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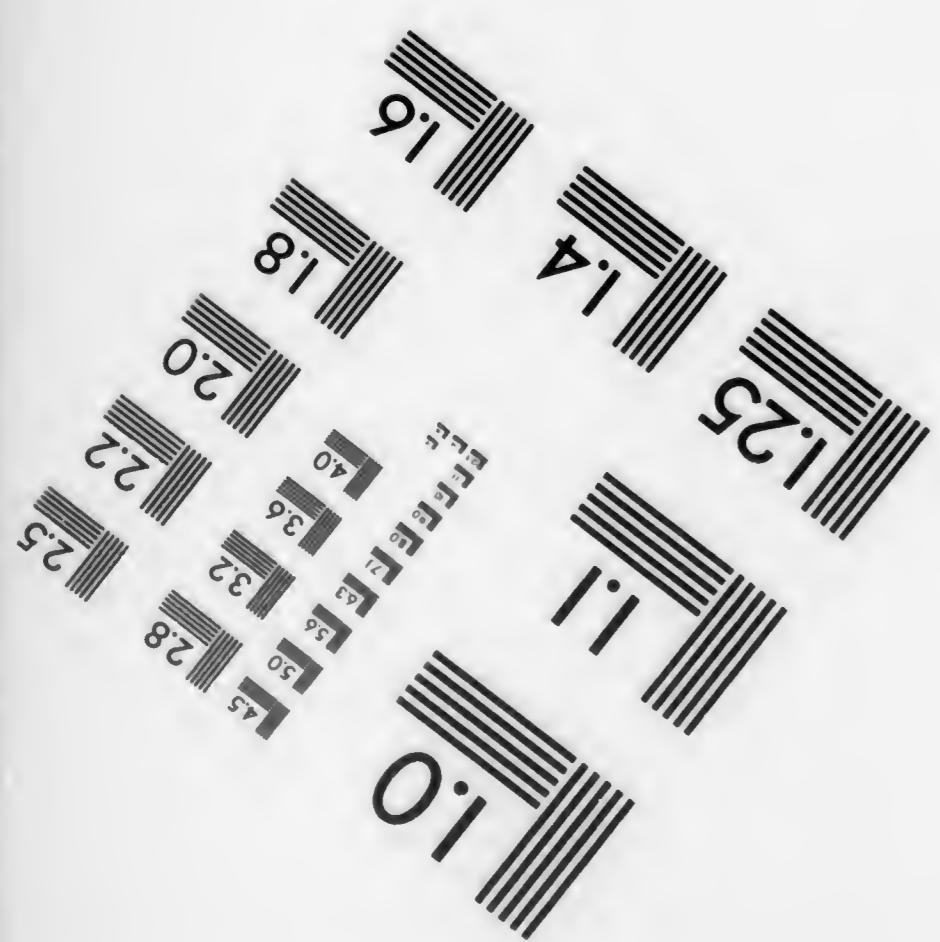
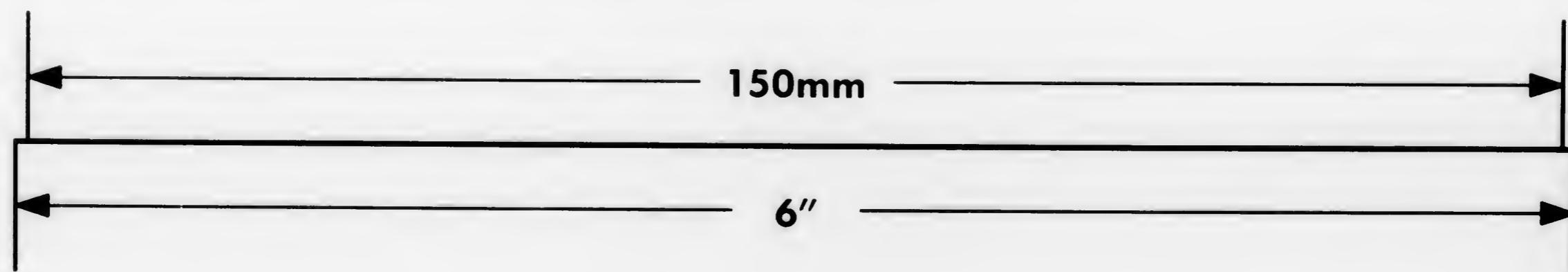
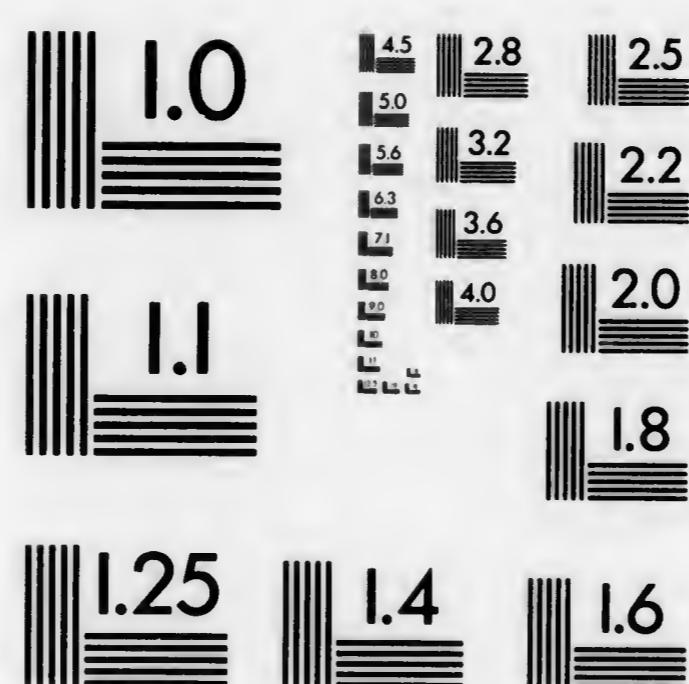
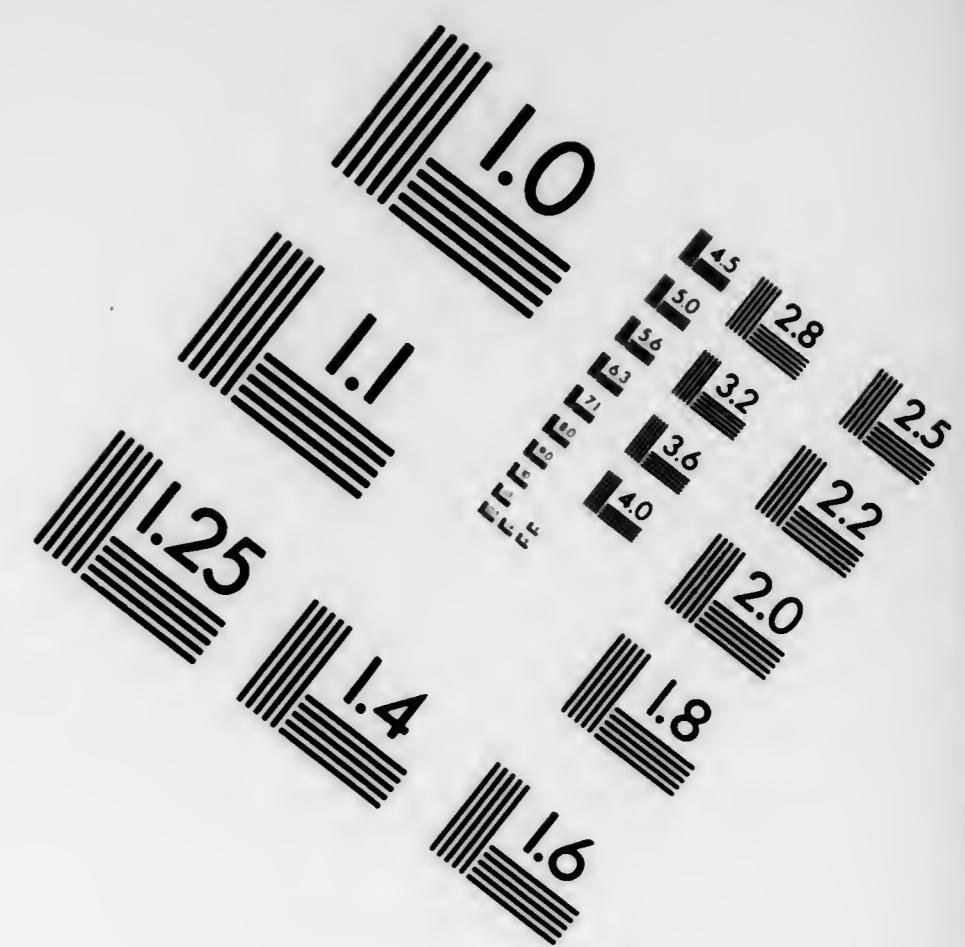
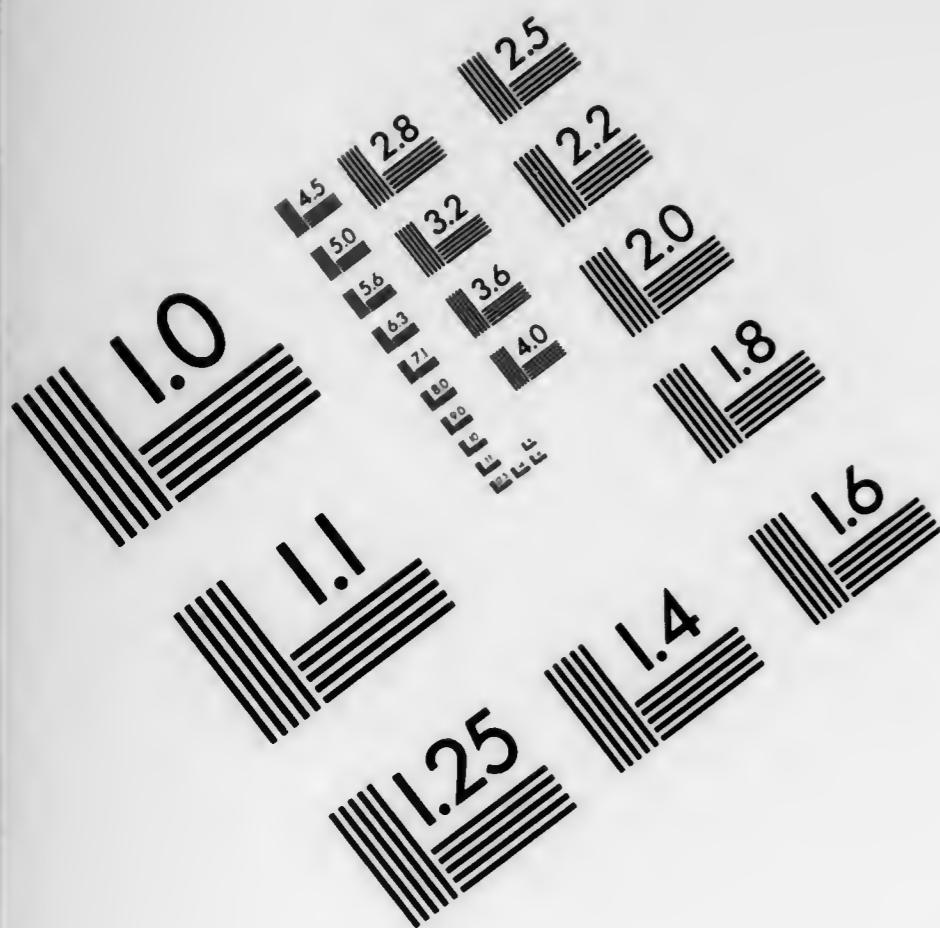
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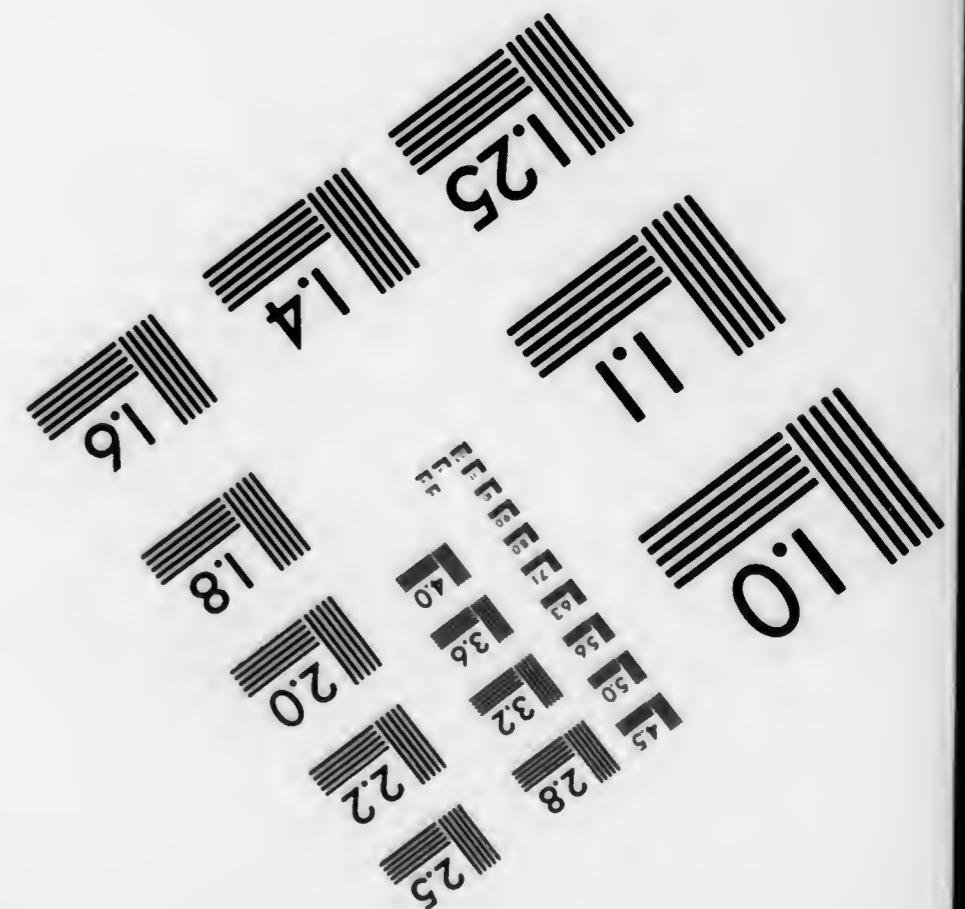
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A Magazine of Horticulture, Botany
and kindred subjects

CONDUCTED BY

THOMAS MEEHAN

FORMERLY EDITOR OF THE "GARDENER'S MONTHLY," AND AUTHOR OF THE "NATIVE FLOWERS AND
FERNS OF THE UNITED STATES." VICE-PRESIDENT OF THE ACADEMY OF NATURAL
SCIENCES OF PHILADELPHIA. BOTANIST TO THE PENNSYLVANIA
STATE BOARD OF AGRICULTURE, ETC.

ASSISTED BY

THOMAS B. MEEHAN, J. FRANK MEEHAN, S. M. MEEHAN

Volumes 1 and 2

1891—1892

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Preface to Volumes I and II.

HE Conductors close here the first volumes of their task. Their object was unique. On the one hand are novices, who know little of gardening or of the sciences relating to garden art. These require the plain practical hints for successful study wherewith to lay the foundation of future success. On the other hand are hosts of intelligent men and women who desire to keep abreast with the advance guard in popular knowledge. There seemed no reason why both of these classes should not be ministered unto. And then there was the desire of continuing in a cheap and popular form, the great work of the senior conductor, *The Flowers and Ferns of the United States*. How well this unusual combination of desirable points has been accomplished the work itself will testify. Having finished this one great day of our labors, the conductors may feel

"Like one who draws the drapery of his couch
Around him, and lies down to pleasant dreams."

For the task has been a pleasant one, and they will awake to the responsibilities of the new volume with a courage born of the enthusiasm of hosts of friends.

