 plants in as many different varieties, and received the highest reward for novelties, 'the Golden Medal,' from the Imperial Horticultural Society. This Pink grows two feet high; the small leaves have a length of four inches, and the double varieties, from their dense double form, and the lacinate petals, somewhat resemble the flower *Papaver pœoniflorum*. Some plants endured our last Russian winter without being covered." I have had the pleasure of cultivating these novelties since 1861, and find them to correspond nearly with these descriptions. I have not had any that attained a greater height than a foot, or foot and one-half, but have had all the shades of color mentioned by Mr. Heddewig. The foliage is somewhat glaucous and lanceolate. Both varieties produce double flowers. To ascertain whether they would survive over winters, I protected a large bed of them with leaves in the autumn of 1864, and they came out bright in the spring of 1865 and flowered superbly during the summer. If they are not hardy enough to stand the winter without covering, they are very valuable acquisitions to the flower-garden as annuals. Like the China Pinks, they are destitute of fragrance.

D. Verschaffeltii. — Verschaffelt's Hybrid Pink. — A remarkably novel and beautiful hardy flower-garden plant, from M. Ambroise Verschaffelt, nurseryman, Ghent. It has a neat and compact half-shrubby, densely-branched

habit of growth, from nine to twelve inches in height. The flowers, in their general aspect of growth, resemble a large specimen of the Florist varieties of Pinks, as grown for competition, but differ in showing a single expansion of flower-lobes, rather than of double petal series, and each entire blossom being from two to three inches in diameter, whilst the entire series of petals, instead of all combining to form a single blossom, with the usual dark ray or center, as is the case in the varieties above quoted, in the present example range themselves into a series of distinct inner flower circles, or rays, each marked with its own beautiful series of colored spots at the base, converging to a crimson belt or zone, and together forming a large aggregate cluster or flower-head. The arrangement of these concentric series of picturesque petal-rays within one simple base or crown, forms one of the most novel and singular combinations yet known in gardens.

D. supérbus.—This is one of the most fragrant of the Pink family; the petals of the flower are very much cut or fringed; one foot and a half high; flowers in July and August; white or rose color.

D. alpinus.—Alpine or Dwarf Pink.—A pretty little perennial, suitable for rock-work, with creeping roots; although not aspiring (not exceeding 3 or 4 inches in height) it soon takes possession of all the ground in the neighborhood. The flowers are small, white, or flesh colored, variegated with a circle of red or purple. *D. arenarius*, or Sand Pink; *D. plumarius*, *D. diminutus*, and some other dwarf species are also proper for rock-work.

DICENTRA.

[From the Greek, meaning *twice* and *spur*, on account of the two spurs or sacs at the base of the flowers.]

This genus has had a hard time with regard to its name. When first published, it was by a typographical error, printed *Diclytra*; it was next called *Dielytra*, a name by which it goes in many of the catalogues. Several species which the older botanists grouped under *Corydalis* are included in this genus.

Dicentra spectabilis. — Showy Dicentra, Bleeding Heart.—This, one of the finest hardy herbaceous perennials in cultivation, was brought from China, by Mr. Fortune. It is a plant of neat dwarf habit, when grown in pots, and two to three feet high, when grown in rich soil in the garden. The branches of the plant are most gracefully curved. It is one of the most striking objects in the whole range of floral attraction. The foliage is of a light transparent green; the flowers, which are produced on stems in sprays, are of a bright rose pink, about the size of a lozenge, and are heart shaped; the corolla pearly white, set in frosted silver; the stalks are literally gemmed, with these beautiful flowers, by hundreds. To cultivate it in perfection, it must have a season of frost; let those for blooming in winter, be taken up early in October and potted, then place them in a cold frame, and let the weather act on them till after Christmas; remove them in-doors, and they will flower in March. It is well to fill the frame, in autumn, with decayed leaves, in which plunge the pots to the rims. For out-door culture, for which it is eminently calculated, it needs not the slightest protection; will endure the cold of Canada, and come up in April, and flower splendidly in May; can be divided either in fall or spring. Grown in clumps, in a favored part of the garden, it shows to a great advantage.

D. exímea.—Red-flowered Dicentra.—A handsome in-

indigenous perennial, with flesh-colored or reddish flowers, from May to July; from six to ten inches high. This is the *Corydalis formosa* of the former edition.

D. Cucullária.—Dutchman's Breeches.—An indigenous perennial, with elegant, finely-divided leaves, of a pale and delicate green: from the midst of the cluster of leaves arises a scape bearing a one-sided, simple raceme of white, singular-looking, pendulous flowers. It is popularly called Dutchman's Breeches, on account of the resemblance of the corolla to that article of dress. Flowers in May.

D. Canadensis.—Squirrel-corn.—Also indigenous, and resembles the preceeding in habit and foliage, but the flowers have rounded spurs, are slightly tinged with red, and have a pleasant fragrance. The root has tubers as large as peas, hence the popular name.

DICTAMNUS.—FRAXINELLA.

[An ancient name adopted from Virgil. *Fraxinella* is in allusion to the similarity which exists between the leaves of the plant and *Fraxinus*, the Ash.]

Dictamnus Fraxinella.—Fraxinella.—The whole plant, especially when gently rubbed, emits an odor like that of the lemon-peel; but when bruised, has something of a balsamic scent. This odor is the strongest in the pedicels of the flowers, which are covered with glands of a rusty red color, exuding a viscid juice, or resin, which exhales a vapor, which may be set on fire. The root was formerly used as medicine. There are two varieties known in flower-gardens; one with purplish-brown, the other with white flowers, which are produced in June and July. They are hardy perennials, natives of Germany, and should find a place in every good collection. The height of the plants, from two to three feet, in rich soil. They may be propagated by dividing the roots, which requires some

care if the stools are large, as they are very tough, requiring a strong, sharp knife to divide them; each portion of the root must have an eye, as it will not grow without. The time to separate the roots is very early in the spring, or after it has done flowering in August. It may also be propagated by sowing the seeds as soon as they are ripe. The seeds are very hard, and do not vegetate freely. If sowed in the spring, boiling water should be poured upon them. The plants will flower the second year from the seed.

DIDISCUS.

Didiscus cœrúlea.—Sky-blue Didiscus.—This is a handsome annual; stem very much branched, producing its fine sky-blue flowers in numerous umbels, or hemispherical heads, of the size and shape of a large quilled Aster; two feet high; in flower July and August. Sow the seed in the open ground in May. Plants, forwarded in a hot-bed, will begin to flower in June.

DIGITALIS.—FOXGLOVE.

[So named by Fuchs, from *digitalis*, a finger of a glove, in allusion to the form of the flowers.]

Digitális purpúrea, with purple flowers; also a variety *D. alba*, with white flowers. Ornamental plants of great beauty, producing dense spikes of flowers on stems, three, four, or five feet high, in June and July, and straggling spikes most of the season. It is a biennial, propagated by sowing the seeds; flowers the second year. It may be perpetuated by dividing the roots every year, and is sometimes called an imperfect perennial.

It is suitable for the border, and may be introduced in-

to the shrubbery with fine effect, as its tall, spire-like spikes, crowned with its large thimble or bell-shaped purple or white flowers, will finely contrast with the green foliage of the shrubs.

D. ferrugínea, or Iron-colored Foxglove; a hardy perennial, with brown flowers, from July to August; four feet high.

D. lútea, or Small Yellow Foxglove; a hardy perennial, with light yellow flowers, from July to August; two feet high.

D. ochroleúca.—Great Yellow Foxglove.—A hardy perennial, with large light yellow flowers, from July to August; four feet high.

D. lanáta.—Woolly-flowered Foxglove, with white and brown flowers, from July to August; two feet high. All the species are poisonous when taken into the system, and the leaves are used medicinally.

"It is a pity this plant is poisonous, for it is extremely beautiful, particularly those kinds which are of a deep-rose color. They are all speckled within the bell, which adds still more to their richness. Mrs. C. Smith invites the bee to

"Explore the Foxglove's freckled bell."

Brown uses a similar epithet when he describes Pan as seeking gloves for his mistress, a curious conceit:

"To keep her slender fingers from the sunne,
Pan through the pastures oftentimes hath runne,
To plucke the speckled Fox-Gloves from their stem
And on those fingers neatly placed them."

"The bee appears regardless of its poisonous qualities:

"— Bees that soar for bloom
High as the highest peak of Furnace Fells,
Will murmur by the hour in Fox-Glove bells."—*Wadsworth's Sonnet*.

"The Fox-Glove, in whose drooping bells the bee
Makes her sweet music."—*B. Cornwall*.

"Let me thy vigils keep
'Mongst boughs pavilioned, where the deer's swift leap
Startles the wild bee from the Fox-Glove bell."—*Keats*.

“But it is not the bee alone that braves this powerful poison; women of the poorer class, in Derbyshire, drink large draughts of Fox-glove tea, as a cheap means of obtaining the pleasures, or forgetfulness, of intoxication. It is said to produce a great exhilaration of spirits. Well may the word intoxicate originate in poison.”

It is a native of England, Germany, and other parts of Europe.

DODECATHEON.—AMERICAN COWSLIP.

[A fanciful name, signifying the twelve gods or divinities.]

Dodecátheon Meádia.—American Cowslip, Shooting Star.—A highly ornamental plant, displaying its flowers in May and June; throwing up stems a foot high, with a large, umbel-like cluster of singularly beautiful pale-purple flowers. The petals are reflexed, or thrown back from the centre, like the *Cyclamen*. There is a variety with white flowers. Soon after flowering, the foliage dies down, and the plant is dormant during the summer, when it may be propagated by parting the roots, leaving a bud, or the rudiments of one, on the crown of each. It is a native of the West and South, and perfectly hardy.

DOLICHOS.—HYACINTH BEAN.

[A name under which Dioscorides describes a plant supposed to have been the kidney bean of the moderns.]

Dólíchos Labláb.—Purple Hyacinth Bean.—A fine tender annual climber, with flowers in clustered spikes; purple, with a white variety. It grows from ten to twenty feet in a season; treatment very much like that of the common bean. A native of Egypt.

DOWNINGIA.

[Dedicated by Doct. Torrey, to the late A. J. Downing.]

Downingia elegans.—Elegant Downingia.—A beautiful tender annual, with delicate foliage, and rich blue flowers in great profusion ; six inches high ; in July and August.

D. pulchella.—Pretty Downingia.—It is a pretty flowering tender annual, of very humble growth, only rising a few inches high. The flowers are rather larger than *D. elegans*, blue, with a broad white spot at the centre, stained with a rich yellow. The flower is about half an inch across. Its delicacy of growth will prevent its spreading rapidly through the country.

When grown in pots in the green-house, both are very beautiful.

The Downingias are natives of California and are generally called *Clintonia*, by florists ; a name given by Douglas, who did not know that it had already been applied to another genus.

DRACOCEPHALUM.—DRAGON'S HEAD.

[From Greek words, signifying a dragon's head, because the flowers are fancied to resemble one.]

Dracocéphalum speciosum.—Showy Dragon's Head.—Is a native of Siberia ; perennial ; three feet high, with pink flowers ; in July and August.

D. Sibíricum.—Siberian Dragon's Head.—From Siberia, perennial ; one foot high, with light blue flowers ; in July and August. Some of the annual species are handsome border-flowers.

D. Moldávica.—Moldavian Balm.—An annual from Moldavia with blue, and a variety with white flowers ; in July and August ; two feet high.

D. Canariense.—Balm of Gilead.—This plant smells of citron, especially when rubbed between the fingers. Sown on a hot-bed early in spring, it may be planted out in the borders like other tender annuals. Flowers pale-blue or purple; from July to September; three feet high; From the Canaries.

ECCREMOCARPUS.

[From the Greek words meaning suspended fruit.]

Eccremocárpus scáber.—Rough Eccremocarpus. — This, which is sometimes called *Calampelis*, is a beautiful climber, a tender perennial, which flowers the first year. The flowers are produced in panicles or racemes, are of a bright orange color; it flowers profusely the latter part of the summer, but it is necessary to start the plants very early in a hot-bed, and when the plants have five or six leaves, they should be transplanted into pots, and turned into the ground in June. The seeds are difficult to vegetate. Properly speaking, it is a green-house plant.

ECHINACEA.—CONE-FLOWER.

[Name from the Greek for *Hedgeboy*, in allusion the spiny chaff of the disk.]

Echinácea purpúrea.—Purple Cone-flower.—A native of Ohio and other western States, and formerly called *Rudbeckia purpurea*. It grows from three to four feet high, and has a rough stem and leaves. The disk of the flower is very rich, appearing in the sun of a golden crimson; the rays are purple, in some varieties whitish, and one to two inches long. A hardy perennial, easily propagated by division of the root.

EPILOBIUM.—WILLOW-HERB.

[From Greek words, signifying *a flower growing upon a pod.*]

Epilóbium angustifólium.—Valuable in shrubberies, as thriving under the drip of trees, and succeeds every where, even in the smoke of cities, and in parks. It is a good plant to adorn pieces of water, being hardy, and of rapid increase, and very showy when in flower. It produces dense spikes of purplish-red flowers; three or four feet high, in July and August. It is handsome when growing in the field or garden, but the flowers are not suitable for bouquets, as they immediately wither upon gathering. At a short distance, the flowers resemble those of Purple Phlox in color, and persons not acquainted with botany, take it for a plant of that family; but it belongs to an entirely different one. It is easily propagated from cuttings of its long straggling roots.

ERYSIMUM.—TREACLE-MUSTARD.

[From a Greek word, signifying to *draw blisters.*]

Erýsimum Peroffskiánum.—Palestine Mustard.—This is a hardy annual, having some resemblance to the Wall-flower. The plant is erect; one to two feet high; bearing racemes or spikes of deep-orange blossoms; from June to September; a mass of it is quite showy.

E. Arkansánum.—Western Wall-flower.—A native of Arkansas, very similar to the other species; two feet high; with yellow flowers most of the season.

ERYTHRONIUM.—DOG'S-TOOTH VIOLET.

[From a Greek word signifying *red*, in allusion to the color of the European species.]

Erythrónium Dens-cánis.—Dog's-tooth Violet is the common name in England, where it is a favorite. It is not at all related to the Violet, but belongs to the Lily Family. It is a bulbous rooted vernal plant, with purple flowers; one-half foot high; there is also a variety with white flowers.

E. Americánum.—Yellow Adder's-tongue.—This is a beautiful vernal plant with bulbous roots, situated deep in the ground. The whole plant is smooth and glossy. Flowers yellow, solitary, drooping; leaves two, nearly equal, lanceolate, veinless, of a dark brownish-green, clouded with irregular spots. Flowers in May; three to four inches high. This pretty indigenous plant should be transferred to the garden; it may be taken in July, after flowering. It will require a leaf-mould soil for its successful cultivation.

ESCHSCHOLTZIA.—CALIFORNIA POPPY.

[Named after Doct. Eschscholtz, a botanist of the last century.]

Eschschóltzia Califórnicá.—California Poppy.—A native of the State, the name of which it bears, where it abounds, and is found in large patches or masses, enlivening the plains with its brilliant shining yellow blossoms.

Scarcely any plant produces a greater degree of splendor than this; when the full sun is upon it, it makes a complete blaze of color. It is a most suitable plant for producing a distant effect. When it is planted out in a bed, it requires a considerable number of sticks for support, or the weak branches will be liable to lie close to ground, and then the bloom is not so fine. If planted in

single patches, they should have several sticks placed around, and a string fastened, so as to keep the flower-stalks tolerably erect; by this attention a neat and handsome effect will be given. I adopt the use of cross-strings, as well as a circular one, by which means I have the shoots regularly disposed. *E. crocea*, Saffron-colored California Poppy, of a dark, bright saffron-color; and *E. alba*, White California Poppy, with white flowers, are only varieties of *E. Californica*, and require the same treatment.

E. tenuifolia, is a species with very slender grass-like leaves; color of the flowers, pale whitish-yellow. All are easily propagated by seeds, and where the plants have scattered their seed upon the ground, a plentiful supply of young plants may be found in the following spring; they should be thinned out one foot apart. It is useless to attempt to transplant them, as it is very difficult to make them live.

The name of this genus has been altered to *Chryseis*, in disregard of the established custom among botanists. Although it is a more elegant word than *Eschscholtzia*, yet that being the older name, must have the preference.

EUPATORIUM.

[Name from Eupator, King of Pontus, who first used it in medicine.]

Eupat^orium purp^ureum.—Purple Thoroughwort, Joe-Pye Weed.—Purple flowers, in August; perennial; four to six feet high; indigenous; leaves in fours and fives. This plant cannot be said to be elegant, yet it is not destitute of beauty, and will be a valuable acquisition to the shrubbery. Its tall stem terminates in large corymbs of small shining purple flowers.

E. perfoliatum.—Bone-set or Thoroughwort.—Is a plant

held in high estimation medicinally ; but it has no claim to beauty. The medicinal virtues of the plant reside chiefly in the leaves, and the most efficient mode of exhibiting it, is by means of a simple decoction ; its powers are those of a tonic. The reputation of it was, in old times, so great, that there were those who believed it would set bones ; hence the common name. That it is a very bitter dose to take, I very well know by experience.

EUPHORBIA.—SPURGE.

[Named after Euphorbus, who was a physician to Juba, King of Mauritania, and first used this plant in medicine.]

This is a very extensive genus of curious, grotesque plants, many of them poisonous. Among them are some splendid hot-house plants. They are all milky, mostly herbaceous ; some are leafless, some are armed with prickles.

Euphórbia corolláta.—Flowering Spurge.—This is one of the most elegant species peculiar to the United States ; a perennial, with subdivided umbels of conspicuous white flowers, and narrowish, oblong obtuse leaves. This plant is not uncommon in the sandy fields of the Middle States, and is in flower in June and July. Propagated by divisions of the root.

E. Láthyris.—Caper Spurge.—A half-hardy biennial, from England, of handsome appearance, with inconspicuous flowers ; from May to September. From three to four feet high. The plants will stand the winter without protection, but are oftentimes entirely destroyed. A few plants should be taken up and placed in a dry cellar, and planted out in the spring. It has seed pods about the size and color of Caper buds, and are said to be sometimes substituted for that pickle. Eaten in any quantity, they must prove highly deleterious.

E. variegáta.—Variegated Spurge.—A most elegant species; a native of Missouri and Arkansas Territory; an annual much cultivated now in gardens, and highly esteemed; flowering late in autumn, and remarkable for its abundant variegated bracts or floral leaves. Leaves oval entire; wavy, edged with white; capsules smooth; stems hairy. The seed must be sown early in April; it is some time in vegetating.

FRITILLARY.—FRITILLARY.

[From *Fritillus*, the Latin for *dice-box*, probably in allusion to the shape of the flowers.]

A genus with showy and singular looking flowers. The plants all require a deep loamy soil, and are readily increased by offsets or by seeds. They grow readily in the shade of trees, and do not require to be taken up oftener than once in three years.

Fritillária imperiális.—Crown Imperial.—A native of Persia. There are many varieties; all handsome, varying in color; viz.: bright yellow, scarlet, orange-scarlet, double red, double yellow, gold-striped-leaved, silver-striped-leaved, etc. This species is less esteemed than its beauty merits, on account of its strong, and, to some, its disagreeable scent. It flowers in April; the bulb throws up a strong, vigorous stem, three or four feet high, producing near the top a crown of beautiful, drooping, bell-shaped flowers, making a very conspicuous object at a season when but few flowers grace the garden. Above the crown of flowers the stem terminates in a tuft of its glossy green foliage. The nectaries are very curious; each cell, six in number, contains a large drop, which looks like a brilliant pearl. When the flower decays, the seed-vessels take a position the reverse of that of the flower, and stand

erect. The bulbs are large and fleshy, somewhat solid; they do not keep well long out of the ground. When the stem dies down, the root should be taken up and replanted, if necessary; but this need not be done oftener than once in four or five years. They should be planted four inches deep, in a rich, deep garden soil. It is by some botanists called *Petilium imperialis*.

F. Pérsica.—The Persian Fritillary or Persian Lily, bears a spike of brownish-purple flowers, growing at the top of the stem in the form of a pyramid; they open in May; stems three feet high; bulb similar to the last, except it is more elongated. To be treated in every way like the Crown Imperial.

F. meleágris.—The Common Fritillary, or Chequered Lily.—Is sometimes called the Guinea Hen Flower, on account of its chequered or spotted flowers. There are many varieties, the colors, various shades of brown, purple, and yellow, curiously mottled, spotted or chequered. The bulbs are about the size of those of the crocus, of the character of the other Fritillary bulbs, but more flattened; stems eight or ten inches high, with one or more gracefully-drooping, bell-shaped flowers, in April or May; to be planted in groups in good garden soil, two inches deep. They should not be kept long out of the ground.

It is a native of England and the South of Europe. It is most probably of the Crown Imperial, that Moore speaks in the following lines; not the Persian Lily, commonly so called, since he describes the color as golden:—

“Once Emir! thy unheeding child,
 ‘Mid all this havoc, bloomed and smiled,—
 Tranquil on some battle plain
 The Persian Lily shines and towers,
 Before the combats reddening strain
 Hath fallen upon her golden flowers.”—*Fire Worshipers*.

FUCHSIA.—LADY'S EAR DROP.

[So named in honor of Leonard *Fuchs*, a noted German botanist.]

Fuchsia coccinea is one of the most elegant of deciduous green-house shrubs; the young wood and nerves of the leaves are tinged with purplish-red; the pendant blossoms produced from the axils of the leaves, as the shoots grow, continue the greater part of the growing season, and are succeeded as they fade by a purple berry. It is a native of Chili. This species, with *F. fulgens*, *F. microphylla*, and others, have been crossed to produce the numerous varieties in cultivation.

Fuchsias succeed admirably when planted in the flower-garden. The following directions will give the young cultivator some hints relative to their propagation and culture:

“*Fuchsias* are readily propagated by cuttings, in sand, with a mixture of peat; to grow the plants for a bloom all summer, they should be started in February, in the green-house, first in *small* pots, and shifted, when the roots completely fill it, into a mixture of fresh loam, peat-leaf mould from the woods, well rotted manure, and a little sand; mix thoroughly, and break finely (*not sifted*), with the spade or trowel; give the roots good drainage, place them in the warmest part of the green-house, and water frequently; as the warmth of summer approaches, and the green-house, or conservatory, becomes empty of plants, place your *Fuchsias* in the most favored position, shading them, with a mat or cotton awning, from the sun, after ten o'clock in the morning, which remove at five P. M., unless the sun is off sooner. This treatment, with a gentle syringing of the foliage twice a day,—which, if carefully done, does not materially injure the flowers,—will produce an abundant bloom all summer and autumn, and will well reward your care. No class of plants is more graceful and elegant. The striking contrast of

white, carmine, rose, and purple, renders the *tout ensemble* perfectly charming. Gradually lessen watering after the 1st of October, and by November merely keep in moisture enough to preserve vitality; place them in the out-of-the-way part of the green-house, on a dry shelf, and attend to merely keeping in life till February, and then commence to sart them."

For a summer conservatory they are unequalled, occupying an otherwise nearly *empty* house, and delighting you with their graceful flowers all the season.

Young plants turned out into the flower-garden in June, will continue to blossom until October; but they must be placed in the coolest spot in the garden, where they will receive the benefit of the shade during the middle of the day or the hot sun will injure the bloom. Some of the new varieties are splendid.

FUNKIA.—DAY LILY.

[A genus dedicated to a German botanist, named *Funk*.]

Fúnkia ováta.—Blue Day Lily.—Is a plant with broad ovate leaves; flowers blue, in June and July; two feet high.

F. subcordáta.—Formerly *Hemerocallis* or *Funkia Japonica*.—White Day Lily,—has large, pure white, fragrant flowers, which open daily in the month of August, on stems one and a half to two feet high; leaves broad ovate, nerved.

These and other Day Lilies are hardy, easily propagated by division of the roots, and require little or no protection.

A variety of *Funkia* has elegant variegated leaves, highly ornamental, and well worthy of a place in the garden. The flowers are in one-sided racemes, about one

and one-half foot high; a bluish pearl color, not remarkable for their beauty; July and August; a hardy perennial.

GAILLARDIA.

[Dedicated to M. *Gaillard*, an amateur French botanist.]

Gaillardia picta.—Painted Gaillardia.—A very handsome plant, naturally perennial, but produces its flowers the first year from seed, if started early. It has large, beautiful crimson flowers, two inches across; each petal being tipped with yellow. The disk is dark-colored, something like *Coreopsis tinctoria*; one to two feet high.

G. bicolor.—Two-colored Gaillardia.—This variety appears identical with *Gaillardia picta*, excepting that the leaves are entire. The fine large blossoms, more than two inches across, the large crimson disk, surrounded by a ray of fine yellow, produce a very showy appearance, and render the plant well deserving a place in the flower-garden. They are natives of Mexico, and too tender to endure our winter, consequently must be protected by frames. They are readily propagated by cuttings in the green-house or hot-bed; but more easily raised from seeds, which, if started in heat, will flower profusely in the garden through the season.

GALANTHUS.—SNOW DROP.

[From Greek words, signifying *milk* and a *flower*, on account of the milky whiteness of the blossoms.]

It is rather singular, and also to be regretted, that no variation, except a double variety, and no hybrids have

been produced from this easily raised and pretty little flower.

“Already now the Snow-drop dares appear,
The first pale blossom of the unripened year ;
And Flora's breath, by some transforming power,
Had changed an icicle into a flower.—*Mrs. Barbauld.*”

Galánthus nivális.—The Snow-drop is a native of Austria, Switzerland, Silesia, and England ; in meadows and orchards. It is the earliest flower of all the garden tribe, and will even show her head above the snow, as if to prove her rivalry with whiteness.

“Lone flower, hemmed in with snows, and white as they.”—*Wordsworth.*

Every third year the roots should be taken up, in June or July, when the leaves are decayed, and kept in a dry place until August, when they should be replanted. The bulbs are very small ; to make them look well, and to produce a pretty effect when in bloom, about twenty should be planted together in a clump, one and one-half or two inches deep. There is a variety with double flowers, both sorts are desirable ; about six inches high, in March and April.

“The Snow-drop, who, in habit white and plain, |
Comes on, the herald of fair Flora's train ;
The Cox-comb crocus, flower of simple note
Who by her side struts in a herald's coat.”—*Churchill.*

There is a flower called the *Leucojum*, or Great Snow-drop, very similar to this, but much larger in the bulb, foliage, and flower. Of this there are three kinds, the spring, summer, and autumnal. These should be planted four or five inches deep.

“We look upon the Snow-drop as a friend in adversity,
Sure to appear when most needed.”

GALIUM.—BED STRAW.

[Name from a Greek word, signifying *milk*, because one sort is used for the purpose of curdling milk.]

The stems of all the species are four-cornered, and the leaves in whorls; the flowers generally axillary, but sometimes panicked.

Galium verum, *Petit Muget* in French, is called Bed Straw, from the verb to strew, strow, or straw; being one among a variety of odoriferous herbs, which were frequently used to strew beds with. The genus contains many indigenous species, but none are worthy of cultivation, except *G. boreale*, which is upright, growing about two feet high, bearing innumerable minute white flowers, in terminal panicles; the stems are very much branched, leaves delicate and small; perennial; in flower in July, August, and September. It is valuable only in the composition of bouquets.

GAURA.

[Name from the Greek, for *superb*.]

Gaura Lindheiméri.—This plant, which is from Texas, is one of the finest that we have received for many years. The flowers are formed by a calyx, in four divisions, colored with red, petals of a flesh-colored white, which contrast agreeably with the lively color of the calyx; there are eight light stamens, with purple anthers.

It flowers on numerous branches, which form a large panicle, and continue in blossom from June until the frost comes. The stems are straight, growing from two to three feet in height, furnished with linear leaves, forming an elegant, although rather a slender plant; large lanceolate leaves clustered in a tuft at the base of the plant.

It is a perennial, and should be sown in May or June,

like other plants of this class, so as to flower the following year. It seems to be hardy, having stood in the open ground, with a little protection, through the winter; it may also be cultivated as an annual, for, if sown in April, it will begin to flower in July.

The *Gaura Lindheimeri*, will probably soon become very common in our gardens; it can be grown in beautiful masses; its flowers are very fine for bouquets, and, above all, it commends itself to us for its long continued flowering.

GAZANIA.

[Supposed to have been so called from a Greek word signifying *riches*, in allusion to the splendor of the flowers.]

Gazania splendens.—A native of the Cape of Good Hope. A very beautiful summer and autumn-flowering evergreen bedding plant of a neat, dwarf, shrubby, trailing, yet compact habit, with oblong-spathulate leaves, deep glossy green on the upper side, and almost pure white on the lower side, with a rich green mid-rib running the whole length of the leaf; and numerous large, golden yellow, Aster-like flowers, three to four inches in diameter, picturesquely marked at the base of each petal with converging cloud-like spots of a rich, dark-brown, chocolate tint upon a black base, and these are again marked with white spots upon their disk or surface.

The union of these rich colors produces a highly ornamental effect; the blossoms, when fully expanded, are so brilliant, that the most accurate description fails to convey an adequate impression of their beauty. It is well adapted for large groups or medium sized beds, or for pot culture in vases, as portable specimens in flower-garden decoration, thriving in all ordinary rich garden

soils, not subject to the attacks of mildew, thrip, or spider, and yielding a succession of bloom from June until November.

GENTIANA.—GENTIAN.

[So called from *Gentius*, King of Illyria.]

The Gentians are very numerous; they are very difficult to preserve in gardens, and the European varieties are not much known in this country, although there are some beautiful alpine species cultivated in Europe.

Gentiána Saponária.—Soap-wort Gentian.—A very fine indigenous plant, distinguished by its large purple flowers, which are so nearly closed at the top as to resemble buds; sometimes the flowers are white and variegated. It is found in moist woods and by the margin of streams. It may be transplanted to the garden without difficulty; it grows one and one-half to two feet high; in flower in September and October.

Gentiána crinita.—Fringed Gentian.—This Gentian is exceeded by few native plants, in the delicacy and beauty of its flowers. The stems are divided toward the top into several erect branches. The leaves are opposite, ovate-lanceolate, smaller than in *G. Saponaria*. Flowers erect on the ends of the branches. Segments of the corolla of a deep fine purple, fringed at the end, expanded in the sun, erect and twisted at other times; one foot high. Found in bloom in moist places in September and October. This is a very difficult plant to remove successfully; probably the only way to propagate it, is by seed, but it flowers so late I have never found the seed ripe enough to vegetate. It is a great pity that it cannot be cultivated, for it is one of our handsomest indigenous plants.

GERANIUM.—CRANES-BILL.

[The name from the Greek word for *crane*, as the long beaked fruit has some resemblance to the bill of that bird,]

Most of the plants, popularly called Geraniums, belong to the genus *Pelargonium*, and will be found under that head. *Geranium* proper, has regular flowers with ten stamens, all with perfect anthers, while the flower of *Pelargonium* is somewhat irregular by having a spur at the base of the calyx, and though it has ten stamens, a portion of them, usually three, have imperfect anthers. The Geraniums are all herbaceous, while Pelargoniums are for the most part shrubby.

Geranium maculatum.—Cranes-bill.—This is a handsome indigenous plant, growing about fences and the edges of woods, preferring a soil that is somewhat moist. Stems erect, hairy, dividing by forks, or more numerous branches; one to two feet high. Leaves large, spreading, hairy, divided in a palmate manner into five or seven lobes, which are variously cut and toothed at their extremities; the lower ones petioled, the upper ones nearly sessile. As the leaves grow old, they are usually marked with pale spots about the sinuses; hence the specific name *maculatum*—spotted. Petals rounded, purple; May, June.

G. pratense.—Crow-foot leaved.—A native of Britain. It is said that “its flower partakes of a delicacy by which it greatly surpasses in effect its more common blue congener. Its flowers vary much in the portion of color they display, some being nearly all blue, whilst others are produced completely white.” One and one-half foot high; May to July.

G. Lancastriense.—A native of Lancastershire, England. This has purple flowers; dwarf-creeping habit; an elegant species; June to September. Probably only a variety of *G. sanguineum*.

G. angulátum.—Angular-stalked Cranes-bill.—This species is a native of Europe, and has been cultivated since 1789. A plant of easy culture, eighteen inches high, with a profusion of pink flowers, in June and July. It is highly ornamental. It may be appropriately planted among low shrubs, or strong herbaceous plants; it will succeed in rather shady places, which renders it oftentimes a desirable plant.

All these species are hardy perennials, and deserve a place in large collections, as do a number of other species not described.

GILIA.

[Named from a Spanish botanist, *Gilie* or *Gileo*.]

This genus has been much divided up, and the synonyms are numerous; the plants called by various botanists and florists: *Ipomopsis*, *Cantua*, *Fenzlia*, *Leptosiphon*, and *Leptodactylon*, all belong under *Gilia*.

***Gilia coronopifolia*, *Ipomopsis*.**—Standing Cypress.—First introduced into England about the year 1720, from seeds collected by Catesby, in the upper districts of Georgia and Carolina; but as the seeds are seldom perfected in England, it was at one time lost from the English gardens; we do not think that its beauty will allow it to share this fate again, while the attention to horticulture remains in its present state.

It is a biennial, of most elegant appearance, but is very subject to damp off, and difficult to keep through the winter. Much protection is sure to kill the plants. It has generally been considered a tender plant, and treated as such. At one time having many fine plants, I distributed them in various exposures, in hopes to save some. About half of the whole number were in fine condition in the spring.

The driest soil, in the shade of a fence, seems to be the most favorable situation for them. If the ground is inclining to moisture, there is but little chance for them. So fine a plant as this *Gilia* well deserves a place in the garden. I should recommend, for experiment, to sow the seed in August, as, perhaps, the small plants would endure the winter better than large ones.

The plant grows from four to five feet high. The foliage is superb, similar to that of the Cypress Vine, with numerous scarlet-spotted flowers, that continue in bloom a number of months.

The plants may be potted and kept in the house, or green-house, through the winter, and then planted out in the open border.

G. tricolor.—Three-colored *Gilia*.—This pretty annual, originally from California, has found its way into most of our gardens. Scarcely anything can be prettier than this plant, when thickly filling a bed a few feet in length, and breadth. It is quite hardy, and grows about one foot high, with an erect stem and foliage much resembling the well-known *G. capitata*; but the flowers are much longer, and instead of being collected into globose heads, are widely spread at the head of long peduncles, which, being numerous, form a large and rather dense panicle, and thus show off to great advantage. The flowers have a yellow eye, surrounded by a purple ring, bordered by pale-blue or white. "From its humble stature and neat growth, it is peculiarly suited for culture in masses, a style of planting showy flowers, which produces a striking effect, when it can be pursued on a tolerably extensive scale."

G. tenuiflora.—Slender-flowered.—A hardy annual from California. The flowers are produced upon slender, branching stems, which rise about two feet high; each flower is about a quarter of an inch across, of a pale rose color, slightly streaked with red on the outside, and of a fine

violet inside. The flowers do not produce much show where a single plant is grown, but it should be grown in masses like the last described species.

G. capitata.—Headed Gilia.—A pretty, hardy annual, with blue, and a variety with white, flowers in clustered heads. From June to August, two feet high.

G. androsacea.—*Leptosiphon androsaceus*.—This is a very pretty, hardy annual, of humble growth, six or eight inches high; varying in the color of its flowers, from white to pale-pink, red, or purple. It is a valuable little plant for flowering early in the summer, from autumn-sown seeds. The leaves of this plant are deeply divided into segments, always consisting of an even number, as four, six, eight, etc.

In addition to these there are *G. achilliaefolia*, *geraniæfolia*, *multicaulis*, *nivalis*, and others, all pretty annuals.

GLADIOLUS.—CORN FLAG.

[From the Latin *gladius*, a sword, in allusion to the shape of the leaves.]

This is called Sword-Lily, Corn-Flag, Corn-Sedge, etc., etc.; in French, *le Glaieul*. The genus embraces a number of species, some of which are planted in autumn and others in the spring. *G. Byzantinus*, from Turkey, and *G. communis*, from the South of Europe, with few varieties, have been in cultivation for more than two hundred years; they are raised by the Dutch Florists and sent out annually to their customers with Tulips, Hyacinths, and other bulbs. They are planted in autumn and flower the next June; the colors are purple, red, and white. All the other species have bulbous roots, and require to be taken up in autumn and dried, or kept in pots in the green-house.

Within a few years the *Gladiolus* has been wonderfully improved by hybridizing ; the beautiful varieties, which have been produced by this process, have excited the admiration of the floral world, and now constitute a class of flowers most beautiful, attractive, and popular. Twenty-five years ago, *G. cardinalis* was considered one of the finest species, and is beautiful and showy, with scarlet and white flowers ; but it is a weak growing plant, and too tender for cultivation, except in pots in the greenhouse. It did not, therefore, receive much attention in this country, although in Europe, where it was planted deep in the open ground, and protected by frames in the winter, it succeeded very well and was much admired. This species is now cast in the shade and neglected for the more hardy and showy hybrids. When *G. psittacinus* was first introduced, about the year 1835, it was considered a great acquisition. It was originally called *G. Natalensis*, from Natal, its native country, and was then one of our most popular and admired species. Its colors are red, green, and yellow ; shaded, striped, or mottled, but very inferior to any of the hybrids. It is a hardy species, and flourishes in almost any good soil, and is very prolific in forming new bulbs. The directions for planting this, will answer for all the hybrid varieties of *G. Gandavenis*, *G. floribundus*, and *G. ramosus*. All are of the simplest culture. The soil should be trenched eighteen inches deep, having been made rich by good decomposed manure, and if the soil is stiff, some sand may be added. The *Gladiolus* shows to the best advantage when planted in beds four feet wide. The bulbs may be planted any time in May. Seven inches each way is rather too near, although I have planted with good success at that distance ; probably a foot apart would be more proper, as some of the plants attain the height of three, four, and even five feet in rich ground. The bulbs should be covered two and one-half inches deep.

Each plant should be supported by a stick or rod, and neatly tied with bass strings, so that it may retain a perpendicular position; the leaves should not be mutilated or cut. In cultivating these varieties and all other bulbous plants, the fact must never be lost sight of, that the bulb is, during the summer, a species of underground continuation of the leaf, while in the winter it is analogous to the bud of a plant; therefore any injury to the leaves, during their growth in summer and autumn, is an injury to the bulb. When the leaves have performed their functions of preparing and elaborating the juices for this subterranean bud or bulb, they die away naturally; leaves of bulbous plants should therefore never be trimmed or cut off, with a view of making them look more sightly, unless they have turned brown. On the other hand, forming and ripening the seed, withdraws considerable nourishment from the bulb; it is, therefore, rather a benefit than an injury to cut the flower, and prevent the seed from coming to maturity; the juices are then diverted from this operation to that of increasing and improving the bulb. These hybrids will commence showing their flowers about the first of August, and continue to bloom until near the middle of September, depending somewhat upon the time they were planted. If planted before the last of May, the flowers will appear in the strongest heat of the summer, and therefore be more liable to be burnt by the sun. An awning erected over the bed, the same as practiced by florists for Tulips and other flowers, will preserve the colors and bloom much longer. About the first of November, I take up the bulbs in the morning of a pleasant day and leave them on the ground, exposed to the sun through the day, leaving the leaves on; I then take them into a dry airy room, where there is no danger of frost, and spread them on the floor or on benches, and let them dry. As soon as they appear to be cured, the tops are

twisted out, the roots pulled apart, the old fibres removed, and the different varieties placed in separate paper bags, where they remain a few days until thoroughly dried; they are then put in boxes and removed to a dry cellar, where they will remain in perfect safety until wanted for planting in the spring. Each variety should have a neat label, with the name, stuck in the ground by the side of the bulb, at the time of planting, and carefully kept with the bulbs when taken up, and placed with them in the bag; there will then be no mistake.

Gladiolus Gandavénis.—It is not more than twenty years since this very striking variety was introduced into this country from England. We imported two bulbs, for which we paid one guinea; color, superb orange, scarlet, and yellow. This variety was raised as a seedling by Van Houtte, and derives its name from the town of Gand. It is a hybrid between *G. psittacinus* and some other species, not certainly known.

G. floribúndus, is a beautiful variety or species; color shaded-rose, pink, or white. The flowers are very delicate, and produced in long crowded spikes. The growth is strong, and the bulb smaller than in any of the described species, except *G. cardinalis*.

G. ramósus.—Beautiful rose, marked with white and carmine. The bulbs are small, and if planted the last of May, will bloom well. The growth is much stronger than that of *G. cardinalis*.

From these different species have sprang the grand collection of hybrid Gladiolus, now so highly esteemed, which have been produced by amateurs and cultivators in Europe and imported into this country, many of the varieties at great expense. But we shall no longer be dependent on foreign cultivators for the production of splendid new varieties, for within the last two years

Messrs. Strong, Spooner, and other gentlemen have exhibited new seedling varieties, some of them fully equal to any imported. These hybrids have often very valuable qualities, besides their beauty; they are frequently more hardy, and very often are more prolific in flowers than the originals, though in some cases they do not produce seeds. As the art of hybridizing is not generally known, it may be interesting to the reader to be made acquainted with the process, and I cannot present the subject in any clearer light than to adopt the description given by my late friend J. E. Teschemacker, in an article published in the *Horticultural Register*, in 1835, on the *Gladiolus*. He says:—"My way has been, when the flower just commenced opening, I open it very carefully, and then extract the anthers with a pair of tweezers or pincers, before they can have opened and shed their pollen on the pistil, which will then be found with the trifid divisions closed. As soon as the flower, thus deprived of its anthers, has opened and the styles have separated, take the ripened pollen from the anthers of the flower you wish to mix and impregnate with, either with a small piece of cotton, a camel's hair pencil, or the fine point of a penknife, and shed it on the styles so that it remains sticking there; this will impregnate the seed.

It is now, however, necessary to prevent this flower receiving, by the means of insects or the air, pollen from any other flowers of the same species, either of its own spike or from others; for this purpose, I have generally tied a piece of very fine gauze or India muslin over the flower, so as entirely to protect it from further impregnation.

When the petals are fading, it will be perceived, by the swelling of the seed vessel, whether the purpose in view has answered. Should it have been successful, I remove the muslin, and generally allow some of the other flowers

of the spike to proceed in growing, to draw up the juices from the earth, but remove their seed vessels as they appear, in order to throw the whole strength of the plant into the hybridized seed; observing that the first and second flowers of a spike, if perfect, are more likely to succeed in this operation than those of later bloom.

It is probable that many varieties of the same flower, now considered a species, have been thus produced naturally; certainly very many beautiful additions to the flower-garden have been thus artificially brought into being. It may be readily imagined how amusing this employment is to the man of leisure, and to the gardener it has been for some years a source of large profits."

The *Gladiolus* is propagated by seed, or by offsets of the bulbs. Large ones may be taken out of the earth and kept in a dry place, but seedlings and small offsets should be left in the pots of earth if possible, they being more apt to dry up if removed; they must, however, be kept out of the reach of frost.

The seed should be sown, as soon as ripened, in boxes or pots, and placed in the green-house in a peaty soil, or it may be sown in March or April, in a hot-bed, with moderate heat; the seeds should be scarcely covered. When the plants appear, and the rays of the sun are strong in May, they should be shaded with mats. When the grass of the plants is two inches high, they may be repotted and plunged in the ground in June, so that the first year they may make the greatest possible growth. When the grass begins to grow yellow in autumn, the pots should be taken up and put in a dry warm place, and the earth remain upon the roots dry, during the winter; they may be planted out in the ground in May, after taking them from the pots. The third year the greater part of them will show flowers.

I had prepared a descriptive list of about one hundred

varieties of Hybrid *Gladiolus*, which were cultivated by me this present year, but as new varieties are produced annually, some of them are superseding the old sorts, it would not be a perfect guide for years to come, and I therefore leave it out.

I find that most of the varieties that have been planted for a number of years retain their distinctive characters; but in consequence of the severe drought, or some other cause, some of the varieties sported more or less. Some of the yellow sorts were inclined to be mottled or variegated with red. The variety, *Marie*, which, according to the description, should have a ground of pure white, was very much striped with red, so that it was difficult to recognize it without looking at the label. Some other varieties slightly departed from the description.

GLAUCIUM.—HORNE D POPPY.

[The name derived from its *glaucous* foliage.]

Glaucium luteum.—Sea Celandine, or Yellow Horned Poppy.—This is a flower common to every part of Europe, growing on sandy soils, chiefly by the sea shore. The flowers fall the second day after they are blown, but they are large, form a fine contrast with the leaves, which are of a sea-green color, glaucous, with a dew-spangled appearance. It is biennial; the whole plant abounds in a yellow juice, is foetid, of a poisonous quality, and said to produce madness. Ben Johnson mentions the Horned Poppies among the plants used by the witches in their incantations. Probably, that however handsome the plant may be, it will not be sought after with great eagerness.

GODETIA.

[Named in honor of Chas. Godet, a Swiss botanist.]

This is properly only a section of the genus *Ænothera*; but, as the distinction is usually kept up in works on floriculture, they are retained here under a separate head. They are generally beautiful, hardy annual plants of easy cultivation in any good garden soil. The species are natives of California, and some improved varieties have been obtained from them.

Godétia rubicúnda.—Ruddy Flowered, introduced by Mr. Douglas from California. It grows nearly two feet high, with large rosy-lilac flowers, which have an orange colored eye in the center, the base of each petal ending with that color; in flower from July to September.

G. rubicunda splendens, is a variety raised by Vilmorin, who says:—

“The *Godetia rubicunda* is one of our best annuals and a general favorite with amateurs of fine flowers, the new variety we offer, and which has been raised in our gardens, differs from its senior by its purple stain in the center, which is larger and of a much brighter color, being thus more showy, and producing a much greater effect.

“We do not doubt that the new variety which has proved during two years cultivation quite permanent, will supersede the old one as soon as it is sufficiently known.”

G. lépida.—The flowers are of a pale-purple, with a light center, each petal marked at the upper part with a large patch of crimson-purple color, which gives the flowers a pretty appearance; it merits a place in the garden.

G. vinósa.—Wine-stained.—Another pretty hardy annual plant. The flowers have much the appearance of *Ænothera rosea alba*; they are near two inches across, nearly white, slightly suffused with rosy-purple. They are produced in profusion from July to September.

G. Lindleyána.—Lindley's *Godetia*.—This species is one of the prettiest of the genus. The flowers are either white or blush, with a rich purple blotch on each petal; in flower all summer. *G. rosea alba.*—Tom Thumb.—The color of the flower is pure white, with a brilliant rose blotch, at the base of each petal; height one foot, and blooms in profusion. *Godetia, the Bride.*—This comparatively new variety is one of the most elegant of the genus. Flowers pure white with a faint blush, large and showy; in bloom most of the season; height one and one-half foot.

GOMPHRENA.—GLOBE AMARANTH.

[From a Greek word for *club*, probably in allusion to the shape of the flowers.]

“Amaranths such as crown the maids
That wander through Zamara's shades.”

Gomphréna globósa, is a popular tender annual, valued for its heads of flowers, which, if they are gathered before they are too far advanced, will retain their beauty for several years. There are three common varieties; the purple, white, and striped. The seed is difficult to vegetate in the open ground; soaking the seed twelve hours in warm milk is recommended; scalding, perhaps, would do better. A powerful heat in the hot-bed will start it quickly, and destroy the plant also, unless care is taken.

A new species of this desirable Amaranth has been discovered in Mexico, which makes quite an important addition to this class of “immortelles,” so universally cultivated in our gardens. It has reddish-orange flowers, in heads more oval than the common Amaranth. Like the other Amaranths, it should be started in a hot-bed. The flowers should be gathered before they are fully mature, and hung up with heads down, to dry.

HELIANTHUS.—SUNFLOWER.

[From Greek words, signifying the *sun* and a *flower*.]

“ Great *Helianthus* climbs the upland lawn,
And bows in homage to the rising dawn ;
Imbibes with eagle eye the golden ray,
And watches, as it moves, the orb of day.”

Nothing can be a more complete ideal representative of the sun than the gigantic Sunflower, with its golden rays ; it is dedicated with great propriety to the sun, which it never ceases to adore while the earth is illuminated by his light. The whole plant, and particularly the flower, exudes a thin pellucid odorous rosin, resembling Venice turpentine. From the seeds edible oil has been expressed, and they are also excellent food for domestic poultry.” That the flower turns with the sun, is a popular error. It is not true that, when the sun sinks into the west, the flowers of the *Helianthus* are turned towards him ; or, that when he rises from the east, the flowers are again ready to be cherished by the first influence of his beams. It is a pity to spoil this poetry, but it is all moon-shine.

Heliánthus ánnuus.—Common Sunflower.—This lordly plant is too well known to need a description, a plantation of them in some locality, not particularly desirable for any thing else, may be tolerated ; but it should be remembered, that they are great exhausters of the soil.

The dwarf double varieties are more to be desired ; they grow from two to four feet high, and have very large double flowers ; the tubular florets of the disk being changed into ligular ones, like those in the ray. There are a number of perennial Sunflowers which are indigenous, tall coarse growing plants, which look pretty in the borders of woods where they are to be found, but not to be tolerated in the garden.