COLORED PLATES.	
	PAGE
Asplenium montanum, vol. ii.....	97
Azalea nudiflora, vol. ii.....	17
Boltonia glastifolia, vol. i.....	33
Desmodium nudiflorum, vol. ii.....	65
Hibiscus Moscheutos, vol. ii.....	161
Lepachys columbaris, vol. i.....	65
Notholena dealbata, vol. i.....	49
Nuphar advena, vol. i.....	17
Opuntia Rafinesqui, vol. ii.....	81
Pavonia Wrightii, vol. ii.....	177
Ranunculus fascicularis, vol. ii.....	1
Rhododendron maximum, vol. i.....	1
Salicornia mucronata, vol. ii.....	129
Spiraea lobata, vol. ii.....	145
Sarracenia flava, vol. ii.....	113
Sarracenia purpurea, vol. i.....	81
Trichomanes radicans, vol. ii.....	33
Trillium erectum, vol. ii.....	49

ILLUSTRATIONS.	
	PAGE
Ardisia crenulata, vol. i.....	58
Apple, Benoni, vol. i.....	93
Apple, York imperial, vol. ii.....	189
Aroids, edible, vol. i.....	89
Balsam fir, Frazer's, vol. ii.....	165
Beech, cut leaved, vol. i.....	61
Begonia, improved tuberous, vol. i.....	59
Berberis Thunbergii, vol. ii.....	189
Black knot, vol. ii.....	122, 125
Boecklin, Werner, grounds of, vol. ii.....	117, 121
Boettcher, John, vol. ii.....	159
Caetus garden, a, vol. ii.....	89
Calanchoe pinnata, vol. ii.....	56
Calla lily, dwarf, vol. ii.....	69
Canna flaccida, vol. ii.....	37
Cardoon, the, vol. ii.....	93
Carrot, vol. i.....	172, 173
Cedar of Lebanon, vol. i.....	39, 40
Celery, vol. ii.....	25, 26, 28, 57, 74, 76, 77
Clarkia elegans, vol. i.....	22
Chaste shrub, vol. ii.....	44
Chestnut trees, vol. i.....	7
Chionanthus retusus, vol. ii.....	157
Chionanthus virginica, vol. ii.....	154
Chrysanthemum, early flowering, vol. ii.....	168
Cocoanut tree, a young, vol. ii.....	171
Corn borer, vol. ii.....	21
Corn, Indian, vol. ii.....	6
Coreopsis tinctoria, vol. i.....	85
Conservatory, a beautiful, vol. ii.....	73
Currant, Indian, vol. i.....	84
Cyclamen, creeping, vol. ii.....	60
Cypress, deciduous, vol. ii.....	137
Cypress, vol. ii.....	134
Dionaea muscipula, vol. i.....	69
Ducumaria barbara, vol. i.....	41
English ivy, vol. i.....	75
Euphorbia heterophylla, vol. ii.....	53
Evergreen specimen trees, vol. ii.....	40
Falls of Linville river, N. C., vol. ii.....	132
Fox glove, vol. i.....	56, 57
Funkia ovata, vol. i.....	73
Fuchsia gracilis, vol. ii.....	186
Girdled Pinus ponderosa, vol. i.....	37
Gladiolus gaudens, vol. ii.....	90
Gladiolus Lemoinii, vol. ii.....	86
Gloxinia, vol. i.....	70
Goodyera pubescens, vol. ii.....	54
Hydrangea, the American climbing, vol. i.....	41
Judas tree, Japan, vol. ii.....	139
Lapham, Dr. L. A., vol. ii.....	31
Lawson cypress, a weeping, vol. i.....	43
Leidy, Dr. Joseph, vol. i.....	13
Lewisia rediviva, vol. ii.....	85
Liriodendron tulipifera, vol. ii.....	4
Mailing cases, vol. i.....	91
Mamillaria applanata, vol. i.....	4
Morel, the, vol. ii.....	141
Memorial pavilion, vol. i.....	25
Norway spruce, wood growth of a, vol. ii.....	181
Olmsted, A. H., residence of, vol. ii.....	185
Palm, the sago, vol. ii.....	88
Pasture grass garden, vol. i.....	9
Pear, Vermont Beauty, vol. ii.....	168
Phytolacca decandra, vol. i.....	53
Plumbago Larpentae, vol. ii.....	58
Pokeberry, vol. i.....	53
Pontederia crassipes, vol. ii.....	13
Privet, tricolored Japan, vol. ii.....	42
Quercus macrocarpa, vol. ii.....	153
Quercus palustris, vol. ii.....	155
Raspberries, vol. ii.....	102
Red snowberry, vol. i.....	84
Redwood trees from cuttings, vol. ii.....	169
Regel, Dr. E., vol. ii.....	111
Rhododendron Kanschaticum, vol. i.....	3
Roop, residence of Joseph C., vol. ii.....	105
Sarcodes sanguinea, vol. i.....	36
Seakale, vol. ii.....	106
Section of Wisteria trunk, vol. i.....	20
Skunk cabbage, double, vol. i.....	68
Smith, Wm. R., vol. ii.....	175
Snowberry, the white, vol. ii.....	10
Spiraea Bumalda, vol. ii.....	24
Spruce forest, black, vol. ii.....	149
Stag's horn fern, vol. i.....	77
Styrax Japonica, vol. i.....	11
Tillandsia Wilsoni, vol. ii.....	180
Toad stool plant, vol. i.....	21
Tradescantia pilosa, vol. ii.....	36
Trenton Falls, vol. i.....	5
Trumpet vine, a tree, vol. ii.....	9
Victoria Hotel, Interlaken, Switzerland, vol. ii.....	143
Venus fly trap, vol. i.....	69
Victoria regia, vol. ii.....	15
Wild flowers, vol. ii.....	79
Xanthoceras sorbifolia, vol. i.....	27

POEMS.	
	PAGE
A Brooklet in the Woods, vol. ii.....	115
A Connecticut Scene, vol. ii.....	87
A Forsaken Grave, vol. i.....	94
A June Evening, vol. ii.....	83
A Morning in Early Spring, vol. ii.....	35
A Persian Garden, vol. ii.....	131
A Spring Garden, vol. ii.....	55
A Thought in a Rose Garden, vol. ii.....	23
An Oak, vol. i.....	51
Autumn, vol. ii.....	147
Forget-me-not, vol. ii.....	158
Hail Chrysanthemum, vol. ii.....	167
His Work Shall Live, vol. i.....	78
Hopeless, vol. ii.....	46

62515

PAGE	PAGE	PAGE			
Labor is Sweet, vol. ii.....	30	The June Rose, vol. i.....	87	Engelmann, Dr. Geo., vol. ii.....	63
Loneliness, vol. ii.....	163	The Love of Nature, vol. ii.....	126	English heath, vol. ii.....	39
Memories of the Past.....	174	The Meadow Brook, vol. ii.....	99	Ergot, vol. ii.....	120
Memories of the Violets, vol. ii.....	19	The Moral of the Holly Tree, vol. ii.....	190	Erigeron speciosum, vol. ii.....	69
Nature Blesses All, vol. ii.....	94	The Night Blooming Jasamine in Paradise, vol. ii.....	71	Eriogonum Haussknechtii, vol. i.....	67
Old Friends, vol. ii.....	142	The Persian Water-lily, vol. ii.....	48	Eucalyptus trees, vol. ii.....	138
Old Memories in December, vol. i.....	83	The Ripening of the Grape, vol. ii.....	119	Euphorbia heterophylla, vol. ii.....	53
Origin of the Rose, vol. ii.....	62	The Rose and the Gardener, vol. i.....	29	Evening glory, vol. ii.....	80
Plant a Tree, vol. ii.....	7	The Spirits of Spring, vol. ii.....	51	Evergreen, hardiness of, vol. ii.....	88
Planting the Apple Tree, vol. i.....	71	The Winter's Ride, vol. ii.....	179	Evergreens of Japan, large, vol. ii.....	154
Primeval Churches, vol. i.....	67	The Trailing Arbutus, vol. i.....	19	Evergreen specimen trees, vol. ii.....	40
The Absent One, vol. ii.....	67	The Woodbine and the Ruin, vol. ii.....	135	Evergreens, transplanted, vol. i.....	87
The Blackbird, vol. ii.....	39	To the Trailing Arbutus, or May-flower, vol. ii. 3	3	Evergreen trees, the beauty of, vol. ii.....	32
The Blessed Tree Planter, vol. ii.....	103	Wasted Lives, vol. ii.....	14	Evergreen trees, the beauty of, vol. i.....	71
The Chestnut Wood, vol. ii.....	67	With a Box of Pond Lilies, vol. i.....	35	Exhibition, a great horticultural, vol. ii.....	71
The Frost Stricken Garden, vol. ii.....	157			Exochorda Alberti, vol. ii.....	170
The Greenhouse in the Winter, vol. ii.....	183			Exochorda grandiflora, vol. i.....	28
Abies concolor, vol. i.....	57	Begonia, sweet scented, vol. i.....	22, 59	Fairchild, vol. ii.....	47
Abies pinsapo, vol. ii.....	26, 55	Berberis Thunbergii, vol. ii.....	121	Farlow, Prof. W. G., vol. ii.....	62
Absinthe, vol. i.....	30	Berberry rust, vol. ii.....	119	Fern, chain, vol. ii.....	118
Acacias for shade trees, vol. ii.....	123	Berries, plants with, vol. i.....	58, 116	Fern, Killarney, vol. ii.....	33
Academy of Natural Sciences, vol. ii.....	16	Bignonia capreolata, vol. ii.....	138	Ferns, odorous, vol. i.....	85
Adams, John, vol. ii.....	63	Big trees of California, vol. i.....	6	Ferns of California, vol. ii.....	84
Air plant, Florida, vol. ii.....	184	Bind weeds, pretty, vol. ii.....	60	Ferns, origin of, vol. ii.....	101
Akebia quinata, vol. ii.....	103	Birch, vol. i.....	7	Ferns, reproduction of, vol. i.....	69
Almonds, vol. ii.....	54	Bird of Paradise flower, vol. ii.....	155	Ferns, shield, vol. ii.....	128
Aloe, the American, vol. i.....	43	Birds, fruit loving, vol. ii.....	157	Ferns, structure of, vol. i.....	67
Alphand, M., vol. ii.....	30	Birds, protection of, vol. i.....	27	Ferns, whitened cloak, vol. i.....	49
American and Japan flowers, vol. ii.....	21	Birthwort, tree leaved, vol. i.....	49	Fig.....vol. i 77; vol. ii. 115, 140, 173, 176	
American Gardening, vol. ii.....	32	Bitter sweet, vol. i.....	54	Filberts, vol. ii.....	29, 60, 187
American Pomological Society, vol. i.....	80	Black knot, vol. ii.....	124	Fire cracker flower, vol. i.....	54
American Pomological Society, proceedings of, vol. ii.....	112	Blanc, A, vol. i.....	63	Fish, fasting, vol. i.....	70
Animomphila arundinacea, vol. ii.....	20	Blechnum spicant, vol. i.....	86	Fleece, mountain, vol. i.....	74
Andromeda Mariana, vol. i.....	20	Bletia aphylla, vol. i.....	38	Flora of North America, the old, vol. ii.....	181
Animals and vegetables, boundaries between, vol. ii.....	68	Blue spruce, Colorado, vol. i.....	55, 106	Floriculture, vol. i.....	41
Animals trespassing, vol. ii.....	102	Brasenia peltata, vol. ii.....	99	Flower pictures, wild, vol. ii.....	48
Angels' tears, vol. ii.....	117	Bridal wreath, vol. ii.....	106	Flowers, miscellaneous notes on, Vol. i. 20, 53, 69, 85, 87; vol. 14, 19, 48, 64, 67, 75, 85, 96, 99, 100, 115, 116, 150, 179	
Ants in gardens, vol. i, 72, 90; vol. ii, 151, 170,	187	Botanical names, vol. ii.....	32, 83	Fly catching plants, vol. i.....	69
Aphis on maple trees, vol. i.....	28	Botanic gardens of New York, vol. ii.....	22	Foliage, varying tints of spring, vol. ii.....	101
Apple, vol. i, 23, 92, 45, 60; vol. ii, 45, 55, 60, 70, 101, 141, 157		Boltonia asteroides, vol. i.....	60	Forestry.....vol. i. 14, 41, 58, 90; vol. ii. 41, 70	
Aquatic culture, vol. i.....	24, 44	Boltonia glastifolia, vol. i.....	33	Foxgloves, curious, vol. i.....	56
Arbronia umbellata, vol. ii.....	70	Boltonia latisquamia, vol. ii.....	176	Franklin tree, vol. ii.....	89
Arbor Vitae, vol. ii.....	21	Bordeaux mixture, vol. ii.....	10	Franklin, Benjamin, vol. i.....	95
Archyranthes, bud variation in, vol. ii.....	37	Borers, fruit tree, vol. i.....	58	Frazer, Alexander, vol. i.....	47
Aroids, edible, vol. i.....	84	Botany as an aid in ethnology, vol. ii.....	179	Fringe trees, vol. ii.....	154
Artichoke, Chinese, vol. i.....	28	Botany at waterfalls, vol. i.....	5	Fruits, miscellaneous notes on, Vol. i. 23, 77, 107; vol. ii. 29, 44, 76, 172, 187, 189	
Artichoke, Jerusalem, vol. ii.....	69, 150	Botany, the pleasures of, vol. ii.....	164	Fly catching plants, vol. i.....	69
Asclepias Cornuti, vol. i.....	36	Buckleya distichophylla, vol. ii.....	118	Foliage, varying tints of spring, vol. ii.....	101
Asparagus, tying, vol. ii.....	13	Buhach, vol. ii.....	111	Forestry.....vol. i. 14, 41, 58, 90; vol. ii. 41, 70	
Aspidium fragrans, vol. i.....	54	Buttercups.....vol. i, 36; vol. ii, 31, 86		Foxgloves, curious, vol. i.....	56
Asplenium montanum, vol. ii.....	97	Butternut tree that should be famous, a, vol. ii ..	36	Franklin tree, vol. ii.....	89
Aster, a new, vol. i.....	22	Cabbage, the heading of,.....vol. i, 42; vol. ii, 124		Franklin, Benjamin, vol. i.....	95
Aster, China, vol. ii.....	41	Cactuses.....vol. i, 4, 57; vol. ii, 91, 118, 124		Frazer, Alexander, vol. i.....	47
Aster, macrophyllus, vol. i.....	22	Cahoon, John C, vol. i.....	30	Fringe trees, vol. ii.....	154
Audubon, vol. i.....	62	Caladium esculentum, vol. ii.....	59, 160	Fruits, miscellaneous notes on, Vol. i. 23, 77, 107; vol. ii. 29, 44, 76, 172, 187, 189	
Australia, select plants for cultivation in, vol. ii	30	Calanchoe pinnata, vol. ii.....	56	Fly catching plants, vol. i.....	69
Autumn foliage, vol. i.....	38	Calla lily, a new, vol. ii.....	73	Foliage, varying tints of spring, vol. ii.....	101
Azalea amoena, vol. i.....	24	Calla palustris, vol. i ..	85	Forestry.....vol. i. 14, 41, 58, 90; vol. ii. 41, 70	
Azalea nudiflora, vol. ii ..	17, 52, 83	Calycanthus, a summer flowering, vol. ii.....	120	Foxgloves, curious, vol. i.....	56
Azalea viscosa, vol. i.....	70	Canna agra, vol. ii.....	192	Franklin tree, vol. ii.....	89
Babington, Prof. C. C., vol. ii.....	191	Canna flaccida, vol. ii.....	36	Franklin, Benjamin, vol. i.....	95
Bacteria and plant disease, vol. ii.....	8	Cardoon, the, vol. ii.....	93	Frazer, Alexander, vol. i.....	47
Bailey, L. H., vol. ii.....	127, 158	Carnation.....vol. i, 28; vol. ii, 8, 151, 187		Fringe trees, vol. ii.....	154
Balsam fir, Frazer's, vol. ii.....	165	Carrots globular, vol. ii.....	77	Fruits, miscellaneous notes on, Vol. i. 23, 77, 107; vol. ii. 29, 44, 76, 172, 187, 189	
Baneberry, vol. ii.....	38	Catalpa timber, vol. ii.....	107	Fly catching plants, vol. i.....	69
Bark enclosed by wood.....vol. i, 20; vol. ii, 180		Caterpillars and tar-grease, vol. ii ..	138	Foliage, varying tints of spring, vol. ii.....	101
Bartram, John, vol. i.....	31	Cedar, Japan, vol. i.....	28	Forestry.....vol. i. 14, 41, 58, 90; vol. ii. 41, 70	
Bearbind, the double flowered, vol. ii.....	186	Cedar of Lebanon, vol. i.....	39	Foxgloves, curious, vol. i.....	56
Bearded lady, the, vol. ii.....	70	Cedar, the red, vol. i ..	86	Franklin tree, vol. ii.....	89
Beech, an interesting, vol. ii.....	166	Cedar, yellow, vol. ii.....	67	Franklin, Benjamin, vol. i.....	95
Bees, vol. ii.....	3, 12, 132, 141	Celeriac, vol. ii.....	28	Frazer, Alexander, vol. i.....	47
		Celery culture, vol. ii.....	60, 76, 140	Fringe trees, vol. ii.....	154
		Celery, turnip rooted.....vol. i, 77; vol. ii, 28		Fruits, miscellaneous notes on, Vol. i. 23, 77, 107; vol. ii. 29, 44, 76, 172, 187, 189	
		Celery, turnip rooted, vol. ii ..	28	Fly catching plants, vol. i.....	69

PAGE	PAGE	PAGE
Grapes, culture and kinds, vol. i. 57, 92; vol. ii. 13, 45, 74, 76, 156, 171, 173, 176, 188, 189	Jasmine Virginia, vol. ii.....117	Mountain flocce, vol. ii.....123
Grass, crab, vol. ii.....87	Jews mallow, vol. i.....21	Mountain laurel, vol. i.....I
Grass under trees, vol. ii.....10	Joly, Charles, vol. ii.....142	Mueller, Herman, vol. ii.....107
Grasses for the South, vol. i.....10	Judas tree, Japan, vol. ii.....139	Muller, Baron Ferdinand, vol. ii.....30
Grasses, mixed lawn, vol. ii.....71	Judas tree of Texas, vol. ii.....38	Munson, T. V., vol. i.....62
Grasshopper traps, vol. ii.....29	Judas tree, the, vol. ii.....166	Murtfeldt, Miss Mary E., vol. ii.....143
Gray, Asa, vol. ii.....30	Kalm, Peter, vol. ii.....132	Musliroonis,
Greenhouses, combination, vol. ii.....119	Kalmia augustifolia, vol. ii.....132	Vol. i. 60; vol. ii. 5, 35, 44, 45, 60, 156, 188, 189
Greenland explorations, vol. i.....29	Kalmia, poisoned by, vol. ii.....68	Musk plant, vol. ii.....54, 70
Green, Thomas, vol. ii.....111	Kemp, Edward, vol. i.....15	My lady's wash bowl, vol. i.....69
Growth force, vol. i.....38	Kentucky coffee tree, vol. i.....52	Mythology, floral, vol. ii.....110
Growth in darkness, vol. i.....54	Killarney fern, vol. ii.....164	Names, the origin and meaning of, vol. ii.....75, 117
Growth of wood, vol. ii.....181	Kolreuteria, vol. ii.....75	National flower, the, vol. ii.....166
Guano, native, vol. ii.....138	Kolreuteria paniculata, vol. ii.....27, 75, 100	Nectarine.....vol. i. 36; vol. ii. 77
Gum trees, Australia, vol. ii.....70	Kudzu vine, vol. ii.....40	Needham, Daniel, vol. ii.....191
Habenaria peramericana, vol. ii.....133	Lacquer trees, Japanese, vol. ii.....148	Nelson, De G. I., vol. i.....14
Hadwen, O. B., vol. ii.....126	Lactuca scariola, vol. ii.....59	Nettle tree, vol. ii.....37
Hale, Dr., North American tea, vol. ii.....95	Ladies traces, vol. ii.....180	Norway spruce, longevity of, vol. ii.....88
Hamilton, Wm., vol. ii.....110	Landreth, Mr. Burnet, vol. ii.....174	Notholæna dealbata, vol. i.....49
Harding, William C., vol. i.....78	Landscape gardens, city, vol. ii.....94	Nuphar advena, vol. ii.....86
Harkness, Dr. H. N.....vol. i. 63; vol. ii. 95	Landscape gardening on the Chicago Fair Grounds, vol. ii.....144	Nuts, planting, vol. i.....75
Harvard College, vol. ii.....190	Lapham, Dr. I. A., vol. i. 45; vol. ii. 25, 31, 46	Oaks.....vol. i. 74, 75, 86, 88; vol. ii. 69, 155, 183
Hawthorn, the Glastonbury, vol. ii.....63	Large trees, vol. i.....25, 74	Oakwood cemetery, vol. ii.....158
Haywald, Cardinal, vol. i.....63	Lathyrus splendens, vol. i.....54	Olmstead, Esq., A. H., residence of, vol. ii.....185
Hedges of Norway Spruce, vol. i.....28	Lawns.....vol. i. 9, 58, 73, 74; vol. ii. 26, 71, 87, 119	Omphalodes verna, vol. ii.....117, 144
Balsam fir, vol. ii.....107	Leaves, variations of, vol. ii.....21	Oenothera speciosa, vol. ii.....148
Hedges, osage, vol. ii.....9	Lee, Lewis A., vol. ii.....110	Onion culture, vol. ii.....108, 109
Hedge plants, Japan privet, vol. ii.....42	Legumes, poisonous, vol. ii.....150	Opuntia prolifera, vol. ii.....59
Hedges, retinospora, vol. ii.....153	Leidy, Dr. Joseph, vol. i. 14; vol. ii. 142	Opuntia Rafinesquii, vol. ii.....81, 131
Heliotrope, vol. i.....38	Lepachys columnaris, vol. i.....65	Orchard in Oregon, the first, vol. i.....93
Hemlock spruce.....vol. i. 38; vol. ii. 147	Lesquereux, Prof. Leo, vol. ii.....191	Orchids in New England, vol. i.....19
Henslow, Prof. Geo., vol. ii.....191	Lettuce.....vol. i. 77; vol. ii. 109	Orange, vol. ii.....40, 72, 75, 108, 116, 138, 152
Herbaceous plants, propagation of, vol. i. 40; vol. ii. 55	Lewis and Clark, vol. ii.....128	Pacific rural press, vol. ii.....62
Herbarium poison, vol. ii.....176	Lewisia rediviva, vol. ii.....85	Palm, the sago, vol. ii.....88
Heteromeles arbutifolia, vol. i.....70	Lilac, common names of the, vol. ii.....27	Pansies, vol. i.....74
Hibiscus militaris, vol. ii.....147	Lilacs, vol. i.....73	Paris green, vol. ii.....59
Hibiscus Moscheutos, vol. ii.....161	Life in the Dead Sea, vol. ii.....131	Parks.....vol. i. 22, 88; vol. ii. 24, 71, 72, 135
Hibiscus, textile value of, vol. ii.....181	Lilies, vol. i. 60, 69, 73, 80, 90; vol. ii. 11, 58, 103, 166	Parker, Robert J., vol. ii.....78
Hickory sprouts, vol. i.....70	Lima beans, vol. ii.....12, 29, 125	Parkman, Francis, vol. i.....46
Hill of Calvary, vol. i.....94	Lonicera Standishii and fragrantissima, vol. ii. 42, 58	Parnassia Caroliniana, vol. i.....22
Hollies, transplanting, vol. ii.....169, 192	Longstret, Joshua, vol. ii.....63	Parry, Dr. C. C., vol. i.....47
Honeysuckle, the yellow coral, vol. ii.....148	Love in a mist, vol. ii.....117	Parsnips, poisonous, vol. i.....67
Honeysuckle, wood, vol. ii.....17, 52	Love vine, vol. ii.....6	Parsons, Jr., Samuel, vol. i.....95
Hooker, Sir. Wm. Jackson, vol. ii.....46	Lycium chinense, vol. ii.....56	Paulownia, vol. ii.....40, 184
Hops in Colorado, vol. ii.....35	Lyonothamnus asplenifolius, vol. i.....21	Pavonia Wrightii, vol. ii.....177
Hop vine, new uses for the, vol. i.....42	Magazines, botanical, vol. ii.....78	Peach, notes on the, vol. i. 55, 56, 91, 93; vol. ii. 16, 27, 43, 44, 61, 76, 77, 80, 91, 92, 107, 125, 150, 171
Hortensia, vol. ii.....184	Mailing cases.....vol. i. 51; vol. ii. 112	Pears, notes on, vol. i. 8, 12, 43, 58, 93, 140; vol. ii. 11, 29, 44, 79, 108, 109, 123, 125, 140, 141, 155, 173, 188
House sparrow under glass, vol. ii.....5	Magnolia cordata, vol. ii.....57	Peanuts, vol. ii.....186
Horticultural Society, a venerable, vol. ii.....79	Magnolia Frazeri, vol. ii.....20	Peary relief expedition, vol. ii.....111
Hot poker plant, vol. ii.....152	Magnolia grandiflora, vol. ii.....23	Peas, sweet, vol. ii.....74
Hovey, Chas. M., vol. ii.....78	Magnolia hypoleuca, vol. i.....57	Peirce, Joshua, vol. i.....15
Huidekoper, Alfred, vol. ii.....47	Magnolia kobus, vol. i.....12	Pentstemon pubescens, vol. ii.....148
Hunt, Dr. Sterry, vol. ii.....78	Magnolia stellata, vol. i.....74	Pepper bush, vol. i.....21
Hyacinth flowers, failure of, vol. ii.....106	Mallow, Jew's, vol. i.....38	Perennials, vol. i.....58
Hybridism, vol. i.....24, 52	Mango fruit, vol. ii.....38	Periwinkle dwarf for grassless places, vol. i.....10
Hydrangea, blue, vol. ii.....71, 103, 107, 135	Manzinita.....vol. i. 52; vol. ii. 105	Periwinkles, Madagascar, vol. ii.....107
Hydrangea, oak leaved, vol. i.....86	Marshallia lanceolata, vol. i.....21	Persimmons.....vol. i. 92; vol. ii. 123, 125, 189
Hydrangea, paniculata grandiflora, vol. i.....87	Masters, Dr. Maxwell T., vol. i.....15	Petunia, a green flowered, vol. ii.....3
Ilex laevigata, vol. i.....73	Matrimony vine, vol. ii.....56	Phenology, vol. ii.....51
Indian as a cultivator, the, vol. i.....94	Maximowicz, Dr., vol. i.....15	Pilogyne suavis, vol. ii.....72
Indian corn culture, history of, vol. ii.....111	Mayflower, vol. ii.....70	Pineapple, formation of a, vol. ii.....118
Indian corn, the seeds of, vol. ii.....6	Mayr, Dr. Heinrich, vol. i.....31	Pinus, aristata, vol. ii.....165
Indian creeper, vol. i.....70	McFarlane, Dr. J. M., vol. i.....31	Pinus ponderosa, vol. ii.....69
Indian pipe, pink.....vol. i. 84; vol. ii. 19, 37	Medary, vol. ii.....154	Plantagenet family, origin of, vol. ii.....110, 190
Ingelow, Jean, vol. ii.....174	Memorial trees, vol. i.....94	Plane, the European, vol. ii.....11
Insects, various notes on, Vol. i. 24, 34; vol. ii. 13, 27, 113, 150, 152, 157, 168	Mice, damage by field, vol. ii.....90	Plowing by night, vol. ii.....42
Iris, vol. i.....24	Michaux, vol. ii.....47	Planting, fall, vol. ii.....171
Ivy, Japan, vol. ii.....56	Mistletoe.....vol. i. 86; vol. ii. 54	Planting for posterity, vol. ii.....24
Ivy, Kenilworth, vol. ii.....24	Monuments, vol. i.....25	Planting, good, vol. ii.....29
Ivy leaves, changes in the forms of, vol. i.....75	Moody, Elisha, vol. i.....30	Plants, miscellaneous notes on, vol. i. 38, 48, 96; vol. ii. 4, 23, 38, 39, 74, 80, 88, 99, 113, 128, 132, 147, 148, 149, 182, 187
Ivy on walls, vol. ii.....7	Moon flower.....vol. i. 40, 96, vol. ii. 80	Plums.....vol. i. 44, 91; vol. ii. 61, 93, 155, 156, 173
Jackson, S. S., vol. i.....26	Morel, the, vol. ii.....141	Seeds from the graves of the mound builders, vol. ii.....121
Jackson, G. S., vol. ii.....14	Mosquitoes, vol. ii.....3, 102	

PAGE	PAGE
Seeds, German flowers, vol. ii.....	151
Seeds, good, vol. ii.....	106
Sensitive plant, vol. i.....	12
Sessen, William, vol. ii.....	158
Shade trees from Florida, vol. ii.....	121
Shaw, Henry, vol. i.....	92
Shelley, Percy Bysshe, vol. i.....	47
Sherman's weed, vol. ii.....	20
Shrublet, vol. i.....	75
Shrubs, trimming, vol. i.....	72
Shultz, S. S., vol. i.....	78
Side-saddle flower.....vol. i, 81; vol. ii, 38	38
Side-saddle flower, vol. ii.....	38
Silk worms, vol. ii.....	42
Skunk-cabbage, double, vol. i.....	68
Smilax Walteri, vol. ii.....	107
Smith, Prof. Emory, vol. ii.....	94
Smith, Wm. R., vol. ii.....	175
Snow, red, vol. i.....	67
Snow plant of the Sierra Nevada, vol. i.....	36, 52
Snowberry, the red, vol. ii.....	36
Snowberry, the white, vol. ii.....	10
Soil, shading the, vol. ii.....	57
Spiders, red, vol. ii.....	121
Spinach, vol. i.....	41
Spiraea Astiloides, vol. i.....	27
Spiraea Bumalda, vol. ii.....	24
Spiraea lobata, vol. ii.....	145
Speedwell, the common, vol. ii.....	36
Splatterdock, vol. i.....	17, 53
Spleenworth, mountain, vol. ii.....	97
Squash, turban, vol. ii.....	43
Stamens growing out of pistils, vol. ii.....	180
Staphylia colchica, vol. ii.....	40
Stein borers, vol. ii.....	21
St. Joseph, vol. ii.....	63
Strawberries, vol. i, 32, 55, 60, 75, 76; vol. ii, 45, 59, 60, 91, 92, 107, 139	
Styrax Japonica, vol. ii.....	11
Streets for the florists, vol. ii.....	96
Strong, W. C., vol. ii.....	63, 79, 142
Sugar maple, the black, vol. i.....	83
Sulphate of copper for leaf blight in the pear, vol. ii.....	172
Sulphate of iron.....vol. i, 74; vol. ii, 41	
Summer house, a type of gentility, vol. ii.....	26
Swamp apple, excrecence in Azalea nudiflora, vol. ii.....	51, 53
Sycamore, the, vol. ii.....	54
Symporicarpus vulgaris, vol. ii.....	118
Symplocos prunifolia, vol. i.....	24
Tamarisk, vol. i.....	87
Tamarack on the Pacific, vol. ii.....	115
Tamarack tree, paper from, vol. ii.....	84
Taplin, James, vol. ii.....	46
Tea, substitutes for, vol. ii.....	86
Teakwood, vol. ii.....	182
Thistle, Canada, vol. ii.....	41
Thomas, J. J., vol. ii.....	31
Thorpe, John, vol. i.....	94
Thuja gigantea, vol. ii.....	115
Tick-trefoil, naked, vol. ii.....	65
Timber, destruction of, vol. ii.....	119
Tints in Autumn color, vol. i.....	42
Toad-stool plant, vol. i.....	24
Toads and tadpoles, vol. ii.....	133
Toads eat, how, vol. ii.....	182
Tomatoes, vol. i, 68; vol. ii, 12, 27, 43, 77, 124, 156, 170	
Tortoise, the age of a, vol. i.....	54
Toyow, or California holly, vol. ii.....	118
Tradescantia pilosa, vol. ii.....	36
Tradescantia rosea, vol. ii.....	80
Transplanting, signs of successful, vol. i.....	88
Trelease, Prof. William, vol. ii.....	175
Trichomanes radicans, vol. ii.....	33
Trillium erectum, vol. ii.....	85
Tropical scenes, vol. ii.....	165
Trowbridge, J. M., vol. i.....	62
Trumpet flower, Peruvian, vol. ii.....	34
Trumpet leaf, large yellow, vol. ii.....	113
Tree on a tower, a, vol. ii.....	112
Tree trunks, lengthening of, vol. ii.....	119, 179
Tree, William Penn treaty, vol. ii.....	174
Trees, miscellaneous notes on, vol. i, 12, 75; vol. ii, 9, 24, 25, 41, 44, 58, 70, 72, 77, 104, 105, 150, 167, 169, 170	
Tulip tree, triangular-leaved, vol. ii.....	21
Tulip tree, variation in the leaves of, vol. ii....	4
Tulips, Darwin, vol. ii.....	11
Valentine, Lawson, vol. i.....	31
Value of a local paper, vol. ii	128
Van Volxem, Jean B. J., vol. i.....	95
Vanderbilt, Cornelius, his lawn at Newport, vol. ii	94
Variations, vol. ii.....	164
Varieties and species, sudden appearances of, vol. ii.....	84
Varieties, persistency of, vol. ii.....	172
Vegetable cellars, vol. i.....	7
Vegetables, Indian, vol. ii	156
Vegetables to Europe, exportation of, vol. ii.....	123
Vegetation in the vicinity of glaciers, vol. ii.....	164
Verbascum phlomoides, vol. i.....	53
Venus' fly trap, vol. ii.....	23
Venus paint bush, vol. ii.....	42
Veronica chamaedrys, vol. ii.....	132
Veronica officinalis, vol. ii.....	166
Vicia Cracca, vol. ii.....	176
Victoria regia, vol. ii.....	14, 24
Vine, matrimony, vol. ii.....	103
Vines on walls, vol. i.....	26
Vilmorin, vol. ii.....	143
Violet, bird's foot, vol. ii	56
Violet, bird's foot, vol. ii.....	106
Violet diseases, vol. ii	8
Violet, dog tooth, vol. ii.....	19
Violet, the dog tooth, vol. ii	86
Violet, yellow dog tooth, vol. ii.....	116
Violets in frames, growing, vol. ii	87
Vitex agnus castus, vol. ii	43
Von Muller, Baron, vol. i.....	45
Von Naegeli, Dr. U. H., vol. i.....	30
Walnut, English, vol. ii.....	140
Wagons, steam road, vol. ii.....	170
Watson, Sereno, vol. ii.....	62
Weeds, vol. i, 37, 68; vol. ii, 5, 52, 95, 122, 144, 153, 176	
Weltz, Leo, vol. i.....	29, 45
Whitewash off glass, getting, vol. ii.....	7
Whitney, Col. Nathan, vol. i.....	14, 31
Wild flowers.....vol. i, 54, 84; vol. ii, 91	
Willows, flowering of, vol. i.....	54
Willow, curled leaved, vol. i.....	54
Willow, the history of the weeping, vol. ii.....	174
Willow wood, vol. ii.....	101
Wisteria multiflora, vol. ii.....	104
Wood, Dr. Thos. F., vol. ii.....	158
Wood, fragrant, vol. i.....	59
Woods, American, vol. ii.....	63
Woolverton, Linus, vol. ii.....	79
Wools, Dr. W., vol. ii.....	79
Worm, cabbage, vol. ii	122, 125
Worms, eel, vol. ii.....	121
Wych hazel, vol. i.....	38
Worm wood, the Roman, vol. ii.....	52
Wright's pavonia, vol. ii.....	177
Xanthoceras sorbifolia, vol. i.....	27
Xavier, St. Francis, vol. ii.....	95
Yuccas and agaves, vol. ii.....	190
York imperial apple, vol. ii.....	189
Zauchneria California.....vol. i, 36; vol. ii, 71	
Zimmerman, Godfrey, vol. ii.....	142
Zinnias, double, vol. ii.....	39



RHODODENDRON MAXIMUM

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MOUNTAIN LAUREL.

NATURAL ORDER, ERICACEÆ.

RHODODENDRON MAXIMUM, Linnaeus.—Stem six to ten or twenty feet high, with stout, irregular branches; leaves three to six inches long, with a short acumination, often cuneately tapering at the base, green above, pale or ferruginous beneath, petioles thick, half an inch to an inch in length. Flowers in dense thyrsoid or corymbose racemes; pedicels an inch to an inch and a-half long; corolla pale rose color, with greenish tinges, and orange or yellow colored spots. (Darlington's *Flora Cestrica*. See also Gray's *Manual of the Botany of the Northern United States*; Chapman's *Flora of the Southern United States*, and Wood's *Class Book of Botany*.)

In the work above cited Dr. Darlington remarks, "this is a noble shrub; but Linnaeus was unfortunate in calling it *Maximum*, inasmuch as Dr. J. D. Hooker has found a species in the Himalayan Mountains forty to sixty feet high." It may be remarked, however, that though it is not usual to go beyond Linnaeus for authorities in plants' names, he is scarcely the author of this. Before his time plants had no specific names. The description was given of each kind, with the generic name, and in many cases Linnaeus, when he adopted the binomial system, merely struck out all but one of the descriptive terms. Thus this Rhododendron was known as the *Chamærhododendron pontica maxima*, or the greater pontic—rhododendron. He struck out all but the last, reducing the name to *Rhododendron maximum*. In these days we only regard the meanings of plants' names as matters connected with their histories. A name which has no meaning is as good as any other. It is looked on as dangerous to take the plant's name as any part of its botanical character.

It, however, has been in many ways the misfortune of the Rhododendron to have misconceptions arise from its name. In Dr. Gray's *Manual of Botany* it is said, "Rhododendron, rose tree, the ancient name," which is correct so far as it is an ancient name; but it is not the ancient name for the plants we now know as such. The *Nerium*, or Oleander, was evidently the classical Rhododendron, and our plants seem to have been unknown to the ancients. It appears to have been known to some of the writers of

the sixteenth century, who describe it as the "Laurel of Alexandria," the Oleander being their "Rose Laurel." Further, we may learn how, under this misconception, this pretty genus of plants came to get a very bad name, for it has been repeated over and over again in most works on the Rhododendron, that the honey collected by bees from the flowers is poisonous. This is simply the statement of Pliny about his "Rhododendron," which, as we have seen, is the Oleander, and may be perfectly true of that plant, which is believed to be a very poisonous one.