H. multiflora.—Many-flowered.—The double-flowered variety of this plant has large deep-yellow flowers, in August and September, of the size and form of the Dahlia; so much so, that many persons not acquainted with plants, have taken the flowers to be Dahlias. It is a perennial, with thick fleshy roots, every piece of which will make a strong plant when planted in the spring. I have found it tender in moist ground, but in dry soil, with a little protection, it stands the winter; four or five feet high.

sun gold

HELICHRYSUM.—EVERLASTING OR IMMORTAL FLOWER.

[From Greek words, signifying the *sun* and *gold*, in allusion to the brilliant yellow color of the flowers.]

The species are much admired for the brilliancy of their colors in a dried state. If gathered when they first open, and carefully dried in the shade, the flowers retain their color and shape for many years, and with Amaranths and other immortals, are highly prized for winter mantel bouquets, wreaths, and ornaments for vases, etc. Annuals of easy culture, in any rich garden soil. Plants forwarded in frames, and planted out in June, will be in flower from July to November. With the exception of a few Dwarfs, they are all about two feet high.

Helichrysium bracteatum. — Golden Eternal Flower, with golden yellow, and a variety with white flowers, were first cultivated among us.

H. macranthum. — Large Everlasting Flower.—Has flowers much larger than the last, with varieties of yellow, white, white tipped with red, and yellow tipped in the same way.

H. compositum monstrósum.—This variety has very large full double flowers of various shades and colors,

viz. : brown, orange and brown, white-yellow, purple, carmine, and rich rose, variously shaded and tipped.

H. nánum atrosanguíneum.—A beautiful everlasting plant, with brilliant deep crimson flowers, very constant ; one and one-half foot high.

HELIOTROPIUM.—HELIOTROPE.

[The name was given by Linnæus, from *Helios*, the sun, and *trope*, a turn ; in allusion to the flowers being turned to the sun.]

Heliotrópium Peruviánum.—Peruvian or Sweet Heliotrope, Peruvian Turnsole.—A native of Peru, whence it was introduced in 1757. It is an elegant and delicate plant, but not showy ; it is chiefly admired for its fragrance. The blossom is very small, of a pale blue, often inclining to white ; with varieties of a dark-purplish blue. It sheds an almond-like perfume, which has gained great favor. It will not stand severe weather, and must be housed as soon as there is an appearance of frost. Notwithstanding the tenderness of the plant, it is valuable for massing in beds. It produces an abundance of bloom through the summer months, and will repay any care that may be requisite for its treatment. Plants may be obtained from nurserymen in the spring, and may be preserved through the winter to plant out the following summer. When they have done flowering, the plants should be taken up and potted, and placed in the house, in a cool room, trimming off the young soft wood ; before freezing weather, they must be removed to the sitting room where they will soon begin to throw out new leaves, and by February or March, produce flowers. When planted out in June, they should be cut down again, so as to form thick bushy plants. Young plants may be easily raised from cuttings, but as a general rule, it will be found more economical to

purchase new plants for summer planting, than to attempt it, unless you have a person in your employ who understands the process.

The name *Heliotrope* is sometimes given to the Sun-flower, commonly so called: (*Helianthus*), as in the following passage—

“ These lovely flowers profuse
Appear as vivid stars;
The snowy rose is there
A silver moon, the *Heliotrope* the sun.”

HELIPTERUM.

[From Greek words, for *sun* and *wing*.]

Helipterum Sanfórdii.—This very pretty and distinct everlasting is of dwarf tufted habit, growing in ordinary soil about nine inches high, with neat oblong-lanceolate entire foliage, and large globular clusters of bright golden yellow flowers. It is not only a valuable addition to our summer flowers, but is also an excellent plant for winter bouquets, its flowers remaining long in perfection.

HELLEBORUS.—HELLEBORE.

[From Greek words, signifying to *injure*, and *food*, on account of its dangerous qualities.]

Leathery leaved-plants, most of which are evergreen, and flower in winter and early in spring.

Helleborus niger.—Christmas Rose.—So called because it is in bloom about that time in England. The leaves are deeply divided, evergreen, and of a leathery texture. The flowers are handsome, pinkish-white, tinged with green, as large as a small single rose. With us it commences flowering the last of November, and continues all

winter to throw up flower-stems, if the season is open and mild; cold does not seem to affect it. Propagated by dividing the roots in the spring.

HEMEROCALLIS.—DAY LILY.

[Name derived from Greek words, signifying *beautiful* and *day*.]

It is an ornamental genus of hardy perennials of the easiest cultivation, and suitable for the borders.

Hemerócallis fláva.—Yellow Day Lily.—Has a brilliant yellow lily-shaped flower, in June, two feet high; leaves long, linear, keeled.

H. fúlva.—Copper-colored Day Lily.—An old inhabitant of the flower-garden; in flower most of the season; four feet high; flower, yellowish copper-color; leaves like the last, but much larger.

HEPATICA.—LIVER-WORT.

[*Hepatica*—from Greek words, signifying *belonging to the liver*, the three lobes of the leaves having been compared to the lobes of the liver.]

Hepática tríloba.—This is a great favorite in the flower-border, on account of its abundant blossoms and great variety of colors and shades. It is a hardy perennial, with varieties of double-red, blue, and white. This charming early flower is found in its single state both red, blue, and white, in great abundance in old woods and copses, where it embellishes the ground with its clumps of numerous flowers. About the latter end of April and beginning of May they appear before the new leaves, which show themselves only when the flower is gone, but the old leaves remain through the winter. The leaves are divided into three lobes (*triloba*) of a brownish-green color, by which the plant may be known in the summer.

Another species, *H. acutiloba*, is less common than *H. triloba*, has more pointed lobes to the leaves, but is similar in other respects.

The double flowers are extremely handsome, colors very bright; they are quite hardy here, and will thrive well if

HEPATICA ACUTILOBA.

not planted in too damp a soil. I have seen the red in perfection at a garden in Roxbury, where it had endured the winter in the open air.

If required to grow in thick clumps, they should not be often moved, and then with great care, pressing the earth close to their roots; a strong, rich, loamy soil is best for them; seed for varieties and double flowers should be sown in July or August, or as soon as ripe—some say the transplanting should take place in August; I am of a different opinion, and think it should take place as soon as the flowering is over; in August the blossoms for the ensuing spring are forming at the base of the foliage, and to check this operation would destroy the flowers, whereas, moving in May only endangers the ripening of the seed which is not wanted.

Double *Hepaticas* in pots are sold in large quantities by the gardeners in England, and from the absence of foliage the pot appears entirely filled with flowers.

The double white variety is considered rare.

HESPERIS.—GARDEN ROCKET.

[*Hesperis*—from a Greek word, signifying *evening*. The flower is more fragrant towards evening, than at any other period of the day.]

Hesperis matronalis, Dame's Violet—Sweet Rocket.—The single varieties of this fragrant flower are common in most gardens. It is a biennial or imperfect perennial, three to four feet high, easily raised from seeds, producing the second year flowers of various shades, from pure white to purple, on long spikes; in May and June. Fine varieties may be perpetuated by divisions of the root, or by cuttings. The double varieties of this flower are superb, and highly esteemed for their fragrance and beauty. There is a purple and white variety, both very double, forming a spike about one foot high. It was known in Gerarde's time, and cultivated by him in 1597. He remarks: "By the industry of some of our florists, within

these two or three years, hath bin brought unto our knowledge a very beautiful kind of these Dame Violets, having very fair, double, white floures." These double varieties are very difficult to preserve, consequently rarely to be seen.

HIBISCUS.—ROSE-MALLOW.

Hibiscus militaris.—Halbert-leaved Rose-Mallow.—This is a fine species, growing six to eight feet high, pro-

ducing very large white flowers, with a deep-red center. A native of the middle and southern States blooming August and September.

HIBISCUS MOSCHEUTOS.

H. Moscheutos, formerly *H. palustris*.—Marsh Rose-Mallow.—Is found growing by the margins of streams, and in marshes near the Atlantic coast. It has large pink flowers, about five inches in diameter. Numerous stems about five feet high; and

leaves with a soft down on the underside. It is easily propagated from seeds or divisions of the root, and suc-

ceeds in any good garden soil; but better in a moist low ground. It is well adapted for planting in the shrubbery.

H. vesicarius.—African Hibiscus.—This is a plant of extremely easy culture; should be planted early in the spring. The petals are large and showy, of a straw color, the centre a deep rich brown or purple, finely contrasted with the brilliant gold color of the anthers. The flowers quickly perish, but, to compensate for their frailty, it continues to bloom from June to September.

HYACINTHUS.—HYACINTH.

[A name from ancient Mythology.]

“Hyacinth, with sapphire bell
Curling backwards.”

“The youths whose locks divinely spreading,
Like vernal Hyacinths in sullen hue.”

Hyacinthus orientalis.—The Garden Hyacinth.—Is a highly esteemed florist's flower, of easy culture, of which more than one thousand varieties are cultivated in Holland, forming quite an important item in the exports of that country, and from whence, Great Britain, the United States, and all Europe, and, in fact, all parts of the world, receive their annual supplies. Hyacinths are double and single; of various colors, embracing every shade of red, from a deep crimson pink, down to white; of blue, from white to almost black, and some few yellow and salmon color; but the shades of yellow are not very brilliant, and appear yellow only in contrast with the white. Some of the white, and other light varieties, have red, blue, purple or yellow eyes, which add much to the beauty of the flower; and others are more or less striped or shaded; and some are tipped with green. The double varieties are generally considered the finest, but many of the single

sorts are equally desirable, as what is deficient in the size of the bells, is made up in the greater number of them; some of the single sorts are the richest in color.

The stem of a fine double Hyacinth should be strong, tall, and erect, supporting numerous large bells, each suspended by a short and strong pedicel, or foot-stalk, in a horizontal position, so that the whole may have a compact pyramidal form, with the crowning, or uppermost bell, perfectly erect.

The bells should be large and very double; that is, well filled with broad petals, appearing to the eye rather convex, than flat or hollow; they should occupy about one-half the length of the stem.

The colors should be clear and bright, whether plain red, white, or blue, or variously intermixed, or diversified in the eye; the latter, when it occurs, gives additional lustre and elegance to this beautiful flower.

Strong bright colors are, in general, preferred to such as are pale; there are, however, many rose-colored, pure white, and light blue Hyacinths, in high estimation. Hyacinths begin to flower the last of April in this climate, and, if shaded by an awning from hot suns, may be kept in perfection the greater part of a month. They never require watering at any season. Keep them free from weeds, and as the stems advance in height, they should be supported by having small sticks, or wires, painted green, stuck into the ground back of the bulb, to which they should be neatly tied; otherwise, they are liable to fall down by the weight of the bells, and, as the stem is very brittle, it is sometimes broken off when exposed to storms.

The most suitable time to plant Hyacinths is in October and November. The finer sorts will appear to the best advantage in beds, while the more common varieties may be distributed about the borders where most convenient.

The dimensions of the bed should be marked out, and the soil taken entirely away to the depth of two feet; the earth on the bottom should then be dug and well pulverized, and the space above filled with the following compost:—

“Four parts of river sand; four of fresh, sound earth; three of rotten cow dung, at least two years old; and one of decayed leaves, or decayed peat. The fresh, sound earth of the compost should be of the best quality of what is called virgin soil, or that obtained from pastures or the roadside; or, if that is not attainable, the best garden mould, free from noxious vermin of every description. These ingredients should be well mixed and incorporated a considerable time before wanted. About ten days before planting, the bed should be filled up with the compost, even with the path, or so as to be even when the roots are set. The surface of the bed should be raked perfectly smooth before planting, and the exact situation for every bulb marked on it as follows:—

R	B	W	R	B	W	R	B	W	
	W	R	B	W	R	B	W	R	B
R	B	W	R	B	W	R	B	W	
	W	R	B	W	R	B	W	R	B
R	B	W	R	B	W	R	B	W	
	W	R	B	W	R	B	W	R	B

The letters R, B, W, denote the color of the flower to be planted there, viz.: red, blue, or white; under these heads, all Hyacinths may be comprehended, except a few yellow sorts, which may be classed with the white.” The bed should be four feet wide; the bulbs to be planted eight inches distant from each other in the rows, and to be covered four inches deep. First, place about one inch

of fine sand where each root is to be placed, then press the bulb into the soil nearly its whole thickness, and cover it completely with fine clean sand. Having completed the planting, the whole may be covered with sound, fresh, sandy earth, four inches deep. Before winter sets in, Hyacinths should be covered a few inches deep with leaves, straw, meadow hay, or any other light substance; they are, however, perfectly hardy, but the bloom is more perfect when thus covered. In selecting bulbs, be careful to procure good sound roots; for an imperfect root is not worth planting, and there are many sold every year, by thousands, at auction, which are generally the refuse of the Dutch gardens. A good root is perfectly hard, and bright, without specks of rot upon it, and one that has not pushed a bud. Roots of the finest varieties can be purchased for fifteen to twenty dollars per hundred, with their names and colors; and very fair sorts for less; and mixed sorts, with colors distinct, from six to ten dollars a hundred.

In about one month after the bloom is over, and the foliage begins to turn yellow, the bulbs may be taken up; then cut off the flower stems, but not the foliage, and, having prepared a sloping bed of light earth, the bulbs may be laid upon it, so as not to touch, with the foliage downwards, covering the roots and fibres with earth. Here they remain till the bulbs are sufficiently ripened, which will be in about a fortnight, when they may be taken up, and, after they have been dried, cleared from the fibres, soil, etc., they are wrapped up in papers, dry sand, or dry sawdust, and kept in a dry place until wanted for use. Or the roots may remain in the bed until the foliage has completely died down, and then taken up, dried and cleaned, as before stated.

HYPERICUM.—ST. JOHN'S WORT.

[A name of unknown meaning.]

Hypericum calycinum. — Large-calyxed St. John's Wort.—Bears a very large yellow flower, and its numerous stamens form a beautiful appearance; it creeps over the ground and prefers the shade of trees, which makes it a valuable ornament for shrubberies; the foliage is broad, thick and shining. A native of Ireland. I imagine it to be sufficiently hardy to bear our climate, but do not know that it has been tried.

H. androsæmum, also called *Androsæmum officinale*, is a shrub about three or four feet high, flowers yellow, showy. The juice expressed from the foliage is claret colored. The leaves were formerly applied to fresh wounds, hence the French name, *toute saine* (all heal) from which it obtained its common English appellation Tutsan. Flowers in July. There are several wild species, one of which, *H. perforatum*, is a troublesome weed.

IBERIS.—CANDY-TUFT.

[Named from Iberia, the country now called Spain.]

The species are generally pretty plants, and some of them cultivated in gardens as hardy annuals, under the name of Candy-Tuft,—a name which was originally applied to the *I. umbellata* only, which was first discovered in Candia. All the species and varieties of the Candy-Tuft are very hardy, and easy to cultivate. The fall-sown seeds flower early, those sown in April, from July to September; and some of the species until the frost in October. All the varieties look best in beds, or masses.

Iberis amara. — White Candy-Tuft. — Has numerous white flowers, in umbel-like clusters. A hardy annual, of no little beauty, from England, and worthy of cultiva-

tion. The seed should be sown early in April; height about one foot.

I. coronária.—Rocket Candy-Tuft.—This hardy annual is of considerable beauty, being very showy, with pure white flowers. The clusters or racemes are numerous and very large, being three or four inches long. At a distance, the fine flowers very much resemble the Double White Rocket. It blooms for several months during the summer. It well deserves a place in every flower-garden.

I. odoráta.—Fragrant Candy-Tuft.—Is white, the foliage delicate and pretty.

I. umbelláta.—Purple Candy-Tuft.—Is very showy and bright, particularly when the rays of the setting sun are on it. Independently of its own beauty, we always cultivate this flower for the sake of seeing the most beautiful color the vegetable kingdom offers; this is produced by placing the lighted end of a cigar under the petals, when their color instantaneously changes to a brilliant green; this alteration is produced with many other flowers, but in none have we witnessed a color at all approaching to this.

I. sempérvirens.—Perennial Candy-Tuft.—This plant is deserving a place in the garden; it is half shrubby at the base, with delicate linear evergreen foliage, covered with a profusion of its pure white blossoms in June and July. The stems are rather decumbent and spreading; about six or eight inches high. It is propagated by layers and cuttings. As it does not produce seeds, it is not inclined to make itself too common, like some plants; for, unless special pains are taken, it will not increase. It will require a little protection in the winter so as to have it come out in the spring, bright and green. *I. Tenoreana* is similar to this, and the two are much confused in collections.

IMPATIENS.—BALSAM.

[A name given to these plants on account of the elastic force with which their capsules burst, and scatter their seeds upon the slightest touch.]

Impatiens Balsamina.—Garden Balsam.—This is one of the most beautiful of popular annuals, forming a showy cone of finely variegated Carnation-like flowers. The prevailing colors of the petals are red and white, the former extending to every shade of purple, crimson, scarlet, rose, lilac, carnation or flesh color, and white; but some of the most superb sorts are elegantly spotted with white. The spotted varieties form a class by themselves, and are justly regarded as the most brilliant ornaments of the garden. There are the crimson, scarlet, rose, purple, and violet spotted; another class is striped after the manner of carnations with purple, crimson, rose, scarlet on pure white grounds, some with one color, others with two or more colors, some are curiously mottled and striped. The most improved varieties are very double, and styled Camellia-flowered by the French; some of the flowers are almost as perfect and as double as those of the Camellia, and nearly as regular in shape. The Germans call them Rose-flowered, as many of them approach the perfection of that flower in shape and fullness. There is a class of Dwarf Balsams, that do not grow over a foot high, but very full and bushy in habit; they do not produce flowers so double as the Camellia or rose-flowered varieties, but are desirable for the garden. They should not be planted with the tall varieties, which attain the height of two or three feet, when properly cultivated. The only way to propagate the Balsam, is from seed, which does not always produce kinds exactly the same as the parent, but approaches very near, when great care has been taken to keep the different varieties by themselves, as is now practiced by those who make a business of raising the seed. We procure the best seed from France, which, after many

years' experience, I have found to produce flowers according to the label. The very double varieties produce seed very sparingly; sometimes, from a large plant, hardly a single capsule with perfect seed can be gathered. The seed of the Balsam will germinate when four or five years old, and perhaps when much older. Gardeners prefer old seed, believing that more double flowers can be raised from it. To have fine plants, the seed should be sown in the hot-bed in March. As soon as the plants are furnished with two to four leaves, they should be transplanted into small pots; and, if there is a good bottom heat, they will soon fill the pots with roots, when they should be shifted into those a size larger, and thus shifted from time to time into larger pots. By the first of June, they will generally begin to show the character of their flowers; the best being selected, they should be planted out in rich garden soil, in beds, or in the border, at least two feet apart. If the soil is rich and rather moist, the plants will attain a monstrous size, flowering from the middle of June to the middle of September. The Balsam is a general favorite for the number, beauty, and sweetness of its flowers, and the uprightness and transparency of its stem:—

“Balsam, with its shaft of amber”

says the poet.

The Balsam is a native of the East. The Japanese are said to use the juice prepared with alum to dye their nails red. By cultivation this beautiful flower has been much enlarged, and the numerous varieties have been produced, which form a striking contrast with the very inferior single ones formerly seen in our gardens.

Mr. Martyn, in his edition of Miller's Dictionary, speaks of having seen one, “the stem of which was seven inches in circumference, and all the parts large in proportion, branched from top to bottom, loaded with its party-col-

oured flowers, and thus forming a most beautiful bush." Loudon speaks of a gardener who, by transplanting only from three to four times from No. 48 pots to those of eight inches in diameter, produced Balsams four feet high, and fifteen feet in circumference, with strong thick stems, furnished with side branches from bottom to top, and these covered with large double flowers.' This is a pretty large story, to those who have only seen the Balsam as it is generally cultivated, huddled together in a bunch without any space for enlargement. It must be remembered, however, that in England they are raised in pots upon bottom heat, and cultivated with great care. I think, if Balsams can be started in February, and shifted from time to time into pots of the richest mould, then transplanted into the garden in equally rich soil by the middle of June, four feet apart, astonishing results would be attained, even if not so extraordinary as those mentioned.

IPOMÆA.—MORNING-GLORY.

[The name said to indicate its resemblance to Bindweed.]

Ipomæa purpurea.—Morning-Glory.—This popular flower is too well known to need any description, it being found in almost every garden. It is a native of Tropical America, and has sported into a number of beautiful varieties, viz.: indigo-blue, crimson, rose, white, pale-blue, striped, etc. This plant is highly ornamental when trained to a trellis, or supported on poles. Nothing is more delightful in the morning walk than the sight of these showy flowers, which were seen curiously twisted in the bud the night previous;

—— "but with fair morning's touch
Rise on their stems, all open and upright."

I. panduráta.—Virginian Convolvulus.—This is a beau-

tiful perennial from Virginia, with large white flowers, with purple centre; in bloom from June to September. It is a climbing plant, and grows about twelve feet high. It has large tuberous fleshy roots, similar to the Sweet Potato. There is a variety with double flowers, but it is not so handsome as the single.

I. lacunósa.—Starry Morning-Glory.—A handsome North American species, with delicate blue flowers, appearing from July to September; grows ten feet high. There is a variety with white flowers. The seed should be scalded before sowing, or not be put into the ground until it is thoroughly warmed.

I. Nil.—Indigo Morning-Glory.—This highly beautiful species which is found growing wild in the Southern States, but it is supposed to have been introduced from Tropical America. It attains the same height as the last, flowers at the same time, and the seeds require the same treatment. The flowers are usually of a clear blue color, and its name is said to be from Anil, one of the names for the Indigo-plant.

I. hederácea.—Ivy-leaved Morning-Glory.—Of this species there are a number of splendid varieties. *I. grandiflora superba*, *superba alba*, *atro-violacea*, *lilacea*, and others. The flowers of all these varieties are much larger than other Morning-Glories, with flowers of the most delicate light-blue, blue with a white edge, blue with a purple center, white with pink center, and those with blue and white flowers, shaded with purplish-red. It must be treated in the same way as *I. lacunosa*, to produce satisfactory effects; but, when well established, they will afford a fund of pleasure through the season. *I. violacea vera*, *I. rubro cœrula*, *I. limbata elegantissima*, with beautiful blue and white flowers, and many other varieties and hybrids, are splendid; eight to ten feet high.

IRIS.—FLOWER-DE-LUCE.

[The Greek name for the rainbow, applied to this genus on account of its varied colors.]

“ The Flowers-de-Luce, and the round sparks of dew
That hung upon their azure leaves did show
Like twinkling stars, that sparkle in the evening dew.”

According to Plutarch, the word Iris is signified in the ancient Egyptian language, *eye*; the eye of heaven. This beautiful genus abounds in Europe, but is rare in America. Some are bulbous, but the greater part tuberous rooted, of easy culture, and propagated by seed or division of the root.

Iris Susiána.—Chalcedonian Iris.—In French, *L'iris de Suse*, or *de Constantinople*, is one of the most beautiful of the genus; it is not a bulbous root, but tuberous, imported with bulbous roots from Holland, and planted at the same time, and manner, except that the soil should be of a more loamy character. It has the largest flowers of any of the species, and is the most magnificent of them all. The colors of the flowers are of various shades of the richest purplish-brown, beautifully mottled and spotted, so as to give it a very rich and unique appearance. It produces its flowers in June, on stems a foot high. It may be increased by parting the roots in autumn. This splendid flower is reputed to be tender; but I have planted it in October and November and even in December, with success, giving the same protection as to Tulips or Hyacinths; but, if the roots are suffered to remain in the ground after flowering, it is not so likely to flower again, and will probably perish. If left in the ground through the summer, it commences growing in autumn, forms its flower-buds before winter sets in, and dies. Observing this, I have taken up the roots the first of August, and kept them out of the ground till the time of planting in autumn, with perfect success. After drying, the roots should be kept in a cool place in dry moss or sand.

One of the most esteemed of the bulbous rooted Irises, is the Persian, on account of the beauty and fragrance of its flowers. It is also very early but not perfectly hardy. It is valued for flowering in the green-house, or sitting-room. A few of its flowers will scent a whole room; the colors are pale sky-blue, purple, yellow, and white.

I. Xíphium.—The Spanish Iris, is a handsome border-flower, with bulbous roots, perfectly hardy, embracing the most delicate shades of light and dark-blue, brown, purple, yellow, and white, and variously colored, striped and spotted; the bulbs are small, tooth-like, sending forth rush-like foliage, flowering in June; stems about eighteen inches high. The bulbs of this and the English Iris should be planted in autumn, about two and one-half inches deep in any good garden soil. The bulbs need not be taken up oftener than once in three years.

I. xyphióides.—The English Iris, is somewhat similar to the last, but more robust in growth; the bulbs are larger; the stem two feet high, producing its flowers in June; colors as various as in the Spanish, and as desirable for the border.

I. sambucína.—Elder-scented Iris.—A very beautiful species, with brilliant, pale-blue, variegated flowers, on stems four feet high, with many flowers, standing above the foliage; the foliage is long and narrow, or more grass-like than the common tuberous sorts. The roots of it are of a more fibrous character than in most of the genus, and mat together so hard, that they are with difficulty separated. A clump of this, with its numerous rich flowers and graceful foliage, makes as much show as any other plant of the season; last of June.

I. pseudacórus.—The Yellow Iris of England, has handsome yellow flowers; in June; two to three feet in height.

I. cœlestina.—Sky-blue Iris.—This is a magnificent species, with long broad leaves and very large light-blue flowers, on stems three feet high.

I. versicolor.—Blue Flag.—This is a fine indigenous species, a showy ornament of our meadows in the early part of summer. It succeeds well in the garden.

I. Virginea.—Slender Blue Flag.—This is another native species, but not very common. It has grass-like foliage, with flower-stems one foot high; its flowers are purple, veined with yellow, and not so large as any of the other species or varieties. A very pretty plant for the border.

I. Germánica.—German Iris.—This is the common Flower-de-Luce of the gardens, well known to all. Flowers large, dark purple, and light-blue, or three-colored; in May and June, two feet high. *I. Florentina.*—Florentine Iris, has large white flowers; flowering at the same time with the last, of the same height and habit.

The series of Hybrid Iris is very extensive, at least one hundred varieties are cultivated by some florists, many of them however, have, so near a resemblance, that there are but very few cultivators that would be desirous of encumbering their grounds with all the sorts. They are of all colors and shades of blue, purple, yellow, and brown; some are beautifully spotted, variegated, striped, parti-colored, etc. A bed of the many varieties makes a fine show. The roots increase so fast, that it is necessary to make new beds of them every three or four years. Although the Iris is not considered as a Lily, the French have given it the name of one; it is the *Fleur-de-Lys*, which figures in the arms of France. The following conjectural origin of this name is given by the Abbe la Pluche, a French writer:—

“The upper part of the Lily, when fully expanded, and the two contiguous leaves beheld in profile, have,” he ob-

serves "a faint likeness to the top of the Flower-de-Luce, which often appears on the crowns and sceptres in the monuments of the first and second race of kings, and which was most probably a composition of these three leaves. Lewis the Second, engaged in the second crusade, distinguished himself, as was customary in those times, by a particular blazon, and took this figure for his coat of arms; and as the common people generally contracted the name of Lewis into Luce, it is natural to imagine that this flower was, by corruption, distinguished in process of time by the name of Flower-de-Luce." Shakespeare appears to consider this flower as a Lily only by courtesy:

—— "Lilies of all kinds
The Flower-de-Luce being one."

LAMIUM

[*Lamium* was a celebrated sea-monster. The flowers of this genus are supposed to resemble the grotesque figure of some beast.]

Lámium rugósum, or Rough-leaved Lamium, produces clusters of its curious white flowers all the season; there is a variety with light-purple flowers; they are suitable plants for rock-work. The odor of the plants is rather unpleasant. Most of the species are coarse weeds.

LANTANA.

[One of the ancient names of the *Viburnum*, which this resembles a little in foliage.]

The species are rapid growers and free flowerers, and readily increased by cuttings. They form small bushes, with heads of flowers of brilliant changeable colors, and of a peculiar aromatic odor.

Lantána Camára, formerly *L. aculeata*.—Changeable-colored, is a native of the West Indies and South Ameri-

ca, and is probably the species from which so many beautiful varieties, that now decorate our green-houses and gardens, have originated. The plant is tender, but flowers in great profusion from June to October, when planted out in the garden, and will attain the height of two or three feet from small plants; but, when old plants are turned out, they form quite large shrubs, from four to eight feet high, with bushy heads two or three feet thick. It presents a pleasing appearance when the different varieties are planted in groups on the back side of the flower-border, on the lawn, or in front of the shrubbery. The flowers are arranged in numerous hemispherical compact heads, an inch or more in diameter; the varieties now in cultivation are: those with scarlet flowers in the outer rows of the head, with orange ones in the center; purple, delicately edged with straw outside, orange center; pure white, with yellow eye; yellow and white; purple and violet-red, etc.; the colors changeable. The heads of flowers are produced in pairs from the axils of the leaves. The stems are angular and somewhat prickly. The foliage is elegant, of a deep shining green; leaves in pairs, opposite, ovate-acuminate, roughish, deeply veined, edges finely serrate. The flowers are succeeded by clusters of green drupes or berries, which turn to a deep-blue when ripe. The flowers and foliage wilt so readily and the flowers drop so soon, that I could not recommend them for bouquets, even if the odor were more agreeable.

LASTHENIA.

Lasthénia glabrata.—A dwarf annual plant from California, ten to twelve inches high, bearing a profusion of small yellow flowers, in the style of a Sunflower. Not likely to become very popular.

LATHYRUS.—SWEET PEA.

[A name employed by Theophrastus, to designate a leguminous plant.]

Láthyrus latifólius, or Everlasting Pea, is a most beautiful, large, diffuse perennial, producing a long succession of large light-purple or pink flowers, in clusters of eight or ten each. The plant is suitable for the shrubbery, arbors, or for training to a trellis. When supported, it attains the height of six feet. "It attaches and supports itself, like many scandent plants, by means of the branching tendrils terminating its single pair of broad leaflets."

A variety has white flowers. It may be propagated by dividing the roots, or more extensively by sowing the seeds. Young plants will flower the second year feebly, but the third and fourth year they produce a profusion of foliage and flowers. It has been suggested that it might be applied to agricultural purposes with profit, on account of its yielding so great a quantity of fodder and seed.

L. grandiflórus.—Great-flowered Everlasting Pea.—The flowers are very large, rose-colored, and appear two or three together; the foliage and stems light and elegant; not in common cultivation. The roots of the *Ever-blooming* or *Everlasting* Peas are very long and fleshy, and in a loamy soil send down a tap root, three or four feet into the ground, and will remain for many years without injury from the severest winter.

L. odorátus.—Sweet Pea, is one of the most beautiful and fragrant of the genus, and is deservedly one of the most popular annuals that enrich the flower-garden. The varieties are white, rose, red, crimson, purple, black, and striped. One style of planting is, to place them in circles, two feet in diameter and four feet apart, each variety by itself. When the young plants commence growing and require support, a neat stake should be firmly placed in the center of the circle, to which they should be trained, on strong strings to the top of the stake, which should be

at least five feet high, if the ground is rich ; others choose to plant them in rows and support them with brush—or with strong twine running the rows, fastened to stakes set among the plants. The seed should be sown as early as possible in the spring. They will then produce a profusion of flowers from July to October.

LAVATERA.

[In memory of the two Lavaters, physicians of Zurich.]

Lavatéra triméstris.—Common Lavatera.—A popular hardy annual, of easy culture and handsome appearance, with large, Hollyhock-shaped, red flowers. There is a variety with white flowers. Two feet high, in bloom from July to October. Cultivated the same as the Mallows, to which it is closely related.

LILIUM.—THE LILY. ✓

[The classical Latin name.]

“Have you seen but a bright Lily grow,
Before rude hands have touched it?”

“Queen of the field, in milk-white mantle drest,
The lovely Lily waved her curling crest.”

All the species of this splendid genus with which we are acquainted, may be considered worthy of a place in every good collection of plants. Many of them are well known, while a greater number are not often seen in our gardens. The Lily is an interesting flower to the young florist as well as to the botanist, on account of the simplicity of its structure, and the size and distinct character of its different parts or organs. The root of the Lily, or

what is generally denominated the root, is a scaly bulb, the scales being laid over each other in an imbricate form, inclosing the bud. The bulb is not a root, strictly speaking, but a bud containing the embryo of the future plant. The roots are thrown out from very short stems at the bottom of these bulbs, or buds, and, unlike the fibres of the Tulip, are perennial; and on their strength depends, in a great measure, the vigor of the future plant. Bulbs, long kept out of ground, are very much weakened, and a number of years will elapse before they recover strength to bloom in great perfection. After the flowering of the Lily, in August, the foliage of many species decays; the bulbs then are in the most perfect state for transplanting. If they are permitted to remain long after this, and the foliage begins to start again, they will not bloom so strong the next year. The Lily should not be moved any oftener than is necessary. It is not like the Tulip and many other bulbs, which are not injured, but rather improved, by taking them up annually after flowering. The Lily will flourish in any well prepared border or bed. To have them in perfection, excavate the soil eighteen inches deep, and fill up with a compost of peat, or swamp muck, undecayed manure, or leaf mould, a foot deep; the remaining six inches may be peat and rich mould. The bulbs of strong-growing Lilies may be planted from four to five inches deep; and weaker sorts from three to four inches. In the borders, three bulbs, of the stronger-growing varieties, are enough for one group, or five, of the weaker sorts. They have a pleasing effect when in masses; or they may be planted in beds. Most of the species are quite hardy; but they will all be benefitted, and bloom more strongly, provided they receive a covering of rotten manure before winter sets in.

Lilium candidum.—The White Lily.—This species has always been considered the emblem of purity, and is too

well known to require any description. A mass of White Lilies is always beheld with admiration, and they perfume the air with their delicious fragrance. The White Lily is, therefore, indispensable, and should be found in every garden. It sometimes attains the height of three or four feet, and is in flower about the first of July. *L. candidum flore pleno*.—The Double White Lily.—A variety of the double white; it is curious, but not beautiful. The inflorescence appears to be a continuation of the foliage, which, as it terminates the stem, gradually assumes the character of petals, with the whiteness of the single flower. It is a monster, and for that reason may be fancied by some. The Variegated White Lily is another variety, and not very desirable. The purity of the white is destroyed by the dull purple stripes that mark the petals, and give it a dingy appearance. *L. candidum folia variegata*.—The Gold-striped Lily.—There are two varieties of the White Lily with striped leaves, one having yellow, the other white-striped foliage; both pretty in a collection.

L. longiflorum.—The Long-flowered White Lily.—This is a very beautiful and fragrant species, not quite so hardy as the common White Lily, but stands the winter well, when protected. The flowers, pure white, very long and large; produced in July.

L. Mártagon.—Turk's-Cap Lily.—There are many varieties of this species; some with pure white, others with purple, spotted, or variegated flowers. The petals are very much reflexed, giving them the appearance of caps. In strong soil, and the roots well established, the stems are sometimes thrown up from three to five feet, producing twenty or thirty flowers; flowering in July.

L. cróceum.—The Umbel-flowered Orange Lily, a variety of which is called *L. umbellatum*, is a strong-growing species, producing quite a number of large, upright orange flowers, with rough interior. In contrast

with the White Lily, it makes an imposing appearance. It flowers about the first of July.

L. Thunbergianum.—The Dwarf Orange Lily.—More dwarfish than the last; about two feet high, with three or four upright orange flowers on a stem; in flower in July. This is the *L. aurantiacum* of the catalogues.

L. tigrinum.—Tiger-spotted Lily.—A quite common, strong-growing species; but very showy, having fine, reflexed, orange flowers, with black spots. It has the peculiarity of producing small bulbs in the axils of the leaves. It grows from four to six feet high, flowering in August, and is a suitable plant for the shrubbery as well as the border. It is very easily propagated, as all the axillary bulbs, when planted in the ground, soon produce flowering plants.

L. Pompónium.—Scarlet Pomponé Lily.—This is a beautiful species, with scarlet reflexed petals, flowering in June and July. It is rather a shy flowerer, and has not flourished so well with us as some other sorts.

L. Chalcedonicum.—Chalcedonian Lily.—This is another fine Scarlet Lily, with reflexed petals, growing three or four feet high, and flowering in July. *L. pyrenaicum*, with reflexed yellow flowers, with scarlet anthers, we have in our collection; very pretty, but producing only from one to three flowers in each stem. Among other beautiful species, are *L. Catesbæi*, a native of the South, with orange-colored flowers, and dwarf in its habit. *L. monadelphum*, a species from Caucasus; and many others which may be obtained from the Dutch florists. Lily bulbs, when transported from Holland, are so much weakened, from being kept so long out of ground, that more than one-half of them perish; and the few that vegetate frequently stand a number of years before they get strength to bloom.

L. peciósam.—The Japan Lily, also called *L. lancifolium*.—This magnificent species of Lily, and its varieties, have been introduced but a few years, and, until lately, treated as green-house plants. They are found to be as hardy as our common Lilies, and do prove a great acquisition to the garden. The species, *L. speciosum*, has a pink and white frosted ground, finely spotted with deep crimson; *L. lancifolium album* is pure white; each variety with reflexed petals. These Lilies emit an exquisite odor. I have seen plants five and six feet high; they were, however, grown in pots in the green-house. These bulbs have formerly commanded extravagant prices; but as the price is now greatly reduced, we hope soon to see them more common. The following account is from an English paper; and, as the directions for their culture will be applicable to us, we insert it, with some omissions:—

“Few plants of recent introduction are more handsome or attractive than the Japan Lilies. They produce a gorgeous display, either in-doors or out; and, as they are quite hardy, they may be liberally planted in the open border, and thus constitute one of our best autumnal flower-garden plants.

“Their propagation is simple and certain. The bulbs may be separated, and each scale will eventually form a new bulb. This separation should be effected when the flower-stems are withered. The scales should be stuck into pans of silver sand, and placed in a cold frame or pit. After remaining one season in this position, they should be planted in a separate bed of peat soil, and a little silver sand intermixed with it; thus treated, the bulbs will soon grow large enough to flower.

“The cultivation of them in pots is by no means difficult. I shall detail the practice I have pursued with success for some years. Immediately when the bulbs go to rest, in the autumn, is the proper time to repot them.

By no means destroy the old roots, but carefully place them amongst the fresh soil. If large examples, for particular display, are required, large pots may be employed, and half a dozen flowering bulbs placed in each pot. The soil I use is rough peat. The pots should be well drained, and the crown of the bulb just covered with the soil; when potted, they should be placed in a cold pit or frame, in order to prevent the soil from freezing, although frost will not injure the bulb. Where room under glass is an object in winter, they may be plunged in the open air in coal ashes, in a manner similar to potted Hyacinths. I have at this time a large number coming into flower, which have never been under glass until within these few days; they have sustained no injury from exposure, and they present every appearance of making a grand display. There is scarcely any plant which is so much benefited by liquid manure as the Lily. If used in a clear state, and considerably diluted, this water alone may be applied for at least a month before it comes into flower.

"If the object should be out-door cultivation entirely, I should recommend them to be planted in beds; their effect is exceedingly grand. Excavate the soil eighteen inches deep, and fill in the bottom, a foot deep, with very coarse peat, intermixed with one-fifth of decayed manure or leaf mould. The remaining six inches may be entirely peat. If the bulbs are large enough to bloom, plant them twelve inches apart every way; and if beds of each kind are brought into contact with one another, the effect will be magnificent."

Among the varieties sold by the florists are *rubrum*, white with crimson spots; *album*, pure white; *roseum*, white with rose-colored spots. *Melpomene*, with very dark spots. *Monstrosum*, a curious variety in which several stems seem to be soldered together and produce a magnificent head, of from thirty to fifty flowers.

All our native Lilies are beautiful, and very much improved by cultivation. While we are bringing together, from the ends of the earth, the treasures of Flora, let not our own be neglected. These may be taken from our fields and meadows, when in bloom, by carefully taking them up with a ball of earth, and in a few years will richly repay the trouble.

L. superbum.—Superb Lily.—One of the most magnificent of our native plants; not common in the vicinity of Boston, but in many parts of the State, and in New York, is abundant. Stem erect, straight, from three to six feet high, bearing a large pyramid of orange-colored flowers, not unfrequently numbering, when cultivated, thirty or forty. The flowers are much reflexed. They are found in many varieties, with flowers from a yellow to an orange scarlet; in bloom in July.

L. Canadense.—Nodding Meadow Lily.—This fine Lily may be found embellishing our meadows in June, when it rarely produces more than from one to five modest, nodding, but showy flowers, on stems one to three feet high. It is very much improved by cultivation, and, when planted in rich ground, has been known to grow five feet high, with a pyramid of at least twenty of its pendulous flowers; color from yellow to deep orange scarlet. The flowers are profusely spotted with brown, on the inside, and are but little reflexed.

L. Philadelphicum.—The Common Red Lily of our pastures and dry fields; equal, if not superior, in beauty, to *L. Canadense*, but of a different habit. Its height rarely exceeds two feet, with one to three flowers, the petals of which are supported on a long claw; upright, of a dark vermilion color, richly spotted with black. The flowers are bell-shaped; in bloom in July. This species may, no doubt, be as greatly improved by cultivation as *L. Canadense*. It would then form one of the most

showy ornaments of the garden, as the color of the flower is rich and brilliant. If ten or fifteen flowers could be produced on one stem, the effect of a group of plants would be surpassingly rich.

L. testaceum.—A splendid species, introduced within a few years under the name of *L. excelsum*. The plants grow four or five feet high, forming a regular pyramid of lanceolate leaves, upon a stout thick stem, crowned with six or eight large nodding Lilies, of a delicate straw or nankin color, finely set off by their prominent scarlet anthers; the bulbs are very large; perfectly hardy.

L. auratum.—Golden Striped Lily.—This new and magnificent species of Lily lately introduced from Japan, is thus described by Dr. Lindley:—

“If ever a flower merited the name of glorious, it is this, which stands far above all other Lilies, whether we regard its size, its sweetness, or its exquisite arrangement of color. Imagine, upon the end of a purple stem, not thicker than a ramrod, and not above two feet high, a saucer-shaped flower at least ten inches in diameter, composed of six spreading, somewhat crisp parts, rolled back at their points, and having an ivory-white skin, thinly strewn with purple points or studs, and oval or roundish prominent purple stains. To this add, in the middle of each of the six parts, a broad stripe of light satin-yellow, loosing itself gradually in the ivory skin. Place the flower in a situation where side-light is cut off, and no direct light can reach it except from above, when the stripes acquire the appearance of gentle streamlets of Australian gold, and the reader who has not seen it, may form some feeble notion of what it is. Fortunately ten thousand eyes beheld it at South Kensington, and they can fill up the details of the picture. From this delicious flower, there arises the perfume of orange blossoms sufficient to fill a large room, but so delicate as to respect the weakest

nerves. It is botanically allied to *L. speciosum* on the one hand, and to the orange-red *L. Thunbergianum* on the other; but it is wholly different from either."

At the present time this splendid Lily is scarce, selling for \$5 per bulb.

LIMNANTHES.

[Name from the Greek, meaning *marsh-flower*.]

Limnánthes Douglásii.—Mr. Douglas' Limnanthes.—A native of California, from whence it was sent by Mr. Douglas. The plant is annual, quite hardy, decumbent, stems growing ten or twelve inches long. The stems are crowned with numerous fragrant flowers, each about an inch across, much resembling in size and form the *Nemophila insignis*. A large portion of the flower is a deep yellow, the extremities of the petals being white. It blooms from June to August.

LINARIA.—TOAD FLAX.

[The plant, out of flower, is very similar to *Linum*, Flax.]

The species are for the most part pretty annual plants, and some of them, as *Linaria Cymbalaria*, well adapted for growing in pots or for rock-work; *L. triphylla* is a popular border annual; *L. triornithophora* is remarkable for the form of its flowers, which resemble three little birds seated in the spur. *L. vulgaris*, known as Butter and Eggs, Toad-Flax, and Ranstead-weed, is a very showy plant, but a bad weed. *L. bipartita lutea*, *alba* and *splendida*, and *L. macroura*, are also pretty plants.

LINUM.—FLAX.[*Linum*, in Celtic, signifies *thread*]

***Linum perénne*.**—Perennial Flax.—A native of the far West with bright blue flowers, which, though they fade soon, are produced so abundantly that the plant is for a long time in flower.

***L. grandiflórum*.**—Large-flowered Flax.—A handsome annual from Algiers. It has large, brilliant, crimson flowers, and but seldom produces seed. *L. luteum* is similar, with yellow flowers. *L. usitatissimum*, is the cultivated Flax; it is an annual species with handsome blue flowers, the proper place of which is the field rather than the garden.

LOASA.

[A name of unknown meaning.]

A curious genus, mostly annuals, remarkable for the beauty of their singular flowers, but the plants possess one quality which must forever banish them from the *pleasure* garden; the whole plant is covered with hairs, which, on being even slightly touched, eject a poison into the flesh, causing a painful blister, the effect of which does not pass off for several days.

***Loása laterítia*.**—Brick-red Loasa.—It is a native of South America; a climber, growing twelve to twenty feet in a season. The seed should be sown in a warm border, early in May. The flowers are prettily colored, between a brick-red and orange shade, and produced in profusion through the summer and autumn. It is very ornamental, when properly trained upon a trellis; but it will be best not to come within touching distance of the plant without a good pair of gloves. *L. Pentlandii* is another beautiful species, of later introduction than the last, and said to be more tender; this is also a climbing plant.

LOBELIA.

[Name in honor of *M. Lobel*, physician and botanist to James I.]

The genus is very large, containing more than eighty species. The predominant color in the species is blue, and many are highly ornamental.

Lobelia cardinalis.—Scarlet Cardinal Flower.—This splendid native plant embellishes the borders of our brooks and rivulets, in the months of July and August, with its unrivalled scarlet blossoms. It is a mistaken notion that it will flourish only in wet ground. I have taken it up, when growing in water, and planted it in a soil that was far from being moist, with good success. It was introduced into England in 1629, and, to this day, is duly appreciated. Justice, who published a work on gardening, in 1754, in describing it, says:—"It is a flower of most handsome appearance, which should not be wanting in curious gardens, as it excels all other flowers I ever knew in the richness of its color." It has an erect stem, two to three feet high, with broad lanceolate, serrate leaves; flowers in terminal spikes, pointing one way.

L. fulgens.—The Fulgent Lobelia.—Is a native of Mexico, and was introduced into England in 1809. Leaves narrow lanceolate, toothed, revolute at the edge; stem pubescent, (downy,) three feet high; perennial; its bright scarlet flowers in terminal racemes.

L. splendens.—The Splendid Lobelia.—Is also a native of Mexico, introduced into England in 1814. Leaves narrow lanceolate; stem quite smooth, three feet high; flowers brilliant scarlet, in terminal racemes; perennial.

L. syphilítica.—The Blue or Great Lobelia.—Is a common plant, and introduced into England in 1665. It has its specific name from its supposed efficacy in the cure of the syphilis, among the North American Indians. Sir William Johnson purchased the secret from them, but

LOBELIA CARDINALIS.

Woodville says its virtues have not been confirmed by any instance of European practice." Stem erect, two feet high; raceme leafy, with flowers of a bright sky-blue. *L. speciosa*, of the gardens, is either a variety of this, or a hybrid between this and another species.

The treatment for those above enumerated is the same. I once had *L. cardinalis*, *fulgens*, and *speciosa*, in great perfection, having a soil and situation well adapted to their growth, with a little preparation. The soil, naturally, was a black, heavy loam, upon a clay and gravel subsoil, a little springy, and never very dry. Upon the spots designed for their location, I threw four or five shovelfuls of river-sand, and two of partly decomposed night-soil compost, and had it thoroughly incorporated with the soil, for two feet around, which made it quite light, and placed the plants in the center. They began to flower in July, and continued to throw up vigorous stems, with an abundance of flowers, until October. Their growth was so luxuriant, that it was necessary to tie them up to slender rods, stuck into the ground, a number of times, to prevent them from being broken by the wind. *L. cardinalis* and *L. fulgens* were more than three feet high; the others between two and three feet. They may be easily propagated, by laying the stems in July and August, or dividing the roots in the spring, or by seed.

"Van Mons observes that *L. cardinalis* perishes in sandy soil, but becomes strong and multiplies in loam, while, at the same time, it produces the most brilliant colors in the former.

"The same thing may doubtless be predicted of the other species, it being a well-known law of nature, as to living beings, that their energies are concentrated in proportion to the obstacles thrown in the way of their expansion."