It is not probable that the Rhododendron of Europe, or our American species, is in any material degree poisonous. The celebrated Dr. Bigelow, of Boston, did not believe it, and he once ate a whole leaf to show his faith in his convictions. Moreover, an infusion of the leaves of *Rhododendron maximum* was a popular remedy for rheumatism among some of the Indian tribes, as we learn from Rafinesque and Lesquereux.

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emblematical of the dangers that lurk about the imperial purple." In countries where people have to disguise their thoughts, the reception of a Rhododendron flower would be a hint to "beware!"

In a state of nature the Rhododendron inhabits wild, rocky places, in uninhabited regions where the foot of the traveler is rarely seen. As the poet Shaw says:

"O'er pine-clad hills and dusky plains,
In silent state Rhododendron reigns,
And spreads in beauty's softest blooms,
Her purple glories through the glooms."

So far away are they generally in their gloomy homes that even the great traveler, John Bartram, had not met with them anywhere west of the Schuylkill river. In a letter to the celebrated Dillenius, written in 1738, he remarks: "I never saw our great Laurel anywhere but near Schuylkill, though I have been told it grows beyond the mountains. It seems to have been left for Michaux, in his lonely wanderings through the Alleghenies, to find how very abundant they were in their far-away localities. In his "Travels in America" he notes that in the central part of Pennsylvania a variety is found with pure white flowers. He found a place in Western Pennsylvania called "Laurel Hill," "from the *Rhododendron maximum*, which covers the banks of the torrents,"—and when passing Jonesborough, North Carolina, he says, "The paths were obstructed by forests of Rhododendrons, shrubs about eighteen or twenty feet high, the twisted branches of which, interwoven with each other, continually retard the traveler, who is obliged to advance with a hatchet in his hand. The torrents to be crossed also augment the difficulties and dangers of the road, horses being very liable to be thrown down by the round, loose flints concealed by the eddy of the waters, with which the bottoms of these torrents are covered." In reading these accounts, one may feel that Whittier might have thrown a few Rhododendrons into his account of the new home in the "Bridal of Pennacook," and it would have been perfect.

"A wild and broken landscape spiked with firs,
Roughening the bleak horizon's northern edge,
Steep, cavernous hillsides, where black hemlock
spurs
And sharp, gray splinters of the wind-swept ledge
Pierced the thin glazed ice, or bristling rose,
Where the cold rim of the sky sunk down upon
the snows."

Those who have not seen the Rhododendron in bloom in its native wilds can have no idea of the gorgeousness of the floral picture. But the beauty varies with the seasons. In a visit to the Rhododendron fields of North Carolina in 1879, Mr. John H. Redfield reports that not a solitary flower was to be found.

Besides the interest the whole family has for the lovers of polite literature, the *Rhododendron maximum* has some place in modern philosophy. Professor W. J. Beal notes that the clamminess of the young branches and leaf stalks catch insects, the decaying bodies of which probably furnish food to the plant. To the gardener they possess an equal interest. They are generally found wild in those gloomy spots where there is a continual moisture in the atmosphere, and this has rendered them particularly suited to the moist English climate. European gardeners have made selections and crossed the varieties of the North Carolina species till the shades of color are almost innumerable. John Bartram seems to have been the first to introduce living plants to English cultivators. Peter Collinson, writing to him in 1744, says: "The rats made a warm nest in each box of the leaves and stalks of the shrubs. It grieved me to see how they had striped the great Rhododendron." In 1758 we find it figured by Philip Miller, who, however, mistook it for *Kalmia latifolia*, and says it had but recently flowered for the first time in England.

Dr. Gray gives its geography as from New England to Georgia. Dr. J. G. Cooper speaks of a variety having been found in the Straits of Fuca, in latitude 48°. This may be what is known as *Rhododendron macrophyllum*, originally collected by Menzies, of which, however, Dr. Gray says little is known. Our drawing is from a Schuylkill specimen.

[July,

WILD FLOWERS AND NATURE.

RHODODENDRON CULTURE.

The chapter of popular interest which we have given in this issue on the *Rhododendron maximum*, makes it proper that we should say a few words on the culture of rhododendrons in general. The *Rhododendron maximum* figured in the plate, is not generally in cultivation; and the beautiful hybrid rhododendrons which we have in gardens, have been raised chiefly by hybridizing the rhododendron of North Carolina, known as *Rhododendron catawbiense*, with the rhododendron of the Mediterranean, *Rhododendron ponticum*. All garden rhododendrons have been raised by intermixture of these two kinds. Our northern rhododendron, the one figured, flowers later than the others; and possibly this has been the reason why there have been no attempts made to introduce an improved race from it. We do not think that its absence from general cultivation comes from any more difficulty in the way of raising it, than there is in the North Carolina Rhododendron, and it must be only that its great beauty and merit have not been made known to cultivators, that there is so little inquiry for it for gardens.

It has been said that if you want to see American plants you must go to England to find them. This means that the rhododendrons are called in England American plants, and it is well known that they grow them there to a high degree of perfection; but they could not grow them there more than we could grow them in our gardens, only for the fact that they take great pains in their cultivation. It is as much a matter of skill as a matter of climate, that they do so well in that country. This is about all the secret there is in successfully growing rhododendrons. They do like, however, a moist atmosphere, and love to be in the neighborhood of falls of water, or fountains, where a little spray can get in the atmosphere, than in drier places. Under the shade of walls, where the ground is kept cool by the absence of sun, they also thrive well. In other words, light open soil for the hair-

like roots to penetrate, and a moist atmosphere, make together the perfection of rhododendron culture.

In shady, damp places rhododendron seed germinates easily. We know of some gardens in which this rhododendron has been introduced, where the self-sown seeds have formed plants; and it is well known that the Rhododendron maximum grows in great abundance in the damp sandy ground around the old Buonaparte mansion at Bordentown, on the Delaware River, where they were first introduced by Louis Buonaparte. This shows how these beautiful rhododendrons can be readily



RHODODENDRON KAMTSCHATICUM—SEE PAGE 4.

naturalized, if the proper conditions are present for it.

As noted in the popular chapter, the name *maximum* applied to these rhododendrons implies great size. It might be well to note that there are other rhododendrons further north, which are mere pygmies, in striking contrast with our own tree-like form. We give with this an illustration from Dieck of one which grows in Kamtschatka, which, it will be seen, is but a few inches high, although the individual flowers are nearly as large as those of our tree-like species. It seems scarcely credible, in the same family of plants there should be forms but a few inches or so in height, while other forms achieve the aspect and majesty of a forest tree.

In ordinary clayey ground, a ground that is liable to pack close, or as we say bake in the summer time, the rhododendron will not do well, and yet the soil of England is largely of that heavy character, and a rhododendron planted in it would do no better than in similar soil in this country. The English take pains, therefore, to prepare their soil for what they call their American plants. They dig out the naturally heavy soil, and fill in with light porous material, generally earth from peat bogs. So earnest are the cultivators of the rhododendron and similar American plants to have a material of the proper character, that it is not infrequent to have large carloads of peat soil, or even shiploads of it, brought one or two hundred miles in order to make the proper beds for growing their "American plants." Yet it is not because it is peat soil that they thrive well, but because the soil is open and porous, and it is found in America that they grow just as well in soil which is largely made up of small stones or broken rock, so that the air and water can perfectly permeate through the whole as they do in peat. In fact any garden soil anywhere in the United States, if liberally supplied with broken rocks, bricks, stones, or even sand itself, that will allow the light hair-like roots to penetrate the mass, will do just as well as the expensive peat soil to which we have referred. It is thought by some that rhododendrons like shade, because they are usually found in shady places in their wild native state; but it has been found that where the soil is loose and open in the manner we have described, they

thrive just as well in the full sun as they do in their natural shady woods.

The illustration represents *Rhododendron Kamtschaticum*, which though a Russian in name, comes also into our list of native flowers, being found in Alaska. T. B. M.

[Since the above was written we find the enclosed in the London *Journal of Horticulture*, on a closely related species, which shows how nearly our estimate is correct, both as regards the reasons why English people succeed with American plants,—and of the beauty of the dwarf Rhododendron.]

RHODODENDRON DAHURICUM is the next on my list of favorites. The plants are arranged in the centre of a large bed, hardy Azaleas and *Pernettya mucronata* growing underneath the Rhododendrons. The position of the bed is one fully exposed to the south and south-westerly winds which sweep across that part of the garden furiously at times. The plants have been covered with its bright rose colored blossoms. This rhododendron should not be dotted about singly in the beds or borders, a much better effect is produced by massing the plants. Like all other American plants it is necessary to provide a peat soil for their growth; any extra trouble taken in preparing the site is time well spent, the growth and freedom in flowering making up afterwards for the outlay.



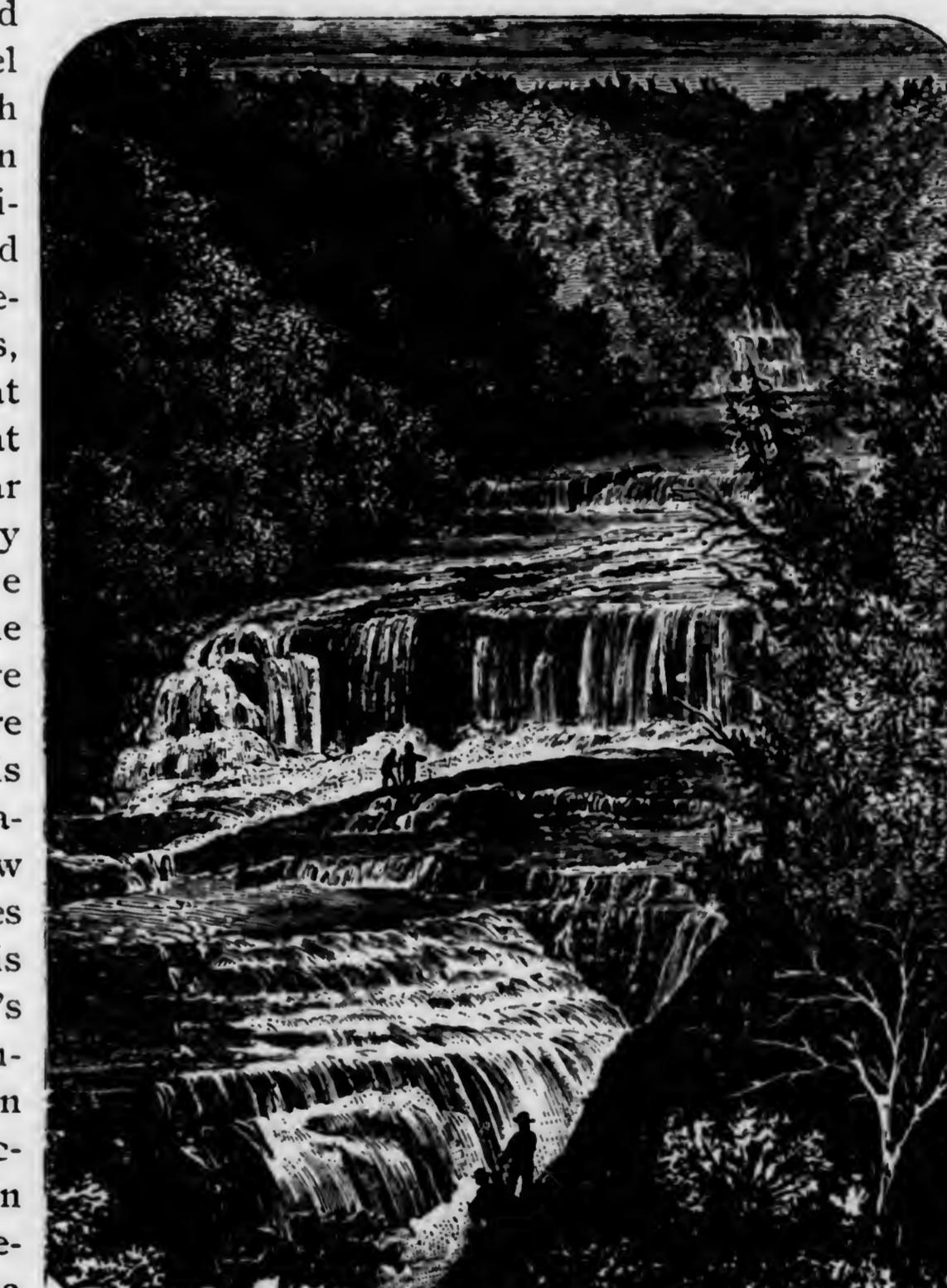
MAMILLARIA APPLANATA—SEE PAGE 6.

THE FRUIT OF CACTUSES.—People frequently travel long distances in order to see something wonderful, and yet matters much more wonderful than any at long distances may be found close by one's door, especially among many wild flowers; or among which, when looked into, are matters that cannot fail to excite surprise and wonder at the manner in which they

are formed, or their behavior at certain times. For instance, on the plains of our country, where cactuses are found abundantly, there is a class of these plants called *Mamillaria*, so called from the tuberculous projections, covering the whole surface. These flower in the early part of spring or summer, and the flower apparently dies away without leaving any trace of a seed vessel behind. In this way the plant remains until the succeeding year, when the flowering time again arrives, and at that time it is found that the seed vessel of last year, which was really formed in an embryonic condition, has remained sunk in deeply between the tubercles, without any effort at growth, and then at this time one year afterwards, suddenly push up all in one night, covering the plant with a large supply of mature seed vessels. It is an excellent illustration of what is now known as the phases of growth; that is to say, that a plant's growth is not continuous, but goes on in waves, now advancing rapidly and then receding, resting before it commences a growth again. Few

people would imagine that the beautiful red seed vessels which we see on these forms of cactus were really formed a year before and remained green and quiescent for so many months. And then that they should spring up in one night to their full length, changing almost instantly from green to red, is truly wonderful. We believe this is not known even to botanists generally, although the writer of this published a paper in the proceedings of the Academy of Natural Sciences on the subject several years ago. The general belief is that the red fruit of these *Mamillaria*

come from the flowers that have just before faded away. Certainly no one would suppose that they have remained on the plant a year before starting again into a second growth. We give with this paragraph an illustration in *Mamillaria applanata*, for which we are indebted to the kindness of Mr. Blanc, which serves well to illustrate the point which we make. It is covered with both fruit and flowers, and the large red fruit really adds very much to the pretty appearance of the plant, and is one of the most beautiful we have in cultivation; but these red berry-like fruit were started by the flowers of the preceding year. The *Mamillaria* is not the only plant that takes this wonderful rest before starting again. Some oaks and pines do the same thing,—but the rapidity with which the fruit changes from green to red, and complete their full growth, adds an additional element of wonder in this case.



A VIEW AT TRENTON FALLS—SEE PAGE 6.

BOTANY AT WATERFALLS.—Those who are fond of natural history and the general beauties of natural scenery, will usually find more

variety to occupy their attention in the vicinity of mountain streams with water-falls, than in any other class of locations; that is to say, there is more variety in a small compass. There is a large class of wild plants especially, which delight in the spray and moist atmosphere from falling waters, and which can only be found in such localities. Take, for instance, the vicinity of Niagara Falls, where visitors, fond of botany, frequently go to get specimens of the *Parnassia palustris*, which are found luxuriating in the spray which falls from the dense volume of water flowing over the rocks.

[July,

In like manner, near the famous water-falls of a smaller character, such as those in the vicinity of the Delaware Water Gap and Trenton Falls, N. Y., ferns of every character are found in the vicinity of the spray, which are either not obtained at all elsewhere, or not with the same vigor and luxuriance, which to the collector is of as much importance as to find an entirely new plant. Equally with the great variety of ferns which love to be in the vicinity of waterfalls, is the great chance for the collection of mosses and liverworts, which also abound in these situations. Trenton Falls is especially interesting, not merely for its varied botanical features, but also from the geological ones. The nature of the formation belonging to the silurian age, affords many special objects of attraction that are not found elsewhere. To say Trenton Falls to the lover of natural history, is like talking of roast beef and plum pudding to a starving man. We present herewith a view of one of the leading features of the Falls, showing the hillsides lined with hemlock and Arbor Vitæ and many other forms of vegetation, which give variety to the forest scenery. With the exception of the New River Falls in Virginia, there is possibly no river scenery in the United States which would give features of more varied beauty.

We are indebted to the proprietor of Moore's Hotel at Trenton Falls, N. Y., for the beautiful illustration which accompanies this note.

THE BIG TREES OF CALIFORNIA.—A wag once stated that the Dogwood tree ought to be known by its bark, but the big trees of California are as certainly known by their bark, which is a spongy mass, often measuring nearly a foot thick. It is on account of this great thickness of bark, which in a measure does not take kindly to fire, that the large trees have been in a great measure preserved through so many ages, when other trees have been entirely destroyed by the flames which rushed through the forests. The bark of these mammoth trees preserved them from destruction. Another wag, following the wake of the Dogwood man, has stated that among the animals the mammoth trees have the biggest bark, only for the "bark" he would not have classed it with the animal creation. It is pleasant to read in the public prints, that the United States is taking steps to preserve these

mammoth trees from the woodman's axe. Although fire has failed to remove these giants from the face of the earth, the other works of man will soon accomplish the destruction, which in a state of nature they have hitherto escaped. No efforts on the part of the United States government should be spared to preserve these great memorials of the past for future generations.

COMPASS PLANTS.—As is now well known the Compass Plant, *Silphium laciniatum*, has the edges of the leaves pointing north and south, the faces of the leaves having an eastern and western exposure. This is undoubtedly true of the younger leaves, the older ones, however, falling around in different directions by their own weight. Just why this plant behaves in this way has not yet been clearly made out, although a number of shrewd guesses have been offered concerning it. An interesting new fact is one given recently by Mr. B. L. Robinson, of Cambridge, Mass., that there are two distinct forms of this plant; one form has the stems covered with glandular pubescence, the other is simply rough, covered with bristly white hair, but not glandular, and one kind blooms late in October, a month later than the other. Mr. Robinson does not know from what part of the west these different kinds come. It would be well worth while, for those fond of wild flowers, to watch the behavior of this plant in its native localities; possibly the clue to its singular polarity might be discovered by a little closer watchfulness.

GENTIANS.—Few lovers of flowers but have either met with or read about Gentians, for they are common in Alpine regions, and some species have entered largely into poetry and literature. Only a few get down to low altitudes; one of the best known of these is perhaps the fringed gentian, though the closed gentian, which appears just before frost in some of the Atlantic sea-board states, is frequently collected. A remarkably beautiful blue one, *Gentiana angustifolia* is found in the low pine-barrens of New Jersey, south to Florida, and a white one occurs from Virginia and Kentucky to Lake Superior and western Canada. *G. saponaria* is the most widely distributed.

GENERAL GARDENING.

THE PRETTY AND USEFUL BIRCH.

Few trees attract as much attention as the Birches. Being hardy in all climates and soils the birch is universally known all over the world. The White birch, *Betula alba*, is very common in Europe; while the species *lenta*, *rubra*, *papyracea* and *excelsa* are found in nearly all parts of North America, being especially plentiful in the forests of the extreme northern parts.

The birch trees are useful as well as beautiful. Carriage builders and furniture dealers use the wood on account of its lightness, and at the same time its toughness. Being very pliant it can be bent and twisted into any shape or form.

In reference to its use as an ornamental tree, no other class commands such individual characteristics as the birch; its fine willowy branches, small heart-shaped leaves, and general uniform growth make a model tree for parks, lawns, or even for shade trees.

The birch commonly seen along creeks and rivers in many parts of the northeast is the red birch, *Betula rubra*. Of all the species none can be so easily distinguished as this one. Its smooth reddish bark hangs in strips all over the trunk, giving it the appearance of a tree on a battlefield, all tattered and torn by bullets. Though this kind is found in its wild state generally on or near some stream of water, it grows with just as much strength on higher ground. The seeds ripen before other birches in the last part of May. The male catkins are long and slender, and the female a trifle longer and greater in diameter than any other kind except the yellow.

The sweet and yellow birches grow on higher ground as a rule, though they thrive in almost any locality. These two varieties are like twin brothers in appearances, both having the same globe-like growth in looking at them from a distance. The sweet birch takes its name from the sugary taste of the sap and bark.

From these already mentioned new forms have been found, among the most common of which are the purple, upright, cut-leaved and Young's weeping birch, bearing the respective names of *purpurea*, *pyramidalis*, *incisa* and *Youngii*. The purple kind is so named on account of its purple leaves and young wood, while the main trunk still retains the fine smooth bark of the white birch.

The next kind mentioned is a compact form having the same white bark, its peculiarity being its pyramidal form.

Betula laciniata, or the cut-leaved birch is the "king" variety of all. The finely cut leaves, as the name implies, give it a rather feathery appearance which no other kind possesses.

Young's weeping birch is a grafted kind,—that is to say, grafted on the trunk of another sort. The limbs, which are thin and switchy, like other birches hang down in form like the common Kilmarnock willow; this makes it useful for lawn and ornamental purposes.

Betula papyracea, or paper birch, was formerly used by Indians and hunters for making canoes, the lightness and at the same time the firmness of the bark being specially adapted to that use.

J. F. M.

VEGETABLE CELLARS.—A correspondent who is at the head of a large State Institution would like to know what would be a good plan of constructing a vegetable cellar. It will probably be difficult to suggest a plan that would suit any two cases equally well—so much would depend on the kind and the quantity of each kind. The chief enemies of a root cellar are too high a temperature, or it is too damp so as to cause rotting, or too dry when shrivelling ensues. As to temperature, the nearer freezing the better, so long as it does not fall below freezing point. Though no one's cellar is likely to suit another exactly, many good suggestions would be drawn from the success of another,—and if any one has a structure that is regarded as satisfactory, an account of it for our pages would be very acceptable.

(7)

THE SECKEL PEAR.—The following interesting letter comes from Prof. Emil Bauer, of Ann Arbor, Michigan. It is a curious commentary on the "truths of history," that the original Seckel pear tree is still standing in Philadelphia, on the estate of Stephen Girard, the famous philanthropist; and that the ground was originally bought with the pear tree on it, by a farmer named Seckel, a few of his descendants still remaining in Philadelphia. They are of English and not German race. There are a number of German descent in Philadelphia who spell their names Sickel.

"The so called Seckel pear originated in Baltimore, Md., at the beginning of this century, not later perhaps than 1818.

"A German, by the name of Sichel, raised it there from seed.

"My authority for this statement is Rev. Jacob Henrici, leader and Trustee of the Harmony Society, at Economy, Beaver county, Pa., who has been an officer of said society since 1826, and who, although in his 87th year, is still the intelligent and active leader of said society. I have known him for 30 years and have visited with him at Economy frequently ever since.

"Knowing that I take great interest in fruit, Mr. Henrici showed me on the 30th of November, 1889, a Sichel pear tree which has a history. It stands in the garden of the Trustees. I was informed by my friend that the society obtained this tree from Mr. Sichel, of Baltimore, and that said tree was first planted by said society at Harmony, Posey county, Indiana, whither the society had moved from Pennsylvania in 1814. In 1824 the society sold their town, Harmony, and all their property on the Wabash river, to Robert Owen, who settled upon it his New Lanark colony. But the Harmonists thought so much of their Sichel pear tree, that they took great pains to take it with them back to Pennsylvania and planted it on their new settlement at Economy, where it grew and prospered again under the intelligent care of Mr. George Rapp, the founder of the society. It is yet bearing and I tasted its fruit from time to time, although I never knew its history until the 30th of November, 1889, as stated above. Pear culture being my specialty of course I took great interest in this statement. I know the fruit of

it to be the genuine so called Seckel pear.

"The tree at Economy must be at least 70 years old.

"It is proper to remark, that this society, from its beginning, has pursued agriculture and horticulture principally, although later, after a successful experiment with the mulberry tree, they engaged in the manufacture of silk and other industries. There is hardly any fruit that is not cultivated with the most intelligent care at Economy.

"Mr. Henrici, my authority for the above statement, although a teacher by profession, was interested in fruit culture from his boyhood. When his family landed in Baltimore in 1825 they sold thousands of grapevines which they had brought with them from Rhenish Bavaria.

"The above statement shows that Mr. Sichel is the benefactor who gave us this highest type of American pears and that it should bear his name, unless Sichel is translated into English, in which case Sickle would be correct.

German, Die Sichel; English, Sickle.

EMIL BAUR,
Teacher of German Language and Literature,
1552 Ann Arbor, Mich."

HARDY CHRYSANTHEMUMS.—Chrysanthemums are seen almost always in pots and cultivated as house plants, but it is not well known that they are very good hardy herbaceous plants, living out even in severe winters, with a very light protection. They like to grow especially alongside of walls or fences and then with a few dry leaves over them and a little earth to keep the leaves from blowing away, they live out as well as the majority of hardy plants do. Another advantage in having them under fences or near walls is that they bloom comparatively early; otherwise they are apt to have their blossoms cut when the early frost comes. They usually flower a little later than asters and golden rods. They also do well when planted in borders of shrubbery; the bushes preserving them from the early autumn frosts. They require during the winter the protection of a few leaves thrown over them. Nothing is gayer than a bunch of shrubbery in autumn, with chrysanthemums flowering between them, from plants that have been out the winter before.

MANAGEMENT OF LAWNS.—It is a long time since the *Gardeners' Monthly* proposed to construct lawns by what was then called inoculation, instead of sowing or seeding it. By this method, it was advised to take one kind of grass and break it into small pieces, planting the pieces about five or six inches apart; rolling the whole thoroughly with a heavy roller, so as to make the surface perfectly flat and smooth, and let the pieces grow together, and in that way have the lawn of one uniform species over the whole. The great pressure of different individuals praising what is called

having one uniform tint of green, has several patchy colors, not at all as pleasing as when one uniform tint of green prevails. We understood that, in Mr. Olcott's method in breaking up one species of grass to fill a lawn, the small pieces are planted closer together than in the method formerly proposed, under the name of inoculating; at any rate, Mr. Olcott's efforts are of immense value to those who like to see beautiful lawns. Under the present method of making lawns, by which grass seed is sown, other weeds frequently are introduced, and give the lawn a bad appearance. This, how-



OLCOTT'S PASTURE-GRASS GARDEN.

lawn mixtures, prepared by the different seed houses, has probably prevented this method of having one uniform kind of grass over the whole surface, come into general practice; but the recent efforts of Mr. Olcott to introduce what he calls Pedigree grass, have done much to again call attention to the value of having one kind of grass only used for any one lawn. It is now well known that no matter what the mixture may be, one kind of grass therein contained finds itself better suited to the localities than some other kinds, and that one kind finally crowds out all the others; or if two sorts should eventually find themselves equally adapted to the soil, the lawn instead of

ever, may be in some measure remedied by hand weeding. All lawns the first year,—and we should judge, even if planted on the pedigree system,—ought to have some little hand weeding. It is not so heavy a task as it appears to be; a comparatively large lawn can be soon weeded, and when the weeds are once kept down and prevented from seeding, the grass eventually takes entire possession of the ground, and little trouble is experienced from weeds afterwards. In our own vicinity, it is sad to see so many beautiful lawns spoiled for want of a little judicious weeding; garlic, blue bottle and Star of Bethlehem take possession of the whole lawn, giving it, in the spring es-

[July,

pecially, a miserable appearance. These can easily be kept down by using a small hand-fork, and drawing out the weeds with their bulbous roots; if any holes are left in the grass, through digging out these bulbs, a little earth forked in will soon give an opportunity for grass roots to sprout in and cover over the hole. Nothing is more easy than to keep up a good lawn with a little effort of this kind, and yet nothing is rarer than to see a lawn, out of which the owner could get as much pleasure as he might.

Mr. Olcott is experimenting with grasses for pastures as well as for lawns. We give a view of his pasture garden, as showing how the trials are made. The lawn grasses are grown in square beds.

T. B. M.

ROOTS OF TREES.—It should not be forgotten by planters of trees that roots have a strong disposition to seek drains, and when these roots get inside of a drain or pipe, they increase so enormously as to fairly choke the drains and prevent the run of water through them. For this reason no large or strong tree should be planted anywhere near where there are pipes or drains. In California, where the Blue Gum is so popular, an act of the Legislature has been suggested to prevent these trees from being planted nearer than 100 feet to any neighbor's drain. These trees have so great a disposition for water, absorbing it in such immense quantities, that they have been found to drain swamps, simply by the evaporation of the leaves, in some countries; and in the vicinity of drains the roots will go 100 feet towards them, finally choking, and rendering their presence, in this respect, a nuisance.

J. F. M.

GRASSES FOR THE SOUTH.—Efforts made in the past to introduce northern grasses into the south have not been wholly successful. Up to the present time Bermuda grass has been chiefly popular, but this does not in many cases meet requirements. They have now in Florida a kind which goes by the name of "carpet" grass; botanically this is *Paspalum platycarpe*. It is said in many cases to crowd out Bermuda grass, and continue to make a permanent sod. It is even said to be very useful as a lawn grass, and to stand well under the mowing machine.

COLEUS.—Our common and well known coleus of gardens, when first introduced by Mr. Bull, of England, in 1867, attracted at once such universal attention for its beauty, that it was well understood it could not fail to be widely popular. Mr. Bull appreciated this fact, and sold seeds in 1868 at the enormous price of 50 cents a seed. It seems scarcely credible when we see immense numbers of plants now sold by florists, that such an enormous price was obtained for a single seed in 1868.

SINGLE DAHLIAS.—These retain popularity in America, but do not gain as rapidly as they do in Europe. One feature which recommends them is that they flower more numerously, and come into blossom earlier than the improved double kinds. They are raised from seeds sown in the Spring, while the old class of dahlias have to be raised from sprouts like sweet potatoes.

J. F. M.

1891.]

DWARF PERIWINKLE FOR GRASS-LESS PLACES.—It is often very desirable to have grass or something green beneath large trees, the roots of which make the ground so dry, by the absorption of the water in the ground, that grass ordinarily will not grow beneath them. For the purpose of having something green, and in a measure a substitute for grass, there is nothing better than the common periwinkle, *Vinca minor*. This seems rather to prefer such dry places, and being always green is attractive, even in winter when grass is usually bare. Besides its value in giving a green surface to these dry places, it has an additional value in having an abundance of blue flowers in early spring, which are almost as welcome as the spring violet. It transplants very easily on account of its running habits; small bunches, placed in the earth at distances of about a foot apart, soon meet together and make a complete mass within a few weeks after growth commences. There is a pink variety in cultivation and also a double variety of this pink one; and more recently a variety has been introduced in the nursery, bearing white flowers; so that with the continual increase in the numbers of varieties of this pretty plant, one may soon have a complete flower garden under the shade of trees, where hitherto not even a blade of grass could be made to grow.

J. F. M.

A BEAUTIFUL CEMETERY.—Every town of any pretension must now have its cemetery,—but most are little better than the old graveyards attached to churches, which have fallen into disrepute. But many are lovely specimens of gardening. One of the most famous is the Forest Hill Cemetery of Utica, New York. Much of the success in forming these beautiful

cemeteries depends on getting the proper superintendent. In this respect this one was fortunate in securing Mr. Roderick Campbell. His advice is often sought by new ventures elsewhere.

STYRAX JAPONICA.—In the *Gardeners' Monthly* for 1869 there is the following account of this plant from a German source: "A pretty hardy shrub, growing four to six feet high, with elegantly spreading branches, bearing bright green elliptic-lanceolate leaves and a profusion of white flowers, resembling snowdrops, from the points of the young branchlets. It should be a pretty object for forcing with such plants as *Deutzia gracilis* and its allies. A native of Japan, and introduced into our



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BY
THOMAS MEEHAN & SON

STYRAX JAPONICA.

gardens by way of St. Petersburg." Since that time it has been introduced into America, and plants are now large enough to flower here. It proves to be well worthy of the introduction given it at that time in the magazine above named. We give with this an illustration, showing the form and character of the flowers. It will undoubtedly become one of the most popular of shrubs for American gardens; growing taller than the statement above indicates.

T. B. M.

MAGNOLIA KOBUS.—Mr. Moon, Morrisville, Pa., says: "I mail to-day a few flowers of a Magnolia taken from a tree about 25 years old and 20 feet high. I would like to know the name of it and will be obliged if you can tell me."

The flower sent by Mr. Moon is the *Magnolia Kobus*, a comparatively scarce kind, introduced into our country a number of years ago by Mr. Hogg, and distributed under the name of *Magnolia Thurberi*, in compliment to the late Prof. Thurber. It has, however, been since identified with one previously named as *Magnolia Kobus*; the latter name being the one employed by the Japanese, who call it *Kobusi*. It is rather common in the mountainous woods of Japan, especially on the Island of Nippon, and is also found abundantly on the Hakone Mountains. We have a specimen about 20 years old, which is also about 20 feet high, and about 18 feet wide. In its manner of growth it is one of the most beautiful of all the *Magnolias*, being very light and twiggy, and yet carrying a very regular form to the whole tree. Our specimen commenced to bloom about three years ago, this year blooming somewhat abundantly, a few days before the well known Chinese magnolia. The latter although called white, has somewhat of a yellowish tint. The *Kobus* is of a pure snow-white; the flowers are smaller than the Chinese, and intermediate in character between the Chinese and the *M. stellata*. On account of its beauty of form, the plant will undoubtedly be popular for ornamental purposes, and when the tree comes to be propagated from flowering specimens it will no doubt come into bloom much earlier; that is to say, young plants will flower earlier than the present specimen on our own ground, and that of Mr. Moon, would indicate.