L. spicáta.—Spiked Lobelia.—A beautiful indigenous species, common in most pastures and by the road sides, with lively pale-blue flowers, in long terminal spikes; in July. Stem upright, smooth, a little hairy, one and one-half foot high. I have never seen this species cultivated, but have no doubt but what it would be very much improved, and prove a valuable acquisition to the border. There are a number of annual Lobelias which are much admired for their innumerable dark-blue flowers, which are produced through the season. They are humble trailing plants, very suitable for the front of the flower-bed, or for ornamental rock-work, until the perennials have spread. Among the varieties recommended are, *L. ramosa*, *gracilis*, *coelestina*, *triqueter*, and others. They are good plants for hanging pots, as they are always covered with their delicate blue, light and dark, rose, or white flowers, which, trailing over the pots, present an interesting appearance. *L. Paxtoniana*.—Flowers fine azure blue, shading off to a white margin; growth compact. A novel and desirable variety for pot culture, or for planting out in the border, where it succeeds best if partially shaded. All Lobelias are poisonous, though some have been used medicinally. I make this remark as a warning to inexperienced persons, against putting any of the species into the mouth. All the species are increased by sowing the seed; most of the perennials by cuttings or division of the roots.

L. infláta.—Indian Tobacco.—Is probably familiar to every one, at least by name. Its virtues are so prized by some, that we are almost led to suppose that it is a sovereign remedy for all diseases that flesh and blood are heir to. The plant is an annual, of not much interest, with small blue flowers, and inflated pods or seed-vessels, common in dry pastures and road sides. The whole plant is a violent emetic.

LUNARIA.—HONESTY.

[From *luna*, the moon, in allusion to the broad, round, silvery pods or silicles.]

Lunária biennis.—Honesty.—Is an old-fashioned plant, flowering the second year from seed, and then dying. It produces large purple flowers, in May and June, that are succeeded by broad elliptical pods, which, when dry, are rather ornamental.

LUPINUS.—LUPIN.

[Said to be derived from *lupus*, a wolf, because this plant devours, as it were, all the fertility of the soil.]

The species are border-flowers, in much esteem for their velvet-like leaves and fine large flowers. They are all vigorous growing plants some annual, but mostly perennials.

Lupinus perennis.—Wild Lupin.—Is a well-known species, indigenous all over the country; found, frequently, in large masses, from a yard to two rods in circumference, occupying the very poorest sandy or gravelly arid soil; in bloom about the first of June. It is very difficult, or even impossible, to transplant, with success, this fine perennial. The only sure way to propagate it is by seed, which should be gathered before it is entirely ripe, as it is scattered, as soon as mature, by the sudden bursting of the pod, by which the seed is thrown to a considerable distance. Nor will it succeed on rich ground; but whenever the seeds are to be sown, the soil should, in the first place, be removed, or a greater part of it, from a circle the diameter of which is three or four feet, and the hole be filled up with a poor, gravelly or sandy soil, and the seed sown in the center.

The flowers are found, in the wild state, of various colors and shades, from pure white (which is rare) through

all the shades of light to dark-blue, inclining to purple; the margin of the flowers is frequently copper color, sometimes inclining to red. One variety has flowers of a dull pink. Stem erect, hairy. The digitate leaves are composed of about eight or ten leaflets, which are lanceolate, wedge-shaped, arranged like rays around the end of the petiole; hairy and pale underneath.

Many beautiful Lupins have, within a few years, been added to the list of herbaceous plants, from California and the North-west coast, which part of the world seems to be the central position, or head-quarters, of this genus of plants.

L. polyphyllus.—Many-leaved Lupin.—Is a splendid plant, from the North-west coast of North America. When I first received the seed of this fine Lupin many years since, only one of them vegetated. It produced radical leaves, only, the first year, which were multifoliated, and borne on long petioles. The second year, it was transplanted, with much care, into rich soil, having been exposed, through the winter, to all the rigors of the season, without protection. In the month of May the flower-stalks began to be developed, and produced, in June, spikes of flowers, which were two feet in length, and from three to four feet in height from the ground. The flowers of a beautiful azure blue, with a reddish border, are disposed in long terminal clusters, forming whorls, very near each other, around the stem. The leaves are composed of from twelve to fifteen green, lanceolate leaflets, hairy on the under side. The third year it flowered abundantly, throwing up numerous flower-stems, so luxuriant that many were broken by the wind before they were secured to sticks. The third year the roots should be divided, as they become large in rich ground; the central part first decays, and finally the whole root perishes, unless this operation is performed. There is also a white variety.

There are a number of annual Lupins, of vigorous growth and easy to cultivate, and well adapted for children to make their first attempts in floriculture. The old varieties are, *L. albus*, white; *L. pilosus*, large blue; and *L. luteus*, with fine yellow flowers. The seeds may be planted in April or May.

L. várius, is a more delicate species, with smaller foliage and fine blue flowers.

L. Hartwégii.—Hartweg's Lupin.—This is a beautiful species, with delicate foliage and numerous dense spikes of rich, blue flowers; one to one and one-half foot high; from July to September; suitable for planting in masses.

L. Cruikshánkii.—This is an elegant species, growing from two to three feet high, with large spikes of white flowers, shaded with yellow, purple, or blue.

LYCHNIS.

[Name from the Greek for *lamp*, the cottony leaves of a related plant having been used as a substitute for wicks.]

Lýchnis Chalcedónica.—Scarlet Lychnis.—A common border perennial from Russia, of easy cultivation. The flowers are brilliant scarlet, which makes it valuable, as there are but few flowers of that color among our hardy herbaceous plants. The double variety is one of the most splendid decorations of the border; it is propagated only by divisions of the root or by cuttings of the flower stem. The cuttings are taken off at any time when the shoots are tender, and planted in a sandy loam, in a warm situation, but covered with a hand-glass and shaded from the sun. When well established, they may be transplanted into the bed or border where they are to remain, and will flower strongly next year. There is also a single and double white variety. The single kinds are easily

raised from seed. All the varieties do best in a light, rich, loamy soil. It is necessary to take up and divide the roots every other year, early in the spring. A light protection is necessary to the double varieties, to insure a vigorous bloom. The flowers are fasciated, (collected in bundles,) level-topped or convex; two feet high; in June and July. The double varieties continue to give flowers until autumn.

L. fúlgens.—Splendid.—Is a hardy species from Siberia, with scarlet flowers; one and one-half foot high; not common with us.

L. grandiflóra, sometimes called *L. coronata*, is a showy species from China. The flowers are large, solitary, terminal, and axillary, red, the petals torn; one and one-half foot high. Unfortunately, this beautiful plant will not stand our winter in open ground; it therefore requires to be taken up and potted in autumn, and protected in the house or a frame. It thrives and flowers abundantly most of the season, if planted out in the spring. It may be raised from seeds or cuttings.

L. Flos-cúculi.—Ragged Robin.—This is an old inhabitant of the flower-garden, a native of Britain. The double variety is deservedly esteemed, is very ornamental, easy to cultivate, and flourishes in any common garden soil. It is propagated by divisions of the root. Flowers fine deep pink.

L. Flos-cuculi plena alba.—Double White Ragged Robin.—This is a scarce but very beautiful variety, its pure white, full, double, solitary flowers are produced in continual succession through the summer. Perennial, but requires protection.

L. Haageána.—Haage's *Lychnis*.—This is an elegant perennial. It flowers the first year, producing large scarlet flowers, with jagged petals; one foot high. It will require protection through the winter. There are also a

number of other species and varieties, which are beautiful, but not yet in general cultivation.

Lýchnis coronária.—Rose Champion or Mullien Pink, is a common showy border-flower; not a perfect perennial, but can be kept by dividing the roots when large. It is also easily propagated from seed, which flowers the second year. The common variety has deep-red flowers, another with white, and still another with white with a rose center; one and one-half foot high; in flower in June and July.

L. Flos-Jovis, is another perennial variety with smaller red flowers in umbels, with soft downy leaves; one and one-half foot high. *L. cæli-rosa* is an annual, with rose-colored flowers, very pretty, but not showy; one foot high.

LYSIMACHIA.—LOOSE-STRIFE.

[Name said to be in honor of King *Lysimachus*.]

Lysimáchia nummulária.—Moneywort.—Is an ornamental creeping perennial, with yellow flowers all the season, suitable for rock-work, or hanging from a pot in a northern exposure; a number of the indigenous species are worth cultivating.

LYTHRUM.—WILLOW-HERB.

[From the Greek for *blood*, in allusion to the flowers.]

Lythrum salicária.—Is a British perennial, and is considered a handsome border-flower; three or four feet high, with purple flowers in July and August; leaves opposite, cordate, lanceolate; flowers in spikes.

L. róseum superbum.—This is a hardy perennial, and a great improvement over *L. salicaria*. The plant is from

two to three feet high, producing numerous spikes of bright, rosy-red flowers through the season; propagated by dividing the roots.

MADIA.

Mádia elegans.—Elegant Madia.—A pretty annual from the Pacific coast. The seeds should be planted in the border in May. If the plants can have a shady location, it will be much the best, as the bright sunshine causes the petals of the flower to curl up, thus destroying much of their beauty. The flowers are large, with yellow rays and brown disk. Early in the morning, or just at night, the blossoms appear splendid; about two feet high. The plant emits an agreeable fragrance; it stands the early frosts, and the only objection to it is, that it fades in the sun, and almost immediately after gathering. It is not fit therefore for bouquets.

MALOPE.

[*Malope*, a name given to Tree Mallows.]

Malópe grandiflóra.—Grand-flowering Malope.—This very showy plant is of the Mallow tribe; grows from two feet to two feet and six inches high. The flowers are produced in great abundance, and, being of a fine rosy crimson, make a very gay appearance, rendering it a desirable plant for giving a distant attracting effect. It blooms from June to the end of October, unless cut off by frost. Seed should be sown in pots early in March, and be raised in a hot-bed; or may be sown upon a hot-bed, under a frame or hand-glass. The plants may be set out in the open border by the middle of May. *M. grandiflora alba*, is a variety with white flowers, but rather

more delicate in its habits. Both of the varieties are better grown in the green-house, but are perfectly hardy. The plant blooms more profusely in a good loamy soil, mixed with a little manure or leaf-mould. If the soil be very rich, the plant will be liable to grow too vigorously, and produce a vast profusion of foliage, which will rather conceal the flowers; but, if moderately enriched, it will produce one mass of bloom. I find it profitable to give all my flower-beds an addition of fresh soil every winter, generally adding about two or three inches deep. If the *Malope grandiflora* is not desired to come into bloom before the beginning of August, the seed may be sown in April or May, in the open border where it is desired that the plants shall blossom. The plant produces seed in abundance, which ripen well from plants that bloom early in the summer.

MALVA.—MALLOWS.

[An old Latin name from the Greek, for *soft*.]

Málva alcéa.—A pretty, hardy perennial, from Germany, with purple flowers from July to October; three feet high; easily propagated by seed or divisions of the roots.

Varieties of the same, have pink and white flowers; lower leaves angular; upper, five-parted, cut; stems and calyxes velvety.

M. crispa.—The Syrian or Curled Mallow.—Has white flowers, veined, with red or purple, with elegant curled leaves; annual; flowers in June, July, and August.

A species of Mallow was used among the Romans as an esculent vegetable. Horace mentions it as one of his ordinary dishes.

“Olives, succory, and white Mallows are my food.”

Job speaks of them as being eaten in times of famine.

"For want and famine they were solitary, fleeing with the wilderness in former time desolate and waste; who cut up Mallows by the bushes, and juniper roots for their meat."

The Mallow was formerly planted, with some other flowers, the Asphodel in particular, around the graves of departed friends. It was probably this circumstance which led to the following reflections, in the epitaph on Bion, by Moschus:—

"Raise, raise the dirge, Muses of Sicily!
 Alas! when Mallows in the garden die,
 Green parsley, or the crisp luxuriant dill,
 They live again and flower another year:
 But we, how great soe'er, or strong, or wise,
 When once we die, sleep in the senseless earth,
 A long, an endless, unwakeable sleep."

Such a sentiment will do for a heathen, perhaps, but not for the Christian.

MARTYNIA.—UNICORN-PLANT.

[Named in honor of *John Martyn*, professor of botany, at Cambridge, England.]

Martýnia proboscídea.—Common Martynia.—This is an annual, as are the other species, from sub-tropical America. It is often cultivated in vegetable gardens for its capsules, which, when green and tender, make a fine pickle. It is also a curious plant for the border, on account of its large flowers; but more particularly for its singularly curious seed-vessels.

M. frágrans.—Fragrant Martynia.—This is a beautiful annual, that succeeds very well when sown in the open border the tenth of May. It is undoubtedly one of the finest species of the genus; no other one will compare with it for beauty. It is robust in habit, throwing out large lateral branches; the plant attains the height of three

feet, producing an immense profusion of flowers from the first of August, until destroyed by frost. The flowers are large, resembling the *Gloxinia*; thickly set in spike-like racemes; delicate rosy-lilac, blotched and shaded with bright crimson, with an agreeable odor. The foliage is

MARTYNIA PROBOSCIDEA. ?

thick, more soft and velvety than the above described species. The capsules add much to the handsome appearance of the plant. The flowers, however, are not suitable for bouquets, and, unless there is much room in the flower-garden, this plant is not recommended.

MATHIOLA.—Stock.—GILLIFLOWER.[Named after *Mathioli*, an Italian physician.]

Mathiôla incána.—Common Stock.—Brompton Stock.—A perennial or biennial. The stem becoming woody at the base, and branching above; leaves smooth or downy. This species has produced many varieties, with different colored flowers, more or less double. The colors vary from straw color to pure white, and from rose to deep-purple and violet. It flowers in the winter or spring after sowing the seed, which if good will produce plants one-half of which or more will have double flowers. A variety is called *M. perennis*, the Perennial Stock. This species and its varieties will not endure our severe winters and are cultivated only as green-house or parlor plants.

M. ánnua.—Ten Weeks' Stock.—Intermediate Stock.—This is an annual, and has produced a great number of varieties, some of which are even biennials, differing in habit, time of blooming and character of the leaf, while in color there is a great range of shades. Some of the German florists devote great attention to the Gilliflower, and have produced several distinct groups, the seeds of which are sold in collections of ten to thirty-six varieties. In the larger collections there are so many shades so nearly resembling one another, that the smaller packages with distinct colors are preferable.

The Pyramidal-flowering Stocks are among the finest of the annual sorts; of these there are: the Large-flowered Pyramidal Ten-week Stock; Large-flowered Branching ditto; New Dwarf Large-flowered ditto. Other varieties of the Ten-week Stock are: New Dwarf Bouquet, New Large-flowered Lavender-leaved, New Giant, Dwarf Early-flowered, Branching Loose-spiked, Wall flower-leaved, Miniature, which is two or three inches high, and others.

The Emperor or Perpetual-flowering, Hybrid Giant

Cape or Corcadeau Stock, with all their variety of colors, are suitable only for the green-house or sitting-room; they do not flower the first season, and cannot be kept through our winters in the open ground.

William Cobbett, a celebrated English politician, in opposition to the government, left his country in disgust and settled on Long Island, N. Y., and amused himself in the cultivation of the soil. He was quite an enthusiast in this line, and published a book of some interest on the cultivation of vegetables, flowers, etc. In speaking of the cultivation of flowers, he says: "If I were to choose, amongst all the biennials and annuals, I should certainly choose the Stock. Elegant leaf, elegant plant, beautiful, showy, and most fragrant flower; and with suitable attention, blooms, even in the natural ground, from May to November in England, and from June to November here. The annuals are called the Ten-week Stocks, and of all these, there are, with a pea-green leaf, the red, white, purple, and scarlet; and then, there are of the same colors, with a Wall-flower, or sea-green leaf.

"Of the biennials there are the Brompton, of which there are the scarlet and the white, and the Twickenham, which is white. As to propagation, it is of course by seed only. If there be nothing but the natural ground to rely on, the sowing must be early; the earth very fine and rich. The seed is small and thin, and does not easily come up in coarse earth. If the plants come up thick, thin them when very young, and do not leave them nearer together than six inches. They, however, transplant very well; and those that have not place to blow in, may be removed, and a succession of bloom thus secured.

"If you have a green-house, glass-frame, or hand-glass, you get flowers six weeks earlier. The biennials are sown at the same time, and treated in the same way.

"They blow the second year; but if there be great dif-

ficulty in preserving them in the natural ground, through the winter, in England, what must it be here? Indeed, it cannot be done; and yet they are so fine, so lofty, and such masses of beautiful and fragrant flowers, and they continue so long in bloom, that they are worth any care and any trouble. There is but one way; the plants, when they get ten or a dozen leaves, must be put into flower-pots.

"These may be sunk in the earth, in the open ground, till November, [Long Island,] and when the sharp frosts come, the pots must be taken up and placed out of the reach of hard frosts, and where there is, however, sun and air. When the spring comes, the pots may be put out into the natural ground again; or, which is better, the balls of earth may be put into a hole made for the purpose; and thus the plants will be in the natural ground, to blow.

"In this country, they should be placed in the shade when put out again, for a very hot sun is apt to tarnish the bloom."

Thus much for Mr. Cobbet, but since his day the varieties have multiplied amazingly, many more varieties than any one would be likely to cultivate.

The double varieties of rich, distinct colors and pure white, greatly ornament the garden when grown in beds or masses. All the summer Stocks, except the early Ten-week, will be much stronger and flower much earlier if forwarded in hot-beds, transplanted into pots, and turned out into the ground in June.

MAURANDIA.

[Named in honor of *Dr. Maurandy*, the botanical professor at Carthagena.]

Maurándia Barclayána, is an elegant green-house, climbing perennial, but may be raised from seed, and brought forward in a frame, so as to flower profusely

from August to October, or till severe frosts later in the season. Plants may be had at most green-houses, at small expense, which, put out in the border with a little frame to which to attach their twining leaf-stalks, will be loaded with its rich purple, white, rose, etc., foxglove-shaped flowers, every day, through the season. There are a number of other varieties, all handsome. The plants will grow from five to ten feet high.

MEDICAGO.—MEDICK.

[A name applied to Lucerne, because it came from Greece to Media.]

The Lucerne, *Medicago sativa*, is cultivated as a forage plant. *M. lupulina*, or Nonsuch, is not rare as a weed, and a few are cultivated on account of the curious forms of their curved seed-pods. The flowers are not showy. Those enumerated here are annuals of easy culture.

Medicágo scutelláta.—Snails.—The seed-pod is neatly curled so as to resemble a small snail.

M. circináta.—Caterpillar.—Has its pod clothed with short stiff hairs, and it appears very much like a green caterpillar. *M. intertexta*, having the pod covered with spines, is called Hedgehog. The pods of these are sometimes placed in dishes of salad to cause surprise to those who are unacquainted with them.

MENTZELIA.

[Named in honor of *Mentzel*, a botanist of Bradenburgh.]

Mentzélia Lindleyána.—This is generally and incorrectly called *Bartonia aurea* in the catalogues. The name *Bartonia*, in honor of the late Doct. B. S. Barton, of Philadelphia, properly belongs to a small native annual of

the Gentian Family. A very pretty flowering annual from California, one foot high. The plant produces a profusion of showy flowers, of a fine golden-yellow color. Each bloom about two and one-half inches across. It delights in a sheltered sunny situation, and, if grown in a rich light soil, will bloom profusely. The plant requires to be raised as a frame annual, and to be planted in the border in June.

MERTENSIA.—SMOOTH LUNGWORT.

[Named for a German botanist, Prof. *Mertens*.]

Mertensia Virginica.—Virginian Cowslip or Lungwort. — An indigenous, hardy perennial, which occurs pretty commonly in the shady woods of Pennsylvania, and most of the southern and western States. Its flowers, which appear early in May, look like so many small, bright blue, pendulous funnels, each springing out of a prismatic, pentagonal, five-tooth calyx; flower-stems from one to one and one-half foot high. After flowering, the plant to appearance dies, and it is not seen until the following spring. This is one of the most elegant ornaments of the flower-garden in May. It is propagated by divisions of the roots, which are thick, fleshy, or tuberous. *M. maritima* and *M. Sibirica*, are elegant perennials, greatly resembling each other and considered by some as only varieties. They are among the most elegant ornaments of the flower-garden, in dry springs; but they require some care in keeping, unless in a soil almost entirely of sand. These species are sometimes placed under *Pulmonaria*, to which they are closely related. *Pulmonaria officinalis*—the Medicinal Lungwort—is sometimes cultivated. It is a native of Europe, in bloom from April to June, with clusters of red and blueish purple flowers, with spotted leaves; six inches high.

MESEMBRYANTHEMUM.—ICE-PLANT.

[From the Greek, meaning flowering at mid-day.]

Mesembryanthemum crystallinum.—Ice Plant.—Is about the only one of the many species cultivated in the border.

“ With pellucid studs, the Ice-flower gems
His rimy foliage, and his candied stems.”

This is a singular and very curious annual, with thick fleshy leaves, that have the appearance of being covered with ice-crystals. The stems of the plant are also studded with crystal gems, and have the appearance of rock-candy. The whole plant is peculiarly brilliant in the sunshine. It succeeds well in the border when forwarded in small pots, in light sandy soil, in a hot-bed. When the young plants have filled the pots with roots, they must be shifted into those of a larger size. They may be turned out into the border the first of July, or before, if the weather is very warm; they will continue to increase in size and beauty all the season. The plant is highly ornamental and curious, but there is not much beauty in the flower. Few green-houses, however small, are without the Ice-plant; from its glittering surface, it is sometimes called the Diamond-plant, *Diamond ficoides*, and Spangled-beau:—

——— “ Geranium boasts
Her crimson honours, and the Spangled-beau,
Ficoides. glitters bright the winter long.
All plants of every leaf, that can endure
The winter’s frown, if screened from his shrewd bite,
Live there and prosper.”—*Cowper*.

MIMOSA.—SENSITIVE PLANT.

[From the Greek, for *mimic*, as the irritable leaves imitate the sensibility of animals.]

Mimosa pudica.—Sensitive Plant.—A native of Brazil, and well-known for the extreme irritability of the leaves, which, when touched, immediately fold themselves to-

gether, and the petiole at the same time droops. The cause of this motion has been the subject of many curious speculations. "The most irritable part of the plant is in the foot-stalk, between the stem and the leaflets.

MIMOSA PUDICA.

During the night, they remain in the same state as when touched in the day-time; yet, if touched then, will fold their leaves still closer."

"Miller, in one of the earlier editions of his Dictionary, speaks of a Calabrian philosopher, who was driven mad by considering the mysterious nature of this plant; 'just,' continues he, 'as Aristotle is said to have flung himself into the sea, because he could not comprehend the ebbing and flowing thereof.'"

When any of the upper leaves are touched, if in falling

they touch those below them, these also will contract and fall, so that by touching one another, they will continue to fall for some time.

Many years since I was greatly interested in a bed of Sensitive Plants, which filled a frame four feet by ten. I set out the young plants in a hot-bed, where the heat was nearly spent, some time in May, about eight inches apart. The glass was kept on till the middle of June, when the plants were fully exposed. They continued to flourish until the bed was completely filled. It was a source of great amusement to myself and visitors to irritate this mass of plants, which was easily done, by giving the frame a gentle kick. The effect would be to cause every plant to drop its foot-stalks and close its leaves. If it was very warm, the foot-stalks would gradually rise, and the leaflets resume their expanded state; the plant is most irritable in the greatest heat. Dr. Darwin thus characterizes it: —

“ Weak with nice sense the chaste Mimosa stands,
From each rude touch withdraws her tender hands;
Oft as light clouds o’erpass the summer glade,
Alarmed, she trembles at the moving shade,
And feels alive through all her tender form,
The whispered murmurs of the gathering storm;
Shuts her sweet eye-lids to approaching night
And hails with freshened charms the rising light.”

In cloudy damp weather, or on the approach of storms, or in the damp of the evening and through the night, the foot-stalks fall, the leaflets close, and the plant appears to be in a state of repose. It is an annual, which, if started in a hot-bed, will flourish in the borders during the summer, but loses its sensitiveness in a great measure as cold weather approaches.

MIMULUS.—MONKEY-FLOWER.

[From the Greek for *ape*, in allusion to the gaping corolla.]

The species are showy plants of the easiest culture in almost any soil or situation. They are perennials in the green-house, where they are easily propagated from cuttings or from seed. In the open ground they are annuals, flowering profusely from seed the same season. I have known them to stand through the winter, when covered with ice and snow most of the season. The seeds are very small, and require considerable attention to get them to vegetate. I have known seeds, self-sown in autumn, to come up freely in the spring, commencing to flower in June, and continuing in bloom till October. They succeed best in a moist soil, partially shaded.

Mimulus luteus.—From this species, sometimes called *M. rivularis*, a great number of beautiful varieties have been produced. The flowers are tubular, with wide-spreading segments; the ground color, all shades of yellow, from light straw to deep-orange, beautifully spotted or blotched with crimson or scarlet. On some varieties there is a large blotch or spot on each segment of the corolla, while the throat of the plant is beautifully spotted or mottled. It is a flower very much given to sporting. The following remarkable account of the success in the cultivation of this plant is detailed in an English paper:—

“This plant delights in a rich, moist soil, mixed with sand, and if it be a little shady it is beneficial; the colors of the flower are better, and the plant more vigorous. A free supply of water is necessary, in order to grow it successfully. I have had a single plant grow three feet and one-half high, and be six feet in circumference, producing a vast profusion of flowers, most amply repaying the little extra attention paid to its culture. When I obtained this plant at first, I was instructed to grow it in a small,

shallow pond, keeping the roots immersed in water. I was told it would there succeed far better than by any other method; but in this particular I find it very much to the contrary. A soil as above described, and a good supply of water in dry weather, are all that is required. I had a plant grown in a pot this summer, the size above particularized. The species and all its varieties are readily increased by taking off rooted shoots, or by cuttings. Seed sown in spring, and the plants pricked out into a bed of rich soil, will flower by July, and continue through the season. The impregnation of these kinds, with any or all of the others, produces a pleasing and interesting variation of flowers." A variety of this, called *M. variegatus*, is a delicate flowering one, and other varieties have been called species under the names of *M. punctatus*, *M. speciosus*, *M. rubinus*, etc.

M. cardinális.—This is another very ornamental species, with brilliant scarlet flowers, with varieties having rose or orange-colored blossoms. It requires the same treatment as the other species, and is equally rapid in its growth. I have not, however, ever raised plants as large as have been described.

M. moschátus.—Musk Plant.—This well-known *Mimulus* is cultivated on account of the musky odor of the plant, rather than for its flowers, which are yellow and much smaller than in most of the species. It delights in a rich soil, and if the summer proves dry, the plant requires a free supply of water; if deprived of this, it will be weakly, and produce but few flowers. When grown in such a soil, and well attended with water, a plant has been known to grow two feet high. To effect this, the suckers, as fast as they appeared, were pinched off, so that the strength of the plant was thrown into a single stem; the result was, an upright pyramidal plant, two feet high, clothed with blossoms from bottom to top.

The general habit of the plant when left to itself, is weak and trailing. It is, therefore, a very pretty plant for a hanging vase. The shoots will push rapidly, and hanging gracefully down the sides with its numerous yellow flowers, presents a very pleasing appearance, perfuming the air to a considerable distance.

All the varieties and species require the same care in cultivation as has been described; always remembering that in our climate the mid-summer's sun is most too powerful for them if fully exposed to its influence. A situation, therefore, should be selected where the plants will have sun only in the morning a few hours, and in the afternoon the same.

MIRABILIS.—MARVEL OF PERU

[Latin word, signifying *wonderful*.]

Mirabilis Jalápa, or common Four-o'clock of the gardens, is a very ornamental plant for borders. When cultivated it sports into many agreeable varieties. It is considered and treated as a tender annual. It may, however be planted the last of April, and bears a profusion of flowers in August and September. Although treated as an annual, it is, in its native country, a perennial, with the rest of the genus. Its large tuberous roots, which, if taken up and preserved during winter, like the Dahlia, will flower perennially. The flowers are red in its native country, the West Indies; but in the garden are to be found white, yellow, various shades of red, and variegated, in the same flower. Stem from two to three feet high.

M. longiflora, like the last, is handsome and fragrant. The flowers are pure white, with purple below, standing on long tubes; in July and August. This species is not so common as *M. Jalapa*. The hybridization of these two species has brought forth new varieties most remark-

ably and singularly colored. The same plant and even the same branch produces very different flowers, sometimes of one color only, and others striped or parti-colored. In some of the rarer varieties, that are distinguished by the elongated tube of the flower, are recognized the traits of *M. longiflora*. These produce but very few seeds, and yet they give us too perfectly distinct kinds, which are very remarkable, and, perhaps, an exceptional example of the fruitful products obtained by hybridization. Among other names for this admirable flower, it is known as World's Wonder, Evening Beauty, Afternoon Ladies, and Four-o'clock, because the flowers open about that time in the afternoon. The French call it *Belle de nuit*, or the Beauty of the Night. The flowers continue through the night and perish before noon, the next day, if very warm. This is an old-fashioned border-plant, but none the less beautiful on that account. If planted three feet apart, they will grow into quite a bush before cold weather; but, if huddled together, as we often see them, into a small space, they lose half their beauty.

MOMORDICA.

[From *mordeo*, to bite; its seeds having the appearance of having been bitten.]

Momórdica Balsamína, or Balsam Apple, is cultivated as an object of curiosity, and for its fruit, which is sometimes used for curing wounds. It has fleshy, ovate fruit, remotely tubercled in longitudinal rows; smooth in the other parts; red when ripe, bursting irregularly, and dispersing the seeds with a spring.

The fruit is used in Syria for the same purpose that it is here. It is cut open when unripe, and infused in sweet oil, and exposed to the sun for some days, until the oil has become red. This, dropped on cotton, is applied to a

fresh wound. The fruit here is not picked until ripe, and then preserved in spirits. An annual, native of India; a climber, four feet high; flowers yellow, in July and August; time of planting in May.

M. charántia.—Balsam Pear.—Like the last a tender annual, the same height and color of flower; growth and habits the same. Both species must be supported with brush four feet high. The fruit of this is pear-shaped, otherwise somewhat similar to the first described species.

MONARDA.—HORSE MINT.

[In honor of *Monardes*, a Spanish botanist of the 16th century.]

Monárda dídyma.—Oswego Tea.—A perennial, native of North America. A well-known garden plant, three feet high, with brilliant scarlet flowers; from June to August. Its familiar names are Red Balm, Crimson Balm, or Bergamot. The leaves are sometimes used as a substitute for tea. *M. fistulosa*, has light-purple flowers, and not so handsome as *M. didyma*, but possess the same properties. There are also many other species, which, in large collections, would be interesting.

MUSCARI.—GRAPE HYACINTH.

[From *moschos*, musk, on account of the odor of the flowers.]

Muscári moschátum.—Grape Hyacinth.—Is a pretty, hardy, bulbous-rooted plant, with dark, light-blue or white flowers, having a strong smell of musk.

M. comósum, in a variety called *monstrosum*, is the Feathered Hyacinth, a most ornamental, hardy border-flower; the bulb is large, ovate and solid; the leaves narrow, a foot long, with obtuse points; the flower-stalks rise

MOSCARI MOSCHATUM.

nearly a foot and one-half high; they are naked at the bottom for about seven or eight inches, above which the panicles of flowers begin, and terminate the stalks. The flowers stand upon the peduncles, which are more than an inch long, each sustaining three, four, or five flowers, whose petals are cut into slender filaments, like hairs; they are of a purplish-blue color, and, having neither stamens nor germs, never produce seeds.

M. botryoides is another pretty species, with varieties of blue, white, and flesh-colored flowers, all small, bulbous-rooted plants, obtained from Holland as species of Hyacinths, with solid bulbs, producing spikes of pretty, bell-shaped flowers a foot high, flowering in June. All are hardy, and may be planted in any good garden soil, about three inches deep, five or six roots in a group; they need not be taken up oftener than once in three years, and then should not be kept long out of the ground.

MYOSOTIS.—FORGET-ME-NOT.

[So named from Greek words, signifying a mouse's ear.]

Myosotis arvensis, is a well-known plant, bearing delicate blue flowers, with white and yellow eyes, in little spikes or clusters. There is also a variety with white flowers. In bloom most of the season; six inches high. It flourishes best in a moist shady place. Propagated freely from seeds. Autumn sown plants succeed best.

NARCISSUS.—DAFFODIL, JONQUIL.

[Named from the youth *Narcissus*, who, as the poets tell us, was changed into this flower.]

“No gradual bloom is wanting ; from the bud,
First born of the spring, to summer's murky tribes :
Nor Hyacinths of purest virgin white,
Low bent, and blushing inward ; nor Jonquilles
Of potent fragrance ; nor Narcissus fair,
As o'er the fabled fountain hanging still.”

Mostly hardy, bulbous-rooted plants, many of them too well known for description ; all suitable to ornament the garden. They may be planted in October or November, in any good garden soil, about three inches deep, and need not be taken up oftener than is necessary to separate the roots when they become matted together, as they will in three or four years.

Narcissus biflorus. — The Two-flowered Narcissus, Pale Daffodil, or Primrose-peerless, is of a pale-cream color, with a yellow cup in the center ; a very pretty species.

N. Pseudo-Narcissus, is the Common Daffodil ; there are many varieties ; with a white flower and yellow cup ; a yellow flower and deep-golden cup, a double flower, with several cups, one within another ; the Great Yellow Incomparable, double and single. The double variety is called Butter and Eggs Narcissus, by the English, and by the Dutch, Orange Phoenix, and is considered the handsomest of all the varieties. It has large and small petals ; the large, lemon color, filled in with small orange-colored ones. All these varieties flower the last of April.

N. odorus.—The Great Jonquille, is yellow ; the scent of it so powerful as hardly to be endured.

N. Jonquilla.—The Common Jonquille, is yellow, and has a cup deeper colored than the petals. There is a variety with double flowers.

N. bulbocódium.—The Hoop-petticoat Narcissus.—Called in France Medusa's Trumpet, has the cup two inches long, very broad at the brim. Of this, there are a number of varieties; one, pale citron color; another darker and larger; both curious and pretty; flowers early in May.

N. poéticus, or Poet's Narcissus, has a snow-white flower, with a pale-yellow cup in the center, fringed on the border with a circle of reddish-purple. It is sweet-scented; in flower last of May. There is a variety with double flowers; these are the most desirable.

N. polyánthos.—The Polyanthus Narcissus is the most desirable of all; but, alas! it is not so hardy. It requires to be planted five inches deep, and to be protected, to do well. The bulbs are quite large. The blossoms are produced the last of May, in trusses of from six to twenty flowers. There are many varieties of this flower. Some have entirely white flowers; others, white, with yellow, citron, or orange cups; and entirely yellow or orange-colored flowers. There is a variety with double flowers. This species of Narcissus succeeds well when grown in pots; or it is fine for flowering in glasses.

NEMOPHILA.—LOVE-GROVE.

[From the Greek words for *a grove* and *to love*.]

Nemóphila insignis.—Showy Love-grove.—This, as well as the other species, is an annual, from California. It grows with a very spreading habit, its numerous weak branches resting on the soil and throwing up its bright blue flowers on stems about six inches long. The whole plant is of a pale-green, and is clothed with somewhat bristly hairs. All the species are disposed to sport, and this one has given varieties in which the flowers are white with blue stripes, and blue marked with white. All are suited for

the front of the border, and are beautiful annuals for pots.

N. atomária.—Dotted Love-grove.—The growth is the same as the preceeding, with flowers which are white, dotted with dark-purple. It is the original of several of the garden varieties, among which are : *N. discoidalis elegans*, in which the flowers are of a light chocolate, or reddish-maroon color, conspicuously and distinctly bordered with white, and *N. discoidalis vittata* with nearly black flowers, broadly margined with white.

N. maculáta.—Spotted Love-grove.—Similar in habit and size of flowers to *N. insignis*, but the white flower has a dark-violet blotch on each one of the petals. *N. aurita*, with purplish-blue flowers, is sometimes cultivated.

NICOTIANA.—TOBACCO.

[Named for *Jean Nicot*, who first introduced the plant into France.]

Nicotiána Tabácum.—Tobacco.—This is cultivated in fields for its narcotic leaves. The flower is somewhat showy, and it may be grown in the garden as a curiosity, as well as for its leaves, which are useful to destroy insects. Its decoction, the powder of the leaves, and the smoke produced when they are burned, are all used by the gardener in freeing his plants from insects. It would be well if the plant were raised only for the destruction of insects, rather than, as I fear is the cause, for the destruction of human beings.

N. longiflóra.—Long-flowered Tobacco.—Star Petunia.—An annual species, with much the habit of a Petunia, with pure white flowers, having a long tube and a star like limb to the corolla.

NIEREMBERGIA.[Dedicated to *Nieremberg*, a Spanish Jesuit.]

Nierembérghia grácilis.—Slender *Nierembergia*.—A charming, half-hardy perennial, from South America. The stems are exceedingly slender and much branching, and bear all summer a profusion of flowers, which are an inch across, with a very slender tube; pale-lilac, with yellow throat.

N. filicaúlis.—Thread-stemmed *Nierembergia*, similar to the foregoing, but with a more branching and spreading habit and larger flowers, white or lilac, with violet streaks. *N. alba*, a splendid white; *N. intermedia*, deep-purple, with yellow eye; and *N. albiflora compacta nana*, dwarf, with compact growth, and white flowers with yellow eye, are among the garden varieties.

NIGELLA.—FENNEL-FLOWER.[Name from *niger*, black, from the color of its seed.]

Nigella Damascéna, is known by a number of names; Fennel-flower, because the plant has fine-cut leaves like fennel, Love-in-a-mist, because the flower is enveloped in its finely divided involucre, Devil-in-the-bush, because the flower is partly concealed in its fine-cut foliage, that evil character being supposed to hide himself as much as possible from public view. This species is a native of the South of Europe, one and one-half foot high; flowers light-blue, with a white variety. The seeds of this and *N. sativa*, are sometimes used in cookery, instead of more expensive aromatics. They are also said to be extensively used in the adulteration of pepper. The double varieties are handsome border-annuals, requiring but little care in their cultivation. In flower from July to October.

NOLANA.

[A diminution of *nola*, the Latin for a *little bell*.]

Nolána prostráta.—Trailing *Nolana*.—This, with the other species, is from South America; all are handsome annuals. The stems are prostrate, much branching, and covered with a profusion of flattish bell-shaped flowers, of a fine blue streaked with black; from July to September. It may be sown early in the spring in the border.

N. atriplicifolia.—A new and very handsome flowering annual, of prostrate growth, or, if grown in masses, will rise to half a foot high. The flowers are produced most numerous, and give a very pretty appearance. The plant deserves a place in every flower-garden. It is a desirable plant to grow in order to hang pendulous over the edge of a vase, pot, etc. The flowers have some resemblance to the Dwarf *Convolvulus*, fine azure-blue with a white center, the bottom or tube, of the flower, yellow.

OCYMUM.—BASIL.

[Said to be derived from the Greek, meaning *to smell*, on account of the powerful odor of the plants.]

Ocymum Basilicum.—Sweet Basil.—This highly odorous plant is frequently known in country gardens, under the incorrect name of *Lavender*. The true *Lavender* is a half-hardy shrub. Sweet Basil is sometimes used in cookery. It is a very agreeable plant to have in the garden. The seed should be sown in May.

ÆNOTHERA.—EVENING PRIMROSE.

[Name derived from the Greek for *wine* and *chase*, on account, it is said, of the roots of some species having been eaten as an incentive to wine.]

“A tuft of Evening Primroses,
O'er which the wind may hover till it dozes;
O'er which it well might take a pleasant sleep,
But it is ever startled by the leap
Of buds into ripe flowers.”

A large genus of which many species are indigenous to America, and it includes annuals, biennials, and perennials. The flowers of some species open only towards night, hence the name Evening Primrose; while others open in broad sunshine. In a strictly botanical classification, the species mentioned under *Godetia*, would come here. All the species succeed in a light rich soil.

Ænóthera biennis.—Common Evening Primrose.—This is a common plant, even a weed, everywhere in this country. There are many varieties of it, differing in the size of the flowers, hairiness of the plant, etc. One of these, under the name of *Æ. grandiflora*, is cultivated. It grows about four feet high and has large yellow flowers, which open at night-fall.

Æ. Missouriénsis.—Missouri Evening Primrose.—A native of Missouri and Texas, with a large fleshy perennial root, and prostrate spreading stems, which bear ash-colored leaves and a succession of large yellow flowers, which are from four to six inches in diameter. The seed-pod is large with broad wings, and the species is sometimes called *Æ. macrocarpa*.

Æ. speciósa.—Handsome Evening Primrose.—Has perennial roots, with stems one and one-half foot high; white and fragrant flowers, which turn rose color in fading.

Æ. noctúrna.—Night-smelling Evening Primrose.—An elegant half-hardy biennial from the Cape of Good Hope. Flowers profusely the first season, and may be

considered and treated in open air culture as a hardy annual; it has a succession of yellow flowers from July to October. Two feet high.

Æ. tetráptera.—White-flowered Evening Primrose.—A very beautiful, prostrate-growing, hardy annual from Mexico. One foot high, with a succession of pure white flowers from July to September, which make their appearance after the sun has descended below the horizon, and perish before it rises in the morning.

Æ. longiflóra, an elegant biennial, if the roots can be preserved through the winter, but generally cultivated as an annual, with uncommonly large and showy yellow flowers from July to October. A native of Buenos Ayres. Three feet high.

Besides these there are cultivated: *Æ. bistorta*, an annual with small yellow flowers, with a purple eye; *Æ. acaulis*, a prostrate white-flowered species from Chili; *Æ. Lamarckiana*, a tall species with large yellow flowers; and others. All the species are propagated without difficulty. The annuals by seed, and the perennials by seed or from divisions of the root.

ORCHIS.

[The ancient Greek name.]

We have only one species of Orchis proper in the United States, those which are popularly so called belong to the genus *Platanthera*.

Orchis spectábilis.—Showy Orchis.—A low species, with a root of fleshy fibres from which are produced two fleshy oblong leaves and a flower-stem about six inches high, bearing several white and pinkish-purple flowers, in May. For remarks on culture, see *Platanthera*.

OROBUS.—BITTER VETCH.

[From the Greek, *to excite*, and *an ox*; that is to say, a food nourishing for cattle.]

Orob. vèrnus.—Spring Bitter Vetch.—Very early flowering, flowers large, handsome, singular in the different shades of colors, the upper part of the large petal is purple with blood-red veins, the wings are blue, the keel blue, tinged with green, the color changes as the flower advances, and becomes finally altogether blue.

O. niger, is a handsome border-plant, with very dark-purple flowers, in June, July and August; two feet high; stem very much branched; leaves in six pairs; racemes one-sided, many-flowered.

O. atropurpùreus, has fine purple flowers, in a dense one-sided, many-flowered raceme. *O. formosus* is also beautiful, a native of Mount Caucasus; flowers large, fine purple. *O. Fischeri* is another handsome purple species. *O. tuberosus*, a native of England, is also of a fine species, remarkable for its tubecous roots, which the Scotch Highlanders chew when dried to give a good flavor to their whiskey; they also assert that by the use of them they are enabled to bear hunger and thirst for a longer time without suffering. In Holland and Flanders they are dried, roasted, and served at table like chestnuts. In England the plant is called the Wood Pea or Heath Pea. *O. luteus* is considered one of the handsomest of the papilionaceous family. Several other species are well deserving notice, they are easily propagated by dividing at the root or by seed. A sandy soil suits them best.

PÆONIA.—PEONY.

[From *Pæon*, an eminent physician of antiquity]

This interesting genus contains many magnificent flowering plants, embracing more than one hundred varieties and species, all of which are desirable for the border, and perfectly hardy, standing over winter without protection. Most of the genus are herbaceous. *P. Moutan*, and its varieties, are shrubby; their roots are fleshy, but not so distinctly tuberous as those of the herbaceous species. All require nearly the same treatment. The time for dividing the herbaceous sorts is in September or October; the whole stool should be taken up. With a sharp knife it may be divided into as many pieces as there are tubers with buds; it is necessary that a bud be preserved on each tuber. At this season of the year the Peony is in a dormant state; the buds are just beginning to show themselves, and, if delayed long after the first of October, the new fibres begin to push, and the plant will be less likely to flower the coming spring. The Peony should not be disturbed in the spring, unless it be very early, as it does not succeed well when transplanted at that season, without a ball of earth adhering to the roots. The tubers should be planted in a deep, rich, light, garden soil; the crown, or bud, should be placed three inches below the surface. The species of the Peony have been so much changed by the florist, that it is difficult to draw the line of botanical distinction with any degree of accuracy; and, for floral purposes, it is not necessary.

Pæonia officinalis.—This is the old Double Crimson Peony, familiar to every one as a household friend. When first introduced into Antwerp, two hundred and fifty years ago, the plant sold for twelve crowns,—a large sum for those days.

The varieties of this species are *P. rosa*, with rose; *P. blanda*, with blush; *P. rubra*, with red; *P. carneus*,

with flesh-colored; *P. albicans*, with white flowers; and many others. This class of Peonies flower the last of May and the first of June.

P. tenuifolia, or Fennel-leaved, with fine leaves like fennel; in flower the first of May; it is of a deep-crimson color, and, when in bud, very beautiful. There is a double variety of this sort.

P. albidiflora.—The White-flowered or Chinese Peony, is the parent of many fine varieties, such as *P. Sibirica* and *P. Whitleyi*, with white flowers; *P. Tartarica*, flesh-colored; *P. Humei*, lilac-red; *P. Reevesii*, lilac-rose; *P. Pottsii*, crimson, all old varieties. After these come a succession of splendid sorts, viz.: *P. prolifera tricolor*; flowers in clusters, ground petals pure white, with a globular mass of small yellow petals in the center with the crimson stigmas protruding; *P. festiva*, large, full, double pure white flowers, delicately striped or touched with purple; *P. sulphurea*, with large petals of a light sulphur color; *Duchesse de Nemours*, with a multitude of other beautiful varieties.

P. paradóxa.—A purplish-red species from the south of Europe, which has produced several varieties, such as *P. Grevillei*, *P. compacta*, *P. fimbriata*, etc. *P. decora* and *P. corallina*, are species with large, single, purplish-red and red flowers.

P. Moultan, or the Tree Peony and its varieties, are magnificent plants, with flowers of various shades of red, lilac, light and dark-purple, and white, measuring from six to eight inches in diameter; all are of easy culture, very hardy, requiring but little protection. The variety *Banksii*, is one of the most common kinds. I have had a plant of this, with from seventy to eighty flowers upon it at one time, presenting a splendid sight; the flowers vary on the same bush, some of them will be very double,

of a light-pink color, fading, as they open to a blush or white towards the edges, and at the base deepening to purplish-red. Variations also take place in the size of the flowers, according to the strength of the plant. The shrub is rarely seen more than three feet high, but it becomes very large in circumference, bushing out from year to year, and growing into a regular, hemispherical shape. It is in flower the last of May.

P. papaverácea, or Poppy-flowered Tree Peony, is also a splendid plant, having large, single, white flowers, sometimes ten inches in diameter. The petals are flat, with a deep purple spot at the base of each. These spots are rayed about an inch and one-half long, from the center, forming a rich, brilliant star in the middle of the flower; the bright yellow stamens add to the beauty of the flower, forming a fine contrast with the purple and pure white. It is a very desirable plant. There is a variety of this, with semi-double or double flowers. *P. papaveracea rosea*, is a variety with fine rose-colored flowers, and there is one of the same color with double flowers; not very common.

P. Elizabeth, is one of the most splendid and rare varieties. The flowers are of the largest size, very double; color carmine, shaded with crimson. *P. Grand Soleil*, has large, double, white flowers, shaded with pink. A great number of splendid varieties have recently been introduced from France and Germany. Some of the new sorts raised by M. Guerin Modeste, of Paris, are the following:—

Charles Rouillard.—Vigorous; leaves yellowish-green; flowers very large, nearly full, brilliant fiery rose, softer rose towards the edge; a magnificent variety.

Henri Pingard.—Vigorous; leaves glaucous green; flowers very large, nearly full, rose amaranth towards the base of the petals, pearly white at the top.

President Brongniart.—Vigorous; leaves glaucous green, tinted yellow; flowers large, well raised in the center, rose amaranth, softer towards the outside, velvety-white, very lightly tinted with carnation towards the center; a superb variety, of which the flowers are of excellent form. This variety was offered for sale in 1863.

Du Mont de Courset.—Vigorous; leaves deep-green; flowers large, nearly full, clear satiny amaranth, of uniform shade; a fine variety, not yet distributed. The same gentleman has produced a great number of beautiful seedling herbaceous varieties. Other florists in Paris and elsewhere in France, have raised many splendid seedlings of Tree Peonies, as well as of the herbaceous sorts. To these must be added those introduced direct from China, by Mr. Fortune. Several of these Tree Peonies remain as yet without an equal, in respect to the regularity of their form and the beauty of their colors.

“The propagation of Moutans, upon their first introduction, was a matter of considerable difficulty. They have, consequently, borne a high price in the nurseries; and though they are now multiplied extensively, yet, with all the experience which has been acquired, the obtaining strong new plants is a tedious operation. All modes of propagation have been tried with them, viz.: by seeds, suckers, grafts, cuttings, and layers. They rarely produce seeds that are perfect, unless the impregnation of the stigmas is properly attended to. Most of the seedlings of late production are from seeds, grown from fertilized flowers. Suckers, or rather root shoots, may sometimes be severed successfully from large old plants, and such soon become strong enough to flower. If the work is carefully executed, grafts of the rarer sorts may be fixed on pieces of the roots of the more common. These pieces of roots must be established in pots, and in the spring, a bud with a little wood attached to it may be joined to the

root in the manner of a graft, a slice of the root being taken off to receive the piece intended to be united with it. When the fitting is completed, it is to be covered with clay, taking care to leave the eye exposed; the pot must be kept covered with a hand glass.