THE SENSITIVE PLANT.—Few things are more interesting in the flower garden than the sensitive plant. The seeds, sown, as soon as the spring arrives, in the open ground, grow very readily, and no plant gives more pleasure to young people. Its botanical name is *Mimosa pudica*, that is to say, the bashful mimosa, from its shrinking habit when touched. If the top of the leaf is pinched carefully, so as not to disturb or jar the other leaflets on the leaf, the leaflets close up gradually one after

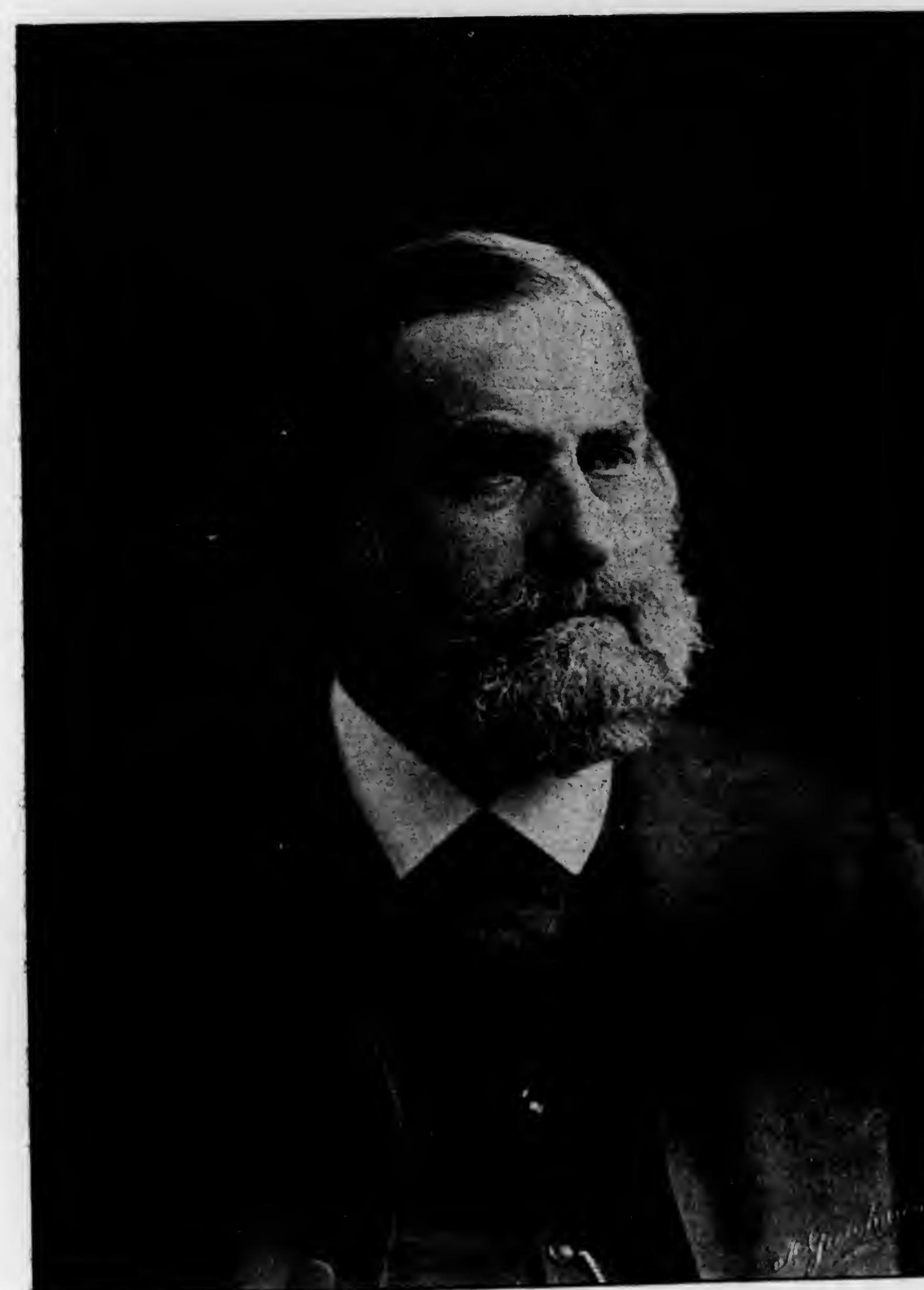
[July,

another from the end to the base of the leaf, until the sensation reaches the end of the leaf stalk, when the whole leaf falls down. Just why the leaflets should close together upwardly and the leaf stalks fall downwardly has never yet been clearly ascertained; in fact the reason for the sensitiveness inherent in the whole plant has not been made clear; although there have been many guesses, some of them shrewd, as to the reason for this particular touchiness. A closely allied plant is our native *Cassia chamaecrista*, the leaves of which, though they do not fall rapidly when touched, as is the case with the true sensitive plant, yet fall together when the atmosphere is somewhat agitated. It has been called sometimes the American sensitive plant, although this name has been given to some few other things.

TREES UNDER ASPHALT ROADWAYS.—In many cities it has been found difficult to get trees along side-walks to live when the streets are laid with sheet asphalt, or the side-walks covered with flag stones or broad sheets of lithogen. The roots are prevented from getting the air and moisture so necessary to their existence. In Philadelphia it has been found by experience that deep rooting trees stand a much better chance of succeeding than surface rooting trees, and hence horse-chestnuts and oaks have lived and done well where poplars, maples and ashes have failed. This is a valuable hint to city street planters.

THE SECKEL PEAR.—It is remarkable how much that is apocryphal creeps into history, especially the history of fruits and flowers. In "Colman's Rural World" for 1868, some writer is giving a history of the Seckel Pear, and he states it as an absolute fact, that the tree was so named by the party on whose ground it first appeared, from the fact that an old sickle had been kept continually hanging for some years on the tree, when the value of its fruit was first discovered, and in that way it received its name, and the writer contends that the name Seckel should be changed to Sickle. Our readers, of course, know that the tree was so named because growing on a farm occupied by a farmer named Seckel, near Philadelphia. These distortions of history are frequent.

BIOGRAPHY AND LITERATURE.



DR. JOSEPH LEIDY—SEE PAGE 14.

MAGNOLIA KOBUS.—Mr. Moon, Morrisville, Pa., says: "I mail to-day a few flowers of a Magnolia taken from a tree about 25 years old and 20 feet high. I would like to know the name of it and will be obliged if you can tell me."

The flower sent by Mr. Moon is the *Magnolia Kobus*, a comparatively scarce kind, introduced into our country a number of years ago by Mr. Hogg, and distributed under the name of *Magnolia Thurberi*, in compliment to the late Prof. Thurber. It has, however, been since identified with one previously named as *Magnolia Kobus*; the latter name being the one employed by the Japanese, who call it *Kobusi*. It is rather common in the mountainous woods of Japan, especially on the Island of Nippon, and is also found abundantly on the Hakone Mountains. We have a specimen about 20 years old, which is also about 20 feet high, and about 18 feet wide. In its manner of growth it is one of the most beautiful of all the *Magnolias*, being very light and twiggy, and yet carrying a very regular form to the whole tree. Our specimen commenced to bloom about three years ago, this year blooming somewhat abundantly, a few days before the well known Chinese magnolia. The latter although called white, has somewhat of a yellowish tint. The *Kobus* is of a pure snow-white; the flowers are smaller than the Chinese, and intermediate in character between the Chinese and the *M. stellata*. On account of its beauty of form, the plant will undoubtedly be popular for ornamental purposes, and when the tree comes to be propagated from flowering specimens it will no doubt come into bloom much earlier; that is to say, young plants will flower earlier than the present specimen on our own ground, and that of Mr. Moon, would indicate.

THE SENSITIVE PLANT.—Few things are more interesting in the flower garden than the sensitive plant. The seeds, sown, as soon as the spring arrives, in the open ground, grow very readily, and no plant gives more pleasure to young people. Its botanical name is *Mimosa pudica*, that is to say, the bashful mimosa, from its shrinking habit when touched. If the top of the leaf is pinched carefully, so as not to disturb or jar the other leaflets on the leaf, the leaflets close up gradually one after

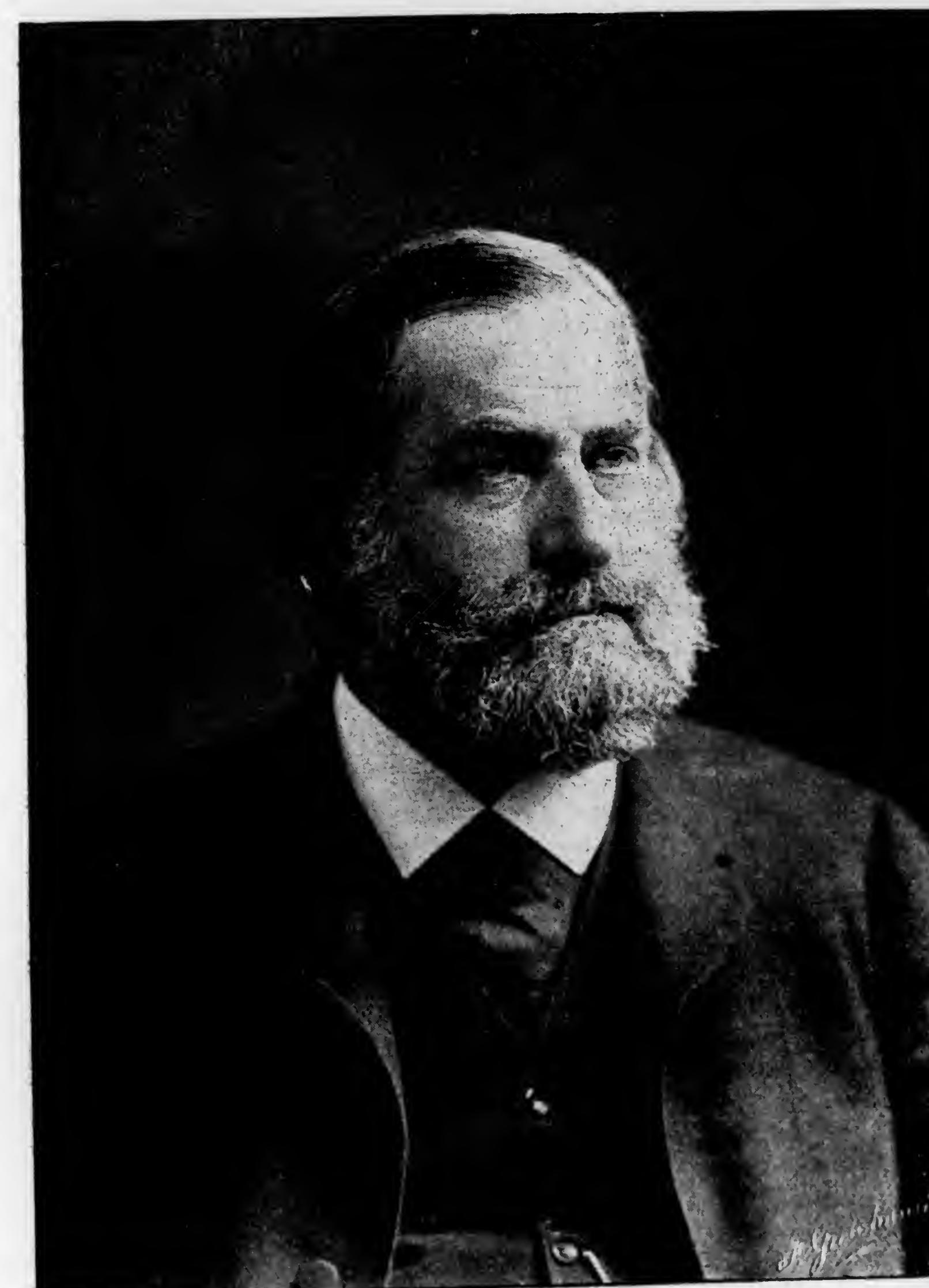
[July,

another from the end to the base of the leaf, until the sensation reaches the end of the leaf stalk, when the whole leaf falls down. Just why the leaflets should close together upwardly and the leaf stalks fall downwardly has never yet been clearly ascertained; in fact the reason for the sensitiveness inherent in the whole plant has not been made clear; although there have been many guesses, some of them shrewd, as to the reason for this particular touchiness. A closely allied plant is our native *Cassia chamaecrista*, the leaves of which, though they do not fall rapidly when touched, as is the case with the true sensitive plant, yet fall together when the atmosphere is somewhat agitated. It has been called sometimes the American sensitive plant, although this name has been given to some few other things.

TREES UNDER ASPHALT ROADWAYS.—In many cities it has been found difficult to get trees along side-walks to live when the streets are laid with sheet asphalt, or the side-walks covered with flag stones or broad sheets of lithogen. The roots are prevented from getting the air and moisture so necessary to their existence. In Philadelphia it has been found by experience that deep rooting trees stand a much better chance of succeeding than surface rooting trees, and hence horse-chestnuts and oaks have lived and done well where poplars, maples and ashes have failed. This is a valuable hint to city street planters.

THE SECKEL PEAR.—It is remarkable how much that is apocryphal creeps into history, especially the history of fruits and flowers. In "Colman's Rural World" for 1868, some writer is giving a history of the Seckel Pear, and he states it as an absolute fact, that the tree was so named by the party on whose ground it first appeared, from the fact that an old sickle had been kept continually hanging for some years on the tree, when the value of its fruit was first discovered, and in that way it received its name, and the writer contends that the name Seckel should be changed to Sickle. Our readers, of course, know that the tree was so named because growing on a farm occupied by a farmer named Seckel, near Philadelphia. These distortions of history are frequent.

BIOGRAPHY AND LITERATURE.



DR. JOSEPH LEIDY—SEE PAGE 14.

DR. JOSEPH LEIDY.

This eminent scientific man died in Philadelphia on the 30th of April, aged 68 years. Few scientific men reached such a world-wide eminence,—few more richly deserved the fame he achieved. Scientific men are human, and though many deserve the honors they get, a large number become prominent as much by their own endeavors for prominence as by the actual value of their work. This cannot be said of Leidy. Born in a comparatively humble home near Third and Callowhill streets, in Philadelphia, his earlier years saw a struggle for support; and yet it is questionable whether in the slightest degree he ever entered into any scheme to suggest or obtain the many high honors that came to him. Indeed such was his good-heartedness that he would rather any time withdraw in favor of a competitor, should such competition arise. The writer was once asking him about a contemporary who died many years ago; he remarked, "He and I were both competitors for the position." (It was only three hundred dollars a year.) "I did feel that I wanted that money badly about that time, but when I found that he needed it as badly as I, and had a mother dependent on him besides, I withdrew in his favor." Possibly no man who ever lived was at the same time so universally beloved for his personal charms, and at the same time so revered for his scientific work as Dr. Joseph Leidy. Though not known as a botanist, it was his first special study, and had not his reputation been more intimately connected with other work, his labors in this field alone would have obtained for him a commanding position.

COL. NATHAN WHITNEY.—This gentleman started the first nursery north of the Illinois River. He was born at Conway, Massachusetts, in 1791, and his one hundredth birthday was recently celebrated at the home of his son, Asa R. Whitney, at Franklin Grove nursery.

J. C. SCHMIDT.—The chief of the Prussian establishment with the above title, Henry Schmidt, died at Teneriffe on the 26th of December. It is a great loss to gardening, as he was a leader in the introduction of new things, many of which have become popular in America.

MR. I. DE G. NELSON.—of Fort Wayne, Ind., died on the 25th of March in his 85th year. Mr. Nelson was one of the original horticulturists of Indiana; and his beautiful grounds and greenhouses were probably among the earliest of the best laid out places of that section of the country. His pretty greenhouses always attracted the lover of exotic plants who visited that section; and whatever horticultural or pomological societies met in that vicinity, they were always cordially and handsomely entertained at Mr. Nelson's residence. In connection with his love of horticulture he was very prominent and popular in public affairs.

One of his greatest works of public usefulness was the establishing of Lindenwood Cemetery, which is one of the most beautiful in the country. In this work he continued to take a warm interest up to the time of his decease. On his own lot in that cemetery the projectors erected a monument, on which the following is inscribed: "The trustees feel that to Mr. Nelson they owe a debt of gratitude for his long service and unflagging fidelity to the best interests of Lindenwood, and as a mark of their appreciation of his valuable service, order the erection of a suitable monument on his cemetery lot." We often wonder that those who would preserve their names to posterity do not often interest themselves in securing public grounds for either the living or the dead, as Mr. Nelson has done; for our own part we would sooner know that one's name was connected with a public square, or a beautiful cemetery, than have a monument in marble or brass, such as is usually given to a military or some other hero.

PROF. GOODALE.—Accounts from Australia state that the presence of Prof. Goodale as the President of the American Association for the Advancement of Science, at the recent meeting of the New Zealand Association for the Advancement of Science, was very highly appreciated; not only its representative value, as from the President of the Association, but also on account of the genial character of the Professor, of which the accounts speak very warmly. The Professor is expected home from Australia the coming autumn.

JOSHUA PEIRCE.—Though it is now some years since his death, no public account of this distinguished Horticulturist has ever appeared. Lovers of gardening are not ungrateful, and they desire to long hold in pleasant remembrance the memory of the man who gave them the beautiful race of Prairie roses—a class that has brought enjoyment to many a home. We have obtained from one of his descendants the following sketch of the man, and a slight account of his work.

"Joshua Peirce was the pioneer of horticulture in the District of Columbia. He was born in 1795, at Peirce's Mills, on Rock Creek, the picturesque region now in the limits of the National Park. His father, Isaac Peirce, came from Chester County, Pennsylvania, in 1794, and established the mill known by his name. In connection with his mill Isaac Peirce had nurseries of fruit and other trees, which he grew for his own planting and to supply the orchards of his neighbors.

In 1823 Joshua Peirce built a house for himself upon a tract of 84 acres, given him by his father, and the next year erected the greenhouses which for many years were the only establishment of the kind in the District. The place was one of the attractions of the capital. It was visited by all the distinguished men of the period. With the exception, perhaps, of Eckington, the residence of Joseph Gales, the editor of the *National Intelligencer*, no place in the neighborhood of Washington can show a greater array of distinguished and famous names among its visitors.

As the city grew in population other establishments were started in the city, until the greenhouses at Linnaean Hill were abandoned, the nursery business being continued by Joshua Peirce up to the time of his death in April, 1869.

The life of a horticulturist is not one of striking vicissitudes or of stirring events. The progress in this pursuit is along general lines of effort in which all of its votaries participate with equal enthusiasm and where the experience of one becomes common property. One important experiment was conducted at Linnaean Hill in the successful hybridization of the Tennessee rose, the result being shown in the beautiful family of Prairie roses, which are even more highly prized in England than in the land of their origin. In the raspberry

known as the Catawissa raspberry when disseminated from Linnaean Hill, another addition was made to the class of autumnal fruits. Many things were accomplished in the introduction of new varieties which have become established favorites of the garden and the lawn.

At Linnaean Hill the ivy covered walls of the now venerable stone mansion erected in 1823, surrounded by the noble trees, many of which were grown from the seed, planted on the plateau overlooking the romantic valley, form the most attractive feature included in the National Park."

DR. MAXWELL T. MASTERS.—The *Gardener's Chronicle*, of London, is known wherever intelligence in horticulture is appreciated. Dr. Lindley, the famous botanical horticulturist, was its first editor, commencing in 1841. On his death, Dr. M. T. Masters, equally known as an eminent botanist, succeeded him, and has fully maintained its high character. He was born in Canterbury, England, of which famous town his father was mayor. Born in 1833, he is still one of the hardest workers in the science he very early learned to love.

DR. MAXIMOWICZ.—This famous Russian traveler, in whose honor so many beautiful plants known in our gardens have been named, died on the 16th of February. He was particularly well known by his explorations in northern Asia.

EDWARD KEMP.—This gentleman, whose work on landscape gardening, entitled "How to lay out a Garden," is in good use in America as well as in the old world, died on the second of March, in his seventy-fourth year.

THE ROSE OF SHARON.—In olden times terms now specially applied, had a general application. Any succulent fruit might be an apple; a lily a handsome flower of any kind, and a rose would be applied to a number of things. Hence the biblical terms of this nature do not mean the plants we understand by these names. It is now understood that the Rose of Sharon is one of the Wind-flowers, *Anemone coronaria*, a close relative of the anemones of garden culture.

GENERAL NOTES.

OUR FRIENDS.—We shall depend in a great measure on the good will of those who appreciate the work we are trying to do. Should any one receive a copy and not be sufficiently interested in the subject to subscribe personally, it is hoped the specimen may be handed to some flower lover.

The publishers will of course make due discounts on the subscription price for the trouble taken to get additional subscriptions to send with one's own, besides being thankful for the kindnesses.

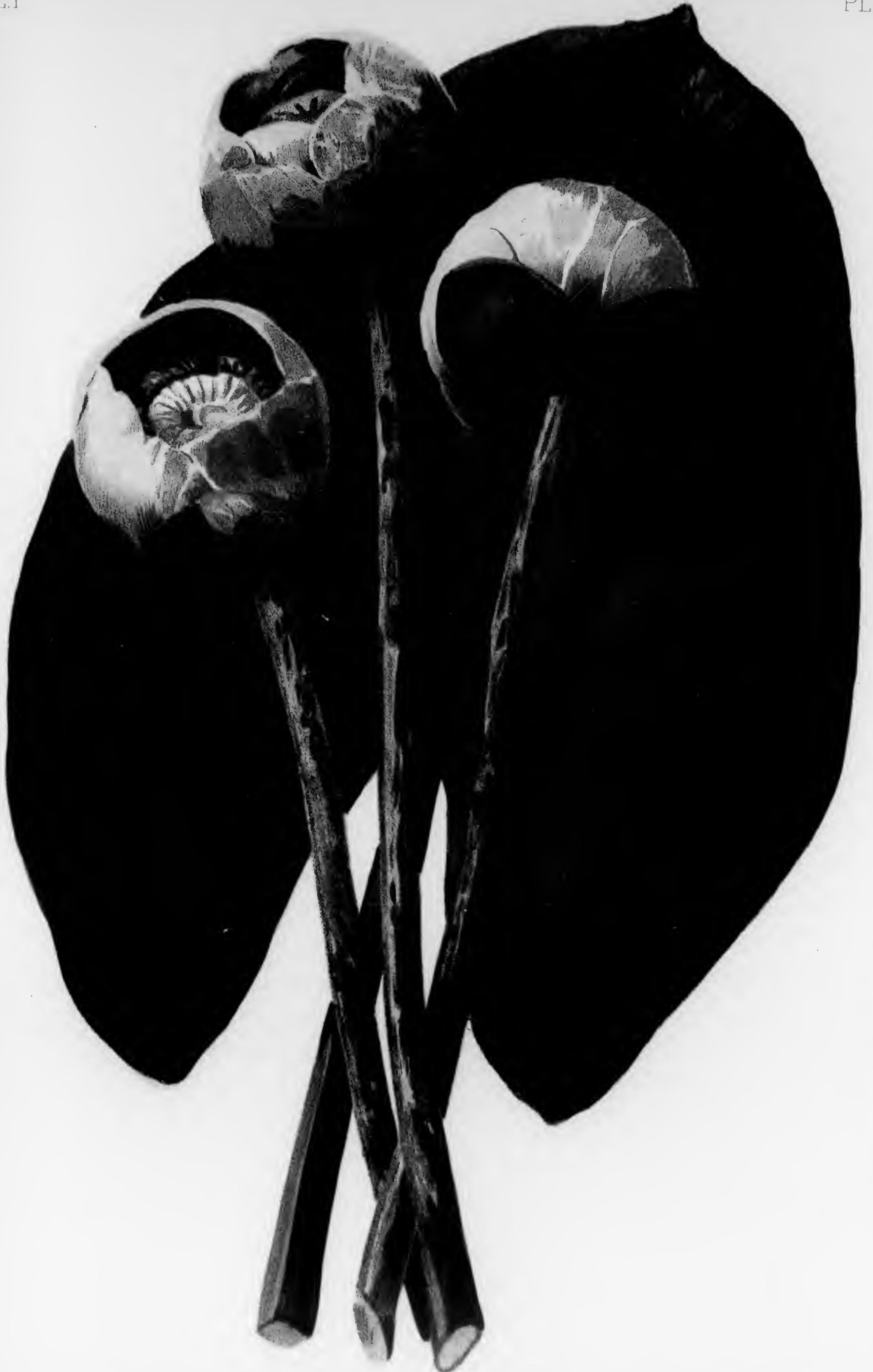
OUR CORRESPONDENTS.—A number of friends have offered to contribute to our pages. Notes of anything of interest will be gladly received. It will be perceived that we shall not have room for the exhaustive essays that often appear in periodicals, which cover every minute point in practice, so readily obtainable from standard horticultural works. But we desire to get notes of such things of such a novel and yet popular character that the great majority of those who read will be glad to know about. The notes of cultivators as to what is new or interesting will be quite as welcome, with due credit, as if the information were furnished by our own grounds.

OUR CIRCULATION.—We desire for the patrons of our magazine all who take any interest at all in wild flowers, or who love gardening in any form. Until comparatively recent times a knowledge of plants consisted of little more than knowing their names, or of so arranging dried specimens that anything desired could be readily found through a systematic arrangement in a herbarium. But thousands who would blush to be called botanists are in love with flowers, and are always interested in knowing of the many strange facts which even the commonest weed presents. Flowers as living things with strange stories and "o'er true tales," present a charm to all,

though few at present know little more about them than that they are pretty and sweet. It is just those stories that we propose to tell, and we know there will be no lack of listeners; and those who have yards and gardens, who love to grow that which is beautiful and useful, and make everything about their homes lovely and attractive, will we trust find our pages interesting. We can only say to the reader who may not perhaps see in any one number just what is wanted, what some storekeepers post up for the benefit of customers, "if you don't see what you want, ask for it." It will always be a pleasure to answer any query through these columns that is likely to interest others as well as the querist.

THE FLOWER ON THE COVER.—As a compliment to our southern friends, so many of whom were interested in our former enterprises, we have selected for an ornament to the page, the southern yellow Jasmine, *Gelsemium nitidum*. This is the earliest of southern spring flowers and fills the air with its sweet perfume. We could perhaps have arranged more artistically the lettering on the title page, but for a desire to interfere as little as possible with the characteristics of this beautiful wild flower. The original specimen from which the drawing was taken grew near Aiken, South Carolina.

OUR JULY NUMBER.—A number of our friends have kindly written to us, that when the July number appears, they will make an active canvass for subscribers. For this purpose we have issued the July number early in June, so as to give abundant opportunity for friends to do as they proposed to do. Any numbers soiled or lost by this friendly canvass will cheerfully be made good by the publishers. We make this explanation, as there will, of course, be an interval before the appearance of the second number, due on the 1st of August.



NUPHAR ADVENA

NUPHAR ADVENA.

COMMON SPLATTERDOCK.

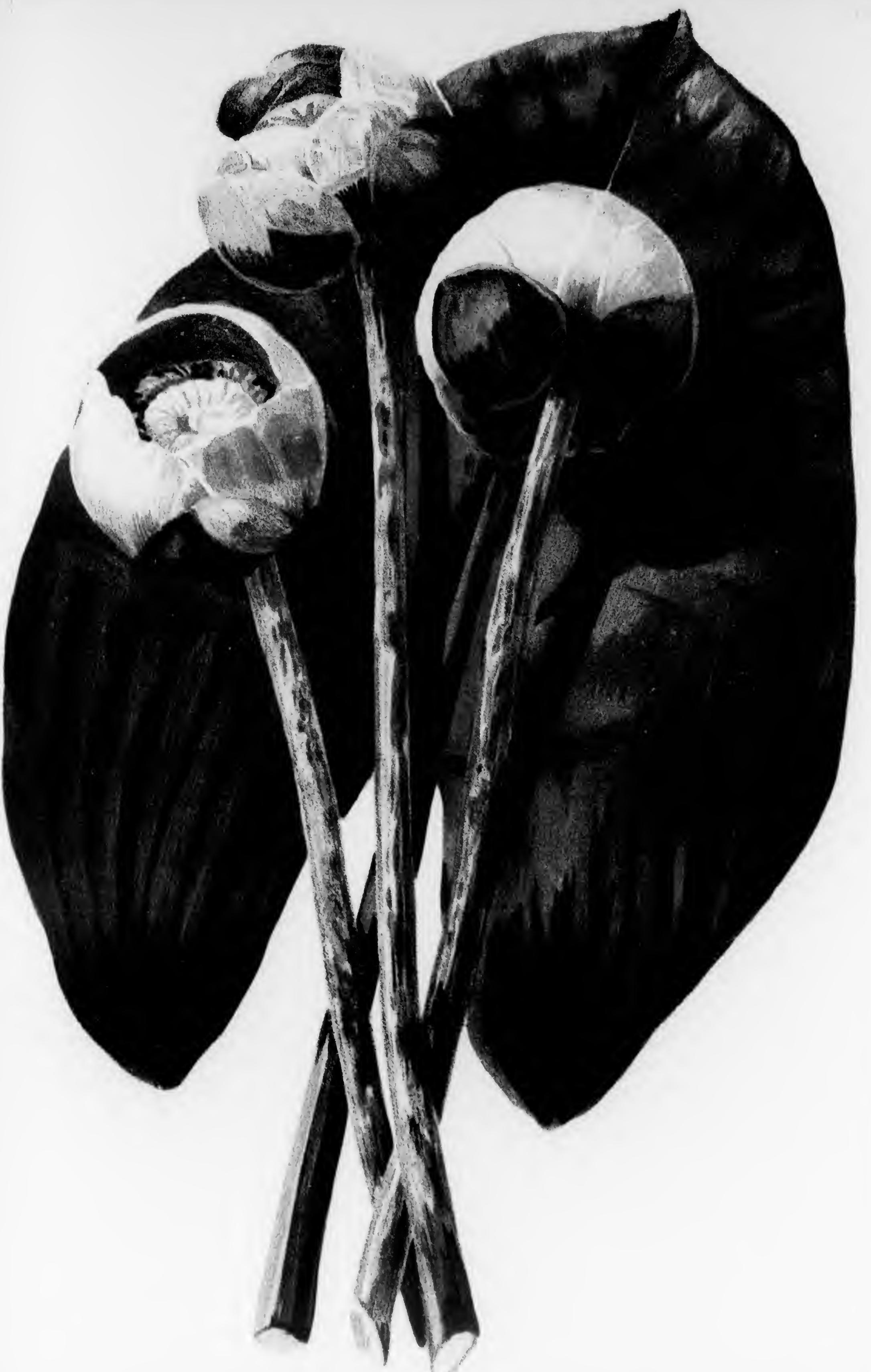
NATURAL ORDER, NYMPHÆACEÆ.

NUPHAR ADVENA, Aiton.—Sepals six, unequal; petals shorter than the stamens and resembling them, thick and fleshy, truncate; stigma twelve to twenty-four-rayed; ovary and fruit not contracted into a narrow neck under the stigma; thin submerged leaves seldom appearing; floating or emersed and erect leaves thick, varying from roundish to ovate, or almost oblong in outline, the sinus open, or (variety *variegatum* of Engelmann) flower often purplish, closed or narrow. (Gray's *Flora of the Northern United States*. See also Chapman's *Flora of the Southern United States*, and Wood's *Class-Book of Botany*.

As noted in the description, our pretty plant belongs to the *Nymphaeaceæ*, or that order to which the *Nymphaea* or common pond-lily belongs. Indeed the older botanists regarded it as belonging to that genus, and the closely allied species, *Nuphar luteum*, was known to Linnæus as a *Nymphaea* merely. The species we are now describing was not perceived to be distinct from the old world species at that time. The differences were detected by Aiton the younger, the curator of the Royal Gardens at Kew, who named it *Nuphar advena*,—that is to say, the introduced Nuphar,—a very good name as contrasting with the one so nearly like it indigenous to the old world. It differs from that species in being much more vigorous in its growth, and in the form of the leaf. The petiole or leaf-stalk of that one is weak, and will not support the leaf blade, which therefore rests, or floats, as one might say, on the water; while the leaf of our species seldom floats, but is borne erect above the surface. Besides this, the lower or divided part of the leaves in the European kind rarely spreads, while, as seen in the plate, our species spreads the lobes considerably. There are also some differences in the flower. In the description quoted from Dr. Gray it is noted that the "berry and fruit is not contracted into a narrow neck under the stigma,"—that being the character of the European form. This European species, *Nuphar luteum*, is also found to some extent in our country,—indeed Torrey and Gray, in the *Flora of North America*, suggest that ours, after all, is little more than a variety of the older known species, though more modern botanists regard them as quite distinct. *Nuphar* is an old name of Dioscorides used in connec-

tion with some of these forms, and when the *Nymphaea* were divided by Dr. Smith in his *Prodromus* of Sibthorp's *Flora Græca* in 1806, it was retained especially to designate this section. It is structurally closely allied to the *Nymphaeas*, but yet so very different in general appearance, that few but critical botanists would suspect the relationship. The beautiful white petals of the common water lily attract every one's attention,—but the petals of the *Nuphar* are very small and insignificant, and are scarcely to be distinguished from the stamens. The yellow parts which constitute the popular flower in this case are regarded as the sepals or calyx. In fact the great difference between the two genera consists in the different gradation of these floral parts. In the Lily the change from sepals to petals and then to stamens is so gradual that any one can trace the several changes, while in *Nuphar* the change from the large yellow sepals to the diminutive petals is very sudden indeed, and seems to leave a wide gap instead of a transition between them. Critically, perhaps, botanists may be wrong in regarding the smaller inside cycles as petals rather than as imperfectly formed stamens; but the fact is, the morphological distinctions between sepals, petals and stamens are so slight that it is often difficult to decide positively whether an organ in question is a sepal or petal, and in such cases as the present few botanists would object to whichever term was chosen for the colored parts that would popularly be taken for the flower.

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In all our botanical works our plant is spoken of as the Yellow Pond Lily; but it seems desirable as much as possible to limit the popular name of our flowers to one that may

be the most likely to be generally adopted, and to lead to as little confusion as possible. As we have now a true yellow water lily in *Nymphaea flava*, yellow pond lily would become confused with it. As it is generally known as "Splatterdock," it seems best to endeavor to retain that name. Dr. Gray uses "Spatterdock," but the orthography adopted in this chapter is probably correct. The European form is popularly known as "Can-Dock,"—"dock," perhaps from the form of the leaves, and "can" from the flowers and fruit resembling such a vessel. Splatter-dock—or as it was no doubt originally with the German settlers on the Delaware—platte-dock—represents the same idea,—a dock with the flowers of a platter or shallow vessel.

The common splatterdock forms one of the most striking features of the muddy shore lines of rivers, or the margins of ponds in most portions of the United States. The leaves appear very early in the season, pushing up in immense quantities wherever the water is but a few feet deep. From May to August, according to latitude, the yellow flowers are produced in great abundance, and make the waters gay with their brilliant blooms. In some parts of our country they are in bloom in April, and the writer has a letter from a Kentucky lady describing how, in her youth, their collection from the ponds in the vicinity of Louisville, was an essential part of the programme in the "May Day" parties of that time.

It had a more practical attraction to our ancestors to whom it was among the greatest blessings vouchsafed to man. The old world form grows in Egypt and other countries washed by the Mediterranean and the Red seas. Herodotus, an ancient writer, tells us of the Egyptians that "when the waters of the Nile have risen to their extremest height, and all their fields are overflowed, there appears above the surface an immense quantity of plants of the Lily species, which the Egyptians call Lotus; having cut down these they dry them in the sun. The seed of the flower, which resembles the poppy, they bake and make into a kind of bread; they also eat the root of the plant, which is round, of an agreeable flavor, and about the size of an apple." He then describes

a second species of Lotus with a flat upper surface to the seed vessel, and seeds like an olive, which is the *Nelumbium* or "Egyptian Lotus" of our present times.

The description of Herodotus is precisely fitted to our Nuphar, and it is interesting to note that the Indians of our continent used the plant in precisely the same manner. In many parts of the country are pockets, apparently artificially constructed, and which are believed to have been formed on purpose to grow these aquatic plants. In the annual report of the United States Department of Agriculture for 1870 it is stated that the plant is called Tak-wah-pah, by the Dacotah Indians. The roots grow four or five feet deep when growing in water, and the Indian women dive for them, obtaining large quantities one or two feet long.

They are very porous, slightly sweet and glutinous, generally boiled with wild fowl, but often roasted. Muskrats store large quantities of these roots in their dwellings for winter use, which the Indians contrive to steal. The seeds form an important part of the diet of the Klamath Indians of California, and when pulverized they are made into bread or gruel, but are often parched and eaten as pop-corn. Josselyn, in that curious old book, "New England Rarities," published in 1672, says, "the Indians eat the roots, which are long a boiling; they taste like the Liver of a Sheep. The Moose Deer feed much upon them, at which time the Indians kill them, when their heads are under water." The drying of the leaves in the sun for cattle feed is still practiced by the Swedes, and is probably the same practice as that referred to in the note from Herodotus.

In addition to the popular names cited it has many others of more or less local celebrity. In the old world it is sometimes called "Brandy bottle," from the form of the flowers or fruit. Darlington calls it "Strange-Nuphar," merely translating the name, but this seems rarely in use. Aiton calls it "Three-colored Water Lily," and Wood notes that "from its dirty habits, it is called 'Frog Lily.'" It is well to place these on record as matters of reference,—but they are not worth perpetuating.

EXPLANATIONS OF THE PLATE.—Leaf and flowers from the shores of the Delaware river.

WILD FLOWERS AND NATURE.

TRAILING ARBUTUS.

I wandered lonely where the pine trees made
Against the bitter east their barricade,

And, guided by its sweet
Perfume, I found, within a narrow dell
The trailing spring flower, tinted like a shell,
Amid dry leaves and mosses at my feet.