“Some nurserymen have succeeded in grafting the Tree varieties on the roots of the herbaceous sorts. To this end, strong roots of herbaceous varieties are procured; these are kept growing and then grafted, a branch with one or more buds being inserted on the side of the root. The grafted roots are put under bell-glasses, or in frames placed by preference in a north aspect, and the grafts soon become united and commence to grow, promptly producing roots for themselves. The grafting is performed from the middle of July to the middle of September. Ripe cuttings, taken off in August and September, with a small piece of old wood at the end, and planted against the side of garden pots, in a mixture of loam, leaf-mould, and sand well drained, and protected from the air by glasses, will succeed. The pots must be secured from frost in the winter, and shaded in summer; in the spring, the progress of the cuttings may be assisted by being placed in a frame with a gentle bottom heat. But the more general plan of multiplying Moutans is by layers, the shoots for which purpose should be planted in protecting pits, or in sheltered borders, which should be covered with mats, spread over hoops; the branches, when laid down, require a longer time to emit roots, than is usual with the common shrubs, and the largest are seldom fit to be removed until they have remained two years attached to the stool. The shoots, when laid down, require a longitudinal slit or tongue in the inner part of the bend; and this must be made with care, for, being brittle, the wood is liable to break. The tongued part should be bedded in a mixture of loam and sand.”

I have found that the Tree Peony flowers stronger when well protected in autumn by a liberal coating of manure about the roots, and the top protected with straw.

PAPAYER.—POPPY.

[Name of obscure derivation, by some said to be derived from the Celtic *papa*, thickened milk, in allusion to the milky juice of the plants.]

“And thou, by pain and sorrow blest
 Papaver, that an opiate dew
 Conceal'st beneath thy scarlet vest,
 Contrasting with the Corn-flower blue;
 Autumnal months behold thy gauzy leaves
 Bend in the rustling gale amid the tawny sheaves.”—*Mrs. C. Smith.*

This genus is well known as furnishing a valuable medicine as well as for its ornamental plants. Opium is the dried juice of *Papaver somniferum*, from which Laudanum, Morphine, etc., are prepared. The seeds of the Poppy are without narcotic properties, and are used as food. The Poppy produces a great number of seeds, for which reason Cybele, the mother of the gods, is represented crowned with Poppy-heads as a symbol of fecundity. The species of this genus are all showy, with large brilliant flowers.

Papáver somníferum.—Opium or Garden Poppy.—This, in its natural state, has large single flowers, which soon fall away and are succeeded by a capsule, which, when wounded, exudes a milky juice that, on drying, becomes Opium. The double varieties, or Hybrid Poppies, are very ornamental. *Picotée Poppies*, are improved varieties with white flowers, spotted or splashed with crimson, scarlet, or purple, and very handsome and double. The Peony-flowered have very large, full double flowers, of rich colors and shades of crimson, purple, scarlet, rose, white, variegated, bordered, etc. A bed of these

Poppies makes a grand show. All the varieties are easily cultivated from seed. None of them can be transplanted with success.

P. Rhæas.—Corn Poppy or African Rose—A common weed, among grain on gravelly soils, in England; but, in its double and semi-double varieties, it is one of the handsomest of garden annuals, sporting into different varieties of scarlet, crimson, purple, pink, white, variegated, and parti-colored flowers, continuing all summer in bloom. The odor of the flower renders it unpopular. The flowers are exceeding beautiful and delicate. The single variety of the common kind is of a bright scarlet, with a deep purple eye in the center, which the poet supposes to be upon the look-out for Ceres:

“ And the Poppies red,
On their wistful bed,
Turn up their dark-blue eyes to thee.”

P. orientális.—Oriental Poppy.—This is a magnificent perennial, worth all the rest of the Poppy tribe. Its large, gorgeous, orange-scarlet flowers, display themselves in the month of June. The bottoms of the petals are black; the stigma is surrounded with a multitude of rich purple stamens, the anthers of which shed a profusion of pollen, which powders over the stigma and the internal part of the flower, giving it a very rich appearance.

The flower-stems are rough, three feet high, each one bearing a single, solitary flower, five or six inches in diameter. A clump, with twenty or thirty of these flowers, makes one of the most conspicuous and showy ornaments of the garden. Leaves are rough, pinnate, serrate. Propagated by dividing the roots, which should be done as soon as the foliage has died down in August, as it commences growing again in September, and throws up leaves which remain during winter, it being one of the most hardy plants. If division be deferred until spring, if it blooms at

all, the flowers will be weak. It may also be propagated from seed, but does not commonly flower until the third year. A native of Levant.

P. bracteatum.—Bracted Poppy.—A native of Siberia; is another superb perennial, very much like the last. The flowers are of a deeper red, and the only essential difference is in the leafy bracts, by which the flowers are subtended. Propagated in the same way; with us, it has not flowered so freely. There are also a number of other species and varieties of perennial Poppy, as *P. nudicaule*, from Siberia, with two or three varieties with yellow, and one with scarlet flowers, one to one and one-half foot high.

PELARGONIUM.—GERANIUM.

[From the Greek for *Stork*, in reference to the beak-like seed-pod.]

Under the article *Geranium*, the principal distinctions between *Geranium* proper and *Pelargonium* are given. The plants of both genera are popularly called by the same name—Geranium. There are many species in cultivation, but these have become so mixed by hybridizing and crossing, that in many cases their identity is obscured. *Pelargonium peltatum*, is the trailing Ivy-leaved Geranium; *P. zonale*, is the parent of all the Horse-shoe Geraniums; *P. inquinans*, is probably the original of the scarlet varieties; *P. capitatum*, is the popular Rose-Geranium. In the present place we treat them only as florists varieties, without reference to a botanical nomenclature.

Scarlet Geraniums.—The Common Scarlet Geranium is familiar to us all, and is deservedly a general favorite. Cowper speaks of it, in describing the inhabitants of the green-house:—

—“Geranium boasts
Her crimson honours.”

Some of the varieties are quite fragrant and emit an agreeable odor, when lightly rubbed with the finger; and a person approaching a Geranium, almost mechanically rubs or plucks a leaf for a perfume; or with some species, for its soft velvety surface.

“ And genteel Geranium
With a leaf for all that come,”

seldom fails of obtaining notice and admiration, notwithstanding it may be surrounded by the most curious exotics. Nothing can exceed the beauty and brilliancy of a collection of Dwarf Scarlet Geraniums, either in beds, or in pots. If removed into a warm conservatory in November and a little water given them until the middle of December, when they commence growing, they will flower from January until April. They are easily raised from cuttings, which, if started in February, will make good plants for summer planting.

Gold and Silver Variegated Geraniums.—In this section the leaves are margined with white and yellow, the flowers being pink, carmine, and scarlet. They are always comparatively rare, being somewhat difficult of propagation, though equally hardy with the common scarlet sorts when once in a state of growth. For striking effect in the flower-garden, parlor, or conservatory, they are unequalled. *Alma*, scarlet flower, leaves white margined; *Bijou*, scarlet-crimson flowers, silvery edged leaves; *Brilliant*, deep scarlet, free-flowering, very effective; *Fairy Nymyeh*, silver foliage, bright scarlet flowers; *Golden Chain*, golden variegated foliage, cerise flowers; *Mountain of Snow*, pure white margin, extra fine; *Golden Attraction*, red zone, sulphur margin; *Silver Chain*, silver-edged foliage, rose flowers.

Zonale or Horse-shoe Geraniums.—The following are a few of the named varieties; *Crystal Palace*, dwarf-scar-

let, extra; *Christina*, pink, extra fine; *Stella Nosegay*, dark scarlet; *Bouquet*, large truss, bright scarlet; *Pretty Susan*, rosy salmon; *Mary Hay*, large carmine; *Mad. Vaucher*, pure white, extra; *Lucy*, crimson, fine bedder; *Ball of Fire*, brilliant scarlet; *Sheen Rival*, cerise scarlet; *Galanthæflora*, white, crimson disc.; *Gen. Williams*, carmine-scarlet; *Ossian*, violet, pure, new; *Fire King*, dwarf-scarlet; *Paul L'Abbe*, rosy salmon; *Pauline*, crimson-scarlet; *Cheapstead Beauty*, carmine, extra; *Hendersonii*, pure white; *Model Nosegay*, crimson-scarlet; *Helen Lindsey*, deep rose.

New hybrid sorts appear every year. The greatest difficulty is, to know what varieties out of the multitude to select for bedding. The scarlets are the most effective. An oval bed of these, with the tallest sorts in the middle and the lowest growing in front, margined with a dwarf silver-edged variety, is a grand sight when in full bloom, as they will be from June to November, if properly cared for and well supplied with water if the season is dry. A circular bed, or any fanciful shape, will look well; but an edging of turf or box is necessary to give a complete finish to these groups; or, if planted in beds on a fine lawn, it will be an improvement.

There are many other kinds of *Pelargonium*, but they are not suitable for cultivation in the garden, but splendid for the green-house or conservatory, in their almost endless varieties, where they flower profusely from March to June. Some of the sweet-scented species and varieties are desirable for the sake of their delightful fragrance, rather than for their flowers. When planted out, they make a vigorous growth, if not nipped to death by the passers by. I was deeply affected in a recent visit to our State's prison as I passed through the workshops. I noticed a sweet-scented *Geranium* in a window by the work bench of one of the unfortunate workman. The plant

was of considerable size, but it had been so often robbed of its leaves that there were none on the bush much larger than my finger nail. I took the liberty to help myself to one of these small leaves. It is against the regulations of the prison to hold any conversation with the prisoners; but in this case, the owner of the plant, by the expression of his countenance, gave me to understand, more forcibly than he could in words, the satisfaction he felt, in the notice I took of his plant. He looked me full in the face, with an air of thankfulness and pleasure, to find that there was one in the world to sympathize with him in his love for this solitary plant, which, no doubt, was a great solace to him in his confinement. I thought how terrible must be, the punishment to one who has a taste for these beautiful creations of God, to be restrained from the liberty of roaming abroad to view them in all their delightful variety and profusion. "Poor prisoner," I inwardly exclaimed, "were it not for your crimes and the sins of others, earth would indeed be a paradise once more."

A bouquet can hardly be called complete without a few leaves of the Rose-Geranium. There are quite a number of varieties of the sweet-scented Geranium, such as the rose, lemon, musk, and many others.

PENTSTEMON.

[From Greek words, signifying *five* and a *stamen*, because of the conspicuous imperfect fifth stamen.]

Beautiful, herbaceous plants, peculiarly American, abounding in the West and South-west of our vast country, and in Mexico. The flowers of all the species are more or less bell-shaped, racemes or spikes. The colors are scarlet, purple, blue, lilac, and parti-colored. Some of the spe-

cies are hardy and stand our winters with a little protection, while others are half-hardy and require the protection of frames.

Pentstémon Murrayanus.—Murray's Pentstemon.—A perennial plant, a native of Texas, about three feet high, producing spikes of numerous flowers, of a rich shining scarlet color; each flower is an inch and one-half long, or upwards. It is a most splendid flowering plant. A single spike has been known to produce upwards of fifty blossoms. This is an English description; here it is half-hardy.

P. Cobæa.—Cobæa flowered Pentstemon.—This is a very showy perennial species, producing paniced spikes of numerous pale-blue flowers, which have a most showy appearance. The flower-stems rise about two feet high; half-hardy.

P. Richardsóni.—Richardson's Pentstemon.—A hardy perennial from Oregon, which grows to the height of eighteen inches; flowers in July and August, of a pinkish-purple color. It does not admit of division of the root, and should be increased by cuttings, which readily strike root about mid-summer. Most of the species must be treated in the same way, or raised from seeds.

P. speciósus.—Showy Pentstemon.—This beautiful species is a native of the north-west coast of America. A hardy perennial, but requiring a protection of leaves, and can be propagated by the division of the roots. The flowers are disposed in a long, terminal, loose, racemose panicle, with the branches in distant pairs, and bearing from seven to eleven blossoms of a beautiful pale-blue color.

P. pubescens.—Downy Pentstemon.—Produces its purplish-blue flowers about June; the pubescent (downy) leaves are lanceolate, oblong, sessile, and serrulate; the flowers, with the sterile filament bearded above the middle,

in a thin panicle; one foot and one-half high. A smooth variety is *P. lœvigatum*, which is very similar, but with paler flowers.

P. campanulatus.—This species is known under several names, such as *P. pulchellus*, *P. atropurpureas*, *P. roseus*, etc. It has large bell-shaped, pale-purple flowers, and long lanceolate, smooth serrate leaves; one foot high. It flowered finely though the last autumnal months, in our collection, although it was from seed the same season.

P. cœrûleus, is one of the finest of the genus, a native of the South, with beautiful blue flowers. Stem smooth; radical leaves linear, entire; cauline ones lance-linear, entire, all sessile; sterile filament short, bearded above; divisions of the calyx lanceolate, acute, glabrous.

P. barbatus.—Bearded Pentstemon.—This is sometimes called *Chelone barbata*. It is a half-hardy perennial from Mexico; a splendid plant, with flower-stems three feet high, covered with a profusion of scarlet-orange flowers; from July to September. It will be necessary to cover it well with pine boughs, or straw, in the winter, or it may be destroyed by the frost. The safest way is, to place the plants in a cold frame for the winter.

When seeds can be obtained, there will be no trouble in raising a supply of plants. It is said to be difficult, or even impossible, to raise the seeds in heat. We are inclined to believe there is some truth in the remark, as we succeeded in raising only a few plants in a moderate hot-bed, while those sown in the open ground in May, produced an abundance. As the seeds are very small, they should only be pressed into the soil, or very slightly covered. The young plants should be sheltered from the mid-day sun. Most of the species are easily propagated from cuttings or layers, which readily take root. A mixture of peat and loam is the best soil for them.

PERILLA.

Perilla Nankinensis.—Purple-leaved Perilla.—An annual, growing from two to two and one-half feet high; stems branching, well covered with an ample foliage of a dark-purple, almost black. Leaves petioled, opposite, oval, with pointed ends, the sides dented, smooth and glossy on both surfaces, sometimes slightly crisped and exhaling, when rubbed, an odor like cinnamon. The flowers are at the axils of the larger leaves, bilabiate, rose or pale-purple, small, but very numerous and producing but little effect. The principal merit of this plant consists in the strange color of the foliage, which contrasts in a remarkable manner with that of most cultivated plants; its fine habit, its robust temperament, and its being an annual, make it very appropriate for masses in the borders of a flower-garden. Seeds scattered on the ground in autumn will vegetate in the spring, and produce an abundance of plants; or the seed may be sown in a mild hot-bed or cold frame in April, and transplanted to the garden in June.

PETUNIA.

[Said to be from *petun*, the Brazilian name for Tobacco, a plant to which the Petunia is closely related.]

Petunia violácea.—Purple Petunia.—Introduced into England from South America in 1831. This now very common plant was at that time considered a valuable acquisition to the flower-garden. We now wonder how a flower-garden could be formed without the Petunia, the Portulaca, the Verbena, Drummond's Phlox, and a host of other ornamental plants now considered indispensable, which have been introduced since that time. The fine rosy-purple flowers of this species make a grand display through all the summer months, and in September and Oc-

tober, and there is no flower like this and its hybrids for massing; this is the only good quality about it. The odor is unpleasant, and it is not fit for bouquets.

P. nyctaginiflora.—Has large white flowers, coarser in its growth than the last, and is of the same spreading habit. Both are somewhat viscid in their stems and foliage. From these two species have been produced innumerable varieties, with colors much more brilliant. Among the improved sorts are the *Countess of Ellesmere*, rosy-carmine with white throat, a very profuse bloomer; *Large-flowered*, dark-red; *Large-flowered*, purple with green edge; *Inimitable*, red margined and blotched with pure white. *Hybrida picturata*, a most beautiful dwarf variety, not exceeding one foot, covered with large flowers of fine form and great substance, of a velvety scarlet-crimson, beautifully marbled with white. *Carnation striped*, a very beautiful class with flowers with white, rosy or lilac ground, with crimson, scarlet and purple stripes; *veined* on the same grounds with the same bright colors. *P. kermesina splendens*, pure white with purple or crimson throat, or blotched with purple or violet. *P. maxima alba*, very large white, and almost every conceivable combination of colors, excepting yellow and blue. But the greatest novelties are the double varieties, introduced within a few years, which partake of the same disposition to sport into a great variety of colors as do the single varieties; but I do not esteem them as any improvement. They are queer mis-shapen monsters, curiosities to be sure, but they are more shy in flowering, more liable to injury by rain, and fail to make that grand display which the single varieties do.

The single sorts are easily raised from seed sown in hot-beds in May; they may afterwards be pricked out into small pots, and, when sufficiently strong, turned into the open ground in the beginning of June. If the seed is

saved from good sorts, a great diversity of fine seedlings may be expected. The last season I sowed seed imported from Prussia, from which I obtained thirty distinct varieties, and most of them very beautiful. In October the best of them were taken up and potted, and kept through the winter, but at the time of potting were reduced to about ten or twelve inches in height.

The choice varieties are easily increased from cuttings. The best time is late in the summer or in September, from plants that have been headed down for that purpose; but where there is a green-house, and the plants have been potted, cuttings may be taken and struck any time in winter.

Double flowers are rarely produced from seed of the single varieties, unless they are fecundated with great care with double varieties; they are usually raised from cuttings. Nurserymen generally, have not only the double varieties for sale, but also the finest single ones, and this is perhaps the most economical way of procuring plants for a small garden. One plant, if permitted to spread, will often occupy a space a yard square. Unless they are planted in masses they look best when trained upright to a neat stake, bringing them into a pyramidal form, or on a small trellis, as fancy may direct. There is no plant in the garden that will make more show than this when properly managed, for it continues nearly until November with a profusion of flowers.

PHACELIA.

[Name from the Greek for *fascicle*, as the flowers are often clustered.]

The genus *Eutoca*, is now united with *Phacelia*, and those which in the former edition of the work were called *Eutocas* are now placed here.

Phacelia viscida.—A native of California, whence it was sent to England by Mr. Douglas, the botanist. A

handsome annual, growing about one foot high, and producing a terminal raceme of fine blue flowers, each flower being about three quarters of an inch across. This lovely plant produces a fine effect when planted in beds or masses; in flower most of the season. The whole herbage is of a dull green, copiously clothed with glandular viscid hairs; the glands of a soot black.

P. divaricáta.—Straggling Phacelia.—A small, light-violet flower from California, not very showy. *E. multiflora* is in gardens here, but, although preferable to this, is not very likely to become a favorite.

P. Menziésii.—Menzies' Phacelia.—A beautiful hardy annual. The whole plant is clothed with hoary down, intermixed with longer bristly hairs. Flowers light-blue, in racemes an inch long. The plant should be cultivated in a light soil and sunny situation. *P. tanacetifolia* from California, and *P. congesta* from Texas, are also cultivated.

PHASEOLUS.—KIDNEY BEAN.

[The ancient name of the Kidney Bean.]

Phaséolus coccíneus.—Scarlet Runner.—This, which is sometimes called *P. multiflorus*, is a native of South America. "Before Miller's time it was cultivated less for its fruit than for the beauty and durability of its blossoms, which the ladies put into their nosegays and garlands. He brought it into general use for the table, and, because it has been found so useful, people seem to think it can be no longer ornamental, which is surely a vulgar mistake." It is one of the most tender of all beans for stringing. The Scarlet Runner will thrive in any good soil, and is well worthy of attention for the beauty of its blossoms. It will clothe whole fences or walls for a time, with a luxuriant green and red tapestry. There is also a variety

with white flowers; plant the middle of May, and if the scarlet and white varieties are mixed, the effect when in flower will be very pleasing.

PHLOX.

[From a Greek word signifying *flame*. The plant so named by the ancients is supposed to have been a *Lychnis*.]

“ Your voiceless lips, O flowers, are living preachers,—
Each cup a pulpit, and each leaf a book,
Supplying to my fancy numerous teachers,
From lowliest nook ! ”

The genus is North American only, and is one of the handsomest in cultivation. It comprises most elegant border-flowers, valuable for blooming from the first of May to November, with an endless variety of colors. What adds much to their value, is, that they are perfectly hardy, requiring little or no protection in the winter, and are easy to propagate. The only fault they have is that of spreading too rapidly. The genus gives us both annual and perennial species; the perennials are vernal, early summer and autumnal blooming.

Phlox subulata.—Moss Pink.—This is found from New York, to Michigan, southward. A British collector exclaimed on seeing a patch of this species in one of the pine barrens of New Jersey, “the beauty of that alone is worth coming to America to see, it is so splendid.” Most of the species delight in a rich sandy loam. When the plants become large, they ought to be divided and planted in fresh ground. There are varieties of *P. subulata* with pink, purple, white, and rosy-eyed flowers. The plant is very dwarf, and has a solid mass of mossy, bristly, ever-green foliage, sending up innumerable bunches of its delicate flowers, completely covering the whole. *P. nivalis*, is a beautiful variety of this, formerly in my collection, but

now lost, and I have not been able to obtain it from any nursery in the country; the foliage is shining deep-green, more bristly; the flowers are pure white with yellow eye, and I think it is more tender than the other.

P. réptans, sometimes called *P. stolonifera*, is a beautiful dwarf species, running upon the ground like those just described, sending up innumerable clusters of deep-crimson flowers, blooming in May; the flowers are nearly as large as in the late flowering species. The leaves are oval and not so abundant as those of *P. subulata*.

P. divaricáta.—This species, with its varieties, flowers late in May and beginning of June; one foot high. The varieties are those with white, lilac, light-purple, or blue flowers, with intermediate shades.

P. maculáta.—From this species (and probably *P. paniculata*, and others also), have been produced a great number of fine varieties known in the gardens under the term Perennial Phloxes. They are divided into two classes, early and late. These were fully described in a communication to the chairman of the Flower Committee of the Massachusetts Horticultural Society a few years ago, from which I present the following extracts:—

“EARLY PHLOXES.—These commence flowering about the first week in June; the different varieties successively coming into bloom to the middle of July; and continue in bloom, more or less profusely, until October, particularly when the flower-stems are cut down to the ground as the trusses or spikes of flowers begin to fade. This class of Phloxes range in height from one and one-half to three feet, according to the richness of the soil; some few varieties are rather more dwarfish in their habits. The early sorts all differ in their foliage from the later. The leaves are generally glossy, with a smooth surface, and mostly oblong-lance shape, sometimes with a heart-shaped base.” Among the varieties of this class are *Madame Duboulet*, pink;

Henry Dierval, purple; *Rival*, white; *Roi Leopold*, white, striped with rose, etc., etc.

LATE PHLOXES.—The earlier varieties of the late Summer Phlox commence flowering about the middle of July, and from that time to the first of September the different sorts succeed each other. The period of bloom of each variety is about six weeks, and the panicle is in perfection in about a fortnight from the time the flowers begin to expand. Some varieties continue to bloom as late as the first of November; the flowers lose their brilliancy after heavy frosts. Thus, with a collection of vernal, early and late Summer Phloxes, there will be a continuous display in the flower-garden for more than six months."

The varieties in this class are numbered by hundreds, and new ones are added each year by our own and foreign florists. Among the author's named seedlings are *America*, rose with pink eye; *Mrs. Webster*, large white flower, with small eye; *Mont Blanc*, pure white. For the others we must refer to the florists catalogues.

"The Phlox flourishes with very little care in almost any soil, succeeding better, however, in a deep rich, rather moist soil.

"The best time for dividing the roots, for new plantations, is about the first of August. The old stools should then be taken up, the flower-stems cut down to one foot, allowing the leaves that are attached to them to remain; separating the roots, making a plant of each stem, with portions of the root connected. These pieces of roots should be planted in highly manured and deeply dug soil. They will acquire strength during the fall, and flower better than the large stools the following season.

"Choice varieties are propagated from cuttings taken off in June or July, and make fine plants the next season."

P. Drummóndi.—This beautiful species was first raised at the Botanical garden, Manchester, England, from seeds

which were received from the late Mr. Drummond, in 1835, and was named by Dr. Hooker after its indefatigable discoverer as a tribute of respect to him. It was then considered doubtful whether it would prove an annual or perennial, and the writer who first described it, says:—"Should this lovely species turn out to be an annual, which to all appearance it will, it must be regarded as a novel feature in this favorite genus. The plant is perfectly hardy, and will prove a great ornament to the flower-garden." This we have found to be true, and wonder how the old gardeners could get along without this splendid flower, which if beautiful as it was first described by the person who received the seeds from its native locality in Texas, how much more so in its improved state, with its varieties of brilliant crimson, scarlet, purple, white, and variegated flowers. "The plant is about one foot high, covered with long hairs. Corolla salver-shaped, tube long, very hairy, pale-rose colored; limb spreading, pale-rose colored without, rich rosy-red within; eye, deep crimson; throat, yellow." This is the original description of it when first received, but it has since sported into a great variety of colors. It is propagated from seeds, which, if sown in a hot-bed in March and planted out in June, will flower profusely from the first of July to November. For masses of separate colors it is not surpassed by any other bedding-plant. The plants should be placed six inches apart each way, to make a solid mass of bloom. Plants from seed sown late in autumn, will be a fortnight in advance of those sown in the open ground in May. It will flourish best in a rich, but rather light soil.

PHYSOSTEGIA.—FALSE DRAGON-HEAD.

[From the Greek for *bladder* and *to cover*, as the calyx becomes bladder-like when in fruit.]

Physostégia Virginiána.—Virginian Dragon-head.—A perennial with stems three feet high, bearing dense, one-sided spikes of purplish flowers, in June and July. Indigenous at the West and South. This was formerly called *Dracocephalum Virginianum*, and its varieties have been called *D. dentatum* and *D. variegatum*.

PLATANThERA.—FALSE ORCHIS.

[From the Greek words for *wide* and *anther*.]

The plants included here were formerly regarded as belonging to the genus *Orchis*, from which they are distinguished by the spreading apart of their anther cells. They are still popularly called *Orchis*.

Most of the species are found in wet boggy ground, and will require a moist and rather shady spot. If the soil be made of peat and leaf mould, I know they will remain and flower for a couple of years, for I have been successful in the experiment. They are chiefly propagated by their tubers, which in most of the species are of a peculiar structure. An *Orchis* taken out of the ground is found with two solid masses at the base of the stem, above which proceed the thick fleshy fibres which nourish the plant. One of these bulbs or tubers is destined to be the successor of the other, and is plump and vigorous, whilst the other, or decaying one, is always wrinkled and withered. From this withered one has proceeded the existing stem, and the plump one is an offset, from the center of which the stem of the succeeding year will come. By this means, the actual situation is changed about half an inch every year; and as the offset is always produced

from the side opposite the withered bulb, the plant travels always in one direction at that rate, and will in a dozen years have marched six inches from the place where it formerly stood.

In the garden the Orchis can hardly be said to be propagated; the species are generally taken up from their native habitations and transferred to a shady border, where they remain a year or two, but seldom increase. I have taken them up when in flower successfully, by removing the plant with a large ball of earth, so that these fleshy fibres are not disturbed.

P. blephariglóttis.—White-fringed Orchis.—Has snow white flowers, with a beautifully fringed lip, in short spikes. Stems about one foot high.

P. fimbriáta.—Large Purple-fringed Orchis.—One of the largest and most beautiful, and sometimes called *P. grandiflora*. The spike is sometimes six inches long, with large pale-purple flowers. Stems about two feet high. June. *P. psycodes* is a species resembling this, but smaller and more common.

P. ciliáris.—Yellow-fringed Orchis.—This resembles the White-fringed Orchis in shape, but the flowers are of a bright orange-yellow.

PLATYCODON.—LARGE BELL-FLOWER.

[From the Greek, meaning *large bell*.]

Platycódon grandiflórum.—This species was formerly called *Campanula grandiflora*, but it is separated from *Campanula* on account of the manner in which the pod opens. It has also been called *Wahlenbergia*. It is a hardy perennial growing about one and one-half foot high, with smooth and serrate leaves. The stem bears one or a few very large shallow flowers. The buds are quite orna-

mental, being large and balloon-shaped. Blue, with a white variety and often semi-double. Culture the same as that of *Campanula*.

POLEMONIUM.—GREEK VALERIAN.

[From a Greek word meaning *war*; of doubtful application.]

Polemónium cœrúleum.—Jacob's Ladder.—This is one of the old standard border-plants, with blue flowers. The common name of Jacob's Ladder is from its beautiful pinnately-cleft leaves. It has lively blue flowers, nodding on the ends of the branches. There is a variety with white flowers. It is a perfectly hardy perennial, and of easy cultivation, flowering in June; one and one-half foot high. Propagated by seeds or division of the roots.

POLIANTHES.—TUBEROSE.

[From the Greek words for *many* and *flower*.]

Polianthes tuberósa.—The Tuberose.—A native of India, and very popular on account of its highly fragrant flowers. In the warmer parts of the European continent it thrives as well as in its native soil. In Italy, Sicily, and Spain, the roots thrive and propagate with ease when they are once planted. The Genoese cultivate it and send the roots annually to England, Germany, Holland, and France, and from thence it comes to this country. These imported roots thrive much better than those raised here. This plant has long been cultivated in English gardens for its extraordinary beauty and fragrance.

The Malaysans style the Tuberose the mistress of the night: —

“The Tuberose with her silver light,
That in the gardens of Malay
Is called the mistress of the night.
So like a bride, scented and bright,
She comes out when the sun's away.”—*Lalla Rookh*.

“The variety with double flowers is the one generally in cultivation; the single variety is not so much esteemed. This double variety was obtained from the seed by Monsieur Le Cour, of Leyden, in Holland, who for many years was so tenacious of the roots, even after he had propagated them in such plenty as to have more than he could plant, that he caused them to be cut in pieces to have the vanity of boasting that he was the only person in Europe who possessed this flower.” Luckily, that man died in due course of time, and as he could not carry them with him, they have since been disseminated among florists and amateurs throughout the world; but no thanks to that mean man. The roots are the best which are large and plump, provided they are sound and firm, and the fewer offsets they have the stronger they will flower. The under parts of the roots or bulbs should be particularly examined, because it is there they first begin to decay. The best compost for the Tuberose, is said to be “two wheelbarrows of light maiden loam, one ditto of decomposed hot-bed dung, and a little white sand should be well chopped and mixed together in autumn; this should be exposed to the frost during the winter, that it may become ameliorated and thoroughly decomposed. To have flowers in perfection in August or September, the bulbs should be potted and set to growing in March. The bulbs should be first prepared by taking off the loose rind and superfluous offsets, or side bulbs, being careful not to injure the principal one. Then provide a quantity of six-inch-pots, well drained with broken pot-sherds; they must be filled

with the above compost and well shaken down, but not pressed with the hands. A little white sand must be placed in the middle of the top of the compost and the bulb must be pressed gently though firmly, down to within a quarter of an inch of the top of the bulb. After the bulbs are potted, plunge them in a strong hot-bed where they must remain till they have grown to the height of three or four inches; they must be kept quite close till they begin to vegetate, when a little air may be admitted; shaded when the sun is powerful, and covered up with mats at night; water must be supplied very sparingly while they are here, for the steam arising from the bed answers in a great measure the purpose of water. When they have grown to the height above stated, take them into a warm spot in the green-house, allowing them a plentiful supply of air and water, setting them where they will get a plenty of light, or they will be apt to draw up weakly." In June, when the weather becomes quite warm, the plants may be turned out carefully into the open ground. As they advance in height, tie them up to green sticks, six or seven feet long. By the middle of August they will begin to show flowers. For plants to flower in October, the bulbs may be planted in pots in May and carefully tended during the summer, but brought into the house before they are overtaken by frost. We had about fifty bulbs unsold the last season, which lay in the store until the 20th of August; they were then potted in a compost similar to that described, and although weakened by having been so long out of the ground, most of them blossomed and gave a succession of their exquisite fragrant flowers from the middle of November to Christmas.

POLYGONATUM.—SOLOMON'S SEAL.

[From Greek words signifying *many* and *knee*, in reference to the numerous joints upon the stems.]

Polygonátum multiflórum, or Giant Solomon's Seal, is a perennial, two or three feet high, with white flowers in the axils of the leaves, in June; appropriate for the shrubbery or borders. Gerarde, our old author, speaking of the virtues of the plant, says, "that the roots are excellent good for to seale or close up greene wounds, being stamped and laid thereon, whereupon it was called *Sigillum Salomoni's*, for the single virtue it hath in sealing or healing vp wounds, broken bones, and such like." He further says, "The root of Solomon's Seale, stamped while it is fresh and greene, and applied, taketh away, in one night, or two, at the most, any bruise, blacke or bleu spots, gotten by fals, or women's wilfulnesse, in stumbling vpon their hasty husband's fists, or such like." A very useful plant, one would think, for some families to cultivate. We have two native species which resemble this, *P. biflorum* and *P. giganteum*, which are common on river banks, etc.

PORTULACA.—PURSLANE.

Portuláca grandiflóra.—Showy Portulaca.—Every person who has had any experience in the garden is too well acquainted with the weed Purslane, or Pursly, and would gladly see an extermination, not only of that plant, but all its kindred. It is indeed a troublesome weed; but as no one should be condemned because he happens to have bad relations, neither should *Portulaca grandiflora*, which is a splendid Purslane. In speaking of it we leave off the Purslane and call it the splendid Portulaca, for, were its family connections generally known, we should

fear it might not receive the attention it deserves; for, truly, it is a great acquisition to the flower-garden, and no plant presents a more brilliant show than this, when planted in masses. The flowers are rosy-crimson, large and beautiful, opening with the bright morning sun. It makes a rich bed from July to October. The plant is dwarf and trailing; leaves small; about six inches high. All the other varieties have the same habit, and equally beautiful. From this, and probably *P. Gilliesii*, have come all the showy varieties of the garden, some of which have received distinct names, such as *P. Thelussoni*, *P. alba*, *P. aurantiaca*, etc.

The *Portulaca*, though one of the most common, is still one of the most showy and beautiful annuals, admirably adapted to our climate, growing freely and flowering abundantly under conditions of soil and treatment where many other flowers would scarcely make any display; the old orange and scarlet, when planted out in large patches, vie in brilliancy and decorative effect with the showiest *Verbenas*. For a long time there were but two or three shades of red and orange, but with the skill of cultivators they have crossed and fertilized till we have nearly a dozen different sorts. They had hardly become well known before we had another improvement, obtained by the German florists, in double flowers, as double as a rose.

“The double varieties are in fact charming objects, and may well claim a prominent place among the novel things of recent introduction. The flowers are perfectly double, about the size of a silver dollar, and a bed of them in full bloom presents a gay appearance, not unlike that of the beautiful *Ranunculuses*, or the little Burgundy Rose, so that the Germans call them ‘*Portulaca Roses*.’

“The *Portulacas* need a warm and rather light soil, and a dryish situation to flower well. They need not be planted early, unless in a frame or hot-bed, as the seed will not

grow freely till the ground is warm. About the middle of June the plants begin to appear in the open ground, and grow with great rapidity, soon covering a large bed, and making a dazzling display with their many-hued flowers, from July to frost.

“The double varieties, like all other double flowers, cannot be relied upon with certainty to produce all double flowers, but the largest part of them will be double, and the single sorts may be pulled up and thrown away or transplanted, unless it is desired to retain them in the same bed with the double kinds. These and the Double Zinnias are grand acquisitions of the German cultivators.”—*Hovey's Magazine*.

I was very successful in the cultivation of these double varieties, with seed from Germany, the last season. I had double snow-white, orange, scarlet, and purplish-crimson. The flowers so much resembled little roses, that when gathered, persons who were strangers to this beautiful flower thought they were roses, and were surprised to see, as they thought, scarlet and dark-orange roses.

The single varieties produce an abundance of seed, so much, that the ground where the plants are grown is filled with young plants the following spring, and frequently it becomes a troublesome weed; but the double varieties produce seed so sparingly, that it is with the greatest difficulty that enough can be gathered for the next year's sowing; on some plants not more than one or two capsules of seed could be found.

POTENTILLA.—CINQUEFOIL.

[Named from *potens*, powerful, in allusion to the supposed virtue of some species in medicine.]

A large genus, some of the species being weedy, and others are worthy of cultivation. Some of these appear

much like the strawberry in foliage. The flowers of most of our native species are yellow.

Poténtilla átrosanguínea.—Dark-blood colored Potentilla.—From Nepal, with dark-crimson flowers and elegant silvery foliage; is in flower from June to September; one and one-half foot high.

P. Nepalénsis.—Another fine species, also from Nepal, with fine rose-colored flowers. From these two, and perhaps others, have arisen numerous garden varieties and hybrids, among which are: *P. Russelliana*, a splendid hybrid with scarlet flowers. *P. Hopwoodiana*, with rose and scarlet flowers is another beautiful hybrid; *P. aurea*, with orange; and *P. cardinalis*, with scarlet. There are also many other beautiful hybrid varieties; some of the most remarkable are those with double flowers. All these described species and varieties are hardy perennials, not requiring protection in the winter; propagated from seeds and divisions of the roots. They all look well in the borders when the sun shines, but the flowers last but one day and are not suitable for bouquets; but a succession of flowers is produced through the season.

PRIMULA.—PRIMROSE.

[Name from *primus*, first, as the flowers of some species appear very early in spring.]

“Primroses, the spring may love them,
Summer knows but little of them.”

Primula véris.—Cowslip, Primrose and Polyanthus are probably all varieties of this species, but this is a point upon which botanists differ, and it will suffice for our purpose to consider them under their garden names.

English Cowslip.—The flowers are produced in umbels, raised upon a stem above the leaves; they are of a pale-

yellow, and sometimes red. A hardy perennial blooming late in April or early in May, and will succeed in cool shady localities. Propagated by seeds and division of the roots.

Primroses.—In the varieties included under this name the flower-stem is very short, and the flowers are close down among the leaves. They are very early flowering, and embrace many beautiful varieties.

Polyanthuses.—The varieties so called have the umbel of flowers raised upon a flower-stalk, which rises three to six inches or more in height. The varieties are innumerable as each sowing adds to their number, and it is useless to attempt to catalogue their names.

The rules for judging of the beauty or merits of a variety are wholly artificial, and founded on an imaginary form far removed from ordinary nature. These rules or cannons are agreed on by the general consent of florists. Polyanthuses were first brought forward by the Dutch, and were formerly in extensive cultivation in Europe; but in more modern times they have given place to new species of flowers. They are, however, well worthy the attention of amateurs, for they are very beautiful, and succeed well in sheltered spots, in a rich and rather moist soil with little care. They are in flower all the month of May, and some of the Primroses by the middle of April. The flowers are of various colors; brown with yellow eye, with a delicate edging of yellow, is very common; also various combinations of crimson, yellow, sulphur, rich brown, almost black, either plain or shaded. The flowers to be perfect, should be round, in regular trusses, on stiff erect stems well above the foliage; each flower or pip should be of a plain black, brown, crimson or some dark color, with a yellow or sulphur eye, edged with white, sulphur, orange, or yellow color. The choice varieties are increased by dividing the roots, which should

be done soon after flowering, and new varieties may be obtained from seed. A little protection of leaves in the winter will be beneficial.

P. Auricula.—The Auricula is a florist's flower of great beauty. It is a native of the Alpine regions of Switzerland and Germany. The most common colors in its wild state are yellow and red, sometimes purple, and occasionally variegated or mealy. In this country the cultivation of this beautiful flower has received but little attention, probably on account of the severity of our winter and spring months, or the great heat of the summer, which is more destructive to it than cold. The extremes of heat and cold render its cultivation difficult. But in England, near most of the manufacturing towns, and in Scotland, the cultivation of this flower has formed a favorite amusement of weavers and mechanics. The flower-stalk springs from radical leaves, is six or eight inches high, and bears a truss of six or eight flowers, which are of various colors. These flowers are called pips, which should be raised with a light-colored eye; the ground color, when very dark-purple, blue or brown, edged with green, contrasts finely with the eye, and such are considered richer than those varieties where the color is lighter. The best soil for the Auricula is a compost made from loam from an old pasture, kept and turned over occasionally during a year, and then mixed with hot-bed dung rotten, to a mould, or with leaf-mould and some sand, to keep it open. The soil and manure must be well mellowed by time before using, and not mixed until it is wanted.

P. Sinensis.—Chinese Primrose.—This beautiful greenhouse species is a native of China, and is too tender for out-door culture; but is fine for the greenhouse or sitting-room, where it will produce a succession of flowers all the winter and spring, and if turned out in the open ground in June in a cool shady place, will continue to bloom all

summer. But the old plants will not answer for another winter, as it is requisite, to have good blooming plants, to sow the seed every year. The best compost for the Chinese Primrose consists of rich light loam, and peat soil in equal parts. The seed should be sown in May in a box or pan lightly covered, and placed in a cold frame. When the plants have formed their first two rough leaves, they should be transplanted singly into three-inch pots; when their roots have filled these, they should then be removed into those a size larger, and afterwards into pots still larger, keeping them in the same situation, and finally when removing them into the green-house or conservatory, give them a shift into those of a larger size. It is necessary in all the pottings to give a good drainage of broken crocks or cinders. The Chinese Primroses are in many varieties; pure white, rose, red or variegated, in umbels rising a little above the foliage. There is a succession of these umbels through the winter. The flowers with fringed edges, are most admired.

One of the most attractive new varieties is *P. Sinensis macrophylla*, with long massive foliage and beautiful large flowers of great substance, beautiful form, finely fringed, of a rich purplish-carmine, with pentagonal, large yellow eye, surrounded by a broad zone; very conspicuous and splendid acquisition. Other varieties are white and red fringed, rose striped, rose carmine, etc.

QUAMOCLIT.—CYPRESS-VINE.

[Name supposed to be of Mexican origin.]

Quámoclit vulgaris.—Cypress-Vine.—*Ipomœa Quamoclit* of some authors. There is no annual climbing plant that exceeds the Cypress-Vine, in elegance of foliage, gracefulness of habit, or loveliness of flowers. The only difficulty in its successful cultivation in our climate, is in

the shortness of the season. It requires heat to bring it to perfection, unless the plants are brought forward in a hot-bed. If planted in the open ground, it will not be of any advantage to sow the seed before the last of May, as it will not vegetate till the ground is warm. Previous to sowing, the seed should have boiling water poured over it, and remain until the water is cold. It is then sown in a warm place, and the plants will appear above ground in a few days. The young plants are difficult to transplant, therefore the seeds should be sown where the plants are to remain. Without scalding, or unless the hull of the seed is taken off, it will remain in the ground a long time without vegetating. Plants thus raised will, in a warm season, do very well, but will be much inferior to those that have been forwarded in the frame. The seeds should be sown in a hot-bed, with a brisk heat, in March, in small pots, a number of seeds in each pot, so as to be sure of two or three plants in each. In a month, if carefully attended, the roots will have filled the pots; it will then be necessary to shift the plants into larger ones. Before the first of June, the plants will begin to flower; but do not be in haste to put them into the ground; keep them in the frame, where they can be protected in case of cold storms, but expose them during the day to the full influence of the sun and air, by taking the sashes entirely off. By the 10th of June, the plants may be turned into the ground very carefully, so that the roots may not be disturbed. The ground should be made rich with well-rotted manure; the plants should be placed at the distance of one foot, or one foot and a half, if the object is to cover a wall or trellis. I have covered a trellis by the middle of August, twenty-five feet long and five high, with its elegant feathery foliage, so as to form a complete screen. The flowers, like those of the Morning Glory, appear in the morning and perish before noon. They are of a deep-crimson color,

and contrast finely with the rich green of the leaves. There is a variety with white flowers. It should be sheltered from the northerly winds by a fence, trees, or buildings. An elegant cone may be made by setting a straight pole substantially into the ground, eight feet high from the surface; describe a circle round it, having a diameter of three feet; let about ten pots of plants be turned into the circle; drive down a stake by the side of each, nearly to the surface, to which tie a strong twine, that may be stained or painted green; let it be carried to the top of the pole and fastened there; then bring it down to the next stake, and so on until the whole is completed. With a little assistance the vines will climb the strings, and by the middle of August will be at the top of the pole, making a splendid show, which more than pays for the trouble. It may be trained over an arch or in any other way as fancy may direct.

Q. coccinea.—Scarlet Morning Glory.—A handsome species flowering in great profusion towards the close of the season, growing ten feet high; a native of the West Indies. The flowers are bright scarlet in one variety, and in another, yellow and quite small; from July to the first hard frost. The seed may be sown from the 1st to the 10th of May, or treated like that of the Cypress Vine.

RANUNCULUS.—CROW-FOOT.—BUTTER-CUP.

[The name is the diminutive of *rana*, a frog, as some of the species grow in damp places.]

Some of the species are weeds, a few are border-flowers, and *R. Asiaticus* is one of the most esteemed florist's flowers. There are a number of varieties of Butter-cups, which are found double, and are frequently introduced into the flower-garden.

Ranúnculus répens flóre pléno, is a double variety; the roots are creeping, and therefore the plant is rather troublesome. The flowers are pretty, of a glossy yellow, and in bloom a number of months. *R. acris flore pleno* is a variety with upright stems; two feet high, with bright-yellow double flowers, in June and July. *R. aconitifolius flore pleno*.—This beautiful plant has fine double white flowers, in June; one foot high; for some reason it is not much cultivated in this country. It goes by the name of "Fair Maids of France."

R. Asiáticus, is one of the most splendid florist's flowers in cultivation; but, unfortunately, our climate is so uncongenial for its perfection, and it requires so much skill and care, that it has received but little attention, except by a few individuals. To have it in all its beauty and strength, it should be kept growing very moderately all winter; but our climate is so severe that this is impossible, in the open air, without too much covering, which would cause the plants to become drawn and weakened in such a manner as to be ruined. In a green-house this may be done; but how shall they be managed in the open air? Samuel Walker, Esq., formerly President of the Massachusetts Horticultural Society, has been the most successful of any person in this neighborhood, in blooming the *Ranunculus* in the open air. The following are the directions he gave for their cultivation, as published some years since:—

"The soil should be trenched eighteen or twenty inches, and composed of good rich loam, to which add one-sixth part of very old, well-rotted cow manure, and the same quantity of clay, broken into small pieces; add to this a little sand, and thoroughly mix the whole; if the soil binds, add some sandy peat; make the bed on a level with the path or walks; the plants would do better if the bed was *below*, rather than above, the level.

"Having prepared the soil, as above, some time during

the summer or autumn, take the earliest opportunity, in the spring succeeding, to stir up the bed one spit, and take off one and a half inch of the soil; then place the plants in an upright position on the surface, six inches apart each way, and replace the soil carefully, which will cover the crown of the *Ranunculus* about one and one-half inch; deeper planting would be injurious. After the plants appear, keep them free from weeds and press the soil firmly around them after they get two inches high. If the weather prove dry, water them freely early in the morning, and shade them from the sun from 9 A. M., to 3 o'clock, P. M. As soon as the foliage becomes yellow, take the roots up, and dry them thoroughly in the shade, and keep them in a dry place."

"The *Ranunculus* loves a cool and moist location, but no stagnant water should be permitted, nor should they be placed under the shade or drippings of trees. The morning sun, free circulation of air, and shade, as directed, will ensure success."

The root of the *Ranunculus* is a cluster of small tubers, like claws, united in the crown, which send up several bipartite leaves and an erect, branched stem, eight or twelve inches high, with a terminating flower, variously colored. It is a native of the Levant, and was cultivated by Gerard in 1596. Though rather a tender plant, innumerable and highly beautiful double flowered varieties have been raised from seed, chiefly by the English florists, from the middle to the latter end of the last century. In a Dutch catalogue, about seven hundred varieties were named a few years since, and in an English catalogue about five hundred.

Criterion for a fine Double Ranunculus.—The stem should be strong, straight, and from eight to twelve inches high, supporting a large well-formed blossom or corolla at least two inches in diameter, consisting of nu-

merous petals, the largest at the outside, and gradually diminishing in size as they approach the center of the flower, which should be well filled up with them. The blossom should be of a hemispherical form; its component petals should be imbricated in such a manner as neither to be too close and compact nor too widely separated, but have more of a perpendicular than horizontal direction to display their colors with better effect. The petals should be broad, and have perfectly entire well rounded edges; their colors should be dark, clear, rich or brilliant, either consisting of one color throughout, or be otherwise variously diversified, on an ash, white, sulphur, or fine colored ground, or regularly striped, dotted or mottled in an elegant manner. It is said, that in no instance does the seed of the *Ranunculus* produce two flowers like the original. Those who have made the attempt to cultivate the *Ranunculus*, and have given it proper treatment, have been well rewarded for their pains, and we should be glad to see it more generally cultivated; but unless good varieties are obtained, and the roots sound and plump, it will not be best to make the experiment.

There is another *Ranunculus*, called the *Great Turban* or *Great Turkey Ranunculus*, producing large, double, and very brilliant flowers. The roots are somewhat larger, but similar to the other species, and the mode of cultivation the same. The varieties are not so numerous, but very brilliant.

The bed for *Ranunculus* should be prepared in autumn and protected from frost by leaves, and the frame covered with boards to keep out the wet. In pleasant weather the last of February or beginning of March, the roots should be planted as heretofore directed, the soil having first been dug over and made smooth. The frame is then to be placed over the bed and the lights put in. In cold

weather there must be a protection of mats to keep out frost, but give air and sun as soon as they begin to vegetate. The bloom will be much more perfect and continue for a much longer time if screened by an awning, as the flowers begin to expand. The hot mid-day sun will soon spoil the bloom.

RESEDA.—MIGNONETTE.

[From *resedo*, to calm, to appease. The Latins thought it useful as a topical application in external bruises.]

“No gorgeous flowers the meek Reseda grace,
Yet sip with eager trunk yon busy race
Her simple cup, nor heed the dazzling gem
That beams in Fritillaria's diadem.”

Reseda odorata.—Common Mignonette.—This fragrant hardy annual is too well known to need any description. A bed of it should be found in every garden. It continues to bloom and send forth its sweetness all the season. Self-sown plants begin to produce flowers in June. The plants are in great demand in and about London and other great cities, being sold in pots and in bouquets. Some idea of the extent of its cultivation may be derived from the fact, which I heard from a creditable London seedsman, that he alone sold a ton and a half of the seed yearly.

To obtain plants for blooming from December to February, a sowing should be made in July in the open ground, and the plants potted in September. The crop for March, April and May, should be sown not later than the twenty-fifth of August; the plants of this sowing will not suffer by exposure to rain whilst they are young; they must, however, be protected from early frosts, like the winter crops. The third crop should be sown in pots the last of February. Thus, by attending to the sowing

of the seed at these three several times, and nursing the plants in a proper manner, this fragrant flower may be had to perfume the bouquet the year round.

The following remarks on the *Tree Mignonette* are taken from the English Floral Cabinet: —

“Sow the seed of the Common Mignonette towards the end of February, in pots the size thirty-two, such being six inches deep and four inches and a half in diameter, inside measure. Use a good rich loamy soil after the seed is sown, place the pots in a cucumber or melon-frame (hot-bed.) When the plants are up, they must be placed where they can get air, to prevent them being drawn up weakly, as well as to preserve them from damping off. When the plants have made a few leaves, pull up all the plants but two, which must be allowed to remain till they get over danger from damping off, when the best may be retained and be secured to a support. As the plants grow, side shoots will push, they must be pinched off, always leaving the leaf at the base of each shoot which contributes to its growth. If the leading shoot should show flower, it must also be pinched off. When the plants have grown ten or twelve inches high, they should be removed to a warm part of the green-house. Water must be given when the plants are dry. As the season advances the plants must be placed in more airy situations, which will gradually harden them. When the plants have reached a desirable height, from half a yard to two feet, pinch out the heads; this will induce a number of lateral shoots to push and form a bushy head. Plants thus treated will bloom early the following spring; after they have showed flowers, the plants, if vigorous, may be removed with balls entire, into pots a size larger; they will then bloom all the season.”

This plant is supposed to be an Egyptian, and to have been brought to England from the south of France, where

it is called *Reseda d'Egypte*, and *herb d'amour* (love-flower.) It is a favorite plant, and has well justified this affectionate name, Mignonette or Little Darling; its sweetness wins all hearts.

"The luxury of the pleasure-garden," says Mr. Curtis, "is greatly heightened by the delightful odour which this little plant diffuses; and as it grows more readily in pots, its fragrance may be conveyed into the house. Its perfume, though not so refreshing as the Sweet Brier, is not apt to offend the most delicate olfactories. People have not been satisfied, however, with growing this little darling in pots; it is often seen cradled in the sunshine, in boxes the whole length of the window it is placed in."

—— "the sashes fronted with a range
Of orange, myrtle or the fragrant weeds
The Frenchman's darling."—*Cowper*.

RHODANTHE.

[From the Greek words for *rose* and *flower*.]

Rhodánthe Manglésii.—A most delightful plant, from the Swan River; it is one of the tribe called everlasting, from its remaining perfect throughout the winter, if gathered when in bloom, and resembles the *Helichrysum*.

R. maculáta.—Is a larger-flowered variety, in which each of the rosy florets have a dark spot at the base. The following are more recent varieties of the same.

R. atrosanguínea.—This beautiful and very distinct variety differs from the *R. maculata* in its dwarfer and more branching habit; longer and more pointed foliage, which is dotted near the tip; and especially by the color of its flowers, which have the entire disk of the dark-purple, or crimson-brown shade, varying in some specimens to almost dark-violet and maroon, as in *Coreopsis tinctoria*.

ria and its varieties. The ray scales are of a bright purple or magenta color, deeper than in *R. maculata*. It is more floriferous than *R. maculata*, but the capitules are

RHODANTHE MACULATA.

somewhat smaller, the average diameter being about one inch. Introduced from Australia, by William Thompson.

***R. maculata alba*.**—This charming variety from the beautiful *R. maculata*, is identical with it in habit, differs from it only in the color of the ray scales, which are of the purest and most silvery white; the disk being yellow as in *R. maculata*. It is unquestionably the finest white everlasting in cultivation.

RICINUS.—PALMA CHRISTI.—CASTOR-OIL PLANT.

[From the Latin name for the *tick*, an insect which the seeds resemble.]

Rícinus comúnis.—This is the common Castor-oil Plant. A very luxuriant, strong-growing annual, sometimes found in the garden, not so much for its beauty as for curiosity. Some of the species are ornamental as well as curious.

R. sanguíneus, is well worthy of a place in the flower-garden, where there is a plenty of room. The seeds should be started in a hot-bed or green-house, and transplanted into small pots when they are three or four inches high, and turned out into the garden in June. They make a vigorous growth, and attain the height of eight or ten feet before the frost overtakes them, with numerous side branches, with terminal spikes of greenish-yellow flowers, one or one foot and one-half long; these are succeeded by thorny capsules of a light-scarlet color, which are very ornamental. The stalks of the plants as well as the foot-stalks of the leaves, are brownish-red. The leaves are very large, palmate, and elegant.

RUDBECKIA.

[Named after Olaus *Rudbeck*, professor of botany at Upsal.]

A genus of North American plants, some of them valuable for the border; all are hardy, and easily propagated by dividing the roots.

Rudbéckia fúlgida has large, brilliant yellow flowers, with a dark center, or disk; about two feet high; continuing in bloom all the months of July and August; perennial.

R. amplexifólia.—An herbaceous annual plant, grows from two to three feet high; straight branching stems; lanceolated radical leaves, sinewy and petiolated; the

cauline narrow embracing the grayish-green colored stem. Flowers large, solitary terminals, with broad streaks of a fine yellow, marked with a lively stripe of purple at the base; conical disk of a deep brown; in blossom from June to September. This plant is remarkable for the brilliancy of its flowers, and for the length of time that it continues in bloom. It is hardy, and its cultivation requires no particular care.

SABBATIA.—AMERICAN CENTAURY.

[Named after *Sabbati*, an Italian botanist.]

A pretty North American genus of plants, not much cultivated, but if properly managed, would no doubt prove valuable in the flower-garden.

Sabbatia chloroides, is found on the margin of ponds; it has large, showy pink flowers; in July. It is a biennial and must therefore be propagated from seed, which should be sown in moist ground as soon as ripe, or early in the spring.

SALPIGLOSSIS.

[From the Greek for *trumpet* and *tongue*, in allusion to the shape of the style.]

Salpiglossis pinnata.—A species from Chili, where it is a perennial, but in cultivation it is treated as a biennial in the green-house, and as an annual in the open air. It has given rise to many varieties, some of which have received distinct names. The flowers in all the varieties are funnel-shaped, something like those of the *Petunia*, but not so broad, and more delicate. The variety called *S. atropurpurea* is of a fine, rich, dark velvety puce color; *S. straminea*, has pure yellow flowers; *S. Barclayana* and

hybrida are iron-brown, and yellow-veined with brown; *S. sinuata*, flowers a dark-blood color, veined or striped; *S. picta* has beautiful striped flowers, all grow from one and a half to two feet high. They succeed finely when started in a hot-bed, flowering profusely from August to October. The best soil for their cultivation is a mixture of loam and sand, enriched with rotted horse-manure and a little leaf-mould. In heavy soil it will not succeed so well.

SALVIA.—SAGE.

[From *salveo*, to save, on account of the healing quality of the plants.]

The common Sage (*Salvia officinalis*), is well known as a garden medicinal plant. It was formerly in great repute in medicine. In cookery it is used for sauces, stuffings, etc.

This genus is very large, and consists of herbs and under-shrubs, the leaves of which have generally a roughish appearance, the smell aromatic, and the flowers commonly in spikes, two or three together from a bract or leaf. They are all of easy culture, and some of them are ornamental green-house plants or border-flowers.

***Sálvia splendens*.**—A Mexican plant of extraordinary beauty for the green-house or border, but tender, and will not bear the frost. It is easily raised from cuttings, which, when well established in pots and turned out into the garden in June, will soon become large plants and produce a profusion of large scarlet flowers in spikes, which continue to give brilliancy to the garden until cut down by the frost. The plants become quite bushy, often three or four feet high.

***S. fúlgens*.**—This is also tender, but may be used as a border-flower, when treated like *S. splendens*. It is not so free a flowerer. The flowers are scarlet-crimson, some-

what rough or hairy, but very beautiful. Two or three feet high.

S. coccínea.—This is a tender annual, with smaller scarlet flowers in spikes; one and one-half foot high; in flower most of the season; easily raised from seeds.

S. párens.—A green-house plant, which flowers rather sparingly in the border. The flowers are large, of the most exquisite blue, but very fragile.

S. angustifólia.—This beautiful species is a native of dry mountainous situations in the cooler districts of Mexico; it requires a light soil and protection during the winter; although called only an annual, its existence, like many others, may be perpetuated by raising plants from cuttings, which strike readily. The whole flower is a beautiful deep azure-blue, the spikes tolerably dense, the lower lip broad and spreading; a plant of elegant growth. There are a number of other fine species and varieties of *Salvia*, which do not succeed very well in the garden, but are fine for the green-house.

SANGUINARIA.—BLOOD-ROOT.

[From *sanguis*, blood, as all the parts of the plant, on being wounded, discharge a blood-colored fluid.]

Sanguinária Canadénsis.—This is a singular and very delicate-looking indigenous perennial plant, producing shining white flowers in April. It has a tuberous fleshy root, and is easily transferred to the garden, where it shows off to advantage with the *Crocus* and other vernal flowers.

“Though the *Sanguinaria* cannot be considered as a showy plant,” says Mr. Martyn, “yet it has few equals in point of delicacy and singularity; there is something in it to admire, from the time the leaves emerge from the

WILLIAMS-CO

SANGUINARIA CANADENSIS.

ground and embosom the infant blossom, till their full expansion and ripening of the seeds." It is found in abundance in our woods. The Indians are said to paint their faces with the juice. The flowers expand only in fine warm weather. Three or four stems spring from one root, six or eight inches high. The plant succeeds best in a rather shady spot.

SARRACENIA.—SIDE-SADDLE-FLOWER.

[Named in honor of Dr. *Sarrazin*, a French physician who first sent the plant from Canada to Europe.]

Sarracénia purpúrea.—Side-saddle-Flower.—Pitcher Plant.—An evergreen herbaceous perennial and one of the most curious of our indigenous plants. It is called Side-saddle-Flower, from the resemblance of the stigma to a woman's pillion: also, "Our Forefathers' cup," from the singular form of the leaves, which are tubular and hold water, and when full-grown, contain from a wine glass full to a gill, and are rarely empty. Report says our worthy ancestors made use of them to drink from. No matter how this may be, they certainly look as if they might be thus used, having the appearance of little pitchers, but not very inviting from their unpleasant odor, and from the fact, that they are generally found to contain many dead insects. The cup is hairy within, the hairs pointing downwards: in these the insects get entangled, and perish. The flowers are destitute of much beauty, but are very curious in their structure. To attempt to give a botanical description of this plant would be out of place in this work. As this is always found in wet, boggy, or mossy grounds, it is rather difficult to manage in a common garden, unless there is a wet corner in it. I have succeeded with it by taking with a spade, a large ball of earth with the plant, and transferring it to a moist place,

exposed to the sun, and it, without much care afterwards, continued to flourish a number of years. With a peat soil, the surface covered with moss, and occasional supplies of water, I have no doubt but it would succeed very well, if not in a very dry situation.

SAXIFRAGA.—SAXIFRAGE.

[Named from *saxum*, a rock, and *frango*, to break, many of the species growing in the clefts of rocks.]

A genus which comprises a number of Alpine plants, which have long been favorites in European gardens, but not much cultivated in this country. Many of them are quite easy to cultivate, and though naturally mountaineers, are not incapable of breathing the more impure air of towns and villages, others are delicate and difficult to rear. Most of the species are perennial, with either fibrous or granular roots, and a few are annuals.

Saxifraga Virginiensis. — This fragrant well-known plant is one of the earliest flowers upon rocks and dry hills. The leaves are mostly radical, spreading, fleshy, elliptical, a little downy and serrate; stem erect, fleshy, nearly destitute of leaves. Flowers numerous, crowded, white, arranged in corymbs on the ends of the branches, which, collectively, form a sort of panicle; April and May; perennial. This sweet flower is associated with my youthful floral rambles for May flowers.

S. crassifolia. — A hardy perennial border flower with broad, thick leaves, rising from the root, from which are thrown up thick fleshy stems one foot high, with panicles of pink flowers in May and June.

S. umbrósa. — London-Pride. — This is a beautiful perennial, growing about one foot high. The flowers are in panicles, white or flesh color, dotted with yellow and dark-

red. It is a native of Ireland. For some reason it does not succeed well in this country.

SCABIOSA.—MOURNING BRIDE.

[From *Scabies*, a skin disease, in which this plant was said to be useful.]

Scabiósa atropurpúrea.—Mourning Bride.—This is a handsome species, and has been cultivated as a border annual so long that its native country is unknown. Linnaeus and Miller consider it a native of India. It is sometimes called Indian or Sweet Scabious; it is chiefly valuable for its exceeding sweetness; yet its colors are often extremely rich. It is sometimes of a pale purple, sometimes so dark as to be almost black; hence, I suppose, the common name, "Mourning Bride;" but its finest hue is a dark mulberry red. Some of the dark varieties are elegantly tipped with white.

S. candidíssima.—An entirely new variety of Sweet Scabious, and being pure white, is very desirable for a contrast with the other kinds in such very general cultivation.

"The Scabious blooms in sad array,
A mourner in her spring."

The flowers are produced in heads, upon stems nearly two feet high, and continue to bloom from July to October. A bed of Mourning Bride of the different varieties is very fine.

SCHIZANTHUS.

[From Greek words *to cut*, and *a flower*, in allusion to the numerous divisions of the petals.]

Tender annual plants, with finely cut pale-green leaves and terminal panicles of elegant flowers.

Schizáanthus pinnátus.—Pinnate-leaved Schizanthus, is

one of the most common species, from which a number of beautiful and improved seedlings have been produced.

All the varieties are very pretty in the open ground, and bloom most of the season, but are much injured by the sun or severe rains. They can only be brought to the highest state of perfection when grown in pots in the green-house, where they can be made to attain the height of three or four feet; in the open ground about two feet; from August to October. The varieties are: *S. humilis*, *S. porrigens*, *S. retusus*, *S. Hookerii*, *S. Priestii* and *S. Grahamii*.

SCHIZOPETALON.

Schizopétalon Walkéri.—Walker's Schizopetalon.—This is a singular plant, about one foot high, with curious white flowers; the segments of the corolla are finely cut into many feathery divisions. The flowers are very frail, being soon spoiled by the sun.

A native of Chili, whence it was originally introduced in 1821. It is a hardy annual, thriving best in a light, sandy soil, and is increased by seeds, which it however perfects but sparingly, and that only in dry and warm summers. To hasten their growth, and thereby insure the maturing of seeds, the young plants should be raised in a frame, and planted out in a sunny border about the middle of May. The flowers are very fragrant, especially in the evening.

SCILLA.—SQUILL.

Scilla Peruviána.—The Star Hyacinth.—A very pretty bulbous-rooted plant, with dark-blue starry flowers; in May and June. The stem grows about nine inches high. The bulb is rather tender and should be well protected.

SEDUM.—STONE CROP.

[The name from *sedeo*, to sit; these plants, growing upon the bare rock, look as if sitting upon it.]

The species are low succulent plants, some of them pretty, others curious; but none of them remarkable in any way. They seem destined by nature to clothe rocks and dry arid places, after a certain portion of vegetable soil has been generated by lichens and mosses.

Sedum Siebóldii.—Siebold's Sedum.—This is a hardy perennial plant of considerable beauty and interest, on account of its being one of the last to flower in the garden. The leaves are very thick and succulent, of a glaucous green. The flowers are very pretty; pink; in numerous heads; the last of October. This species flourishes in any good garden soil. Some of the Sedums are suitable for rock-work.

SENECIO.—GROUNDSEL.

[Name from *senex*, an old man, in allusion to the hoary appearance of the pappus, or hairs upon the fruit.]

Senécio aureus.—Golden Senecio.—This is a handsome indigenous species, and makes a fine appearance in meadows in May and June. From one to three feet high. Flowers, a golden yellow or orange; perennial. It is not often introduced into the flower border, although much handsomer than many plants that are cultivated.

S. elegans.—Jacobea, Groundsel or Rag-wort.—A handsome annual in the open ground, or biennial in the green-house. The double varieties are the only sorts worth cultivating, of which there are a number of colors, viz., double-purple, crimson, rose, flesh-colored and white. The fine double sorts are propagated from cuttings, which grow very readily, not one in fifty failing. It is also raised from seed, but few of the plants will produce double

flowers. It is a very pretty plant in its foliage and in flowers, grows freely and most profusely, scarcely anything surpassing it for a neat and handsome show.

It succeeds best in soil composed of fresh loam mixed with leaf mould, and upon a dry subsoil, the layer of compost over it about eight inches. I find that when the soil is much enriched, the plants have a tendency to produce much foliage; but when grown in this compost, an amazing production of bloom is the result. It grows about eighteen inches high, and continues to bloom all the season.

S. coccínea.—Scarlet Tassel-Flower, *Cacalia coccinea*, is a handsome half-hardy annual, with neat tassel-shaped, scarlet flowers; one and a half foot high. *C. aurea* is a variety with orange flowers. In shape and habit they are the same. Sow the first of May.

SILENE.—CATCH-FLY.

[Name from the Greek for *saliva*, in reference to the viscid secretion which covers the stems of many species.]

Silene Pennsylvánica.—A native species, found in dry, sandy soils in June, quite a handsome plant; sometimes called "Wild Pink," from its similarity in habit to some of that genus. The whole plant is viscid or glutinous; the flowers are light purple.

S. Arméria.—Catch-fly.—This plant is covered with a glutinous moisture, from which flies, happening to light upon it, cannot disengage themselves. This circumstance has obtained it the name of Catch-fly, to which Gerarde adds the name of Limewort. It is a hardy and very common annual, found in almost every garden, producing umbels of pink, and a variety with white flowers. *Silene compacta*, *S. pendula*, *S. Schafta*, *S. Saxifraga* are also handsome annual border flowers. Having the plants of

the most of these species in the ground, there will always be plenty from self-sown seeds in the spring.

SOLIDAGO.—GOLDEN ROD.

[From *solido*, to unite, on account of the alleged vulnerary qualities of the plants.]

The species are all autumnal coarse-looking herbaceous plants with yellow flowers; in the shrubbery they make a pretty appearance with other coarse plants. About all of the species are indigenous.

Solidágo odóra.—Sweet-Scented Golden Rod.—This species may be admitted into the garden not only for the fragrance of the plants, but its inflorescence is also interesting. The flowers grow in a compound, panicle raceme, with each of its branches supported by a small leaf, and of a brilliant yellow. The whole plant has a smooth appearance; the leaves have a very pleasant anisate odor, and yield by distillation a fragrant, volatile oil.

S. nemoralis.—Grey Golden Rod.—This is a very pretty dwarf species, not more than one foot high, common in dry fields, where it appears as if stunted by drought. Panicle small, leaning; bright yellow; August and September.

SPECULARIA.—VENUS' LOOKING-GLASS.

[From *Speculum Veneris*, a name by which one of the species was formerly called.]

Speculária spéculum.—Venus' Looking-Glass, also called *Campanula speculum*.—This is an annual border-flower of some beauty; very hardy; having it once in the ground it will sow itself; the young plants may be taken up in the spring and planted where they are to remain,

set one foot apart; or sow the seed in April. One foot high; very branching; producing a long succession of blue flowers, which close at the approach of rain and in the evening. There is also a variety with white flowers.

SPHÆNOGYNE.

Sphænogýne speciosa.—This is a most beautiful flowering annual from the Cape of Good Hope, growing about one foot high. The plant is of handsome foliage and a most profuse bloomer. The flowers open fully when the sun shines upon them, and then display a show of the most pleasing kind. The flower has some resemblance to the *Calliopsis*. Rays, yellow; disk, dark-brown; about two inches in diameter; in bloom from July to October. A bed of it would be a delightful contrast with some other dwarf plant of an opposite color.

SPIRÆA.—MEADOW SWEET.

[Name supposed to be from the Greek word meaning to *entwine*, in reference to the use of some of the species in garlands.]

A large genus, comprising both herbaceous perennials and ornamental shrubs.

Spiræa Ulmária.—Meadow Sweet, or Queen of the Meadow.—A hardy herbaceous perennial, a native of Britain, where it abounds in moist meadows, perfuming the air with the Hawthorn-like scent of its abundant white blossoms; in June, July, and August. It grows three or four feet high.

“ Each dry entangled copse empurpled glows
With Orchis blooms; while in the moistened plain
The Meadow-sweet its luscious fragrance yields.”—*Dr. Bidlake's Year.*

The double kind, *S. Ulmaria plena*, is an improved variety of the single. A large mass of it is quite imposing;

its fine double white flowers in ample corymbs, on erect stems two or three feet high, have the appearance of snow. From June to August. Leaves pinnate, downy beneath; the terminal leaflets larger, three-lobed; the lateral ones undivided. This and most of the species succeed best in a strong, moist soil, enduring the severest winter without protection.

The Golden-striped leaved Meadow-sweet is a variety of the single Meadow-sweet, with leaves elegantly variegated with golden-yellow. The flowers, which are not of much account, are of a greenish-white.

S. filipéndula.—Dropwort, is an herbaceous perennial of easiest culture. It is so called from the manner in which its tuberous roots hang together by threads. The flowers are arranged in corymbs, somewhat flattened. It is very handsome in bud, just before blooming; the buds are bright rose or red. The foliage is elegant; leaves pinnate; leaflets serrated. The Double Dropwort, *S. filipendula plena*, is one of the finest hardy perennials. It possesses all the elegance of the single variety in its foliage; while the mass of its pure white flowers is much finer and more showy. It does not grow so high, and is in flower all the season, throwing up a succession of flower-stems until frost. The tuberous roots of this species must be divided with care in August, to have a strong bloom the following season; care must be taken to preserve an eye on each tuber, as in dividing the Peony, or the root may fail. Sometimes sprouts will be thrown out from the tuber, but not commonly.

S. lobáta.—Lobed-leaved Spiræa.—Queen of the Prairie.—A species, indigenous in the middle States. The flower-stems are two feet high, terminated by corymbs of deep-pink or red flowers. It is not so long in bloom as the last species and varieties, but fine in its season; in July. Leaves pinnate, glabrous; the odd leaflet large,

seven-lobed; lateral ones three-lobed. Varieties of this are found in collections as *S. palmata* and *S. venusta*; they are more robust plants, and differ somewhat in the foliage and the depth of color of the flowers.

S. Japonica.—Japan Spiræa.—The foliage of this species is a rich deep-green, decomposed. Flowers pure white in paniced spikes; one and one-half foot high; in June and July. This is one of the most delicate and elegant of all the Spiræas; and, like all the rest, very hardy. These spikes of white flowers, with the foliage, are fine for choice bouquets.

S. Arúncus.—Goat's Beard.—This is a tall-growing species, three or four feet high, with large compound leaves, and paniced spikes of yellowish-white flowers; in June and July. This is more suitable for the shrubbery than for the border.

SYMPHYTUM.—COMFREY.

[Named from the Greek, signifying *to grow together*, the plant having formerly been used as a vulnerary.]

Sýmplytum officinále.—Common Comfrey.—A rather coarse, rough, hairy plant, with showy flowers in nodding racemes. The color of the flower is white, blue, pink or red in the different varieties. The plant is very mucilaginous, and on that account sometimes used medicinally.

TAGETES.—MARIGOLD.

[Named after *Tages*, a Tuscan divinity.]

Tagétes pátula.—French Marigold.—This is one of the old-fashioned tender annuals, deservedly popular from the brilliancy and variegation of its flowers, and its easy cultivation. Some of the improved varieties are exceedingly

beautiful. A rich, velvety, dark, reddish-brown, is the most common color. This, when striped and variegated with yellow, is still more beautiful; then there are flowers of a plain lemon or orange-yellow color, or dark-brown, edged with yellow, and variously shaded; these, when full double like the *Ranunculus*, are superb. Some of the single varieties with brown and yellow-striped petals, are also fine. The only drawback to this beautiful flower is the odor, which is disagreeable to many persons. This species is sometimes called the Velvet or *Ranunculus* Marigold. It is in flower from July to October, and in rich ground, if planted singly, or two or three feet distant from any other plant, will make quite a large bush before it is cut down by frost. All the varieties of this and the African Marigold are apt to degenerate, even when the seed is saved from the most perfect flowers, unless the single varieties in their neighborhood are pulled up and thrown away as soon as they show flower.

T. erécta.—African Marigold.—This is also one of the old inhabitants of the flower-garden, and although called African, it, with the preceeding, came from South America. The large double varieties of this species are very rich; the colors from a pale citron-yellow to deep-orange. The seed may be sown any time in May. The plants should be transplanted when large enough, into patches of four or five plants each; all inferior sorts should be pulled up as soon as the flowers appear. One plant is enough for one place, which, if tied up to a support and trimmed occasionally, will give good satisfaction and will continue to flower till frost.

T. signáta.—This species of Marigold is of recent introduction, and, when properly cultivated, forms a striking ornament of the flower-garden. The variety called *T. signata pumila*, is not more than one foot in height, forming a compact hemispherical bush from one to two

feet in diameter. I exhibited one plant at the Horticultural rooms last September, which measured more than six feet in circumference, or two feet across. The foliage is of a rich deep bluish-green, finely pinnated, almost covered with its innumerable small, single, orange blossoms. The plants are as symmetrically shaped, as if they had been artificially trimmed. The plant throws out from the main root a succession of flower-stems, which, with every part of the plant, produce flowers even until it has experienced a number of hard frosts. This is very useful for borders or beds of dwarf plants. If the plants are started in hot beds, they will commence flowering much earlier than those planted in open ground. Plant in rich soil, giving each plant plenty of room. This Marigold, when planted in alternation with the dwarf-crimson Cock's-comb, will make a brilliant and striking display.

THALICTRUM.—MEADOW-RUE.

Thalictrum anemonoides.—Rue-Anemone.—A pretty little indigenous perennial, which looks in flower so much like an Anemone, that it was formerly called *Anemone thalictroides*, but the character of the fruit places it with *Thalictrum*. It has tuberous clustered roots, which are readily broken, and care is needed to transplant it successfully. This is a common plant in the woods, in April and May, and is one of the best known early flowers. The flowers are usually white, but sometimes tinged with pink; rarely flowers are found with a tendency to become double. When transferred to the garden, it should have a moist and shady situation.

THUNBERGIA.

[Dedicated to *Thunberg*, an indefatigable botanical traveller.]

Thunbergia alata.—*Thunbergia*.—A handsome climbing green-house perennial, but succeeds well as an annual, from seed sown in the open ground the last of May; grows five or six feet high, with numerous buff-colored flowers, with dark throat; from July to October. The White-flowered,—var. *alba*,—is a very showy variety of *T. alata*, differing in no respect except color. The Orange-flowered,—var. *aurantiaca*,—is another variety. The varieties are easily multiplied by cuttings, and are often treated as stove-plants, but succeed better in the conservatory or green-house; and, if planted in a warm, sunny border, it will grow and blossom freely during the summer months. A soil composed of peat and loam is that which suits them best. Plants forwarded in pots, in a frame, succeed better than those sown in the open ground. There are other improved varieties, all fine. The plants throw out many lateral branches, and will require training to a trellis or frame-work.

TIARELLA.

[Named from *tiara*, a particular kind of head-dress, a mitre, in allusion to the form of its capsule.]

Tiarélla cordifolia.—Heart-leaved *Tiarella*.—This fine dwarf plant is found in the woods in most of the Northern States. The roots are creeping, and send out runners. Leaves on long hairy petioles, heart-shaped, lobed and toothed, hairy on both sides. Flowers entirely white, on long racemes six or eight inches high. In blossom in June. A hardy perennial, related to *Saxifrage*, and easily cultivated in the flower-border.

TIGRIDIA.—TIGER-FLOWER.

[Named from *tigris*, the tiger, the flowers being spotted.]

Tigridia Pavonia.—Mexican Tiger-Flower.—This, and *T. conchiflora*, which is by some considered as a distinct species, and by others as only a variety, are exquisitely beautiful, but not sufficiently hardy to endure much frost. The bulbs are tunicated, producing from one to four stems each, from eighteen inches to two feet high; the flowers are of short duration. It is born to display its glory but for a few hours, when the sun totally destroys its beauty; but to compensate for this sudden decline it continues to produce flowers a number of weeks.

The shape of the flower is singularly curious, and the coloring of each variety gorgeous. The flowers of *T. Pavonia*, are of the richest scarlet imaginable, variegated with a bright golden-yellow, spotted with black. The ground-work of *T. conchiflora* is of the richest orange, variegated with light-yellow, also spotted with black. No flowers can exceed these in beauty; but nature does not lavish all her riches upon one flower; in this there is no scent. The flowers are large; produced in succession nearly all the season. The bulbs should be planted about the middle of May, about two inches deep in any rich garden soil; they require no particular care. The bulbs and offsets should be taken up in October, and dried; but be particular not to expose them to frost while drying, or at any other time, as that would destroy them. They may be kept in dry sand, saw-dust, or moss, until the time of planting in the spring. The mice are very fond of the roots, and if they find them, but few, if any, will be left to plant.

TRADESCANTIA.—SPIDER-WORT.

[Named in memory of John *Tradescant*, gardener to Charles I.]

Tradescántia Virginica.—Spider-wort.—With its varieties are interesting border-flowers, on account of the continual succession of fine blue or white flowers, which are produced every morning, from May to September. It has long, grass-like foliage; flowers on stems one and one-half foot high, in umbel-like clusters. There is also a variety with double flowers, of a reddish-purple. None of them are desirable for bouquets, as the flowers close, and never open in water; hardy perennials; propagated by dividing the roots, which multiply very rapidly.

TRILLIUM.

[Name from *trilix*, triple, as it has all its parts in threes—three styles; three petals; three sepals (leaves of the calyx); and three leaves on the stem.]

Trillium pictum.—This is a very handsome species of this curious genus; indigenous, but rarely found. I shall not forget the pleasurable surprise I experienced some thirty years since, as I came unexpectedly upon a bed of it in the woods of Lancaster, Mass., the first time I had seen the plant. The patch in full bloom, five or six feet in diameter, was indeed beautiful. It was situated in a dark, shady part of the woods, in a rather peaty soil. This species is exclusively a North American plant. The flowers are two inches in diameter, pure white; the petals pencilled at the base with rich crimson-purple. The fruit is also very ornamental, being a large scarlet berry.

T. sessile.—Sessile-flowered.—Is found in Pennsylvania and southward; it is a dark-chocolate color, the leaves beautifully variegated with dark and light-green.

T. grandiflorum, is probably the handsomest of the species. The petals are one and one-half to two inches

long, white at first, gradually changing to a dark-rose color; the berry dark-purple. It is found in Vermont, Wisconsin, etc.

T. cernuum.—Nodding Trillium.—Although the least beautiful of the genus, it is still elegant and interesting; the flower is pure white, much smaller than that of *T. pictum*. *T. erectum* (upright), is of a dull purple color, larger flowered than *T. cernuum*.

The Trillium is difficult to keep in the flower-garden. The only chance of success in their cultivation would be upon a bed of peat and leaf-mould, in a shady and rather moist locality. They may be increased, though slowly, by the division of the roots.

TRITOMA.

[From Greek words signifying *three* and *to cut*, in allusion to the three sharp edges of the ends of the leaves.]

Tritoma uvária.—A native of the Cape of Good Hope, and has given rise to several varieties, which differ somewhat in their foliage and flowers as well as their time of blooming. All thrive best in peat soil, but will do very well in any other light earth. They are not hardy enough to stand our winters, unless with great care, and must therefore be kept in the green-house or perhaps the cellar, though I have succeeded in keeping them in the open ground by covering them deeply with earth.

These are splendid late-flowering, sub-evergreen, herbaceous plants, forming large, robust, stemless leaf-crowns, from the centers of which their tall flower-scapes; from three to five feet in height; are produced in the late summer and autumn months, with large terminal, densely-flowered racemes of rich, pendant, orange-red tinted flower-tubes, each raceme from one to two feet in length.

They are admirably adapted for forming large effective groups and beds, in which the numerous terminal flame-colored blossoms form a stately distant or mediate effect. The species thrive in all ordinary rich garden soils, or in equal portions of loam, peat and leaf-mould, and bloom from the middle of August until the end of September. *Tritoma serotina* unfolds its richest colors in October, and in fine seasons prolongs its ornamental effect into November.

TROPÆOLUM.—INDIAN CRESS.

[Named from the Greek word for a *trophy*. The leaf resembles a buckler, and the flower an empty helmet.]

Tropæolum peregrinum.—Canary Bird Flower.—This is a beautiful climber, the charming little canary-colored blossoms of which, when half expanded, have a pretty and fanciful likeness to little birds. The plant has a fine, luxuriant, rambling character. It succeeds best in a light soil. If the seeds are planted in April or May, by the side of a trellis or arbor, the plants will soon cover considerable space, and produce their curious, lively flowers from July till the severe frosts of autumn. In rich, heavy soil it runs very much to vine, and produces its flowers very sparingly.

T. május.—Great Nasturtium.—This is a well known ornamental annual, of easy cultivation. It flowers best in a light soil. It looks well trained to a trellis, or over a wall. The flowers are rich orange, shaded with crimson and various colors; the variety with crimson or blood-colored flowers makes a fine contrast with the orange. The seeds are used as a substitute for capers, and the flowers sometimes eaten in salads, or used for garnishing dishes.

There are a number of fine varieties of the Great Nas-

TROPAEOLUM PEREGRINUM.

turtium, which are all beautiful and are very showy when trained together on a trellis or wall. The variety *T. Scheuermani* has straw-colored flowers with brown spots, and straw-colored flowers blotched and streaked with scarlet. *T. coccinium*, with scarlet flowers; *T. nigro purpureum*, with dark blackish-purple flowers; and *T. atrosanguineum*, with dark-crimson flowers, are all fine. These are some of the more distinct varieties of this species, but almost every variety of shade of their colors may be found in plants from the seeds of these sorts, as they vary very much; oftentimes the flowers will be different on the same plant. All are annual, and are propagated either by seeds, which are freely produced, or by cuttings of half-ripened wood, which will root freely in sand.

T. Lobbiánum, was first collected by Mr. Lobb, in Columbia; a rampant grower, and free-flowerer in the greenhouse, but does not succeed so well in the open ground; color of the flowers, bright orange-scarlet. It strikes freely from cuttings, but produces seed sparingly.

T. mínus.—Dwarf Nasturtium.—More than thirty varieties of this species are named in the European catalogues, and possess various habits; some very dwarf, others vigorous tall-growing plants, with every variety of color and shade of yellow, orange, sulphur, straw, creamy-white, scarlet, crimson, and dark-puce; shaded, blotched, and striped, most elegantly, with darker shades and colors. Carter's Tom Thumb varieties are dwarf, suitable for bedding-plants, and are yellow, orange, and scarlet, very rich shades without stripes or spots. There is also Catell's new Dwarf Crimson, very fine, and Dennett's new Orange and Spotted. One of the finest new Scarlet varieties is Crystal Palace Gem.

The following varieties, described by E. S. Rand, Esq., Chairman of the Flower-Committee of the Massachusetts Horticultural Society, were my seedlings:—

T. Bréckii.—“Raised by Joseph Breck.—A pretty petite variety, in color resembling *Lobbianum*, though perhaps darker; the petals are often finely fringed, a very free flowerer, but unless afforded a plenty of pot-room, ceases to grow after it begins to bloom; roots freely from cuttings, and seeds abundantly. Blooms very freely in the garden, and is desirable for bedding.

T. Rándii.—“A very fine seedling of Mr. Breck’s; a vigorous grower; the writer has, in one summer, had one side of a large green house covered by a small plant. This variety has the desirable property of blooming equally well as a border-plant in the summer, and in the green-house in the winter. The color of the flower is a brilliant yellow; the base of each petal marked with a round, black spot; the flowers are often veined with purplish-red, sometimes very deeply, and, from a large plant, often dozens of blossoms, all of different shades, may be gathered; this is particularly the case in the green-house; in the border, the colors are more constant. This is probably, from its abundant flowers and free habit, the most popular variety, of its color, among gardeners, for bouquet purposes; and, though of comparatively recent introduction, is very widely disseminated. Propagated by cuttings; seeds sparingly. *T. minus Breckii.*—A very pretty variety in the style of *T. Breckii* already described, with scarlet flowers; raised easily from seed.”

To describe all the beautiful sports of the *Tropæolum*, would be impossible, they are so numerous; very few of them will come true from seed; seeds from the same variety, will oftentime give a great diversity of colors. It is one of the most interesting, as well as one of the most ornamental of garden plants. There are two double varieties of *T. majus*; one with orange, the other with yellow flowers, which answer for effect so far as a brilliant display of these colors in masses is concerned, as they are free

bloomers; but they will not compare in beauty with the single varieties, when examined singly. They are so contorted and mis-shapen, and filled up with twisted petals, that a person, who had never before seen one, would think it almost anything but a *Nasturtium*. These varieties are propagated only by cuttings. I have noticed that the large-flowering *Nasturtiums* produce a greater profusion of bloom in light soil, than they do in that which is very rich; but the plants are more dwarfish.

There are many beautiful species and varieties of *Tropæolum*, which are suitable only for the green-house or stove.

TROLLIUS.—GLOBE-FLOWER.

[Name derived from an old German word, signifying *something round*, in allusion to the globular form of the flower.]

Tróllius Europæus.—Globe-Flower, also called Globe *Ranunculus* and Globe Crow-foot.—The petals being always inflected at the tip, and never expanded, they form a complete globe.

The European Globe-flower is a native of most parts of Europe, growing in moist shady places. "This splendid flower," says Linnaeus, "adorns the pavement of the rustics' on festal days." It is a bright-yellow flower, blooming in June and July; two feet high. A hardy ornamental perennial of easiest culture, preferring a moist rich soil. Propagated by dividing the roots in August. Martyn, in his edition of Miller's *Gardener's Dictionary*, says:—"In Westmoreland these flowers are collected with great festivity, by the youth of both sexes, at the beginning of June; about which time it is usual to see them returning from the woods in an evening, laden with them, to adorn their doors and cottages with wreaths and garlands."

T. Asiaticus, has large dark-orange flowers, more open than *T. Europæus*, on stems one foot high; in June and July. This, like the other, is a hardy border-perennial, and propagated in the same way.

TULIPA.—GARDEN TULIP.

[Linnæus classed this among barbarous names. In Persian it is called *thouly ban*, whence undoubtedly its origin. In old French it is called *tulipan*.]

Túlipa Gesneriána.—The Garden Tulip, has been called the King of florist's flowers, having been a prime object of attention with this class of cultivators, for nearly three centuries. Its popularity has, for many years, been on its wane. It appears to have been brought from Persia by the way of Constantinople, in 1559, and in a century afterwards to have become an object of considerable trade in the Netherlands. The taste for Tulip in England was at its greatest height about the end of the seventeenth and the beginning of the eighteenth century. It afterwards declined, and gave way to a taste for rare plants from foreign countries.

“ Then comes the Tulip race, where beauty plays
Her idle freaks ; from family diffused
To family, as flies the father dust.
The varied colors run ; and while they break
On the charmed eye, th' exulting florist marks
With secret pride the wonders of his hand.”

The Tulip is a flower of easy cultivation. The varieties are endless. With the early and late varieties the garden can be made very gay all the month of May.

These flowers became, in the middle of the seventeenth century, the object of a trade for which there is no parallel, and their price rose beyond that of the precious metals. Many authors have given an account of this trade, some of whom have misrepresented it. One called it

the Tulipomania; at which people laugh, because they believe that the beauty and rarity of the flowers induced florists to give such extravagant prices. But this Tulip trade was a mere gambling commerce, and the Tulips themselves were only nominally its object, many bargains being daily made, and the roots neither given nor received. In Holland and Belgium the passion for Tulips among the florists became an absolute madness. Many thousand francs have often been given for a single root, and the commerce of this article in 1637, rose to some millions of francs. At the period of this effervescence, properties of considerable value were given for a single flower, and a memorable monument of this outrageous folly is still exhibited at Lille, in the Tulip Brewery, which, it is said, though valued at 30,000 francs, (\$6000,) was given by its proprietor for a single root. At last the Tulip mania became so overpowering that the government of Holland, convinced of the evil effects which might result from it, were obliged to interfere, and to pass laws of great severity against such transactions, limiting the extent of the amount for any one bulb to 200 francs. To this day, a few of the choice and rare varieties are priced at that sum in the Dutch catalogues. During this Tulip fever, a merchant in Holland gave a herring to a sailor who had brought him some goods. The sailor, seeing some valuable Tulip roots lying about, which he considered of little consequence, thinking them to be onions, took some of them unperceived, and ate them with his herring. Through this mistake, the sailor's breakfast cost the merchant a greater sum than if he had treated the Prince of Orange.

Another anecdote is told of an Englishman, who, being in a Dutchman's garden, pulled a couple of Tulips, on which he wished to make some botanical observations, and put them in his pocket; but he was apprehended as a

thief, and obliged to pay a considerable sum before he could obtain his liberty. A bed of two hundred and fifty Tulips, of the finest varieties, at the present time, cannot be obtained without a considerable outlay; and there are few, who have the means or the fancy, who are willing to be at the expense.

Tulips are divided into two classes, early and late bloomers; and these are, again, subdivided into other classes.

Early Tulips commence their blooming about the first of May, in company with the Hyacinth, and some of the varieties are very desirable. They are dwarf in their habits. The many distinguished varieties of early Tulip are all produced from the late bloomers, which, having tall stems, and much finer colors, engross nearly the whole attention of the cultivators of Tulips. The modern mode of classing the late varieties by the Dutch florists, is as follows:—

“*Prime Baguets*, from the French word *baguette*, a rod, or wand. They are very tall, with handsome cups and white bottoms, well broken with fine brown, and all from the same breeder.

Rigaut's Baguets.—This variety is supposed to have received its distinctive appellation from some individual by the name of Rigaut, who was eminent in this branch of floriculture. They are not quite so tall as the former, but have strong stems, and very large, well formed cups, with white bottoms, handsomely broken with rich brown color, and all from the same breeder.

Incomparable Verports.—A particular kind of *Bybloemens*. Cups very perfect, cherry-red and rose color, and white bottoms well broken with shining brown. Some of these are from \$10 to \$25 a root.

Bybloemens, or nest flowers, called by the French *Flamands*. They have white ground, or nearly so, and are

beautifully broken with shades of purple and a variety of colors. They are from different breeders.

Bizarres, from the French, odd, or irregular. Ground yellow; from different breeders, and broken with a variety of colors.

Paroquets, or Parrot Tulips.—The edges of the petals are fringed, colors, brilliant crimson and yellow, with shades of bright green; but still they are held in no sort of esteem among florists."

Double.—These are of various brilliant red, yellow, and mixed colors, but, like many other double flowers, are deemed monsters, and not appreciated by flower fanciers, although they have an elegant appearance, from their upright, tall, and firm stems, and crowns of large, peony-shaped flowers; and, when scattered with the Parrot Tulips among the small shrubs and other plants, in the borders of avenues and walks, or planted out in separate beds, they have a pleasing effect.

Breeders are such as have been procured from the seed, and consist of one color, which is red, purple, violet, gray, brown, black, yellow, or some other individual color, without any sort of variation. These are cultivated in a rather poor and dry soil, and become broken or variegated, in from one to twenty years, and produce new varieties; but so uncertain is the prospect of a favorable result, that but few persons are willing to make the experiment, by raising Tulips from seed, as probably not one in a thousand, after so many years of patient cultivation, would exhibit anything remarkable or new. For this reason, a new and superb Tulip commands a high price at the present time in Europe.

When a Tulip has broken, the colors are unchangeable, when properly managed, and it is perpetuated by offsets from the parent bulb. Tulips become deteriorated by improper culture, by feeding them too highly with stimu-

lating manures. This causes the colors to run together, and the flower becomes what the florist denominates "foul," and they can only be restored to their former beauty by planting in a pure loamy soil for a few years.

A DESCRIPTION OF THE PROPERTIES OF A FINE LATE
TULIP.

The stem should be strong, elastic, and erect, and about thirty inches above the surface of the bed.

The flower should be large, and composed of six petals. These should form almost a perfect cup, with a round bottom, rather wide at the top.

The three exterior petals should be somewhat larger than the three interior ones, and broader at their base. All the petals should have perfectly entire edges, free from notch or serrature. The top of each should be broad and well rounded. The ground color of the flower, at the bottom of the cup, should be a clear white or yellow; and the various rich colored stripes, which are the principal ornament of a fine Tulip, should be regular, bold, and distinct on the margin, and terminate in fine broken points, elegantly feathered or penciled. These are the principal points of excellence, in the eyes of a florist; yet with amateurs there is some difference of opinion.

The colors which are generally held in greatest estimation, in variegated striped sorts, are black, golden-yellow, purple, violet, rose, and vermilion, each of which is varied in different ways; but such as are striped with three different colors, in a distinct and unmixed manner, with strong regular streaks, and but little or no tinge of the breeder, are considered the most perfect.

The cultivation of the Tulip is mystified by the elaborate directions generally given for its cultivation. I have succeeded, for many years, in producing very fine flowers

by a simple course of cultivation; the varieties in my possession being probably as fine as can be obtained from any collection in Europe, having been imported, a few years since, at great expense.

The finer sorts of Tulips should always be planted in beds, containing a considerable quantity of bulbs; but they look very well when disposed in small groups, in the borders, particularly the more common sorts.

The proper season for planting is in October. If kept out longer, they are somewhat weakened, and will not flower so finely.

A bed for two hundred and fifty Tulips, should be thirty-six feet long by four wide. The bulbs to be planted in rows, seven inches apart, and seven inches distant from each other. The ground being marked out, the soil should be taken out to the depth of twenty inches. The rich surface mould should be first taken off and placed by itself, while the subsoil must be taken off out of the way. I have found the best soil for Tulips to be that made of decayed turf, from an old pasture, well incorporated with old, thoroughly-decomposed cow-manure, with a little sand, if the soil be adhesive; for the Tulip and most bulbs delight in a loose soil. The exact quantity of these three materials is laid down by some florist as one third of each, but I have not been so nice. My mould is light enough without much sand, and the quantity of manure is very small, not more than one-eighth. When highly manured, the flowers will make a ranker growth, but it is injurious to the flower. The mould or soil should be prepared beforehand, and frequently turned to receive the influence of the air and sun. When the bed has been dug out as directed, the cavity is to be filled with this compost, a week or ten days before planting. My practice is to fill it even with the surface of the ground. This, when settled, will be the right depth to

plant the bulbs, if planted on the surface. The planting should be done in a pleasant day. It should not be done directly after a heavy rain, for then the soil will be heavy. That the roots may be planted exact, I prepare a board, six and a half inches wide, the length the width of the bed. On the edges of the board I mark the distances the bulbs are to be planted from each other, by sawing in a notch; thus, three inches from the end, for the first, and from that seven inches, until the whole number, seven, are made, which will leave three inches on the other side. Stretch a line on one side of the bed, and, by keeping one end of the board up to it, the planting may be done without any trouble, and every root in its right place, provided the board is placed square across the bed at each removal. Having placed the board, let some fine sand be placed where the bulbs are to be set. The roots should then be gently pressed into the earth, close up to the notch, but not so deep as to cover them, the large bulbs a little deeper than the smaller ones, and remove the board; then completely envelop each root with a little cone of sand, or very sandy earth, and so proceed until all the bulbs are set. Now with a spade gradually cover the bulbs with the surface soil, until the bed has been raised four inches above the level of the walk. This will cover the bulbs about three and a half inches, the proper depth. Let it be carefully smoothed, but not with any instrument that will interfere with or put out of place any of the roots which have been set. All the care necessary, after this, is to throw some light protection over the beds before winter sets in, to be removed by the first of April. Afterwards keep the bed free from weeds. To have the flowers in the greatest perfection, screen them from the sun, in mid-day, by an awning. A powerful sun soon destroys the beauty of a Tulip bed, by causing the colors to run together. A bed of late Tulips is generally in its

highest perfection about the 20th of May, and may be kept in fine condition a fortnight longer, by taking the trouble to erect an awning over them. I take up my Tulips about the 20th of June, and dry them under cover, in an airy place, and, when dry, take off the offsets and plant them out, while the flowering roots are each wrapped in a piece of waste paper, and put away, in a box or drawer, in a dry place, until wanted to plant. One hundred different varieties, with their names and colors, reputed the very best, may be obtained from Holland, at the cost of about \$25; but I have found, by experience, that some of the rarer and most expensive sorts are not included. Very good border Tulips, including fine double sorts, early and late, single, parrots, etc., may be obtained from 50 cents to \$1 per dozen, and some of the common sorts at much less price.

Tulips sometimes succeed very well, in any good garden soil, without extra preparation. The Duc Van Tholl Tulips, single and double, are some of the most esteemed early sorts, the single being the most suitable, and about the only one that succeeds well in pots and for forcing.

The sorts that are planted in the borders may be set in groups of from three to five bulbs. These need not be taken up oftener than once in three years. Separate the offsets, as they become so crowded that they will not flower well, and besides, as the new bulb is formed every year, below the old one, the roots will penetrate so deep, that, if permitted to remain many years, they become so weakened they will not flower at all.

UVULARIA.—BELL-WORT.

A genus of little beauty and easy culture. We have a number of indigenous species found growing in the margin of woods and thickets.

Valéria perfoliáta.—Perfoliate Bell-wort.—A plant, about one foot high. Stem smooth, round, running through the leaves, furnishing a good example of the perfoliate leaves. Flowers pendulous, pale-yellow, in May; perennial.

U. grandiflóra.—Large-flowered Bell-wort.—Similar to the foregoing, but larger; the leaves narrower, the flowers brighter yellow and smooth inside. This is one of the prettiest of the genus, and worth cultivating; hardy perennial.

VALERIANA.—VALERIAN.

[Name from *valere*, to have efficacy, on account of its medicinal qualities.]

The species are generally ornamental garden plants of easy culture in common earth, and preferring a shady, moist situation.

Valeriana dioíca, has usually the stamens and pistils in separate flowers, situated on different plants. This species, and *V. officinalis*, are medicinal. Cats are delighted with the roots, and rat-catchers employ them as they do the oil of anise, to draw rats together.

V. Phu.—Garden Valerian.—This is an esteemed border-flower; perennial, growing to the height of three or four feet, with large corymbs of white flowers; highly fragrant; more cultivated for that property than for their beauty.

V. Pyrenáica.—This is a handsome species with umbels of light-red flowers, growing about three feet high.

VERBASCUM.—MULLEIN.

[An alteration of the Latin *barbascum*.]

Verbáscum Thápsus.—Common Mullein.—No doubt, this species will be considered by many as hardly ornamental. Everybody knows this tall and very common

plant, with leaves exceedingly wooly on both sides, with its long, thick, cylindrical spikes, with handsome five-parted flowers, abundant in dry pastures; in July and August. Most of the European species are biennial; a few perennial, and some quite desirable for the garden.

V. phœniceum, is a native of the South of Europe, a handsome hardy perennial, growing three feet high, with elongated racemes of purple flowers.

V. pulverulentum.—This is a native of Britain, biennial, and a magnificent plant, sending up a stem a yard high, covered with many hundreds of gold-colored flowers; leaves powdery, ovate-oblong, sub-serrate.

V. Blattária.—Moth Mullein.—An indigenous species, two or three feet high. Flowers in a long terminal raceme, yellow or white, marked with purple; stamens covered with purple hairs. This plant is said to have the power of driving away the *blatta*, or cockroach. Propagated from seed.

VERBENA.—VERVAIN.

[An ancient name for some sacred herb.]

“Vervain was held sacred among the ancient, and was employed in sacrifices, incantations, etc.; it was one of the plants termed by the Greeks, Sacred Herb. It was suspended around the neck as an amulet, thought good against bites, and recommended as a sovereign medicine for various diseases. It is supposed to have been in use with the Druids upon sacred occasions.”

“Lift your boughs of Vervain blue,
Dip in cold September dew;
And dash the moisture, chaste and clear,
O'er the ground and through the air.”—*Mason*.

"In Rome, the Vervain was used on various occasions, as, in religious ceremonies, incantations, treaties, etc.

"Bring your garlands, and with reverence place
The Vervain on the altar."—*Ben Johnson*.

"Virgil mentions it as one of the charms used by an enchantress.

"Bring running water, bind those altars round
With fillets, and with Vervain strow the ground."—*Druids' Chorus*.

"Drayton, in the *Muse's Elysium*, calls it the Holy Vervain, and in the same poem speaks of it as worn by heralds.

"A wreath of Vervain heralds wear,
Amongst our garlands named,
Being sent that dreadful news to bear,
Offensive war proclaimed."

We have a number of indigenous *Verbenas* or Vervain in New England. *V. hastata*, which is the common blue Vervain, is the only one that has any claim to beauty, a tall and rather showy plant, often found by road sides on low ground; the stem is three or four feet high; leaves opposite, rough, sharply serrate, tapering to a point. Spikes numerous, erect, slender. The flowering commences at the base, and is long in reaching to the summit. Flowers close, of a dark-purplish blue. In bloom from July to September; perennial; not worth cultivating.

Garden Verbenas.—The genus was considered a worthless weedy race, until the introduction of *V. Aubletia*, *chamædrifolia*, and *Lambertii*.

Verbena chamædrifolia was introduced into England from Buenos Ayres, by Mr. Hugh Cumming, an ardent lover of nature, about 1825. For a long time this was the only species cultivated; its form was excellent and its color of the most brilliant scarlet. The introduction of this beautiful and showy flower into this country, about

the year 1835, created a great sensation among the florists of the day; and well it might, for we had nothing of the kind then in cultivation that could equal it in beauty and richness of coloring for masses. The flower in the brilliancy of the color, has not been surpassed in any new variety, though great improvements have been made in the size of the flowers and form of truss. The credit of producing the first white, crimson, and pink varieties, is due to Robert Buist of Philadelphia, from seed received from Buenos Ayres, about the year 1835. *V. multifida*, with lilac-purple flowers, was introduced from Peru; *V. Tweediana*, with rose-crimson flowers, from Brazil. From these have sprung all the numerous varieties, many hundred in number, now in our collections. In these varieties may be found every color except yellow, and even this color in its lighter shades, is sometimes seen in the eyes of some of the sorts. We now have crimson, scarlet, rose, white, lilac, blueish-purple, and purple in all their shades, with eyes of purple, crimson, rose, white, or straw color, and also a number of striped and spotted sorts. No plants are more generally cultivated, or more eagerly sought after, than this beautiful family. I sometimes wonder how a flower-garden could be considered passable without the Verbena. The habits of all are similar, naturally prostrate creeping plants, taking root freely wherever the stems come in contact with the ground, and sending forth innumerable clusters of their many hued, brilliant flowers, from June to November.

“The qualities of a first-class Verbena as laid down by florists, are: Roundness of flower without indenture, notch, or serrature; petals thick, flat, bright, and smooth; the plant should be compact, with short, stout joints, either distinctly of a shrubby habit, or a close ground creeper or climber; the trusses of bloom compact, standing out from the foliage; the flowers meeting but not

crowding each other; the foliage should be short, broad, bright, and enough to hide stalk; in the eyed and striped varieties, the colors should be well defined and lasting, never running into each other, or changing in the sun." I should also add that the truss should be hemispherical, not flat, and the center filled out full with perfect flowers, destitute of green eyes or flower-buds.

The Verbena is kept with difficulty through the winter, except in the green-house or in warm rooms; unless kept growing, it will perish. It cannot therefore be kept even in a dry cellar, and it is not hardy enough to stand the winter.

Most of the varieties are easily raised from cuttings, and can be purchased at so small a price from florists, that it is by far the most economical to buy a few dozen in the spring than attempt to keep them through the winter. Small plants turned out from the pots in June, soon make large plants, and by October will be two or three feet across. They continue to flower after severe frosts, and are among the last lingering flowers of autumn.

The seed, sown in May, in the open ground, will begin to show flowers in August; but, when the seed is sown in January, in the green-house, and afterwards potted and placed in a hot-bed in March or April, will begin to flower in June.

Seedling plants produce seed in abundance, but those plants, which have been a long time propagated from cuttings, lose that power in a great measure, and produce none or very sparingly. It is easy enough to raise seedlings, but the chance of getting an improved variety, may not be one to twenty or one in fifty.

No plant equals the Verbena for masses, particularly when grown in fanciful beds and on lawns, as the brilliancy of the flowers contrasts finely with the green grass.

VERONICA.—SPEEDWELL.

An extensive genus, most of the species being ornamental plants, the taller growing sorts suitable for the borders, and those of a more dwarfish habit for the rockery. The flowers are produced in spire-like spikes, or racemes, and are generally blue; but some few species are white, and others pink.

Verónica Virgínica, is a tall, strong-growing species, four or five feet high, with white flowers in clustered spikes; in July and August; suitable for the shrubbery.

V. Sibirica has blue flowers, in spikes, in July and August; two feet high. *V. speciosa* is a dwarf-species, with brilliant blue flowers, in spikes; June and July. *V. azurea* is two or three feet high, with fine sky-blue flowers.

V. spicata is about one foot high, with fine blue flowers. There are as many as fifty species, all easily cultivated in almost any soil; propagated by dividing the roots.

VINCA.—PERIWINKLE.

Vinca minor.—Common Periwinkle.—A hardy evergreen prostrate plant, rooting at the joints; flowers blue with a white variety.

V. májor.—Great Periwinkle, with larger and rounder leaves than the foregoing and not quite so hardy, evergreen trailing plants; valuable for their early and long-continued flowering, flourishing under the shade and drip of trees. It is best to give a little protection in winter. A variety of each, with gold-edged leaves, is very beautiful but not so hardy. There is also a variety with silver-edged leaves.

V. rósea, or Madagascar Periwinkle.—This is a beautiful green-house plant, with evergreen leaves; one variety with white flowers and red eye, another with white, and

still another with rose-colored flowers. These varieties are in perpetual bloom, and are easily propagated by cut-

VINCA ROSEA.

tings under a hand glass. Young plants planted out in June, will flower through the summer.

VIOLA.—VIOLET.

[The ancient Latin name.]

"Violets, sweet tenants of the shade,
 In purple's richest pride arrayed,
 Your errand here fulfil;
 Go bid the artist's simple stain
 Your lustre imitate in vain,
 And match your Maker's skill."

This is an extensive genus of plants, of dwarf habit, suitable for the border or rock-work. There are many indigenous species which flourish well in the garden, and will repay the trouble of collecting them from the woods, meadows, and pastures.

Viola odorata, the Sweet-scented Violet, should not be wanting in any collection of plants, on account of its fragrance and early appearance. A single flower will perfume a large room. The flowers appear in April, and continue through May. There are the single white and single blue, and the double blue and white varieties; the double sorts are the most desirable; they succeed best in a shady, sheltered place, and are rapidly multiplied by divisions of the plant.

The double Neapolitan Violet is a variety with pale-blue flowers, extensively grown for small hand bouquets, and much admired on account of its exquisite scent. The Sweet-scented Violet is a native of every part of Europe, in woods, amongst bushes, in hedges, and on warm banks.

The Violet is said to be an emblem of faithfulness.

"Violet is for faithfulness
 Which in me shall abide;
 Hoping likewise from your heart
 You will not let it slide."

It is a pity that our American species do not possess the fragrance, which is so characteristic of the European Violet. We have some beautiful species, however, well worthy the attention of the lovers of flowers.

V. pedata.—Pedate Violet.—This is a large-flowered and handsome species, very distinct from the other American Violets. Flowers pale-purple, white or yellowish at the base of the petals. It is often found in large masses, in woods and dry soils, the beginning of June; perennial. This will succeed well in the flower-garden, in a light, sandy soil, and in a shady place. We have many other indigenous species, all interesting on account of their early appearance in the spring, but not very remarkable for beauty or show.

“ And as proud as all of them
Bound in one, the garden's gem,
Heart's ease, like a gallant bold
In his cloth of purple and gold.”

V. tricolor.—Heart's-ease, Pansy.—This interesting and beautiful flower is a native of Siberia, Japan, and many parts of Europe. A traveler, speaking of the forests of Sweden, says;—“Innumerable flowers of the liveliest colors peeped out between the masses of brown rock, enamelled with various kinds of lichens, and huge fragments were variegated with beds of the Pansy or Heart's-ease, displaying its different hues, relieved by the darkness of the sweeping pines.”

The Pansy, or Heart's-ease, now so generally cultivated and so much admired, is an improvement on the original species, and is known to florists as *V. grandiflora*. It is frequently called the Pansy-Violet, or Pansy, a corruption of the French name *pensees*, thought, alluding to keep in mind, or forget me not. It is a general favorite, as we may well suppose, from the numerous names that have been bestowed upon it abroad; as for instance the following:—

Love in idleness,
Live in idleness,
Call me to you,
Three faces under a hood,
Herb Trinity,

Jump up and kiss me,
Look up and kiss me,
Kiss me ere I rise,
Kiss me behind the garden gate,
Pink of my John,

Flower of Joye.

Hunt, in his enumeration of the flowers in blossom, in his history of the months, too fond of the Heart's-ease even to name it without a passing commendation, he calls it the Sparkler, a name which it so truly deserves, that it might well be added to those it now bears. Herrick plays upon its name of Heart's-ease: —

“ Ah cruel love, must I endure,
Thy many scorns, and find no cure?
Say, are thy medicines made to be
Help, to all others but to me?

“ I'll leave thee and to Pansys come,
Comforts you'll afford me some;
You can ease my heart, and do
What love could ne'er be brought unto.”

Pansies recommend themselves to notice not only by the brilliancy and variety of their colors, and the profusion of flowers they produce, but also for their durability in bloom, which, by attention to culture, will extend from April to December, including a portion of nine months of the year; and in warm, sheltered places, straggling flowers may be gathered through the winter. The facility with which all the kinds can be propagated, and the very little attention they require afterwards in culture, are additional recommendations.

The flowers ought to be planted in clumps or beds, and then the rich mass of bloom, so mixed and so many colored, produces a very pleasing effect. The most prevailing colors are plain purple and violet, of many shades; red, brown, white, yellow, etc., as well as purple and violet variegated, with white or yellow, etc., streaked with stripes and spots, in every diversity of coloring. One of the most remarkable varieties is one, called the King of the Blacks; the color, a plain jet-black.

The largest flowers are generally found on young vigorous plants, and in the earliest part of the season have

been known to measure two and one-half inches in length, and two inches across the upper petals; the colors, variegation and penciling, are then more uniform and regular than they are in the summer season. Flowers, having only one color, are called selfs; these are not so common as the varieties in which two, three, or more colors are combined and distinctly marked in the same flower. The first fine imported variety of *Viola grandiflora* which I beheld, was a self; color a deep-purple, with a very small yellow eye, and soon after a plain white or cream-colored variety. This was about 40 years since, probably among the first of the kind imported from England. I obtained very small plants of each sort from my old friend Wm. E. Carter, from the Cambridge Botanic Garden, and considered myself rich. They like a cool moist situation in the garden, particularly in hot summers, and ought, therefore, to be planted, not on raised beds, but in such as are upon a level with the alleys. They produce seed freely, which may be sowed early in spring, in cold frames to forward; and where the young plants are sheltered from the cold wind and storms, until the weather gets settled, when they may be planted in the open ground. Seed collected during the summer months, may be sown early in September. The plants will then have sufficient time to be firmly rooted before winter, and not be liable to be cast out by frost, nor to damp off. The seed should be sown in a shady situation, upon a bed of light finely sifted soil. After sowing the seed, sift a little mould over, so as to cover it and no more; then gently press the surface with a flat board, to bring the seed and soil together, by which means they will more certainly vegetate. The plants will generally appear in a week or ten days. When an inch high, transplant to where they are to flower, four or five inches apart. Choose an open sheltered situation. The plants will flower the following spring.

It sometimes happens, that, if the seed be left on too long, the pods are apt to burst open, and scatter on the ground, when numerous young plants will spring up in the autumn, particularly if a little fine mould be strewed on the surface around the old plants. These seedlings may be taken up any time in September or the beginning of October, and planted out in beds to flower in the following spring, when the finest may be selected for keeping, and the inferior ones cast away. Several will, of course, resemble the mother plant; but there is no doubt that the same pod of seed will produce many different varieties, both in color and shade, as well as in the form and size of the petal. Pansies grow very readily, and soon spread widely. When the plants thus extend, the soil being exhausted, and the stems smothering each other, the overgrown roots produce only small flowers. It is therefore necessary, in order to have fine flowers, frequently to renew the plants.

Propagation by Cuttings, to be successful, ought to take place at the end of May or early in June. If left till July or August, the success will be doubtful, because the flower-stems get hollow and pithy. The cuttings may be placed singly in thumb-pots, in a little light sandy loam and well-rotten dung, and set in a frame with a moderate bottom heat, to be kept rather moist and shaded; or they may be stuck in the ground under a common hand-glass, with coal ashes under to prevent the worms casting them up; but if placed on gentle bottom heat, the glass ought by no means to be shut down close, or they will be liable to damp off.

Propagation by Dividing the Roots, may be done in moist weather, any time from July to September. The readiest and most certain way is by layers, which may be made in either of the above named months. Make an incision in the joint near the top of the stem, which pin

down gently and cover half an inch deep with rich, light mould; if dry weather follows, water moderately, and the layers will soon take root. The plants thrive best in well manured loam, in a shady situation, and preserve their flowers longer; though they will grow and flower abundantly in almost any situation. A Pansy, to be perfect, should stand up well above the foliage; the petals should be flat without any curl or wrinkle, the edges without notch or serrature; the upper, lower, and middle petals so arranged, as to form as near as possible a perfect circle or oval.

WHITLAVIA.

[Named in honor of F. Whitlaw, an Irish botanist.]

Whitlavia grandiflora.—An elegant annual from California, with blue, bell-shaped flowers. It produces its flowers in continued succession, from June to October. In habit the plant resembles the *Phacelias*, but the flowers are more like the *Campanula*; of a very rich dark-blue. In heavy, wet soils, this plant does not succeed well, but flourishes in light, sandy loam. There is a variety with white flowers.

XERANTHEMUM.

[Name from Greek words signifying *dry* and a *flower*, on account of the dry nature of the flowers, which retain their color and form for many years.]

Xeranthemum annuum.—Purple Everlasting,—and a variety with white flowers, are popular border annuals, of easy culture in light, rich soil. Like the *Helichrysums*, they are valued for their properties of retaining their colors and form, when gathered and dried, and are much prized in forming winter bouquets for vases, etc.

YUCCA.—ADAM'S NEEDLE.

This is an ornamental genus of plants, mostly natives of the Southern States and South America. Some of them succeed well in the open ground in the Northern States, and form a pleasing contrast with other plants, on account of the peculiarity of their foliage. The leaves are sharp-pointed, stiff, and rigid; and, in some of the species, the edges of the leaf are margined with long threads.

Yucca filamentosa, called Thready Yucca, from the long threads that hang from the leaves, is one of the most hardy sorts. The flower-stem grows to the height of five or six feet, and nearly the whole of it is covered with large, bell-shaped, white flowers; all the species are rather shy flowerers; in August and September.

Y. gloriosa, and the variety *superba*, produce an immense number of fine bell-flowers on their tall stems. The foliage of all the species is evergreen, and they closely resemble each other. The severity of our winters often blackens the foliage; to prevent this, the leaves should be gathered up and tied together, and covered with straw. Propagated from suckers.

ZAUSCHNERIA.

[Named for M. Zauschner, a German.]

An elegant herbaceous perennial plant from California, where it is found in very sandy soils. The plant grows in bunches; the flowers a brilliant scarlet, tubular or trumpet-shaped, terminating in five unequal divisions; stamens and pistil projecting; flowers solitary, produced in the axils of the leaves; continuing in bloom most of the season; tender in wet soil, but has proved hardy in light soil, with little protection.

ZINNIA.

[Named in honor of J. G. Zinn, a German professor of botany.]

Handsome border annual plants, requiring the same cultivation as the Marigold.

Zinnia elegans, with its varieties, are all handsome flowering plants; in bloom from July to October; two

DOUBLE ZINNIA.

or three feet high. The colors of some of the varieties are very brilliant, and particularly the scarlets. The colors are white, pale to dark-yellow, orange to scarlet; shades from rose to crimson, from crimson to light-purple,

lilac, etc. The flower is handsome when it first commences blooming; the central, or disk part of it, which contains the florets, as they begin to form seed, assumes a conical shape, and a brown, husky appearance, which gives the flower a coarse, unsightly look.

Double Zinnia.—Within a few years, the great novelty of Double Zinnias has been disseminated. This, of all other flowers, was considered one of the most unlikely ever to become a pet, as the large central disk greatly disfigures the flower; but in the double flowers, this unsightly portion is transformed into regular petals, which, when fully expanded, form a hemispherical shape, become regularly imbricated, and the flower might be taken for a well-formed Dahlia, as they are nearly as large. The colors are the same as in the single varieties. The plants require considerable room to show off to advantage, and should not be planted less than two feet apart; they produce an abundance of bloom through the summer; a plant in full bloom is very showy. It is well to put out the plants within six inches of each other at first, as many of them will show semi-double flowers, which should be rejected; but the plants with full double flowers, as soon as they appear, may be removed to the bed prepared for them. With a little care, they will not be much checked.

DESCRIPTIVE LIST OF HARDY FLOWERING SHRUBS,
SUITABLE FOR THE SHRUBBERY, LAWNS, ETC.

AMELANCHIER.—JUNE-BERRY.—SHAD-BUSH.

[A name by which one of the species is known in Savoy.]

Amelanchier Canadensis.—June-berry, Shad-bush, Sugar Pear.—A shrub so variable that in its different states it has received at least a dozen different names. It is found as a low shrub and as a tree twenty feet high. Its leaves differ much in shape and smoothness, and the flowers are in some forms much larger and produced in greater abundance than they are in others. It is found along streams and in woods, and is conspicuous about the first of May for its white flowers in pendulous racemes. The crimson or purple bracts at the base of the flower-stalks, contrasted with the pure white flowers, and the glossy, silken, scattering pairs of the opening leaves, give a delicate beauty to this shrub. The fruit is berry-like and eatable. Easily transferred from the woods to the shrubbery.

AMORPHA.—FALSE INDIGO.

[Named from the Greek, meaning *wanting form*, from the absence of parts of the corolla.]

Amorpha fruticosa.—False Indigo.—A native shrub, found on the banks of streams from Pennsylvania, westward. It is very variable, and its different forms have received several distinct names. It grows about six feet high, has foliage somewhat like that of the Locust, and long spikes of dark-violet purple flowers which appear in July. Of easy propagation by seeds or by cuttings.

AMPELOPSIS.—VIRGINIAN CREEPER.[From Greek words signifying a *vine* and *resemblance*.]

Ampelopsis quinquesfolia.—Virginian Creeper, American Woodbine.—“This is the most ornamental plant of its genus. It recommends itself by its hardiness, the rapidity of its growth, and the luxuriance and beauty of its foliage. It is a native of our woods, and climbs rocks and trees to a great height. In cultivation it is often made to cover walls of houses, forty or fifty feet high, clinging by suckers which proceed from its tendrils. The flower is of a reddish-green, and not showy, and is succeeded by clusters of dark-blue, nearly black, berries when mature. At the same period the fruit-stalks and tendrils assume a rich crimson or red color.

“The great variety of rich colors, shades of scarlet, crimson, and purple, which the leaves and stems of this plant assume, and the situations in which we see it, climbing up the trunks and spreading along the branches of trees, covering walls and heaps of stones, forming natural festoons from tree to tree, or trained on the sides and along the piazzas of dwelling-houses, make it one of the conspicuous ornaments of the autumnal months. Often, in October, it may be seen mingling its scarlet and orange leaves, thirty or forty feet from the ground, with the green leaves of the still unchanged tree on which it climbed.”—(*Emerson*.)

This luxuriant climber is easily propagated by layers and cuttings. It flourishes best in a rich, moist soil.

AMYGDALUS.—ALMOND.—PEACH.

[The Greek name for the Almond.]

Amygdalus nána.—Dwarf Almond.—The double variety of this, usually called Flowering Almond, when in blossom, is not inferior to any other shrub. It is loaded

in the spring with elegant flowers resembling small roses. Easily propagated by suckers. When budded upon the plum stock it is much more hardy than when grown on its own roots, and in this way a magnificent head may be formed at any desired height from the ground.

A. Pérsica-flore-pleno.—Double-flowering Peach,—is very beautiful in the shrubbery. The flowers are very large and full, and there is a purple and a white variety. The trees should be kept well headed in, or they will become straggling and unsightly. This may also be budded upon plum stocks, and if properly pruned will make a great show when in flower.

ANDROMEDA.

[Named in allusion the virgin *Andromeda*, who, like this plant, was confined in a marsh, and surrounded by the monsters of the water.]

Andrómeda polifolia.—Water Andromeda.—This beautiful little shrub is from twelve to eighteen inches high, found in wet, mossy bogs, from Pennsylvania to the extreme north of the continent. The flowers are red before they open, but, when fully expanded, of a rosy hue. It flowers in June. It is difficult to manage in cultivation, unless it has a moist situation and a soil composed mainly of peat.

There are a number of North American species, which might be introduced into the shrubbery with good effect. Most of them are dwarfs, and succeed well with the same treatment that is given to the Azalea.

A. speciósa and all its varieties are very beautiful, and flower in great profusion, and continue in leaf nearly the whole year, although they are not, strictly, evergreen shrubs. They grow about three feet high.

They are all propagated by seed, layers, or cuttings.

ARISTOLOCHIA.—BIRTH-WORT.

Aristolóchia Sípho.—Pipe Vine.—Dutchman's Pipe.—A singular climbing plant, with handsome, broad foliage, with brownish-purple, and very curious, somewhat pipe-shaped flowers. It grows fifteen or twenty feet high; blooms in June and July; propagated from layers and cuttings. It flourishes in any good, strong soil.

AZALEA.—SWAMP HONEYSUCKLE.

[From Greek signifying *arid*, a name quite inappropriate to our species, which grow mostly in moist places.]

Azálea Indica.—This is not hardy enough to endure our winters, but is one of the most beautiful of the hardy green-house shrubs in cultivation. The colors are from pure white to dark crimson, scarlet, and light purple, with intermediate shades; it continues a long time in bloom during the winter months; it is suitable for the sitting-room as well as the green-house.

A. viscósa.—Clammy Azalea, White Swamp-Honeysuckle, may be found in abundance among the brush-wood in low grounds, and is much admired for the fragrance of its flowers, which are produced in terminal, umbel-like corymbs; mostly pure white, but sometimes varying to blush or variegated; hairy and glutinous on the outside; stamens longer than the corolla, which in all the species is bell or funnel form, terminating in five unequal segments.

A. nudiflóra.—This, as well as *A. viscosa*, is called by the country people Swamp Pink, probably on account of the odor of the flowers, which has some resemblance to the Garden Pink. By them they are eagerly sought after, and form a conspicuous part of the decoration of the mantel-piece, in its season, the month of June. The color

is commonly a fine pink, varying to a deep red, which is rare. Their beauty is much increased by the thread-like stamens being much longer than the corolla.

There are several indigenous species, besides many varieties to be found in different parts of our country; all handsome and worthy the attention of the florist.

Some of the cultivated varieties are the following; *A. coccinea*, with scarlet flowers; *A. rutilans*, with deep red flowers; *A. carnea*, with pale-red flowers; *A. alba*, with white flowers; *A. partita*, with flesh-colored flowers parted to the base; *A. papilionacea*, with red flowers, the lower divisions white; *A. polyandria*, with rose-colored flowers, with from ten to twenty stamens.

A. Póntica is a beautiful species from Pontus, with yellow flowers, emitting the most exquisite odor. The juice in the bottom of the flower is said to be poisonous, and communicates its bad properties to the unwholesome honey of that country; the famous honey of Trebizond spoken of by Xenophon, in his history of the retreat of the ten thousand Greeks, as having produced the effect of temporary madness, or rather drunkenness, on all who eat of it, without, however, producing any serious consequences. All the beautiful varieties now in cultivation, have been raised from hybridized seeds of the Pontic and American species.

The *Azalea* is a well-known plant throughout Belgium, and forms one of the most splendid decorations of the flower-garden. It is generally considered to be the most beautiful genus of the flowering shrubs. The neat form and bushy growth, the vast profusion of its flowers, the extensive variety and splendor of colors in the flowers, their appearance at a season when few other flowers are in bloom, and the little trouble which the plant requires when grown in a suitable soil and a good situation, all combine to cause the plant to be much admired, sought

after, and introduced into nearly every pleasure-ground in Belgium.

The varieties of this handsome genus are very numerous and have been raised in a short period. Twenty years since there were only a very few moderate species, having small, insignificant flowers, in large clusters, continuing through the month of June. The colors are white, yellow, orange, scarlet, and pink, with every intermediate shade.

Notwithstanding the exceeding beauty of this tribe of shrubs, and their perfect hardiness, they are rarely to be seen in our gardeus.

Azaleas require a moist, peaty soil, or black, sandy loam, and rather shady situation. Plants may be freely raised from seed, or from layers and suckers.

If taken from the woods, the best way is to cut them off close to the ground. They will throw up numerous shoots and form fine healthy plants.

BENZOIN.—FEVER BUSH.

[So named from the resemblance of its odor to that of the drug *Benzoin*.]

Benzoin odoriferum.—This was formerly called *Laurus Benzoin*, by botanists, and is popularly known as Fever Bush. It is a graceful shrub, from four to ten feet high, with large and handsome leaves. In April or early in May, clusters of from three to six flowers, of a greenish yellow color appear in the axils of last year's leaves. The fruit is berry-like, of an oval shape, and dark-red or purple. All parts of the plant have a strong aromatic odor which, to some persons, is disagreeable. Common in damp woods, where it grows most vigorously, but does not flower and fruit as freely there as in more exposed situations.

BERBERIS.—BARBERRY OR BERBERRY.

[Derived from the Arabic name for this plant.]

Bérberis vulgaris.—Common Barberry.—This shrub is too common about Boston; but where it is not found growing in such profusion, it will most assuredly be considered a valuable acquisition to the shrubbery. It has often been said, and generally believed, that Barberry bushes were prejudicial to rye, causing it to blast; but this is not our experience, having grown heavy crops of this grain with Barberry bushes on all sides of the field. Loudon says:—“*B. vulgaris* is at once an ornamental shrub, a fruit tree, a hedge plant, a dye, a drug, and a reputed enemy to the corn farmer. When covered with flowers in the spring, or with fruit in autumn, it is a fine object. Every one, who is an observer of nature, must have been struck, in May or June, with the beauty of the upper arching shoots of the Barberry, springing from a mass of rich green, and sustaining numerous pendant racemes of splendid yellow flowers. It is hardly less attractive when its blossoms have been succeeded by the cluster of scarlet fruit in autumn.” The leaves are of a blueish-green, and gratefully acid to the taste. The smell of the flower is offensive when near, but pleasant at a certain distance. The berries are so very acid, that birds seldom touch them. They are sometimes pickled and used for garnishing dishes, or when boiled with sugar, form a most agreeable jelly. The roots boiled in lye, yield a yellow color. There is a variety or species with purple foliage, which is desirable in large collections.

B. dúlcis.—Sweet-fruited Barberry, is more dwarf in habit, the foliage more delicate, and almost evergreen; the flowers dark orange, scattered along the branches, among the foliage. It is a pretty plant, but I have found that it is not perfectly hardy here; but in England,

it makes a handsome fancy hedge. The species are all easily propagated from suckers.

B. Aquifolium.—Holly-leaved Barberry, Mahonia.—This is an elegant evergreen shrub, three or four feet high, with clusters of yellow flowers, in May or June, succeeded by bunches of blue berries. The leaves are compound, with somewhat prickly points, very glossy green, inclining to purplish-brown, and, in those that are young, various shades of crimson and purple, giving the plant a very rich appearance. The foliage remains in perfection during the winter, where screened from the sun by trees, or covered with snow or straw. In autumn the foliage is very gay, as on the same plant there will be bright-green, purple, brown and crimson leaves.

BUXUS.—Box.

[The ancient Greek name.]

Búxus sempervirens.—Garden Box.—This is a delicate shrub, which may be pruned to any shape to please the fancy. It is an evergreen, and easily propagated by cuttings. It is in general use, and the best material for forming edgings to beds, walks, and grown singly, will make large shrubs in some locations. It is necessary to plant Box for shrubs in a shady place, and they will generally require to be matted in the winter. There are varieties with yellow and white striped leaves, called the gold and silver striped. There are a number of species, among which are the Dwarf and Tree Box. The last kind is suitable for the shrubbery, as it will grow and thrive well under the drip of trees. The Box is a native of most parts of Europe. It is one of the most useful of evergreen shrubs, not only for its beauty and adaptability in the garden for edgings, but the Tree Box is valuable for various mechanical purposes.

-- singular fashion prevailed many years since, to cut and clip Box trees into the shape of beasts, birds and various fantastical forms. "This preposterous taste in gardening was at last reformed by the pure and classic taste of Bacon, who, though no enemy to sculpture, did not approve of this absurd species of it, at once disfiguring art and nature." The Yew and other trees, were also tortured in this strange fanciful way. I noticed in an old garden, a few miles from Boston, a small parterre, which was laid out in the year 1794; the beds were all edged with box, which had, for more than 60 years, been regularly trimmed. The edging was about six inches thick, and at least four feet high. The sides were smooth and the top even, without any break in the foliage from the ground to the top. Great attention had been given it by the old lady who was in possession, that it might remain as it was at the time of her husband's decease, many years before. The beds of various shapes were small, so that no plants could flourish, and the only thing of interest about this strange arrangement was, as a relic of olden time. If Box is used for edging, it should, in all cases, be kept low, by regular trimming every year, and kept down to the height of not more than four or five inches; and when it becomes too thick, should be taken up and re-set.

CALYCANTHUS.—CAROLINA ALLSPICE.

[Name from the Greek words for *cup* and *flower*, from the colored cup which contains the stamens and pistils.]

Calycánthus flóridus.—Carolina Allspice, Sweet-scented Shrub.—This well-known shrub grows from three to five feet high, and bears from June to August a profusion of dark brownish-purple flowers, which have the odor of ripe

melons. The wood is also very fragrant. There are several other species of the same general appearance, but differing in the character of their leaves. *C. lævigatus*, has smooth leaves, and *C. glaucus* has the leaves white underneath. All are easily propagated by suckers or by layers.

CEANOTHUS.—NEW JERSEY TEA.

[An ancient Greek name of obscure application.]

Ceanóthus Americánu.—New Jersey Tea.—A low bushy shrub, found growing on the margins of woods in dry sandy soil. The minute, delicate, white flowers are very pretty, and are produced in crowded clusters in June and July. The leaves have been used as a substitute for tea, and the root to dye a nankeen or cinnamon color.

CELASTRUS.—STAFF-TREE.

[An ancient Greek name for some evergreen, but our species is deciduous.]

Celástrus scándens.—Wax-work, Climbing Bittersweet.—A strong woody vine, growing around trees and over rocks, in moist situations. It is very useful for covering arbors, walls, or trellis work, or it may be trained to a pillar in the shrubbery. The foliage is of a deep green, and handsome. The flowers, which are small, greenish and in racemes, make but very little show, but the fruit is very ornamental. The fruit is a round three-valved capsule, which, when ripe, opens and discloses the seeds, which are of a deep scarlet, and contrast finely with the orange color of the valves of the capsule. A vigorous climber, which will grow fifteen or twenty feet high.

CERCIS.—JUDAS TREE.

[The ancient name applied to the Eastern species.]

Cérçis Canadénsis.—Judas Tree, Red Bud.—A shrub or low tree, indigenous to the Southern and Western States. It is curious from being covered with bunches of rose-colored flowers before the leaves begin to appear. They give a brilliant appearance to the whole tree, except the extremities of the branches. It is also a handsome tree when in full foliage in summer.

CHIONANTHUS.—FRINGE TREE.

[From the Greek words for *snow* and *flower*, in allusion to the snow-like whiteness of the racemes of delicate flowers.]

Chionánthus Virgínica.—Fringe Tree.—A fine deciduous shrub or small tree, sometimes growing twenty feet high, but flowering when but six or eight feet high. Its leaves are six or eight inches long, and two to three inches wide. The flowers are white, numerous, and in long bunches, which have a fringe-like appearance. It is a native of Pennsylvania and southward, and is quite hardy. A light loam is the best soil for it. It is rather difficult to propagate, and it succeeds best grafted on the Ash.

CLETHRA.

[The Greek name for the Alder, to which this plant has some resemblance in its foliage.]

Cléthra alnifólia.—Alder-leaved Clethra, Sweet Pepper-bush.—A shrub from two to eight feet high, with long spikes of fragrant flowers which appear towards the end of summer. It is found in wet places and by the sides of streams, but succeeds well when removed to the garden,

and blooms even more freely there than it does in the wild state. *C. acuminata*, and other species, are found in the Southern States.

COLUTEA.—BLADDER SENNA.

[Name from the Greek, signifying to *make a sound*; probably in allusion to the noise produced by the bursting of the bladder-like fruit.]

Colútea aboréscens, grows about ten feet high, with yellow or orange pea-shaped flowers, which are succeeded by seed-vessels like bladders; in June and July. *C. cruenta*, four feet high, has reddish flowers. All are free growers, and well adapted to introduce into extensive shrubberies.

CORONILLA.—SCORPION-SENNA.

[Named from *corona*, a crown. Its pretty flowers are disposed in little tufts like coronets.]

Coronilla émerus, or Scorpion Senna, is a native of most parts of Europe. It has yellow, pea-shaped flowers in little heads, in June. It is a delicate shrub, with handsome foliage; somewhat tender when exposed to the full rays of the sun, but when grown among other bushes succeeds very well. Its height rarely exceeds three feet.

CORNUS.—CORNEL—DOGWOOD.

[Name from the Latin, *cornu*, a horn, the wood being very hard and durable.]

The larger species of this genus are hardy ornamental shrubs, mostly North American, and are prized not only for their flowers and different colored berries, but for their red, purple or striped bark, which has a fine effect in winter, especially among evergreens.

Córnus alternifólia.—Alternate-leaved Cornel.—“A beautiful shrub, six or eight feet high; sometimes a graceful small tree, of fifteen, twenty, or even twenty-five feet high, throwing off, at one or more points, several branches, which, slightly ascending, diverge, and form nearly horizontal umbrageous stages, or flats of leaves, so closely arranged as to give almost a perfect shade. Recent shoots, of a shining light yellowish-green, with oblong scattered dots. The older branches, of a rich polished green, striped with gray. Flowers in an irregularly branched head, yellowish-white; fruit, blue-black. A beautiful plant, with a variety of character. It grows naturally in most woods, or on the sides of hills; but, when cultivated, flourishes in almost any kind of soil, and even in dry situations. It flowers in May and June, and the fruit ripens in October.”

C. flórida.—The Flowering Dogwood.—This species is more of a tree than any of those described, and one of the most desirable of all the genus. It is a conspicuous object, in some of our woods, the last of May. The tree is then loaded with a profusion of its large, showy, white flowers, which are produced at the ends of the branches. What is generally taken for the flower is not in reality such. The flowers are small, and without much interest, except to the botanist. Twelve or more of them are clustered together in a head, and surrounded by a whorl of four large white floral leaves, which constitutes the principal beauty of the flower. These floral leaves are nerved, somewhat heart-shaped, shaded with flesh color, or purple; the fruit is of a bright scarlet.

“The leaves early begin to change to purple, and turn to a rich scarlet, or crimson, above, with a light-russet beneath; or to crimson and buff, or orange ground, above, with a glaucous-purple beneath. These, surrounding the scarlet bunches of berries, make the tree as beautiful an

object, at the close of autumn, as it was in the opening summer."

C. circinata.—Round-leaved Cornel.—A spreading shrub from four to six feet high, with roundish leaves. The young shoots are green, blotched with purple; flowers white; fruit blue, turning whitish, and ripe in October.

C. stolonifera.—Red-stemmed Cornel.—The main stem is usually prostrate and sends up slender erect branches, five to eight feet high; flowers white, and fruit lead-colored. This plant is conspicuous towards the end of winter for the rich red color of its stems and shoots.

C. paniculata.—Panicked Cornel.—About six feet high, with rather irregular branches. Flowers produced in great profusion in May and June, and are succeeded by white berries, which ripen in August and September, at which time the fruit-stalks become a delicate pale scarlet.

CRATÆGUS.—THE THORN.

[Name from the Greek, signifying *strength*, from the hardness of the wood.]

In relation to this genus Mr. Emerson remarks:—"It is found that a greater variety of beautiful small trees and ornamental shrubs can be formed of the several species of Thorn, than of any kind of tree whatever. Thus they give persons, whose grounds are not extensive, the means of ornamenting their grounds with great facility. If trained as trees, they have an appearance of singular neatness united with a good degree of vigor; and the readiness with which they are pruned and grafted, renders them susceptible of almost any shape which the fancy of the owner would have them assume. Some of the species, native to Massachusetts, often take, even in a state of nature, the shape of handsome low trees. Of these, the flowers and foliage have great beauty, and the scarlet

haws, which remain on into winter, till, ripened by frost, they are gathered by the birds, give them additional charms. Into these tall species all the others, very various, and many of them very beautiful, may be grafted.

The four principal species, natives of our State, are: — *Crataegus coccinea*, Scarlet-fruited Thorn; *C. tomentosa*, the Pear-leaved Thorn; *C. crus-galli*, the Cockspur Thorn, and *C. punctata*, the Dotted-fruited Thorn; — all handsome, with white, fragrant flowers, in clusters.

C. Oxyacantha is the common Hawthorn of England, which is also an ornamental shrub, as well as a very important one for the formation of hedges. Of this species there are a number of beautiful varieties, viz.: *rosea*, with deep red flowers; double white and double red, which are very beautiful, besides some others not so well known.

CYDONIA.—JAPAN QUINCE.

[So called from being a native of the ancient town of Cydon, in the island of Crete.]

Cydônia Japonica, formerly *Pyrus Japonica*, is indigenous to Japan, and embraces two varieties, the scarlet and variegated flowering. When in bloom, there is no plant that equals it in splendor. The *Cydônia* may be seen budding and bursting into bloom in April. The flowers are in aggregated clusters, along the branches, interspersed with the young leaves. The scarlet color of the flowers is most brilliant. There is a paler variety which has flowers of a fine blush, shaded with red, which, when contrasted with the other, forms an agreeable relief. The perfect hardiness of this shrub, and the brilliancy of its flowers, render it valuable in the shrubbery, lawn or flower-garden. It grows from six to eight feet high, but commences to flower when the plants are quite small. A

writer says:—"One of the most pleasing and picturesque objects we recollect ever to have seen, was a large *Cydonia* whilst in full bloom, partially imbedded in a late snow; the branches weighed down thereby, and the rich brilliant blossoms, peeping through their chaste covering." A variety with double flowers has recently been introduced. It succeeds in any good garden soil, and is propagated by layering and by suckers.

CYTISUS.—LABURNUM.

[An ancient classical name.]

Cýtissus Labúrnum.—Golden Chain.—A tall and elegant shrub or low tree, which, when in bloom, is laden with long, pendulous clusters of golden, pea-shaped flowers, similar in appearance to those of the Locust. Blooms the last of May or in June, and is most rich and beautiful. The variety *C. leucanthum*, has cream-colored flowers. There is also a purple-flowering species, *C. purpureus*, which grows two feet high, but the first mentioned is the most desirable of all the species and varieties.

DAPHNE.—MEZEREUM.

[A name from ancient mythology.]

Dáphne Mezéreum.—Mezereum.—This has long been in cultivation, and is much esteemed for its early flowering and fragrance. The flowers come out before the leaves, early in the spring; they grow in clusters, all around the shoots of the former year.

"Though leafless, well attired, and thick beset
With blushing wreaths, investing every spray."

The flowers are succeeded by brilliant scarlet berries, which are a powerful poison. Another variety has white

flowers and yellow berries. When a large number of bushes are planted together, they will perfume the air to a considerable distance. It thrives well in a loamy soil, and will grow in the shade and even in the drip of trees.

DEUTZIA.

[So named by Thunberg, in compliment to John *Deutz*, one of the senators of Amsterdam, a patron of botany, and one of the promotor of the voyage of the former to Japan.]

Deutzia scábra.—A very elegant shrub, a native of Japan. Its height is about six or eight feet, and during the early part of summer it is covered with a profusion of white blossoms, which are highly fragrant. The specific name of the plant is given on account of the roughness of its leaves.

D. grácilis.—This is a very graceful and elegant dwarf shrub, two or three feet high, with arching branches, which are loaded with pure white flowers in June; leaves smooth and deep green. This plant is useful for forcing in the green-house, where it flowers in as great profusion as out of doors, and should be taken up and potted as soon as the foliage is destroyed by frost. Both of these varieties are of easy culture, being sufficiently hardy to endure our winters without protection, and readily propagated by cuttings or from suckers.

DIERVILLA.—WIEGELA.—BUSH-HONEYSUCKLE.

[Named in honor of *Dierville*, a French surgeon.]

Diervilla trifida.—Three-flowered Bush-Honeysuckle. —A neat little native shrub, from two to three feet high, with handsome opposite leaves, from the axils of which spring three yellow honeysuckle-shaped flowers, in June and July.

D. rósea.—*Wiegela rosea*.—Rose-colored Wiegela.—This shrub was first introduced from Japan as a new genus, to which the name of Wiegela was given. Botanists have since placed it in the old genus *Diervilla*, but the name Wiegela has become so well established that it will serve for the common name of the shrub, it being the only one that it has. "When I first discovered this beautiful plant," says Mr. Fortune, the gentleman to whom we are indebted for its introduction, "it was growing in a Mandarin's garden, on the island of Chusan, and literally loaded with its fine rose-colored flowers, which hung in graceful bunches from the axils of the leaves and the ends of the branches. Everyone saw and admired the beautiful Wiegela. I immediately marked it as one of the finest plants in Northern China, and determined to send plants of it home in every ship, until I should hear of its safe arrival. It forms a neat bush, not unlike a *Syringa* in habit, deciduous in winter, and flowering in the months of April and May. One great recommendation to it is, that it is a plant of the easiest cultivation. Cuttings strike readily, any time during the winter and spring months, with ordinary attention, and the plant itself grows well in any ordinary soil. It should be grown in this country as it is in China, not tied up in that formal unnatural way in which we see plants brought to our exhibitions; but a main stem or two chosen for leaders, which, in their turn, throw out branches from their sides, and then, when the plant comes into bloom, the branches, which are loaded with beautiful flowers, hang down in graceful and natural festoons." Several fine varieties are now in cultivation. The variety *amabilis*, formerly considered a species, and called *Wiegela amabilis*, has a more drooping habit, rather larger leaves and somewhat smaller and deeper colored flowers. The variety *Isoline* has white flowers. *Desboisii*, has very dark flowers, and

there are two varieties with variegated foliage. All that we have tried have proved as hardy as a Lilac, flower most profusely, and are very handsome and sweet-scented.

DIRCA.—LEATHER-WOOD.

[*Dirca* is the name of a fountain near Thebes, and probably applied to this plant because it grows near mountain rivulets.]

***Dirca palústris*.**—Leather-wood, Wicopy.—This is a much branched shrub, from three to six feet high, found in wet, marshy and shady places. It is conspicuous, when in flower in April, for the number of yellow blossoms, which fade and fall rapidly as the leaves expand. The wood is very pliable, and the bark of singular toughness and tenacity. It has such strength, that a man cannot pull apart so much as covers a branch of half or third of an inch in diameter. It is used by millers and others for thongs. The aborigines used it as a cordage.

EUONYMUS.—SPINDLE TREE.—STRAWBERRY TREE.

[*Euonymus* was a heathen divinity; according to Epimenides she was the mother of the Furies by Saturn.]

***Euónymus Americánu*s.**—Burning Bush.—An elegant shrub, growing eight to fifteen feet high, producing rather inconspicuous purple flowers in clusters, which are succeeded by brilliant scarlet fruit, that remains after the foliage has fallen; highly ornamental. The foliage is handsome; the branches erect, of a fresh green color. There is a variety with purplish-red berries, and another with white berries. Upon the opening of the valves which enclose the seeds, the white variety shows to great advantage, the valves being white, and the berry-like seeds a light scarlet. The fruit is produced in great profusion.

Plants may be raised from seed, which should be planted in autumn; or by layers or cuttings.

E. Europæus.—The European Spindle Tree.—This is a handsome evergreen shrub, with deep shining-green leaves, with a variety having silver-edged leaves. The European species and varieties are somewhat tender in this latitude. They should be planted in a sheltered, shady place.

HALESIA.—SNOWDROP.—SILVER-BELL TREE.

[Named after Doct. *Hales*, author of *Vegetable Statics*.]

Halésia tetráptera.—Four-winged Silver-bell Tree.—A native of Virginia and southward, where it is found on the banks of rivers. An ornamental shrub five or six feet high, which, in May, produces flowers in small bunches, all along its branches; each bud produces from four to nine flowers, of a snowy whiteness; these appear before the leaves, and last for two or three weeks.

H. diptera.—Two-winged Silver-bell Tree.—This is also a native of the Southern States, but is hardy at the North. It is much less common than the last. It has leaves twice as broad and flowers of a larger size, and the pods have only two wings. It blossoms three or four weeks later than the four-winged species. Both are raised from seeds and by layers.

HEDERA.—ENGLISH IVY.

[From *hedra*, the Celtic name for cord.]

Hédéra hélíx.—Common Ivy.—The ancients held Ivy in great esteem, and Bacchus is represented as crowned with it to prevent intoxication. It is a highly esteemed ornamental evergreen climber, and much used in England

for covering naked buildings or trees, or for training into fanciful shapes, or a stake so as to form a standard.

In this country it is not very common, but it appears to succeed well in shady situations. There are some specimens in the city of Boston, which flourish finely upon the rough granite or brick walls of buildings. It is easily propagated by cuttings or layers. There are a number of varieties of this, all of which are desirable. It grows to a great height, and attaches itself firmly to whatever it grows upon, without any assistance.

HYPERICUM.—ST. JOHN'S-WORT.

Some of the species of this genus have been noticed under Herbaceous Plants.

Hypêricum prolificum.—Shrubby St. John's-wort, is a native woody species worth cultivating. It is found in New Jersey and westward, grows from one to four feet high, and from July to September is covered with a profusion of yellow flowers.

HIBISCUS.—ROSE OF SHARON.

Hibiscus Syriacus.—Tree Hibiscus, Rose of Sharon; also called *Althæa frutex*, Shrubby *Althæa*.—The herbaceous species of Hibiscus have been mentioned in another place; this is an old and well-known shrubby species of easy cultivation. A great number of varieties have been produced, both single and double, and ranging in color from white to dark-purple. The single varieties are generally more hardy than the double ones. Easily raised from seeds and from cuttings. It requires very severe pruning to keep it from growing loose and straggling.

ILEX.—HOLLY.

[An ancient Latin name.]

Ilex Aquifolium.—English Holly.—An evergreen shrub or low tree, of which innumerable varieties have been raised. The silver and gold edged varieties are very beautiful. This species does not succeed well in this country, on account of our hot suns.

I. opáca. — American Holly. — This species is found plentifully in some parts of Massachusetts and southward. Mr. Emerson says of it: — “The American Holly is a handsome low tree, with nearly horizontal branches, and thorny evergreen leaves. The berries are scarlet, and remain on the tree into winter.

The plants, formerly called *Prinos*, are now considered by botanists as deciduous species of *Ilex*.

I. verticilláta.—(*Prinos verticillatus*.)—Black Alder.—This indigenous shrub, so ornamental in low grounds and swamps in autumn, is worthy of a place in every collection of shrubs. “It is a handsome shrub, five or six—rarely ten or twelve—feet high, with crowded branches and leaves, conspicuous for its bunches of axillary blossoms and scarlet berries, remaining late in the autumn, or even into the winter. The recent shoots are clothed with an apple-green bark, which, on the large branches, turns to a pearly gray, and, on the older stems, is of a polished and clouded dark color, whence the plant derives its common name.” The flowers are white, and not very ornamental. The berries are of a bright scarlet, covering the twigs, the size of peas, in bunches of two or three, and remain long on the bush. The flowers expand in June; the berries are ripe in September. The Black Alder will require a peaty, moist soil.

I. glábra.—(*Prinos glaber*.)—The Ink Berry.—“An elegant, delicate-looking, evergreen shrub, with slender branches, growing in sheltered places, to the height of.

from two to eight or nine feet. The elegance of the evergreen foliage causes it to be much sought after to be mingled with bouquets in winter; and for this purpose it is brought from considerable distances, and carefully kept in cellars, sometimes for months." The leaves are lance-shaped, an inch or more long, and one-third or half an inch wide.

INDIGOFERA.—INDIGO SHRUB.

[The name means a plant bearing *Indigo*.]

Indigófera decóra.—Indigo Shrub.—A handsome plant, growing four or five feet high, bearing spikes of small purple flowers; suitable for the shrubbery, free flowering, and of easy culture.

JASMINUM.—JASMINE.

[From the Arabic *jasmin*, (*ysmyn*).]

Jasminum officinále.—White Jasmine, is a native of the East Indies; it is an exceedingly elegant plant for training over a wall or arbor, and will bear the winter in the Middle States, with some protection. It is a delicate and fragrant shrub, not surpassed by any of the species. It is of this that Cowper speaks, in the following passage:

"The Jasmine, throwing wide her elegant sweets,
The deep dark-green of whose unvarnished leaf
Makes more conspicuous, and illumines more
The bright profusion of her scattered stars."

In New Haven I have seen it in a garden, and was assured that it did not require protection there. The proper place for the Jasmines in Massachusetts, is the green-house.

KALMIA.—AMERICAN LAUREL.

[A small genus of handsome evergreen indigenous shrubs. Named in honor of Peter Kalm, a pupil of Linnæus.]

Kálmia latifolia.—Mountain Laurel, Spoon Wood, etc. —Its general height is from five to ten feet, but may sometimes be seen rising from fifteen to twenty feet, among the rocks, and forms almost impenetrable thickets, by its crooked and unyielding trunks, locked and entangled with each other. The leaves are about three or four inches long, evergreen, giving much life to the forests in the winter, by their deep shining-green. The flowers are disposed in large corymbs, at the extremity of the branches; numerous; of a pure white, blush, or a beautiful rose-color, and more rarely, a deep red. The season of flowering is in the months of June and July. Nothing can exceed the magnificence of its appearance when in full bloom. The soil in which it best succeeds is soft, loose, and cool, with a northern exposure. The foliage is the richest when the plant is grown in the shade. The soil suitable for its growth, is the same as recommended for the Azalea. Young plants, taken up with balls of earth attached, will succeed well in the garden, in the shade. Those from open pastures will flourish best, if such can be found. There is no shrub, foreign or native, that will exceed this in splendor, when well grown.

K. angustifolia.—Narrow-leaved Kalmia, Sheep-Laurel. —This is a low shrub, that covers large tracts of cold, moist land, in almost every section of the country. It is a great nuisance to the farmer, who looks suspiciously upon it, as it has the reputation of being poisonous to sheep and other animals, which, for the sake of variety or want of other food, sometimes feed upon it. Blooms in June and July; flowers red, or deep pink, and I have seen a white variety; leaves evergreen; growing from one to two feet high.

KERRIA.—JAPAN GLOBE FLOWER.

[Named in honor of Mr. Kerr, a former superintendent of the botanical garden at Ceylon.]

Kérria Japonica,—formerly called *Corchorus Japonica*—Is an elegant shrub, growing from three to six feet high, and producing a profusion of double-yellow, globular flowers. The branches are bright green, and the foliage handsome. In some localities it is a little tender, and the tops are killed down; but it sends up fresh shoots, which flower the same season. Easily propagated by suckers.

LAVANDULA.—LAVENDER.

[Named from *lavo*, to wash, referring to its use in baths.]

Lavéndula spicáta.—Spike-flowered Lavender.—This is a most desirable dwarf shrub, with delicate glaucous foliage, and spikes of blue flowers, in July; three feet high. The whole plant is delightfully fragrant, but more particularly the flowers. These yield the oil from which the Lavender water is made. In some soils and situations the plant is tender. In cold, moist soil, it is almost sure to be winter-killed; but, in a dry, loamy, or gravelly soil, it endures our winters with but little protection. We have been successful in the cultivation of it in a soil of the latter quality, and, from the flowers that grew upon the edging of a circular bed, six feet in diameter, obtained more than one ounce of the pure oil, one drop of which would perfume a room. It is sometimes used for edgings, in milder climates, but grows too high for general use. As an edging for a bed of Moss Roses, we have seen it used with pleasing effect.

“The agreeable scent of Lavender is well known, since it is an old and still a common custom to scatter the flowers over linen, as some do rose leaves, for the sake of their sweet odor.”

Lavender is easily propagated by cuttings or slips. It is a great pity that it is not perfectly hardy; but as it is, with a little choice in its location, it is easily preserved through the winter, and worthy of all the care and trouble that may be given to its cultivation.

LIGUSTRUM.—PRIVET.

[The ancient classical name.]

Ligústrum vulgáre.—The common Privet, or Prim.—The Privet is a native of Europe, and introduced from thence to this country, and now has become domesticated in many parts of New England. In England, the Privet is an evergreen, or the leaves remain until driven off by new ones. In this climate it is deciduous, shedding its leaves late in autumn. “In France and Great Britain, the Privet is much used for a hedge plant, either alone or with other plants. Its use for this purpose is recommended by the beauty of the foliage, the flowers and berries, by its rapid and easy growth, and by the fact that it grows well under the drip of other trees, except evergreens. It flourishes in almost any soil, as may be easily seen from the variety of ground on which it has sown itself in the vicinity of Boston; and it is propagated by seeds, or by cuttings, and requires very little pruning. It grows in clumps, from strong, matted, bright-yellow roots, in height six or eight feet. Flowers white, in short, terminal panicles, in June; the berries are of a shining black.” The blossom of the Privet, when exposed to the noonday sun, withers almost as soon as blown. In the shade, it not only lasts longer, but is much larger. The leaves too, are much larger and finer when so placed.

The English Privet is much used for ornamental hedges, and is also desirable in a shrubbery, on account of the

permanency of its elegant foliage; it retains its foliage much longer than the American variety, and bears green berries. In England it is an evergreen, and nearly so here. The American variety is also very desirable. It sheds its foliage much sooner, and has black berries. There are a number of other varieties or species of Privet, which are also desirable.

The Golden-edged Privet is a very striking variety, with variegated leaves. *L. lucida* has elegant, thick, glossy, green foliage, and is a valuable acquisition. *L. Japonica* has large, long, glossy leaves, of a bright green, and where it is hardy, will be very desirable.

LIPPIA.—SWEET VERBENA.

[In memory of A. Lippi, a French botanist, who was killed in Abyssinia.]

Lippia citriodóra. — Sweet Verbena, Lemon-scented Verbena. *Aloysia citriodora* and *Verbena triphylla*, of the older botanical authors. — A desirable green-house shrub, which also succeeds well when planted in the border in the summer, and, if in rich soil, will form a neat little bush before hard frosts set in in autumn. Before freezing weather, the plants should be taken up, and housed, either in the green-house or sitting-room. This delightful little shrub is a native of South America; it is indispensable in the flower-garden, on account of its exquisite fragrance, which partakes of the scent of the lemon and almond. The leaves are elegant, linear-lanceolate, rough, arranged in threes upon the stem. Flowers minute, pale-purple, almost white; numerous, in dense upright regular panicles. It may be increased by cuttings, and also from seeds, when they mature, which is not often the case in common cultivation.

LONICERA.—HONEYSUCKLE.—WOODBINE.

[Named after Adam *Lonicer*, a German botanist of the 16th century.]

This genus now includes both the erect and climbing ones, the latter were formerly called *Caprifolium*.

Lonicéra Tartárica.—Tartarian Honeysuckle.—This species grows to the height of eight or ten feet, and in June is covered by a profusion of pink flowers, which are succeeded by red berries. It is a desirable shrub, whether for its foliage, flower, or fruit, and will thrive in almost any soil and situation. A native of Russia and Siberia. There are several varieties with white and red-striped flowers, and yellow and white berries. Easily propagated by cuttings, layers, and seed.

L. sempérvirens.—Scarlet Trumpet-Honeysuckle.—Native, from New York southward; perfectly hardy, and in general cultivation. The foliage is evergreen at the South, but deciduous at the North; flowers trumpet-shaped, of a rich scarlet without, tinged with orange within, without fragrance. The plant grows rapidly, throws out a multitude of fine branches, and has a singularly rich appearance, from the deep green of its leaves and the splendor of its scarlet flowers. In bloom from June to October.

L. fláva.—Yellow Honeysuckle.—A native species, found in the mountains at the South and West. It has very pale, glaucous, thick leaves, and slender, light yellow flowers. In bloom all the season.

L. hirsúta.—Hairy Honeysuckle.—This is a native of the Northern States, found on damp, rocky banks, often growing to the height of fifteen to thirty feet; the flowers are of a pale-yellow without, hairy, and of a rich orange within; flowers in June and July.

L. Periclyménum.—Woodbine.—This is a vigorous-growing English species; flowers pale-yellow, in June; highly fragrant.

The variety *Belgicum*, or Dutch Sweet-scented Honeysuckle, is a well-known fragrant climber, giving a profusion of bloom in June, which emits a delightful odor; flowers yellow, variegated with red or purple.

The Dutch Monthly Sweet-scented Honeysuckle is another variety, with flowers somewhat like the last, but produced in succession through the summer and autumn, until hard frosts. The buds, before they expand, are of a dark-red or purple. When the flower opens, the interior is pure white, which changes to a cream color, and from that to an orange, giving the cluster a variegated and rich appearance. A variety has oak-shaped leaves.

L. Japonicum.—Japan, or Chinese Honeysuckle.—Botanists seem to be in much confusion about this species and its allies, and one botanist has called it *L. confusa*. We give the name adopted by the best authorities. It is a very desirable species, with evergreen leaves, and delicate flowers through the season; stem flexuous and twining. It readily supports the rigor of our winters, and, blooming with an exhaustless profusion, presents, from May till late in autumn, rich wreaths of flowers, various in tint, and of an exquisite orange-flower perfume.

The buds are purple; as they expand, the spotless white of the gaping corolla is exhibited, with its protruding stamens tipped with yellow anthers. On exposure to the air, the flowers gradually assume a cream-like tint, and, finally, a perfect orange color; and, as they mature in succession from the base to the extremity of the branch, the colors are all present on the same shoot. The stems and nerves of the leaves are purple; it is nearly evergreen. In rich loam, the growth is luxuriant.

The White Italian Honeysuckle has pale-yellow, almost white flowers. There are many other fine varieties and species of this beautiful genus, but not much known.

In raising the Honeysuckle from seeds, they should be

sown in the autumn after they are ripe; otherwise they will not come up the first year. Cuttings are sometimes apt to rot, owing to water lodging in their tubular stems, above the last joint. To obviate this inconvenience, some make the cuttings of double the usual size, and insert both ends into the ground, leaving the part above ground in the form of a semi-circle. Commonly, however, such cuttings root only at one end.

LYCIUM.—MATRIMONY VINE.

[Name said to be named from *Lycia*, its native country.]

Lycium Bárbarum.—Barbary Box-Thorn, Matrimony Vine, Willow-leaved Lycium.—A climbing shrub, which grows from four to six feet in a season, and valuable for covering arbors, naked walls, etc. The foliage delicate, and the whole plant is covered with small, but handsome, violet flowers, from May to August; these are succeeded by small red berries. It will grow in almost any soil, and is easily propagated by suckers or from cuttings. It may be permitted to ramble, or trained to suit the fancy.

MAGNOLIA.

[Named for *Magnol*, a distinguished French botanist.]

Most of the genus are lofty trees, some of them, however, bloom when quite small, and may be considered as shrubs.

Magnolia gláuca.—Small, or Laurel Magnolia, Sweet Bay.—The most northern boundary of the habitation of this beautiful plant is supposed to be in a sheltered swamp, near Cape Ann, and not far from the sea. It is, however, common along the southern coast.

“Few ornamental plants are better worth the attention of the gardener. Carefully trained, it forms a beautiful little tree. No plant is, at any season and in every condition, more beautiful. The flower, pure white, two or three inches broad, is as beautiful and almost as fragrant as the White Lily. The fruit is a cone, about two inches long, covered with scale-like, imbricated ovaries, from which, when mature, escape the scarlet obovate seeds, which, instead of falling at once to the ground, remain some time suspended by a slender thread. The bark of the young shoots is smooth and of a rich apple-green, afterwards becoming of a soft glaucous or whitish color.”

Although naturally growing in wet ground, it will flourish in almost any good garden soil, if not exceedingly dry, particularly if partially shaded from the sun. It may be propagated by layers,—which require two years to root sufficiently,—or by seed, if great care is observed.

M. conspicua.—White Chinese Magnolia, Yulan.—This is called *M. Yulan* by some botanists. This forms a large tree, but flowers when only a few feet high. Flowers white, appearing before the leaves.

M. purpurea.—Purple Chinese Magnolia.—Similar in habit to the foregoing, with long dark-purple flowers. Each of these presents several varieties, and there are some hybrids. The late A. J. Downing, says:—

“They are certainly among the most striking and ornamental objects in our pleasure-grounds and shrubberies in the spring. Indeed, during the months of April and the early part of May, two of them, the White, or *Conspicua*, and Soulange’s Purple, or *Soulangiana*, eclipse every other floral object, whether tree or shrub, that the garden contains. Their numerous branches, thickly studded with large flowers, most classically shaped, with thick, kid-like petals, and rich, spicy odor, wear an aspect of novelty

and beauty among the smaller blossoms of the more common trees and shrubs that blossom at that early time, and really fill the beholder with delight. The Chinese White Magnolia (*M. conspicua*,) is, in effect of its blossoms, the most charming of all Magnolias. The flowers, in color a pure, creamy white, are produced in such abundance, that the tree, when pretty large, may be seen at a great distance.

"The Chinese name, *Gulan*, literally, *Lily-tree*, is an apt and expressive one, as the blossoms are not much unlike those of the White Lily in size and shape, when fully expanded. Among the Chinese poets, they are considered the emblem of candor and beauty."

"The next most ornamental Chinese Magnolia," he says, "is Soulange's Purple, (*Magnolia Soulangeana*.) This is a hybrid seedling, raised by the late Chevalier Soulange Bodin, the distinguished French horticulturist. The habit of the tree is closely similar to that of the *conspicua*; its blossoms, equally numerous, are rather larger, but the outside of the petals is finely tinged with purple. It partakes of the character of both its parents, having the growth of *Magnolia conspicua*, and the color of *M. purpurea*, (or, indeed, a lighter shade of purple.) Its term of blooming is, also, mid-way between that of these two species, being about a week later than that of the white, or *Gulan* Magnolia. It is also perfectly hardy in this latitude." The *Magnolia purpurea* is sometimes seen in large gardens about Boston, but is a little tender. "It is a shrub of six to eight feet high. The blossoms are white within, of a fine dark-lilac or purple on the outside, and quite fragrant, like the others." The flowers begin to open early in May, and continue blooming a number of weeks, or, if in the shade, through most of the summer.

The same gentleman remarks, that, "If these noble flowering trees have a defect, it is one which is insepar-

able from the early period at which they bloom, viz., that of having few or no leaves when the blossoms are in their full perfection;" and suggests, that the planting of the American Arbor Vitæ and Hemlock would remedy this defect, by forming a dark-green background on which the beautiful masses of Magnolia flowers would appear to great advantage.

PHILADELPHUS.—SYRINGA, MOCK ORANGE.

The Syringa is a most delicious shrub; the foliage is luxuriant, the blossom beautiful and abundant, white as the purest Lily, and of the most fragrant scent. In a room, indeed, this perfume is too powerful, but in the air it is remarkably agreeable. There is a variety which has no scent, and also a dwarf variety, which does not usually exceed three feet in height. The flowers sweet, and some double.

"The sweet Syringa, yielding but in scent
To the rich Orange, or the Woodbine wild,
That loves to hang on barren boughs, remote.
Her wreaths of flowery perfume."

All the species are propagated by suckers, layers, or cuttings, and thrive in any good garden soil.

Philadelphus grandiflorus.—Large-flowering Syringa.—This is the handsomest of the genus, and is properly only a variety of *P. inodorus*. It is perfectly hardy, growing in any soil or situation, forming a spreading shrub about six feet high; flowering in June and July.

P. hirsutus.—This shrub grows from four to five feet high. Like the last, it is a native of North America, and was first discovered by Mr. Nuttall. It thrives in the shrubbery in any common garden soil, and is propagated like the others.

P. coronárius,—or Common Syringa,—greatly resembles the others ; grows about five feet high, and is delightfully fragrant when in bloom. Flowers in June and July.

PRUNUS.—PLUM AND CHERRY.

[The ancient classical name of the plum.]

The cherry was formerly placed in the separate genus of *Cerasus*, but it is now united by botanists with the Plum in *Prunus*, the chief distinction between the two being in the form of the stone.

Prúnus cándicans.—This is a delightful, hardy, deciduous shrub, growing about six or eight feet high. It is very easy of cultivation, and in May and June, when in full flower, is a perfect picture, the white flowers nearly hiding the young leaves, which are beginning at that time to cover the branches. It may either be propagated by layers, or by budding and grafting on the common plum stock.

P. Cérasus.—The Common Cherry, in its double variety called the Double-flowering Cherry, *Cerasus communis plena*, is a very desirable addition to the shrubbery, on account of its immense number of large, double, pure white flowers, which cover the tree in the early part of May. The flowers are like small white roses, very full and beautiful. By proper training, it can be kept in a low, shrubby state, if desirable. It will grow in any garden soil, and is propagated by budding or grafting.

The Weeping Cherry is formed by budding a delicate drooping species of Bird Cherry upon the Mazzard stock, at any height that may suit the fancy. By inserting a number of buds, at the desired height, a large drooping head may be formed, which continues to increase in diameter, but not much in height. Its pendent branches,

covered with delicate foliage, are at all times a pleasant sight, but more particularly when covered with its profusion of bloom.

RHAMNUS.—BUCKTHORN.

[The ancient Greek name.]

Rhámnus cathárticus.—The Common Buckthorn.—The great value of the Buckthorn, with us, is for hedges. It is perfectly hardy, grows rapidly, and bears pruning better than any other shrub with which we are acquainted. Another important item in its value is, that it is never attacked by insects of any description. It is, also, very tough, and flourishes in any soil. No animal, except sheep or goats, will feed upon it. We consider it, therefore, the only plant for general use for the formation of hedges. “It puts forth its leaves early in the spring, and retains them late in the fall, and its bunches of rich berries are very showy in autumn.”

The plants are easily raised from seed, which may be planted either in the fall or very early in the spring. When planted in autumn, it may be done as soon as the berries mature.

The berries should be first mashed and washed, so that they may be planted more evenly. The seed may be sown in drills eighteen inches apart, or in beds. The fall-sown seed will vegetate very early in the spring, while those sown in the spring will not appear under four or five weeks from the time of planting. The second year, the plants may be transferred to the nursery, and should be headed down as soon as they begin to grow. This causes them to thicken at the bottom; a very important point to be remembered, for unless they are first grown with branches from the bottom, no after-cultivation can remedy the neglect.

The best hedges we have seen were those where the plants were placed in a single line, six inches distant from each other.

RHODODENDRON.—ROSE-BAY.

[The ancient Greek name, meaning *rose-tree*.]

Rhododéndron máximo.—Great Laurel.—In the Northern States this is a straggling shrub of very irregular growth, but one of the most magnificent in foliage and flower the country can boast of. It is abundant in the Middle States, and in the mountainous tracts of the Southern, but rare in New England.

It is generally under ten feet in height in this part of the country, but sometimes attains the height of twenty or twenty-five feet in a less rigorous climate. The places where it is found in New England, may be considered as beyond its proper natural limits, and it is met with only in warm swamps, under the shelter of evergreens, and where the roots are protected by water, which usually overflows these places.

The flower-buds are often destroyed, even when it is thus situated, in very severe seasons. When the leaves are beginning to unfold themselves they are rose-colored, and covered with red down. When fully expanded, they are smooth, five or six inches long, of an elongated oval form, and of a thick texture. They are evergreen, and partially renewed once in three or four years. It puts forth flowers in June and July, which are, commonly, rose-colored, with yellow or orange dots on the inside, and sometimes pure white, or shaded with lake. They are always collected at the extremity of the branches, in beautiful groups, which derive additional lustre from the foliage that surrounds them. Previous to their expansion,

the flowers are in one large compound bud, resembling a cone, each individual bud being covered by a rhomboidal bract, which falls off when the flower expands. The corolla is monopetalous, (one piece or petal,) funnel-shaped, with a short tube, the border divided into five large, unequal segments. There is but a small chance of plants succeeding which have been taken from swamps. The surest way to propagate it is by seed, from which it readily grows, but requires time and patience to bring it into a flowering state.

Shade and humidity seem almost indispensable to the growth of this shrub. Deeply shaded situations, where the atmosphere is laden with vapors, are most congenial to its growth. It is, therefore, well calculated for the shrubbery. With a little attention, it may be insured to stand the sun, and then forms a stately ornament for the lawn or grass-plot. The proper soil is a light, rich, peaty loam, with moisture. It will grow, however, in almost any, and flourish on a strong, heavy loam. It may be propagated from cuttings and layers, from young, healthy branches of ripened wood. There are many exotic species, which are beautiful, and highly ornamental to the green-house.

R. Catawbiense.—A low species from the mountains of Virginia and southward. It has shorter and more rounded leaves than the preceeding, and large lilac-purple flowers. Quite hardy.

R. Pónticum.—A native of Asia Minor, where it is a large shrub. Though usually hardy if protected, it forms here only a low bush, with large purple flowers. These three species are hardy, and from them have been produced numerous beautiful hybrids, which are equally hardy, and are among the most interesting and valuable of flowering shrubs.

My friend, Mr. Robert Murray, Landscape Gardener, Waltham, Mass., has been very successful in the manage-

ment of the *Rhododendron*, and has, at my request, favored me with a letter, from which I extract the following :

“The beautiful hybrid varieties sent us a few years ago from the English nurseries, have proved as hardy and as well adapted to our climate, as our native *R. maximum* ; the flower-buds are sometimes killed by severe winters, but that may be avoided by a slight covering of white pine boughs, laid over the plants before winter sets in ; by so doing, I never had a bud injured. I will now state for the information of all amateur florists, the best method of preparing the soil for a luxuriant growth, and gorgeous display of flowers. The following kinds of American shrubs, along with the Rhododendrons, will all flourish and do well with the same soil and treatment : *Kalmia latifolia*, Andromedas, and all the fine, new, hardy, hybrid Azaleas. Select a piece of ground in a partially shaded situation, then excavate and cart away all the soil to the depth of two feet ; then fill the hole, about one-half full, of dry peat mud ; then from the hollow places of an old oak wood, dig six or eight inches of the soil, which is principally decomposed leaves ; cart and fill up the whole excavation ; then lay all over the top six inches of clear white sand ; then begin at one side, turning, breaking up, and mixing the whole together twice, allowing the bed to stand for some time to settle ; it will ultimately be no higher than the surrounding ground. In the months of April or May, plant all the sorts and varieties of those I have named, from two to two and one-half feet apart, mixing the different colors to suit the taste. Afterwards, lay a covering of leaves, six inches in depth, all over the ground, amongst the plants, the same never to be removed ; and as they have decayed through the summer, add more to those that have blown amongst them by the fall winds. They are all propagated by seeds or layers ; but as both methods take a number of years to

get good-sized flowering plants, I would, therefore, leave their propagation to the nurseryman. Fine plants, full of flower-buds of all the new, hardy, hybrid Rhododendrons, and Azalias, can be bought at all the principal nurseries at very moderate prices, considering the time it takes to get good-sized flowering plants."

ROBERT MURRAY.

RHODORA.

[From the Greek word for *rose*, from the color of the flowers.]

Rhodóra Canadénsis.—False Honeysuckle.—This beautiful shrub is found on the margins of swamps, and in wet meadows, frequently in large masses, many yards in circumference, which, when in bloom, in May, present a magnificent appearance. The flowers appear on the extremity of the branches, before the leaves are perfectly expanded, are of a fine purple color, and in shape somewhat resemble the Honeysuckle. I have been successful with this fine shrub, by taking large masses of it from the meadows, with the earth attached to the roots, and planting in moist soil; also by taking the suckers, which it throws up as freely as the Lilac. It will flourish without difficulty.

RHUS.—SUMACH.

[The ancient classical name of the genus.]

Rhus typhína.—Stag-Horn Sumach.—This is highly ornamental in the shrubbery, on account of its elegant compound leaves, and bunches of rich scarlet berries. The shrub, which grows to the height of twelve to twenty feet, is ugly shaped, its branches being rather naked and crooked. It must, therefore, be planted with other

shrubs, so as to conceal, as much as possible, its crooked, irregular stems and branches. There is no particular beauty in the flowers; but, in July and August, the heads of berries begin to assume a rich scarlet color, afterwards turning to purple, and remain conspicuous and beautiful into winter; while in autumn the leaves begin early to turn, and become of a red color, with various shades of yellow, orange, and purple. The ends of the branches, from their irregularity, and the abundant down with which they are covered, resemble the young horns of the stag, whence the popular name.

R. copallina.—The Dwarf, or Mountain Sumach,—is another beautiful species, “found growing on dry rocks, or sandy hills, about the same height of the last, in favorable, protected situations, but usually about three to five feet. The varnished polish of the leaves, and the rich purple they assume in autumn, as well as the scarlet of the leafy heads of fruit, make this species one of the most beautiful of the genus.”

R. glabra.—The Smooth Sumach.—This is a handsome, spreading, leafy bush, usually four to six, rarely ten, feet high. The leaves are compound, smooth, of a rich green. The flowers are disposed in a large green head, of yellowish-green color, and agreeable fragrance. The velvety crimson heads of berries on this plant, as on the others, are acid and astringent. The leaves are used in tanning.

R. Côtinus.—Venetian Sumach or Smoke Tree.—This species is much cultivated as an ornamental shrub. It is a crooked, straggling growing plant, from ten to fifteen feet high. No attempt should be made to make it grow straight by pruning, as it looks the best when left to itself, clothed with branches to the ground. Persons, ignorant of the habits of the shrub, often complain of nurserymen, because they do not give them regular-shaped plants; but this is impossible, and it is not desirable.

The foliage is handsome; the flowers are disposed in large panicles, first green, changing to a reddish-brown, and afterwards a brownish smoke color. The flowers, or appendages to them, have the appearance of downy silk, in light, airy masses, and the plant is nearly covered with these graceful clusters, which have some resemblance to puffs of smoke emerging from among the graceful leaves. It is propagated from layers very readily.

We have two poisonous species of *Rhus*, which are briefly mentioned that they may be avoided. *R. venenata*, the Poison Sumach or Dogwood, is a handsome shrub, with foliage somewhat resembling that of *R. glabra*, but the leaflets are entire. The berries are in loose panicles, smooth and whitish. *R. Toxicodendron*, the Poison Ivy, is a very common climber upon trees, rocks, stone walls, etc. The leaves are compound, of three variously lobed or entire leaflets. This character of the leaves will distinguish it from the Virginia Creeper, for which it is sometimes mistaken, as that has five leaflets. To some persons these species are poisonous to the touch, and very susceptible persons are affected by being in their vicinity.

RIBES.—CURRANT.—GOOSEBERRY.

[The name said to be of Arabic origin.]

Ribes sanguineum.—Red-flowering Currant.—This is a very handsome ornamental species, producing pendent racemes of rich deep-red flowers, in May. The shrub is about three feet high; the foliage elegant. The plant is easily propagated by cuttings. I find it is rather tender, the extremities of the branches being often killed in this climate. Probably, if planted the north side of a wall, or where it is partially shaded with evergreens, it would succeed better. There is a white-flowered variety, and one with double flowers, which is very fine.

R. speciosum.—Showy Gooseberry.—The flowers are of a bright crimson, and far superior in brilliancy to the preceeding, and like that somewhat tender.

R. aureum.—Missouri Currant, Buffalo Currant.—A native of the far West; has in May a profusion of yellow fragrant flowers, which perfume the whole neighborhood. All the species are propagated from cuttings, in the same manner as the common Currant.

ROBINIA.—LOCUST-TREE.

[Named in honor of Jean *Robin*, herbalist to Henry IV., of France.]

Robinia viscosa.—Clammy Locust.—This is a small tree, with large pale-pink flowers. The branches are covered with a gummy substance that is unpleasant to the touch. It looks well with other trees and shrubs.

R. hispida.—Rose Acacia.—This is a beautiful flowering shrub, growing from three to ten feet high, bearing a great profusion of elegant rose-colored flowers, which are produced in dense, pendent racemes. The shrub commences flowering when only two feet high. It has long, rambling roots, which throw up numerous suckers. The branches are thickly clothed with stiff hairs. This is a very desirable species.

The Common Locust, *R. Pseudacacia*, is a well-known ornamental tree, but its liability to be destroyed by borers, makes it useless to attempt its cultivation. A variety of it, *R. crispa*, has curiously contorted leaflets.

ROSA.—ROSE.

[The ancient Latin name.]

“And first of all the rose; because its breath
Is rich beyond the rest; and when it dies,
It doth bequeath a charin to sweeten death.”

The Rose has been a favorite flower from time immemorial among the civilized nations of Europe and Asia. The Rose, in its wild state, is found in almost every country in the temperate zones. We have a few species in New England, none of which have been taken in hand by the florist for improvement, but are suffered to remain in their wild state for the pleasure of the botanist.

This well-known and highly esteemed genus, embraces many distinct species, which, by the skill of the florist, have multiplied into thousands of varieties. They vary in height from one to twelve or fifteen feet, producing flowers, single, semi-double and double, and generally of exquisite fragrance. The colors are pure white, white-tinted, shaded, striped, or mottled; every shade of red to purple, and all these shades and colors variously mixed; also a few yellow varieties. There are no black Roses, although we sometimes hear of them. Such as are sold for Black Roses, are those of dark shades of purple or crimson. The foliage is also various in the different species or varieties, but of a general character. They differ also as to the appendages to the plant, some having formidable thorns, while others are entirely destitute. Some flower only once in the season—others are perpetual, or everblooming. Most are hardy, but many require protection. It is a flower beloved by every one, not only in the present age, but has been in all ages past, and will, no doubt continue to be the most prominent and desirable flower as long as the world stands. It may, with propriety, be styled the *Queen of Flowers*. We have not space in this work to do justice to its merits, and must refer our readers, for the details of its culture, and for a mass of valuable and interesting particulars, to a work published by S. B. Parsons, Esq., of Flushing, N. Y., a volume of 280 pages, octavo, upon the Rose, which we heartily commend to all the lovers of this universal favorite. Mr. Par-

sons treats of it historically, poetically, and scientifically, as well as in a practical manner. We must, of course, say something of the Rose ourselves poetically,—for who can dwell long upon this beautiful flower without some aspirations of this kind?—but not having a faculty of soaring upon our own wings, we must cull from others, and finding in a work entitled “*Flora Domestica*,” all we desire under this head, we give the following copious extracts, which may not be unacceptable to a portion of our readers at least:—

“The Rose is preeminently the flower of love and poetry, the very perfection of floral realities. Imagination may have flattered herself that her power could form a more perfect beauty; but, it is said, she never yet discovered such to mortal eyes. This, however, she would persuade us to be a mere matter of delicacy, and that she had the authority of Apollo for her secret success:—

— ‘No mortal eye can reach the flowers,
And 't is right just, for well Apollo knows
'T would make the poet quarrel with the Rose.’

It is, however, determined, that until the claim of such veiled beauty, or beauties, shall rest upon better foundation, the Rose shall still be considered as the unrivalled Queen of flowers.

‘I saw the sweetest flower wild nature yields,
A fresh-blown Musk Rose.’

“It is said, however, that the angels possess a more beautiful kind of Rose than those we have on earth. David saw in a vision a number of angels pass by with gilded baskets in their hands.

‘Some as they went, the blue eyed Violets strew,
Some spotless Lilies in loose order threw;
Some did the way with full-blown Roses spread,
Their smell divine, and color strangely red;
Not such as our dull gardens proudly wear,
Whom weathers taint, and winds' rude kisses tear;

Such, I believe, was the first Rose's hue,
Which at God's word in beauteous Eden grew;
Queen of the flowers that made that orchard gay,
The morning blushes of the spring's new day."—*Cowley*.

"The Rose, as well as the Myrtle, is considered as sacred to the Goddess of beauty. Berkley, in his Utopia, describes the lover as declaring his passion by presenting to the fair-beloved a Rose-bud just beginning to open; if the lady accepted and wore the bud, she was supposed to favor his pretensions. As time increased the lover's affections, he followed up the first present by that of a half-blown Rose, which was again succeeded by one full-blown; and if the lady wore this last, she was considered as engaged for life.

"Poetry is lavish of Roses; it heaps them into beds, weaves them into crowns, twines them into arbors, forges them into chains, adorns with them the goblet used in the festivals of Bacchus, plants them in the bosom of beauty,—nay, not only delights to bring in the Rose itself upon every occasion, but seizes each particular beauty it possesses as an object of comparison with the loveliest works of nature:—as soft as a Rose-leaf; as sweet as a Rose; rosy clouds; rosy cheeks; rosy lips; rosy blushes; rosy dawns, etc., etc. It is commonly united with the Lily:—

'In the time that the morning did strew Roses and Violets on the heavenly floor against the coming of the sun.'

'A bed of Lillies flower upon her cheek,
And in the midst was set a circling Rose.'

'Rosed all in lovely crimson are thy cheeks,
Where beauties ever flourishing abide,
And as to pass his fellow either seeks,
Seen both to blush at one another's pride'

"The Red Rose is said to be indebted for its color to the blood which flowed from the thorn-wounded feet of Venus when running through the woods in despair for the

loss of Adonis; as the White Rose is also said to have sprung from the tears which the goddess shed upon that occasion. Ample reasons these for dedicating them to her.

‘White as the native Rose before the change,
Which Venus’ blood did in her leaves impress.’

Anacreon tells us that it was dyed with nectar by the gods when it was first formed; he speaks of it, too, as the flower of Bacchus:—

‘With nectar drops, a ruby tide,
The sweetly orient buds they dyed,
And bade them bloom; the flowers divine
Of him who sheds the teeming vine.’

Some say they were dyed with the blood of Cupid and

—— ‘’T is said, as Cupid danced among
The gods, he down the nectar flung;
Which, on the White Rose being shed,
Made it forever after red.’

But the general opinion is, that the Rose is indebted to Venus for its beautiful blushes.

“Perhaps the most beautiful season of the Rose is when partly blown; then too she still promises us a continuance of delight; but, when full-blown, she inspires us with the fear of losing her.

“Constance, expatiating on the beauty of her son, says:

‘Nature and fortune joined to make thee great;
Of nature’s gifts thou mayst with Lilies boast,
And with the half-blown Rose.’

“The bed of Roses is not altogether a fiction. ‘The Roses of the Sinan Nile, or garden of the Nile, attached to the Emperor of Morocco’s palace, are unequalled; and mattresses are made of their leaves, for men of rank to recline upon.’

“The Eastern poets have united the Rose with the nightingale; the Venus of flowers with the Apollo of

birds; the Rose is supposed to burst forth from its bud at the song of the nightingale.

“A festival is held in Persia, called the Feast of Roses, which lasts the whole time they are in bloom.

‘And all is ecstasy, for now
The valley holds its Feast of Roses;
That joyous time when pleasures pour
Profusely round, and in their shower
Hearts open, like the season’s Rose,—
The flowret of a hundred leaves,
Expanding while the dew-fall flows,
And every leaf its balm receives!’

“‘Persia is the very land of Roses.—“On my first entering this bower of fairy land,” says Sir Robert Kerr Porter, speaking of the garden of one of the royal palaces of Persia, “I was struck with the appearance of two Rose-trees, full fourteen feet high, laden with thousands of flowers, in every degree of expansion, and of a bloom and delicacy of scent that imbued the whole atmosphere with exquisite perfume. Indeed, I believe that in no country in the world does the Rose grow in such perfection as in Persia; in no country is it so cultivated and prized by the natives. Their gardens and courts are crowded by its plants, their rooms ornamented with vases filled with its gathered bunches, and every bath strewn with the full-blown flowers, plucked with the ever-replenished stems.

* * * * But in this delicious garden of Negaaristan, the eye and the smell are not the only senses regaled by the presence of the Rose. The ear is enchanted by the wild and beautiful notes of multitudes of nightingales, whose warblings seem to increase in melody and softness with the unfolding of their favorite flowers. Here, indeed, the stranger is more powerfully reminded that he is in the genuine country of the nightingale and the Rose.”—(*Persia in Miniature*, vol. iii.)

“Sir William Ouseley, accompanied his brother, the ambassador, on a visit to a man of high rank at Teheran;

and though there was a great profusion of meat and fruit at this entertainment, 'it might,' he says, 'have been styled the Feast of Roses, for the floor of the great hall, or open-fronted *talar*, was spread in the middle, and in the recess, with Roses forming the figures of cypress-trees; Roses decorated all the candle-sticks, which were very numerous. The surface of the *hawz*, or reservoir of water, was completely covered with rose-leaves, which also were scattered on the principal walks leading to the mansion.'

"He says that the surface of this reservoir was so entirely covered with rose-leaves, that the water was visible only when stirred by the air, and that the servants, during the entertainment, were continually scattering fresh Roses both upon the waters and the floor of the hall.*

"We must not dismiss the subject of the Rose, without recalling to the minds of our readers those beautiful lines from Milton:—

————— 'Eve separate he spies,
Veiled in a cloud of fragrance where she stood,
Half spied, so thick the Roses blushing round
About her glowed; oft stooping to support
Each flower of tender stalk, whose head, though gay
Carnation, purple, azure, or speck'd with gold,
Hung drooping unsustained; then she upstays
Gently with myrtle band, mindless the while
Herself, though fairest unsupported flower,
From her be t prop so far, and storm so high.'

"In two different poems, where Venus is represented, she has a crown of white and red flowers:—

'I saw anone right her figure
Nakid yfletyng in a se,
And also on her hedde parde
Her rosy garland white and redde.'

'Then father Anchises decked a capacious bowl with garlands, and filled it up with wine.'—(*Davidson's Translation.*)

* See Sir W. Ouseley's *Travels in the East*, vol. iii., pp. 352 and 353.

“‘To crown the bowl,’ says Mr. Davidson, ‘sometimes signifies no more than to fill the cup to the brim; but here it is to be taken literally for adorning the bowl with flowers, according to the ancient custom. Otherwise, *implevitque mero* would be mere tautology.’ Horace repeatedly speaks of crowning the bowl with Roses.

“The Romans were at great expense to procure Roses in winter; Suetonius affirms that Nero spent upwards of 4,000,000 of sesterces, about thirty thousand pounds, for Roses, at one supper. Horace alludes to this custom in his thirty-eighth Ode, Book i.

‘Seek not for late-blowing Roses; I ask no other crown than simple Myrtle.

“It is said that the Turks cannot endure to see a Rose-leaf fall to the ground, because says Gerarde, ‘some of them have dreamed that the first Rose sprang from the blood of Venus.’

“It may, perhaps, be worth while to quote Gerarde’s translation of a passage from Anacreon, rather for its curiosity than beauty:—

‘The Rose is the honor and beauty of flowers,
The Rose is the care and the love of the spring,
The Rose is the pleasure of th’ heavenly powers;
The boy of fair Venus, Cythera’s darling,
Doth wrap his head round with garlands of Rose,
When to the dances of the Graces he goes.’

“Many species of the Rose preserve their sweet perfume even after death; as the poet observes in the following passage:—

‘And first of all, the Rose; because its breath
Is rich beyond the rest; and when it dies,
It doth bequeath a charm to sweeten death.’

“The very essence of this sweet perfume is extracted from the flowers; and the attar of Roses is dearer than gold:—

'The Rose looks fair, but fairer we it deem
 For that sweet odor which doth in 't live.
 The canker blooms have full as deep a dye
 As the perfumed tincture of the Roses,
 Hang on such thorns, and play as wantonly,
 When summer's breath their masked buds discloses.
 But, for their virtue only is their show,
 They live unmoved, and unrespected fade ;
 Die to themselves ; sweet Roses do not so ;
 Of their sweet deaths are sweetest odors made.' "

"The Moss Rose, or Moss Provence Rose, is well-known as an elegant plant. The flowers are deeply colored, and the rich mossiness which surrounds them, gives them a luxuriant appearance not easily described ; but it is familiar to every one. It is a fragrant flower ; its country is not known to us, and we know it only as a double flower.

"The origin of its mossy vest has been explained to us by a German writer : —

'The angel of the flowers one day
 Beneath a Rose-tree sleeping lay :
 That spirit to whose charge is given
 To bathe young buds in dews from heaven ;
 Awaking from his light repose,
 The angel whispered to the Rose :
 'O fondest object of my care,
 Still fairest found where all are fair,
 For the sweet shade thou'st given to me,
 Ask what thou wilt, 't is granted thee.'
 'Then,' said the Rose, with deepened glow,
 'On me another grace bestow.'
 The spirit paused in silent thought ;
 What grace was there that flower had not !
 'T was but a moment ; — o'er the Rose
 A veil of moss the angel throws ;
 And, robed in nature's simplest weed,
 Could there a flower that Rose exceed ? ' "

We now proceed to give some practical instruction in relation to the Rose.

Soil.—Roses will succeed well in any good garden soil, but to have them in perfection, it is necessary that the soil be well enriched and deeply dug. The Rose, like the vine, is a gross feeder, and is not injured by heavy ma-

nuring. In a poor, lean, shallow soil, it is impossible to bring out the beauties of any variety of the Rose. A strong, rich loam, or vegetable mould, with about one quarter of its bulk of well decomposed stable manure, is recommended by Parsons as a standard for the quality of the soil in which to grow the Rose; and if the soil of the garden, where the Rose is to be planted, differs materially from this, the requisite materials should be added, that it may approach as near as possible to that standard. In my own experience, I have found that the more manure, if not an extravagant quantity, the better the bloom; but, in addition to the quality and richness of the soil, a good depth is absolutely necessary. My general practice is to plant out Roses in beds, which, for all the hardy Roses, I prefer to do in November. First, the ground should be trenched two spades deep, and a liberal supply of stable, barnyard, or night-soil manure, with bone-dust incorporated with it, as the digging proceeds, but not buried too deep. I have not been very particular as to the quantity or quality of the manure. After the ground is settled, the Roses may be planted. Four feet each way is about the proper distance to plant the different varieties of Roses, in the rosary.

Rivers recommends, as the best compost for Roses, rotten dung and pit sand for cold, clayey soils; and for warm, dry soils, rotten dung and cool loams. He finds that night-soil, mixed with the drainings of the dunghill, or even with common ditch or pond water, so as to make a thick liquid, the best possible manure for Roses, poured on the surface of soil twice in the winter, one or two gallons to each tree. In our climate, it may be applied in November and in April. In my beds of established Roses, I cause manure from the stable to be applied to the surface of the ground about the bushes, in November, which serves as a protection; some of the tender sorts are fast-

ened down and covered with the same. As soon as the ground is in a fit state to dig, in the spring, this manure is carefully incorporated with the surface soil, but not so as to injure the fibres or roots of the plants. A wet, retentive soil is injurious to the Rose, as I have found by sad experience ; but in a rich, dry loam, my labors have been amply rewarded.

When Roses are to be planted out singly, as many of the climbing sorts are, the soil should be dug out two and a half feet deep ; the bottom may be filled, to the depth of six inches, with small stones, or, what is better, with bones, and then filled up with prepared soil.

Situation.—The Rose will flourish in any situation where the soil is well prepared ; but it is best to plant the Rose where it can be shaded from the intensity of the mid-day sun. If it can be so located as to receive the morning and evening sun, and shaded during its greatest heat, the bloom will be more perfect, and continue longer. Some varieties are very delicate, and their blossoms are almost ruined by a full exposure. An eastern or northern exposure is, therefore, the best. Roses should not, however, be wholly shaded.

Planting.—The best season for planting all the hardy Roses, as before stated, is in autumn ; or, if necessary to defer till spring, it should be done as early as possible. If planted late in the spring, it will be best to cut the plants down to a few buds. Any time, after the first severe frost, is a proper time to commence planting. The plants should be taken up with great care, disturbing the roots as little as possible, remembering that the breaking of a single fibre diminishes the strength of the growth and future prosperity of the plant. Presuming that the ground is all ready, the holes should be dug somewhat larger than the roots. When the planting is completed, the plant should stand but a very little lower in the ground

than it stood before. The operation of placing the roots and fibres should be done with the nicest care. In my fall planting, I place the plant in an oblique direction, so that the plants may be easily bent down and covered. Fall-planted Roses are liable to be more or less winter-killed, which is prevented, if covered with coarse litter, or manure.

We have seen Pillar Roses, in the grounds of Mr. Charles Hoffman, of Salem, — which, without protection, are liable to be killed down to within two or three feet of the ground, — grown in great magnificence, forming beautiful pyramids of Roses from twelve to fifteen feet high. We had never seen the Pillar Rose in such perfection. They were the same varieties which in our own ground did not exceed more than five or six feet, as the greater part of the new wood is every winter killed down. We were informed that the supports to which these Roses were trained, consisting of nothing more than three or four strong spruce poles, were taken away in autumn, and the plants laid down and covered with earth, or coarse manure. The only time to plant tender Roses, as far north as Boston, is in the spring. The China, Bengal, and Tea Roses may be grown in the open ground, in New England, if they are taken up in autumn. They may be kept in a dry, cool cellar, with the roots packed in loam or sand; or they may be laid in by the heels, on a dry knoll, and covered with earth, where they will remain secure till spring. In planting them out, they should be cut down to a few buds, and they will bloom after the summer Roses have passed away, provided the roots were taken up well. In replanting Roses, the roots should be carefully examined, and all broken or bruised parts should be cut off with a sharp knife.

A young, healthy plant is much better than one that is old and overgrown, to plant out; indeed, old plants should be rejected.

Plantations of Roses should be made to succeed each other. In the second and third years after planting, the Rose will be in its greatest perfection. After the plants become old, they do not do so well; and I have found, in my own experience, that five years was long enough to continue a plantation. It is best then to prepare a new place, or, in fact, it should be prepared, and the new plantation made, a year before the old one is given up, as a general and perfect bloom cannot be expected the first year.

It is becoming fashionable, at the present time, to plant out Roses in masses, which have a fine effect, where the white, the crimson, or other distinct colors, are planted by themselves. Many of the strong-growing sorts are suitable for planting with other shrubs in the shrubbery.

Pruning.—Roses, in this climate, should be pruned early in the spring. For Roses that are grown as dwarfs, it is necessary to prune them down to a few buds; all the old wood, and the weak, last year's growth, should be taken entirely away. The young wood generally produces the finest flowers, which, when properly pruned, are larger and much more double than when the bushes are suffered to grow at random.

In pruning climbing Roses, the operation must be different, as it is necessary to retain the whole length of the most vigorous shoots, cutting out all the old wood that will not be likely to produce fine flowers, and pruning down the lateral branches to one eye. The manner of pruning must, in a measure, depend upon the variety of the Rose, and more particularly upon the style in which it is to be trained. This must be left to the ingenuity and taste of the cultivator; and whether it is to be trained to a trellis, over an arch, pillar, or in whatever shape it is wanted, the proper way will generally suggest itself.

Propagation.—The Rose is propagated in various ways.

Some varieties succeed well by cuttings, as the China and many of the tender Roses; but, with most of the hardy kinds, this is only resorted to by skillful gardeners.

By Layers.—All the summer-blooming Roses may be propagated in this way. It can be performed in mid-summer, and for several weeks afterwards. Young shoots, at least one foot long and well matured, should be selected for this purpose. The mode of operation is the same as in all shrubby plants. The soil should be well dug about the plant, and increased by a little fresh loam, well enriched with rotten manure, raised about it, so as to form a little bed. Proceed, then, with the usual process of layering, “by making a slit with a sharp knife just below a bud, making a slanting cut, upwards and lengthwise, about half through the branch, forming a tongue from one to two inches long, on the back part of the shoot, right opposite the bud. A chip, or some of the soil, can be placed in the slit to prevent it from closing, and the shoot can then be carefully laid and pegged down at a point some two or three inches below the cut, keeping, at the same time, the top of the shoot some three or four inches out of the ground, and making it fast to a small stake to keep it upright.” The prepared shoot should be buried about three or four inches deep. Great care will be necessary to prevent the branch from injury. The ground over the layer should be covered with moss, or coarse manure, or some substance to screen it from the sun. In some varieties, the layers will be sufficiently rooted in autumn; but in many kinds, particularly the hardy perpetuals, they will not be sufficiently established to separate from the parent plant till the autumn following the year in which they were laid.

By Suckers.—Many varieties of Roses are inclined to throw up suckers. With these sorts there is no difficulty in increasing the stock. These should be taken off with

as much root as possible, every autumn, and planted out in nursery rows, or where they are to remain, if strong plants. The parent plant is also very much benefited by this operation.

Budding.—All the varieties of the Rose can be propagated by budding, and, to increase new and rare varieties, this mode is always resorted to. There are some sorts, naturally weak, which flower much more perfectly when budded on some strong-growing species; but we hate a budded Rose-bush, and will not have one in our own grounds, if we can get them on their own roots. It requires much care and attention to keep them in order, as the stock is continually throwing up suckers, which draw all the nourishment from the budded variety. Where there are but few varieties, and a skillful gardener to look after the plants, there is no doubt but that it is desirable to have some upon strong-growing stocks. We were not a little amused, a few years since, upon a visit at the house of a horticultural friend, who, by the way, was better acquainted with the management of his fruit trees than he was with the flower-garden. His garden was well laid out and kept very neat. He was taking me around to show the various plants, and getting what information he could out of one he supposed knew more than he did about them. Presently he came to a wilderness of the French Dog Roses. "There," says he, "is a lot of the choicest Roses that could be obtained in France." "Indeed," says I, "they certainly look very vigorous." "They do, to be sure," he replied; "but somehow or other, they look very much alike, and the few that flowered this year were very single." "That is very probable," I replied, "for Dog Roses have great resemblance to each other, and are always single." Great was his surprise, when I convinced him that the Roses he had imported and cultivated with so much care, were only

suckers from the stocks on which his imported Roses were budded. He had planted them out, supposing they were on their own roots, and had not perceived the necessity of keeping down the suckers.

Tree Roses.—The Tree Rose is a beautiful object when in bloom. It is formed by budding the desired variety upon a standard, some four or five feet in height, generally the Dog Rose, as it is called in France, or the Eglantine. Many have been imported from France, and succeed well the first or second year; but from some cause they soon die. Either the severity of our winters, or our powerful summer's sun, causes their death.

New varieties are produced from seed raised from flowers, which have been crossed with others of opposite characters; but none but amateurs will attempt this, so this mode of propagation will not be dwelt upon.

Of the diseases of the Rose, and of the insects that infest it, we shall have something to say in another place.

GARDEN CLASSIFICATION OF ROSES.

On the subject of Classification of Roses, there has been much difficulty and confusion among amateurs; and even Rivers himself, one of the most correct of Rose amateurs in England, remarks: "Within the last ten years, how many plants have been named and unnamed, classed and unclassified! Professor A. placing it here, and Dr. B. placing it there! I can almost imagine Dame Nature laughing in her sleeve, when our philosophers are thus puzzled. Well, so it is, in a measure, with Roses; a variety has often equal claims on two classes. First impressions have placed it in one, and there rival amateurs should let it remain."

We are pleased with Mr. Parsons' classification, as being the most simple of any we have seen, and also as distinctive as possible, in a family so intermixed as the different varieties or species appear to be.

After speaking of the great confusion that has arisen in Rose nomenclature, he says:—

“If there exists, then, this doubt of the proper class to which many Roses belong, we think it would be better to drop entirely this sub-classification, and adopt some more general heads, under one of which every Rose *can* be classed. It may often be difficult to ascertain whether a Rose is a Damask, a Provence, or a Hybrid China; but there can be no difficulty in ascertaining whether it is dwarf or climbing, whether it blooms once or more in the year, and whether the leaves are rough as in the Remontants, or smooth as in the Bengals. We have, therefore, endeavored to simplify the old classification, and have placed all Roses under three principal heads, viz.:

“I. Those that make distinct and separate periods of bloom throughout the season, as the Remontant Roses.

“II. Those that bloom continually, without any temporary cessation, as the Bourbon, China, etc.

“III. Those that bloom only once in the season, as the French and others.

“The first of these includes only the present Damask and Hybrid Perpetuals, and for these we know no term so expressive as the French *Remontant*. *Perpetual* does not express their true character.

“The second general head we call *Everblooming*. This is divided into five classes:

“1. The *Bourbon*, which are easily known by their luxuriant growth, and thick, large, leathery leaves. These are not perfectly hardy in New England.

“2. The *China*, which includes the present China, Tea, and Noisette Roses, which are now much confused, as there are many among the Teas, which are not tea-scented, and among the Noisettes which do not bloom in clusters. They are, moreover, so much alike in their growth and habit, that it is better each should stand upon its own

merits, and not on the characteristics of an imaginary class.

"3. *Musk*, known by its rather rougher foliage.

"4. *Macartney*, known by its very rich, glossy foliage, almost evergreen.

"5. *Microphylla*, easily distinguished by its peculiar foliage and straggling habit.

"The third general head we divide into five classes :

"1. *Garden Roses*.—This includes all the present French, Provence, Hybrid Provence, Hybrid China, Hybrid Bourbon, White, and Damask Roses, many of which, under the old arrangement, differ more from others in their own class than from many in another class.

"2. *Moss Roses*, all of which are easily distinguished.

"3. *Brier Roses*, which will include the Sweet Brier, Hybrid Sweet Brier, and Austrian Brier.

"4. *The Scotch Rose*.

"5. *Climbing Rose* ; which are again divided into all the distinctive subdivisions."

ROSES THAT BLOOM DURING THE WHOLE SEASON.

Remontant Roses.—"The term Remontant," says Mr. Parsons, "signifying, literally, to grow again, we have chosen to designate this class of Roses, there being no word in our language equally expressive. They were formerly called Damask and Hybrid Perpetuals, but are distinguished by their peculiarity of distinct and separate periods of bloom. They bloom with the other Roses in early summer, then cease for a while, then make a fresh bloom, and thus through the summer and autumn, differing entirely from the Bourbon and Bengal Roses, which grow and bloom continually through the summer." This class of Roses require longer time to establish themselves from layers than any others, as they are not often fit to detach from the old plant till the second year. Budding

is resorted to for extensive propagation with this class. Some of the varieties, when grown upon their own roots, do not do justice to themselves; but when worked on strong-growing stocks, grow much more luxuriantly, and give more perfect flowers. Mr. Parsons has described two hundred varieties of Roses from the various classes of those sorts he thinks most desirable for the amateur to select from. There are but few persons who will be disposed to cultivate that number. His selection is a very choice one, and I should hardly know myself which to reject. Fifty varieties, well chosen from the various classes, are as many as most persons, unless they have money enough and to spare, would be likely to cultivate; and the great majority would probably be happy to possess half that number.

Everblooming Roses.—These Roses are distinguished from the Remontant, by blooming continually through the season, without any temporary cessation. They include the Bourbon, the Bengal and its sub-varieties, the Tea and Noisette, the Musk, the Macartney, and the Microphylla Roses."

The Everblooming Roses are very desirable, wherever the climate renders it possible to preserve them through the winter. As far north as Boston, the greater part of them can only be cultivated to perfection in the greenhouse, but further south, they endure the winter, even, without protection.

Bourbon Roses.—This section of the Everblooming Roses has not succeeded in my own grounds. Mr. Parsons says they are perfectly hardy with him, (Long Island,) which is much warmer than in this State. He says, in speaking of it as having superior qualities to the Tea-scented Rose, "These qualities are, its perfect hardiness, its very thick, leathery foliage, its luxuriant growth, its constant bloom, and its thick, velvety petals of a con-

sistency to endure even the burning heat of a tropical sun."

China Roses.—This class of Roses we must set down as the proper inhabitants of the green-house, in this section of the country; although, by planting in frames, taking up the plants and laying them in the ground in a dry place, or preserving them in a dry, cool cellar, they will do very well to plant out in the spring, and make a fine bloom after the summer Roses have passed away. Mr. Parsons remarks, that, "next to the Bourbon, this is perhaps the most valuable class of Roses; but in this climate they need protection from the cold. This, however, can be easily afforded by salt hay, or straw." I have tried to keep this class of Roses in the open ground, by protection of all kinds, but unfortunately their location was rather too wet in winter; perhaps, in a dry, loamy soil, they would succeed better. Further south, this is a most desirable class for out-door culture.

Tea and Noisette Roses.—What has been said in relation to the tenderness of the China Roses, will apply to the Tea and Noisette Roses. "The Tea and Noisette Roses have been generally classed distinct from the China." "They are, however, but varieties of the latter; and there is so much confusion in the old classification, that the amateur is frequently misled. Many of the Roses now classed among the China, have a strong tea scent, and many of the present Tea Roses have very little fragrance. The characteristic of the Noisette Rose is understood to be its cluster-blooming habit." The Southern States must be the congenial climate for the whole class of China and Tea Roses. The author of the work already alluded to, however, says, "They will endure our winters, with the thermometer at zero, but it is better to protect them by means of straw and hay, or by boards upon low stakes. Perhaps the least troublesome way of protecting them, is to have

one or more hot-bed frames, six feet by twelve, and about a foot and a half or two feet deep. This can be set several inches in the ground, and litter of any kind placed around the sides. The Roses can be carefully taken up, and planted in this frame as thick as they will stand. The top can then be covered with boards, a little slanting, to carry off the rain, and the plants will be sufficiently protected. If the weather is severe, some litter can also be placed on the top." This class of Roses is so desirable, that if, by any means, they can be protected without the expense of a green-house, it will be a great desideratum.

Musk Roses.—The Musk Rose stands pretty well here, in a warm, dry situation, but, in wet ground, rather tender. In the latitude of Long Island, Mr. Parsons says it is quite hardy, having a plant of the old White Musk, that has braved the severity of more than twenty winters, in his grounds. "It has already, this season, made shoots of more than six feet; and in our Southern States more than double the growth would probably be attained." It produces its flowers in large clusters. We are familiar with the old white cluster, which commences flowering late, and continues till cold weather. Other fine varieties are, Eponine, and Princess of Nassau.

Macartney Roses.—"This Rose was brought from China to England, by Lord Macartney, in 1793. Its habit is luxuriant, and its foliage is more beautiful than of any other Rose, its leaves being thick, and of a rich glossy-green." As to hardiness, it is about the same as the China Rose. "It is one of the most desirable Roses for beds or borders. When covering the whole ground, and kept well pegged down, its rich, glossy foliage, gemmed with fragrant flowers, produces a fine effect."

Microphylla Roses.—"This Rose came originally from the Himalayan Mountains, and was brought to Europe in 1823."

ROSES THAT BLOOM ONLY ONCE IN THE SEASON.

The time of flowering of this class of Roses is in June, and they are therefore frequently called June Roses. The class includes many varieties, most of them hybrids, raised by cross impregnation between the various species, and are arranged under the heads of French, Provence, Damask, Hybrid Damask, White, Hybrid Bourbon, Hybrid China, etc. etc. All of this class are hardy, or nearly so. Some of the Hybrid China and Bourbon are a little tender, and will sometimes suffer in the young wood, but not much more of the wood will be injured, than would have been necessary to prune off in the spring. For selections from these sections of the Rose family, I must refer the reader to the catalogues of the nurserymen, as it is next to impossible to point out from the innumerable varieties in cultivation, such as would suit all tastes. There is a greater diversity and more brilliancy of color among the June Roses, than in any other class. Every shade of color may be found in flowers, from a pure white, blush, rose, red, crimson, to dark-purple, some shades approach to a scarlet; also shaded, mottled, and striped, with various shades and colors. All are more or less fragrant, and some of them pre-eminently so.

Moss Roses.—This is a well-known and elegant class of Roses, of which the common Moss is about the only one that is very familiar. The Luxembourg Moss has dark crimson-cupped flowers, and is a vigorous grower. Perpetual White Moss is handsome only in bud. It produces a large cluster of beautiful mossy buds, but the flowers are inferior. It is not properly a perpetual, but produces a long succession of buds. The White Bath Moss has fine white flowers, which are sometimes lightly striped with pink.

Princess Adelaide is one of the most vigorous-growing Moss Roses, and one of the varieties we recommend.

Cristata, or crested, is a singular and beautiful variety. Excepting when in bud, it does not have the appearance of a Moss Rose. The calyx has a beautiful crested appearance. "In a rich soil, this fringe-like crest most beautifully clasps and surmounts the bud, and gives the rich clusters a truly elegant appearance. Its form is globular, and its color rose."

Scotch Roses.—This class of Roses are distinguished by their small leaves, prickly stems, abundant bloom, delicate habits, early bloom. They flower about two weeks before the summer Roses. They are suitable for growing in masses, or borders, and the shrubbery. The original, from which all the varieties sprang, was found growing wild in Scotland and the north of England. In some of the catalogues two or three hundred varieties are described, but many of them are so near alike, it would be difficult to see the difference.

Brier Roses.—"These Roses are distinguished by their small, rough foliage, and brier-like habit. They include the Sweet Brier, the Hybrid Sweet Brier, and the Austrian Brier." The Sweet Brier or Eglantine is generally supposed to be indigenous, as it is found growing plentifully on road-sides, and in pastures; but it is believed by botanists to have been imported from England, and has been extensively disseminated by birds, who feed upon its abundant fruit, or hips, as they are called. The botanical name is *R. rubiginosa*. A plant of this species should find a place in every collection of shrubs, on account of the agreeable strong perfume of the flowers, and also of the leaves, when rubbed, or when wet, with dew or rain. The plant is armed with sharp-hooked prickles. In rich soil, new shoots will sometimes attain the height of eight or ten feet. These new shoots form the flowering stems for the next season. The old wood should be cut out every spring. The delicate Eglantine has scarcely been less

honored by the poets, than the more luxuriant Roses. It is usually coupled with the European Woodbine, as the Lily with the Rose, etc.

“Shenstone, in describing the delights of a country walk, after long confinement in sickness, makes particular mention of the fragrant pair.”

“Come gentle air! and while the thickets bloom,
Convey the Jasmine's breath divine;
Convey the Woodbine's rich perfume,
Nor spare the sweet-leaved Eglantine.”

“The Eglantine boasts that even in winter she has beauty.”

“Though of both leaf and flower bereft,
Some ornaments to me are left —
Rich store of scarlet hips are mine.”

“Keats alludes more than once to the sweet perfume of the Eglantine, when moist, with rain or dew.”

“Its sides I'll plant with dew-sweet Eglantine
And Honeysuckles full of clear bee wine.”

The Double Yellow Provence Rose is supposed to have had its origin from the Austrian Brier. It is an old inhabitant of some gardens, but a very shy bloomer, showing its flowers very sparingly, and, some years, none. We have seen the bushes bending with their load of flowers. They are large, very double, of a pale-yellow. On account of its peculiar habits, it is not worth its room in the garden. Copper Austrian “is a very singular-looking Rose, blooming well in this climate, is of a coppery-red, and the outside inclining to pale-yellow, or sulphur.” It has single flowers, but they are truly beautiful. The Yellow Harrison Rose was considered a great acquisition, a few years since, but this is now entirely eclipsed by the Persian Yellow. Its flowers are more double, and of a more brilliant yellow, than the Harrison; and this is the only hardy

yellow Rose we know of, really worth growing, except the Copper Austrian. The flowers of the Austrian Roses are produced on short joints all along the stem ; they will not, therefore, bear much pruning.

“Double-margined Hip is a Hybrid Sweet Brier, of luxuriant growth, almost adapted to a pillar. Its form is cupped, and its color creamy-white, shaded with pink.”

Climbing Roses.—The Climbing Roses may be divided into four or five sub-classes, viz.: Boursalt, Ayrshire, Prairie, Hybrid China, Noisette or Bourbon, and Miscellaneous. In the Miscellaneous class, the old-fashioned Cinnamon may be placed, not knowing where else to put it ; and it should most assuredly have a place somewhere, “for auld lang syne,” if nothing more. It deserves a place in the shrubbery, on account of its early flowering and profuse bloom. It opens its blossoms the last of May, in this climate, and, with a little attention, will make a bush ten or twelve feet high.

Boursalt Roses.—The Boursalt Roses come next in bloom after the Cinnamon. They are all desirable on account of their hardy character and vigorous growth. “Their smooth bark renders them desirable for stocks to bud upon.” For the extreme North, this whole class, next to the Prairie, are the most desirable for pillars and trellises.

Amadis is one of the handsomest of the Boursalt Roses, producing its large purplish-crimson flowers in pendulous clusters.

For distant effect, the Common Purple Boursalt is not without its merits. The flowers are semi-double, but are produced in immense numbers ; and, then, it is very hardy.

De Lesle, or Blush Boursalt.—This is one of the earliest of the sub-class, producing large blush flowers, with a deep rose center, and perfectly double. All the Boursalts have quite smooth stems, but none more so than the Thorn-

less Rose, which comes into bloom soon after the Cinnamon. Its stems are perfectly smooth; it makes a stout bush, ten or twelve feet high, and is covered with a profusion of pretty pink Roses. This is suitable for the shrubbery. The Old White Rose makes a handsome bush for training. The flowers are semi-double, of a fine rose-white, and, when properly managed, in rich soil, will grow twelve to fifteen feet high.

Prairie Roses.—Samuel Feast, Esq., of Baltimore, has the honor of originating the first Prairie Rose, — the *Queen of the Prairies*, — for which the Massachusetts Horticultural Society awarded him their large gold medal, as a special premium. This is the type of a new class of hardy Roses, and proves to be a most valuable acquisition for the North, it being as hardy as the oak. The tribe bloom after the summer Roses are passed.

Queen of the Prairies is a most superb variety of *Rosa setigera*, a native of the West, sometimes known as the Michigan Rose. This is Mr. Feast's first seedling, and considered by some the best. The flowers are of a deep rose color, with a white stripe in the center of each petal. They have a peculiar globular, cup-shaped form. This variety is the most luxuriant grower of any of the class, making a surprising growth in rich soil. The flowers of all the varieties are produced in clusters.

Baltimore Belle.—The flowers are a pale, waxy blush, almost white, very double, in large clusters; like the other perfectly hardy.

Rosa superba, has pale, delicate blush blooms, in large clusters, the flowers not so large as the Baltimore Belle.

Perpetual Pink, produces flowers in great profusion, which continue in long succession; rather small, but in clusters, varying from light-pink to purple. In addition to those described there are many other varieties equally desirable, and new sorts are produced every year. This

class of Roses lack one important quality, that is, fragrance.

Ayrshire Roses.—This family of Roses are great ramblers, producing a long, slender, luxuriant growth; but, in a northern climate, they cannot be relied on as being perfectly hardy, unless laid down and covered over. They produce very pretty flowers, in clusters, mostly white. They are desirable for covering “unsightly places, old buildings and decayed trees.” “The Ayrshire Roses are also valuable for weeping trees. When budded on some stock eight or ten feet high, the branches quickly reach the ground, and protecting the stem by their close foliage; present a weeping tree of great beauty, loaded with flowers.”

One of the most desirable varieties is the Dundee Rambler; flowers in large clusters, white, edged with pink, and the double blush.

Hybrid China, Bourbons, etc.—Of this class there are many varieties, suitable for pillars, or poles, but which it will be the safest course to be careful of in the winter, in the New England States. In climbing Roses, length is an important feature; and if these hybrids are left without protection, they may lose a large portion of the new wood, unless laid down and covered over. Rivers's George the Fourth is a Hybrid China; grows about ten feet high; flowers large, of a very rich crimson color. This is also a fine dwarf Rose, when pruned down, and, like most of the Hybrid China Roses, stands perfectly well in the open ground, but the tops are always winter-killed here.

Belle Theresa.—Hybrid China.—A rampant grower, with rich dark purple-crimson flowers, in clusters, under medium size.

Fulgens.—Hybrid China,—has beautiful bright scarlet-cupped flowers.

Gloire de Rosemene.—Bourbon.—This fine Rose gives

a succession of fine bright crimson-scarlet flowers, but rather tender.

Brennus.—Hybrid China,—has large bright scarlet-crimson flowers.

Blanchfleur.—Hybrid China.—Pure white; of a very double and compact form, and an abundant bloomer; about six feet high.

Madame d'Arblay.—Hybrid climber, of great luxuriance, flowers white; too tender for the North.

La Tourterelle, or Dove Rose,—Hybrid China,—a very luxuriant grower, but succeeds well as a dwarf Rose, when pruned down. The flowers are large, cup-shaped, of a purplish-lilac or dove color.

Phillipar.—Noisette, or Bourbon,—admired for its profusion, and peculiar rosy-lilac hue of the flowers, blooming without intermission from June to November.

Of the *Hybrid Perpetual* Roses, suitable for training, are Madame Laffay, blooming three or four times in the season, with bright rosy flowers; Prince Albert, with large flowers, of a rich crimson color and perfect shape; and Youland d'Arragon, with fine, deep flowers. There are some of this class that can be made to grow in rich grounds five to six feet high.

In planting climbing Roses, they should always be cut down to within a few inches of the ground, as it is important to get a clean, vigorous growth for the next year's bloom. Another important matter is, to dig the ground deep and have it thoroughly enriched. A third is, in pruning. The wood of climbing Roses does not produce so fine flowers after it is two years old. It is necessary, therefore, to encourage the growth of one or more new shoots every year, cutting out the old wood as fast as there is new to supply its place. The lateral branches are to be pruned in, while the main stems are to be kept the whole length.

We had almost forgot the *Multiflora Rose*, a class distinct from those already named; they produce flowers in large clusters, but rather small. Some of the varieties are, the Cottage Rose, Laure Davoust, Garland, etc. In New England they are all rather tender.

In closing our remarks on Roses, we cannot refrain from giving Gerarde's account of it some two hundred and fifty years ago. His mode of classification was, among thorny plants. "This plant of Roses, though it be a shrub full of prickles, yet it had been more fit and convenient to have placed it with the most glorious flowers of the world, than to insert the same here, among base and thorny shrubs, for the Rose doth deserve the chiefest and most principled place among all flowers whatsoever, being not only esteemed for its beauty, vertues, and his fragrant, odoriferous smell, but also because it is the honour and ornament of our English sceptre, as by the conjunction appeareth in the uniting of those two most royal houses of Lancaster and York. * * * * The Holland, or Provence Rose, hath divers shoots, proceeding from a woody root, full of sharp prickles, dividing itself into divers branches, whereon do grow leaves, consisting of five leaves set upon a single mid-rib, and those snip about the edges; the flowers do grow on the tops of the branches, in shape and color like the Damask Rose, but greater and more double, insomuch that the yellow chives in the middle are hard to be seen; of a reasonable good smell, but not full so sweet as the common Damask Rose; the fruit is like the other of his kinde."

ON THE ODORS OF ROSES AND THE MODES OF OBTAINING THEM.

"Crop the gay Rose's vermeil bloom,
And waft its spoils, a sweet perfume,
In incense to the skies."—*Ogilvie*.

"Of their sweats there are sweetest odors made."—*Shakespeare*.

“This Queen of the garden loses not its diadem in the perfuming world. The oil of roses, or, as it is commonly called, the otto or attar of roses, is abstracted by various processes from the Cabbage Rose in Turkey, Persia and India; the finest is imported from Ghazepore, in the latter country. For obtaining it, the procurers at each place have their own mode of operation; the best method, however, is to stratify the flowers with a seed containing a fat-oil; they will absorb the essential oil of roses, and swell a good deal if the flowers are changed repeatedly. They are then pressed, and the product allowed to stand for a time; the otto rises to the surface, and is finally purified by distillation. Pure otto of roses, from its cloying sweetness, has not many admirers; it is, moreover, likely to produce headache and vertigo in this state; when diluted, however, there is nothing to equal it in odor, especially if mixed in soap, to form rose soap, or in the pure spirit form, ‘*Esprit de Rose*.’ The former preparation not allowing the perfume to evaporate very fast, we are not so readily surfeited with the smell as in the latter. The finest preparation of Rose as an odor, is made at Grasse, in France; here the flower is not treated for the otto, but simply by maceration in fat, as mentioned with other flowers.

“The Rose Pomade, thus made, if digested in alcohol, yields *Esprit de Rose* of the first order, very superior to that which is made by the addition of otto to spirit. It is difficult to account for this difference, but it is sufficiently characteristic to form a distinct odor. It is never sold by the perfumer; he reserves this to form part of his recherche bouquets. Roses are cultivated to a large extent in England, near Mitcham, in Surrey, for perfumers’ use, to make rose-water; the odor of the English flower is not strong enough to use for any other purpose. Though the dried rose-leaves are used for scent-bags, they retain but

little of their native fragrance. In the season when successive crops can be got, they are gathered as soon as the dew is off, and sent up to town in sacks. When they arrive, they are immediately spread out on a cool floor, otherwise, if left in a heap, they will heat to such an extent in two or three hours, as to be quite spoiled; to preserve them for use they are immediately pickled; for this purpose the leaves are separated from the stalk, and to every bushel of flowers, equal to six pounds, one pound of common salt is thoroughly rubbed in; the whole becomes a pasty mass, and is finally stowed away in casks. In this way they will keep almost any length of time without seriously injuring their fragrance. For rose-water, which is best prepared from time to time, take 12 lbs. of pickled Roses, and $2\frac{1}{2}$ gallons of water, place them in a still, and draw off 2 gallons; this product will be the 'double distilled rose-water' of the shops."—*English paper.*

RUBUS.—BRAMBLE.

[Name from the Celtic word *rub*, which signifies red.]

This genus embraces rambling rough plants, well-known and highly prized for their grateful, delicious, and wholesome fruits; the Raspberries, Blackberries, and Thimbleberries, with their varieties. The High Blackberry produces clusters of handsome white flowers, succeeded by delicious fruit, and when cultivated in the garden, is much improved.

Rúbus odorátus.—The Flowering Raspberry.—This is the only ornamental variety; found growing freely in mountainous districts, "giving a charm to many a solitary spot by its large, rose-like flowers." The leaves are large and handsome. The fruit is inferior to the other species. It deserves a place among other shrubs. It should be planted in a shady place.

SAMBUCUS.—ELDER.

[Name from an ancient musical instrument, supposed to have been made from the wood of this tree.]

Sambucus Canadensis.—Common Elder.—This very common shrub grows about eight or ten feet high in low ground, and conspicuous in June and July for its broad cymes of white flowers, succeeded by clusters of small, dark-purple, or nearly black, berries. An infusion of the bruised leaves is used by gardeners to expel insects from vines. The flowers are highly esteemed, as having important medicinal qualities. The plant, on account of its ornamental flowers and berries, may be introduced into extensive shrubberies.

S. nigra.—European Elder.—This species is very common in Europe, and is the original of several ornamental varieties, among which are, *S. laciniatus*, or Parsley-leaved, which is a variety of the European *S. nigra*, a shrub eight feet high, with deeply cut or lacinated leaves and white flowers. There a number of other curious varieties, one the Golden-striped, in which the leaves are striped or blotched with yellow. A variety of the Parsley-leaved, or Silver-striped, has leaves beautifully variegated with white. There is also a variety with double, pure white flowers, of which the shrub has some resemblance to our Common Elder. The flowers, however, are so offensive to the smell, that they are not desirable to cut, but handsome on the bush.

SHEPHERDIA.

[So named by Nuttall, in compliment to Mr. Thomas *Shepherd*, of the Botanic Garden, Liverpool.]

Shepherdia argentea.—Buffalo Tree.—This graceful shrub, or low tree, is found in the neighborhood of the Rocky Mountains, in large clumps, or clusters. It is eaten

or browsed by the Buffalo, from which it derives its common name. The tree is graceful in its appearance, growing from ten to thirteen feet high; the branches are rather pendulous; the leaves are small, of a soft, woolly nature, and have a silvery appearance. It has staminate and pistillate flowers on different plants, hence both kinds should be grown together. The branches of the female trees are thickly studded with clusters of small crimson berries, nearly the size of the red currant. The fruit has a pleasant acid flavor, and is sometimes used for jelly or preserve. There is an astringent taste in addition to the acid, which makes the fruit of little value, in comparison with the common currant. For an ornamental tree or shrub, it deserves a place among other plants. It is beautiful in fruit. The flowers cannot boast of much beauty.

SPARTIUM.—BROOM.

[From the Greek, signifying *cordage*; the earliest ropes were made of this and similar plants.]

Spártium scopárium. — Common Broom. — A shrub, thick-set with verdant, flexible, rush-like twigs, which are very ornamental in winter, and generally profusely covered with showy, white, or yellow, pea-shaped flowers in summer. A very ornamental shrub in the garden scenery. It is not very common in New England, as our winters are rather severe upon it. In the interior of the country, we find no difficulty in keeping it, when the snows are deep. If planted on the north side of a wall, and covered with snow, it will be found perfectly green in the spring, and will flower abundantly.

SPIRÆA.

Spiræa hypericifolia.—Hypericum-leaved Spiræa, or, St. Peter's Wreath.—This is a very elegant shrub, producing its numerous small white flowers in long garlands, upon the delicate curving branches of the plant. The bush, when in flower, has the appearance of being covered with a light fall of snow. The foliage is elegant; it is in flower in May and June; grows about four feet high; the extremities of the branches are sometimes winter-killed; easily propagated by suckers, divisions of the root, or by layers, as all the species are.

S. opulifolia.—Nine-Bark.—“An ornamental native shrub, found from Canada to Georgia; from five to seven feet high, distinguished for the abundance of its showy heads of flowers, and for its conspicuous fruit. The stem is rugged, with loose, gray bark, easily detached, and falling off. Flowers in hemispherical heads, on a short stalk, —each flower on a slender, downy thread; white, with a rose tinge.”

S. salicifolia.—The Queen of the Meadows.—This is a very pretty native shrub, from two to four, and sometimes six, feet high, with terminal heads of neat, white, sometimes rose-tinted flowers, in June and July.

S. tomentosa.—Steeple Bush,—Hard-Hack.—This is a very common, leafy shrub, from two to five feet high, growing in wet ground, and distinguished in the flowering season for its long, tapering spire of purple flowers. A few years since, we ordered all the handsome Spiræas from England, excluding all that we possessed. When they came into flower, we found among them, this old, familiar country friend. It is, however, handsome when cultivated and pruned of the previous year's stems, which disfigure it very much, when growing in the pastures.

S. prunifolia plena.—Double Plum-leaved Spiræa.—This is one of the most desirable species or varieties of the Spi-

ræa, and is perfectly hardy. The following account is from the Gardener's Chronicle. "This charming shrub was introduced into Europe by Dr. Siebold, to whom our collections are indebted for so many novelties, only to be procured with the utmost difficulty. It deserves the attention of all amateurs, as well for its hardiness as its elegant habit and beautiful flowers. The Dutch traveller found it cultivated in the Japanese gardens, and supposes its native country to be Corea, or the north of China. It is a shrub, from six to nine feet high, and has upright, close, bushy, slender branches, which are covered with a smooth, ash-colored bark, that detaches itself at later periods in thin scales. The leaves are oval, or ovate-elliptic, rounded at their base, obtuse or a little acute at their apex, downy beneath, denticulated at the edge. The flowers, which grow by threes or sixes, cover the whole length of the branches, are as white as snow, and very double, in consequence of a complete abortion of their stamens. Their shape is exactly like that of the *Ranunculus aconitifolius* with double flowers, and their number and arrangement, with a light and elegant bright-green foliage, render this plant a charming addition to the shrubs which grow in the native air." It flowers in this climate in May.

S. Douglásii.—Mr. Douglas's Spiræa. — This shrub is from California, and has some resemblance to *S. tomentosa*, flowering in the same manner; flowers fine rosy-lilac, continuing in bloom from July till the autumnal frosts commence.

S. sorbifolia.—Pinnate-leaved Spiræa.—This is a vigorous shrub, a native of Siberia. It develops its handsome pinnate foliage very early in the spring. The leaflets are serrated, or with notched edges. The flowers are yellowish-white, produced in large, dense panicles, in June. The flowers seem to be peculiarly attractive to the rose-bugs, which sometimes disfigure and spoil their beauty by the

immense numbers which delight to revel in its sweets. This shrub propagates itself too fast, as it throws up its suckers in great profusion, and makes itself quite too common; otherwise it would be a desirable plant for the shrubbery.

S. Reevesiána.—Mr. Reeves's *Spiræa*.—We consider this one of the most elegant and desirable species of the whole genus. The flowers are of a snowy whiteness, produced in clusters, the whole length of its graceful, arching stems, which, intermingled with the handsome foliage, produce a pleasing effect. The shrub is delicate in its growth, about four feet high, and flowers in June. It is propagated by cuttings, layers, and suckers.

S. airæfólia.—This is a very delicate species which we have in our collection, with exceedingly graceful foliage, with small heads of white flowers; two or three feet high.

S. lævigáta.—Smooth-leaved *Spiræa*.—This species has smooth lanceolate leaves, without serrature or notch. The flowers are white, in compound racemes, somewhat fragrant. It is not very showy, but, in a collection, makes up a variety; about two or three feet high.

S. trilobáta.—Three-lobed-leaved *Spiræa*.—The leaves of this species are bluntly three-lobed, and toothed, or notched. The flowers are white, in stalked umbels, about three or four feet high.

Altogether, we do not know any genus of plants where the foliage is so diversified. When grouped together, they make a fine appearance, either in flower or foliage. There are many other species that have not come under our observation, which, no doubt, are as valuable for the shrubbery as those described.

SYMPHORICARPUS.—SNOWBERRY.

[The name is from a combination of Greek words, signifying "a plant which bears its fruit together in clusters."]

Symphoricárpus racemósus. — Common Snowberry. — This is a delicate, hardy, North American shrub, extensively known and much cultivated on account of its fine white berries, which are quite ornamental, after the leaves have fallen. The flowers are pink, and rather inconspicuous; the shrub grows about four feet high; easily propagated by suckers.

S. vulgáris. — Indian Currant, Coral Berry. — This has no claims to beauty, as to the flowers, which, like the last, are small and inconspicuous, of a pink color. These are succeeded by dark brownish-purple berries, which are thickly clustered upon the branches, three feet high. It is propagated in the same way. Both these species thrive in the shade and under the drippings of trees.

SYRINGA.—LILAC.

[A Persian name.]

"Various in array, now white,
Now sanguine, and her beauteous head now set
With purple spikes pyramidal."

All the species are most beautiful flowering shrubs, readily propagated by suckers, which they throw up in abundance. The common Lilac seems to have been introduced before or during the reign of Henry VIII., for in the inventory, taken by the order of Cromwell, of the articles in the gardens of the palace of Nonsuch, are mentioned six Lilacs, — "trees which bear no fruit, but only a pleasant smell." — (*Loudon.*)

Syrínga vulgáris. — The Common Lilac. — This is so well known that it needs no description. The purple variety

is found in almost every garden; the white is more scarce. Grown together, they are very beautiful; and, notwithstanding they are old-fashioned, common, and vulgar, with some people, we esteem them as some of our most valuable and ornamental shrubs of the season.

S. Pérsica.—Persian Lilac.—This species is “far more delicate and pretty than the common Lilacs, both in leaf and blossom. The bunches of flowers are frequently a foot long, and weigh down the tender terminal slender shoots so as to give the plant a very graceful appearance. The *white* and *purple*, both beautiful; the Cut-leaved Lilac has interesting and delicate foliage.” The Persian Lilac grows about four or five feet high. All the species bloom the last of May and the first of June.

The common Lilacs are suitable for the back of the shrubbery. “This was one of the first plants introduced by our forefathers, and is universally found; often in the front of ancient houses, growing almost to the size of a tree.” To make a small tree of it, care must be taken to destroy all the suckers and keep a clean stem. The Persian varieties are suitable for planting in clumps, or in the front of the shrubbery. Some beautiful new varieties have been imported within a few years, producing immense clusters of flowers. There is one variety with double flowers, but it is not an improvement.

TAMARIX.—TAMARISK.

[From *Tamarisci*, a people who inhabited the Spanish side of the Pyrenees, where one species grows abundantly.]

Támarix Gállica.—French Tamarisk.—An elegant, deciduous, hardy shrub, which, for some reason, has not received much attention in New England. The foliage is very graceful, and has some resemblance to that of the Heath. The pink flowers are produced in lateral spikes,

in July and August; small, but very numerous. It grows about ten feet high. On account of its delicate, graceful habit, and heath-like flowers and foliage, it makes a desirable addition to the shrubbery. The German Tamarisk is a hardy shrub of similar habits. There are also a number of other species and varieties.

TECOMA.—TRUMPET-FLOWER.

[Said to have been altered from the Mexican name.]

The species are trees or shrubs, inhabitants of hot climates; the leaves are opposite, pinnate, ternate, or conjugate; the flowers in panicles, large and handsome, of various colors, red, yellow, blue or white, and eminently beautiful. The hardy species will grow in almost any good soil, and easily propagated by layers or cuttings of the root. The species here mentioned were formerly included in the Genus *Bignonia*.

***Tecoma radicans*.**—Scarlet Trumpet Flower.—This is a magnificent climbing plant, producing large, trumpet-shaped, orange-scarlet flowers, of great beauty, from July to October. They are produced in clusters; handsome in bud, as well as when fully expanded, and when contrasted with the elegant glossy, pinnate foliage, present a most splendid sight when trained to a pillar or trellis.

The plant is a little tender in some locations, and will do best to be laid down and covered over, or secured with straw or mats.

T. grandiflora has flowered with us, but it is rather tender in this climate. It is a native of China and Japan. "In the growth of the wood it is rather more slender, and the leaves more coarsely serrated than those of *T. radicans*. The vine has the same habit of attaching itself firmly to a wall, or building of stone, brick or wood, or

to the trunk of a tree within its reach, by the numerous small aerial-rootlets, which it sends out from the inner sides of its shoots.

“In the blossoms of the *T. grandiflora*, however, lies its peculiar beauty. These are produced, in great profusion of clusters, in July and August, so as to give the whole plant an exceedingly gay and lively appearance. They are not long and tubular, like those of the common Trumpet Flower, but somewhat cup-shaped. * * * The color is beautifully varied, the outside being a rich pure orange-scarlet, marked with brighter streaks. These gay clusters open their blossoms in succession, so as to keep up a brilliant appearance for a long time; and we are acquainted with no climbing shrub, except the Chinese Wistaria, which at all vies in elegance or brilliancy of effect, in the garden or pleasure-ground, with this during the season of bloom. Last season, we counted over three hundred in bloom, at once, upon a plant in our neighborhood; and the same profuse display continued a fortnight or more.

“*T. grandiflora* may be grown with perfect ease where the old Trumpet Flower (*T. radicans*) thrives. North of this (Newburg, N. Y.) it will, perhaps, require a little protection in winter, such as a layer of straw tied over the larger shoots, or some branches of evergreens laid against them at the approach of winter. A northern site will also be found the better one at the north, wherever there is a doubt of its hardiness, since the temperature will, in such a site, be more uniform and less injurious than in a southern aspect. Wherever the Isabella grape ripens, this handsome climbing shrub will be easily cultivated in almost any situation. If there are any fears of its hardiness, it may be protected, as we have pointed out, for a couple of years, till the wood gets strong and well hardened. Any dry, light, well-drained soil, suits this climb-

er. It should be made moderately rich, and in such soil, when planted against a wall, it will cover a space twelve or fourteen feet square, in two or three seasons. It is well worthy the attention of those who are looking for climbers of a permanent kind, to cover unsightly walks, or close fences, or to render garden buildings of any kind more ornamental, by a rich canopy of foliage and bloom.”—*(Downing.*

VIBURNUM.—SNOW BALL.

[An ancient Latin name.]

Viburnum Lentago.—Sweet Viburnum.—A native species of great beauty. Mr. Emerson describes it as a “beautiful small tree, rising to the height of fifteen to twenty feet, with rich foliage, and clothed, in June, with a profusion of delicate, showy flowers.” The flowers are produced in terminal cymes, and from them a very agreeable fragrance is diffused. “There is a softness and richness about the flowers and foliage of the Sweet Viburnum which distinguish it above all others of the same genus. It is hardly less beautiful in fruit, from the profusion of the rich blue berries hanging down among the curled leaves, which are beginning to assume the beautiful hues of autumn. A tree of this kind makes a fine appearance at the angle of a walk, or in the corner of a garden, as its delicacy invites a near approach, and rewards examination. With this delicacy of appearance, it is a hardy plant, and may sometimes be seen on the bleak hillside, where it has encountered the north-west stormy winds for a score of years.”

We think this Viburnum much more desirable than the common Snowball. As it is found growing in uplands,

no doubt it will flourish in any garden loam, and is propagated the same as the Snowball.

We have a number of other species, which would well repay cultivation. Most of them would require the same treatment as the *Azalea*, and that class of plants, as they are found in swamps and woods. Some of them are very beautiful, viz. : *V. dentatum*, *nudum*, *acerifolium*, etc.

V. lantanoides.—Wayfaring Tree, Hobble Bush.—This fine native plant “received its specific name, *lantanoides*, from its resemblance to the English Wayfaring Tree, *V. lantana*, the tree which William addresses, when he says:—

‘ Wayfaring Tree ! what ancient claim
Hast thou to that right pleasant name ?

* * * * *

Whate’er it be, I love it well,—
A name, methinks, that surely fell
From poet, in some evening dell,
Wandering with fancies sweet.’

“That tree rises to the height of eighteen or twenty feet, and has an ample head of white flowers. Ours, less fortunate in its name, is a stout, low bush, found in dark, rocky woods, and making a show, in such solitary places, of a broad head of flowers, the marginal ones often an inch across.” * * * “The leaves are from four to six inches in length and breadth, roundish, heart-shaped at base, ending in a short, abrupt point, and unequally serrate on the margin. They are smooth above, but beneath downy on the veins, which are thereby rendered strikingly distinct. * * * The fruit is ovate, large, of bright crimson color, turning afterwards almost black.”—(*Emerson*.) The first time we beheld this crooked, straggling shrub, in flower, in its native haunts, a dark swamp, we thought it one of the most ornamental shrubs of the country. It is certainly worthy of a place in every collection of shrubs. It will no doubt succeed with the same treat-

ment as the *Rhododendron* or *Azalea*, and may be propagated by seeds, layers, or cuttings.

V. Opulus.—Cranberry Tree, High Cranberry.—“A handsome low tree, five to ten feet in height, ornamented throughout the year with flowers or fruit. In May, or early in June, it spreads open at the end of every branch, a broad cyme of soft, delicate flowers, surrounded by an irregular circle of snow-white stars, scattered, apparently, for show. The fruit, which is red when ripe, is of a pleasant acid taste, resembling cranberries, for which it is sometimes substituted.” This is the parent of

V. Opulus, var stérilis, the Guelder Rose or Snowball.—A common ornament of the garden, producing large bunches of white flowers, shaped like those of the *Hydrangea*. When grouped with the *Laburnum*, *Lilacs*, —the double-flowering *Thorns*, etc., it has a fine effect. In flower the last of May, and early in June; eight or ten feet high; readily propagated from suckers, layers and cuttings.

V. macrocéphalum.—Great-clustered Snowball.—“This is a new and splendid species, that has not been much, if any, cultivated in this country. M. Van Houtte describes it as found growing in the gardens about Chusan, China, where it forms a shrub, or tree, twenty feet high. It flowers every year, in May, producing its enormous clusters, which equal those of the old garden *Snowball*, or ‘Guelder Rose,’ in purity of color, and far eclipses them in size and beauty. Each blossom is more than an inch across, and the clusters measure eight or ten inches in diameter. The leaves are regularly oval, with short petioles, and about three inches long. It flourishes in the open border, in the same soil as the common *Snowball*; and M. Van Houtte considers it one of the most beautiful additions to the shrubbery.”—[*Downing*.]

WISTARIA.

[Named by Nuttall, in honor of Dr. Caspar Wistar.]

W. Sinénsis.—The Chinese Wistaria.—This, which is sometimes called *Glycine*, is one of the most magnificent climbing shrubby plants in cultivation. It was formerly treated, at the North, as a tender plant, and might be seen trained to the rafters of the green house, in full flower, in March, with its thousands of rich clusters, or pendulous racemes of delicate pale-purple blossoms, so numerous that the whole space it occupied seemed to be covered with them. Each raceme is from ten to twelve inches long, and densely filled with its delicate and richly perfumed flowers. It is easily raised from cuttings or layers. In the open ground, we have known it to make a growth of thirty feet in one season; and, with us, has not failed, excepting one year in the last twelve, to produce an abundant bloom, and that without the least protection. The December previous to the year in which it did not bloom, was a very warm one. The buds prematurely started, and were winter killed; it however, flowered in August, but not so perfectly as it would have done in the spring. In another locality, in low ground, which is not well drained, the flower buds are frequently killed. The foliage is abundant, and its color a lively, pleasant hue of green. The flowers make their appearance before the foliage starts, the last of May, in the open ground. The plants for the first few years are somewhat tender, at the North, and should be laid down before the winter sets in, and covered with earth, or coarse manure. It grows freely in almost any soil; but to have strong plants, it is important to have a rich, deep loam. It will not flower till the plant gets strong.

A new variety with white flowers, has been introduced from China into England, by Mr. Fortune, and can, at the present time, be obtained at many of our nurseries.

Plants generally produce a few scattering racemes of flowers, in the last summer months, but are not to be compared with the clusters produced in the spring. In planting out young vines, they should be cut down to a single bud. Long shoots should be shortened in February or March.

THIS BOOK IS DUE ON THE LAST DATE
STAMPED BELOW

AN INITIAL FINE OF 25 CENTS

WILL BE ASSESSED FOR FAILURE TO RETURN
THIS BOOK ON THE DATE DUE. THE PENALTY
WILL INCREASE TO 50 CENTS ON THE FOURTH
DAY AND TO \$1.00 ON THE SEVENTH DAY
OVERDUE.

NOV 22 1934

JUN 29 1936

FEB 3 1944

JUN 5 1947

May 26 4 9 ML

9 Mar '50 R R

INTERLIBRARY LOAN

APR 23 1991

UNIV. OF CALIF., BERK.

FEB 24 1997

YB 48535

U. C. BERKELEY LIBRARIES

C057930868

6108

SB405

BB2

UNIVERSITY OF CALIFORNIA LIBRARY