From under dead boughs, for whose loss the pines
Moaned ceaseless overhead, the blossoming vines
Lifted their glad surprise,
While yet the blue-bird smoothed, in leafless trees,
His feathers, ruffled by the chill sea breeze,
And snow-drifts lingered under April skies.

WHITTIER.

ORCHIDS IN NEW ENGLAND.

A correspondent of the *American Garden*, describes a wood at Shelburne, New Hampshire, in which *Cypripedium acaule* grows, and in which there are many varieties of color exhibited among the flowers. Some he says are snowy white, and there are many shades between the snowy white and deep purple.

Near Stowe, Mass., the yellow lady's slipper, *Cypripedium pubescens* he found in great quantities; though rarer than the *acaule*, or stemless species. The small flowered *C. parviflorum* he found at Acton, Mass., on a richly wooded slope.

C. spectabile, grows in bogs in Western Massachusetts, and in Maine. The Ramshead Lady's Slipper, *C. arietinum*, grows in Northern New England.

The purple fringed orchis, *Habenaria fimbriata* is one of the commonest, and very beautiful. It grows neath shady nooks, and the borders of a wooded stream, where they look like red-coated sentinels in a row. It will sometimes reach 3 ft. in height. *Habenaria psycodes*, is still more common, growing with the other, flowers smaller and less deeply, though abundantly, fringed. Most any wood or damp bog will reveal it. The correspondent, Mr. Walter Deane, finds few perfect good fruit, though the structure is well adapted to fertilization by moth agency.

The white fringed orchid, *Habenaria blephariglottis*, grows in spongy bogs. Stems

one or two feet, with a two-inch spike. *Habenaria Hookeri*, is a yellowish-green flowered one, not attractive, but pretty when examined, found on grassy knolls by the Androscoggin river. A more striking species is *H. orbiculata*, common in rich woods, with greenish-white flowers, the two large root leaves lying flat on the ground. A plant which had a spread of leaves of fourteen inches, beginning to form fruit in July, at Jaffray, New Hampshire, in a rich wood. *Habenaria tridentata* appears everywhere in boggy places, a foot high, with inconspicuous greenish flowers. Half hidden in the grass of a wet meadow at Concord, Mass., he finds *H. virescens*. *H. bracteata* and *H. obtusata* with greenish white flowers grow in the damp woods of Northern New England; and he found together *H. hyperborea* and *H. dilatata* in great profusion in a boggy field by Willoughby Lake, Vermont, growing from 6 inches to 2 feet.

On the Blue Hills, not many miles from Boston, grows the yellow fringed orchis, *H. ciliaris*.

In rich bogs in almost any part of New England, *Arethusa bulbosa* may be found; in two or three weeks it is followed by *Pogonia ophioglossoides*; and this a few weeks later, running into July, is followed by *Calopogon pulchellus*.

An uncommon species in New England, is *Pogonia verticillata*, resembling, he remarks, in its sterile form, *Trillium cernuum*. It is not really common, we think, anywhere, and near Philadelphia, is so much like *Medeola virginica* as to be often passed for it. He has collected it among the Blue Hills in Milton, Mass., as early as the fourth of June. He speaks of rarely finding *Pogonia pendula*. This also, we think, is never common anywhere though widely scattered. The *Orchis spectabile* is abundant about Lebanon, N. H. *Orchis rotundifolia* occurs in Northern New England, in woods and bogs. The rattlesnake plantain, or *Goodyera repens*, he finds in abundance among the White Hills. In South New

England, a larger species *G. pubescens* supplies its place. *Spiranthes simplex*, "ladies tresses," as he calls them; but which we believe should more properly be called "ladies' traces," according to old works, is found only in South New England. *S. gracilis* is found all through New England, in the woods or along roadsides. The upper surface of its small lip is green, while that of *S. simplex* is white. *S. gracilis* has clustered roots, but not more than one tuber is found on *simplex*, as a general thing. The commonest of the ladies' traces is *S. cernua*, a stouter plant, growing six inches to a foot. He found a field, at Jaffray, N. H., in September, white with it. It has not an unpleasant odor. *S. latifolia* and *S. praecox* are rare, and found only in wet places. *S. Romanzoffiana* is not uncommon in Northern New England.

Listera convallarioides grows in rich shade about Willoughby Lake, and extends southwardly along the mountains. *L. cordata* is more delicate, but has a wider range. The common name is twayblade. In wet places throughout the State is the adder's mouth, *Microstylis ophioglossoides*. The name twayblade is also given to another genus of orchids, of which there are two species in New England, *Liparis Læselii* and *Liparis liliifolia*. He has collected it at York in Maine, though growing in all New England. The crane-fly orchis, *Tipularia discolor*, is rare in New England. The putty-root (*Aplectrum hiemale*) is also rare in New England. *Calypso borealis* is rare; it likes cold damp shade. The coral-root, or *Corallorrhiza* are probably parasitic. The commonest is *C. multiflora*, found in rich woods; sometimes flowers as late as September. *C. innata* is a more delicate plant, and more common in swampy places. *C. odontorhiza* is delicate and rare.

WILD FLOWERS OF MISSOURI.—Mrs. Lamance, of Pineville, speaks of the beautiful picture formed by the bird's foot violet, *Viola pedata*, and the cactus, *Opuntia Rafinesqui*, growing together in that vicinity. It is the first time that we have known of these two plants growing contiguously; the violet usually prevailing in damp and shady situations in more eastern localities, while the Opuntia likes a situation that is blazing hot.

ENCLOSURE OF BARK BY WOOD.—A correspondent from Mickleton, N. J., sends a section of a stem of Wistaria, with sections of bark enclosed by circles of wood, of which he desires explanation.

Wood is formed by the growth of cells out of a mother cell. This can be readily understood by noting how new wood and bark grow over a wound caused by cutting a branch off near the trunk of a tree. Supposing this wound covered by dead bark, the new growth of wood would spread over and enclose it.



SECTION OF A WISTARIA TRUNK,
BARK ENCLOSED BY WOOD.

Now the Wistaria has often portions of its surface become practically dead, no daughter cells are produced from the mother cells; on the other hand portions of the trunk, getting a full supply of nutrition, will produce the daughter cells in amazing abundance and vigor. This new wood then overflows the weaker spots, bark and all, precisely as it flows over a wound. Other trees, especially the Red Cedar, furnish similar illustrations.

ANDROMEDA MARIANA.—A correspondent from New Jersey says he thinks that that part of the world will show more beautiful floral scenery than any part of the United States. He challenges any one to produce a more lovely sight than this little State can exhibit at the end of May, when the large waxen flowers of this Andromeda, intermixed with the broad shining leaves of the Black Jack oak, go to make up the floral picture.

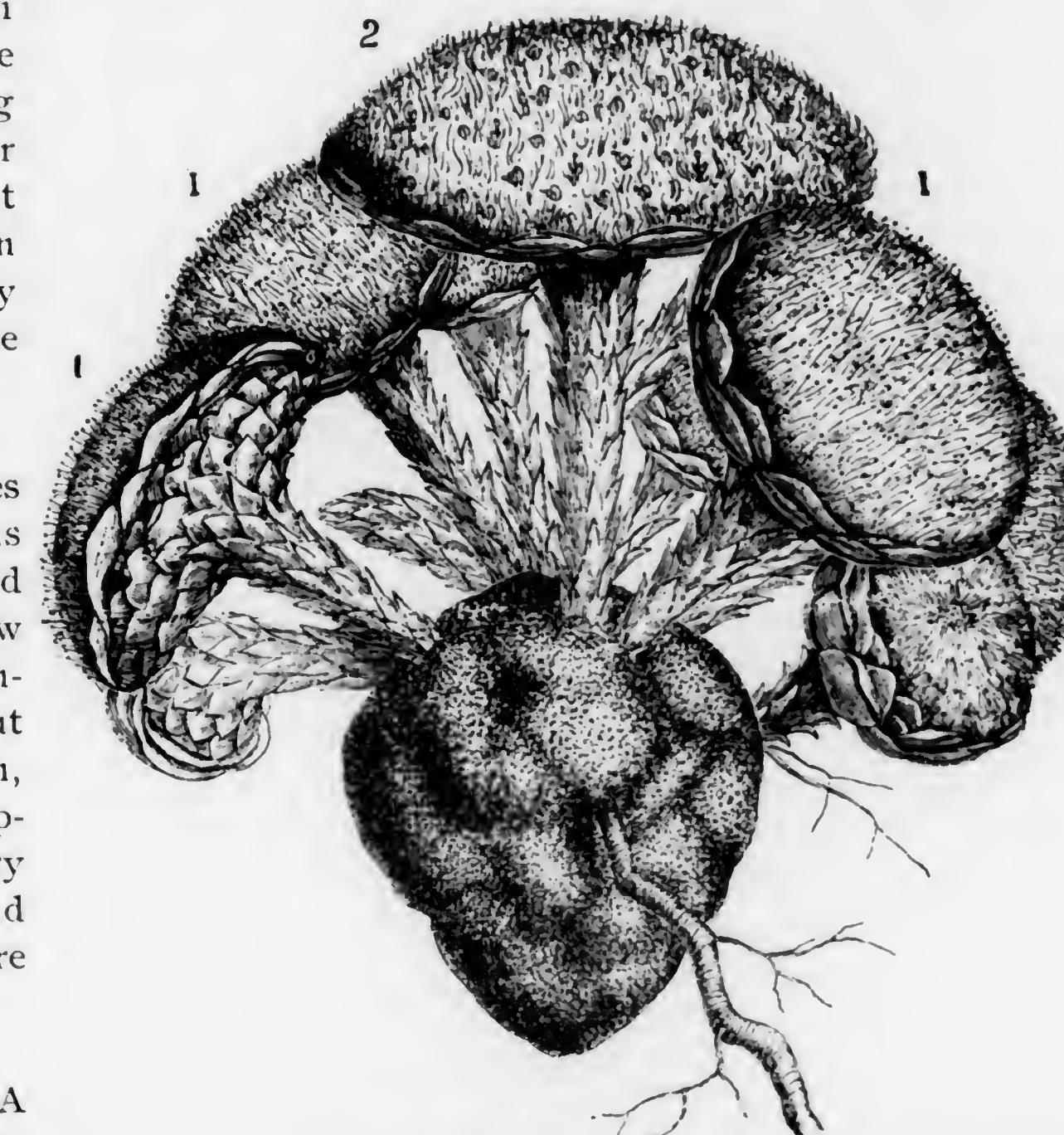
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SALVIA LYRATA.—This species of sage is the only one that is native to the Atlantic seaboard States. It is usually found in low and wet meadows. A correspondent tells us that in a deep cut along a roadside, near Jenkintown, Pa., it completely clothes the sloping sides of the comparatively dry cut, and is one of the prettiest wild flower scenes that has come before his observation this year.

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LYNOOTHAMNUS ASPLENIIFOLIUS.—This is the name of a new tree discovered in 1866 on Santa Cruz Island, off the coast of Southern California. The flowers are said to be quite showy, the corymbs often measuring a foot in diameter. It is called "iron wood" by the natives. It belongs to the order *Saxifragaceæ*, of which the mock orange is a familiar example.

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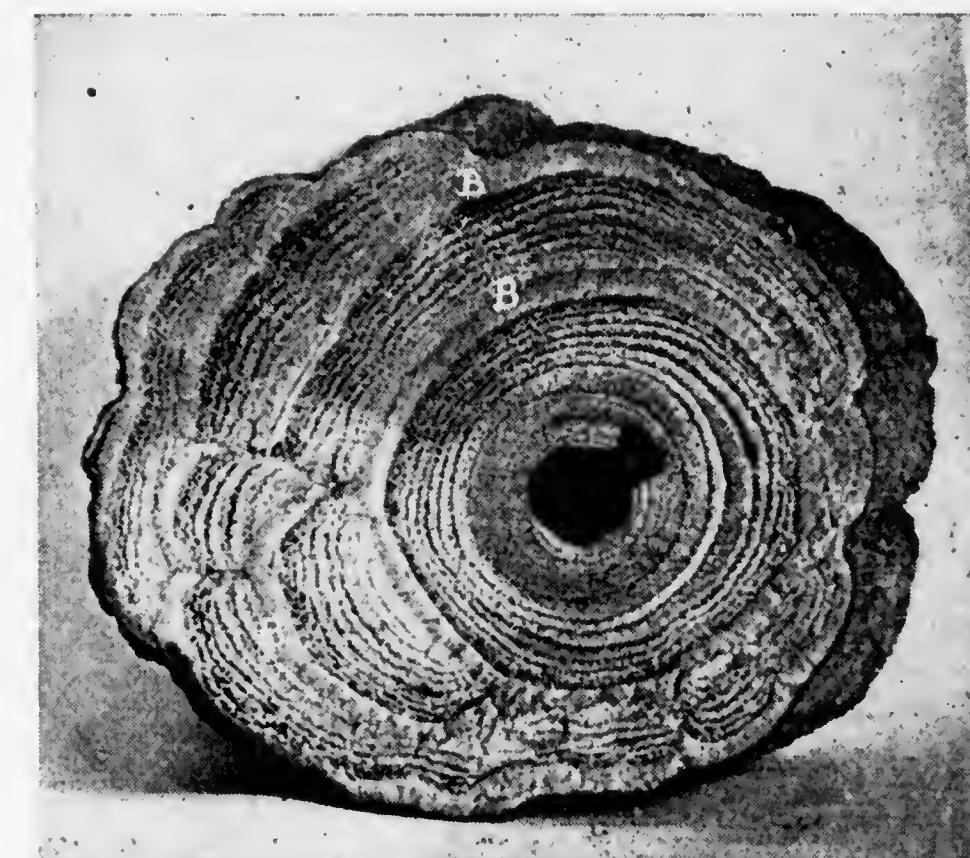
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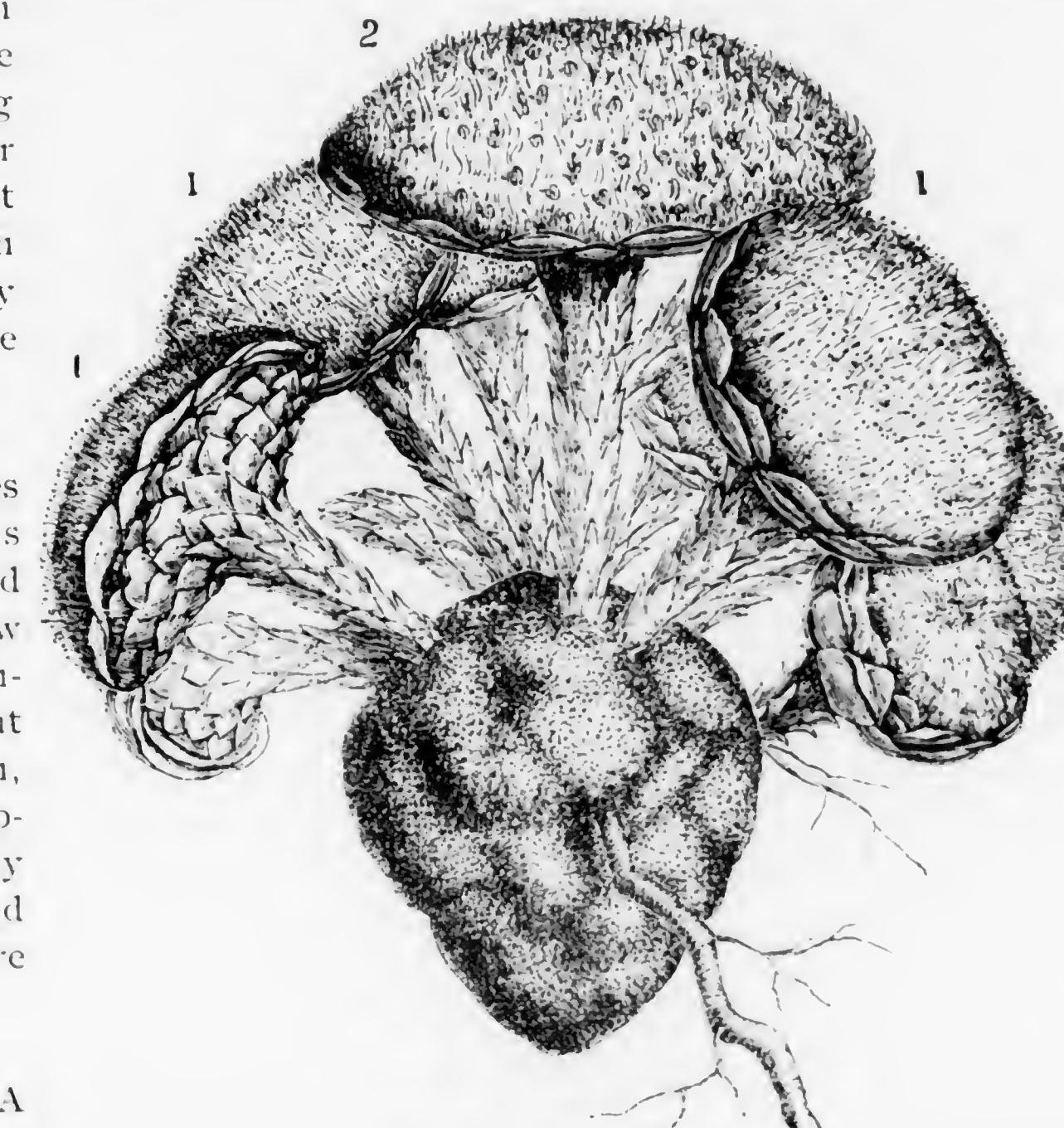
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DOUBLE CLARKIA.—This beautiful California annual was so named in honor of Captain Clark,—of the famous Lewis and Clark expedition,—the earliest to cross our continent. They formed an admirable double in a great work,—and now the plant itself has done the double duty of producing a double flower by changing its stamens to petals as in the annexed sketch.



CLARKIA ELEGANS, DOUBLE.
FLOWERS ROSE-COLOR.

SWEET SCENTED BEGONIAS.—One of the most remarkable facts developed of late years is this—that odor in families of plants is usually confined to a few species, no matter how large the genus. Very few of the large family of violets have fragrance, and only one migonette in some half a hundred of the genus Reseda; of the several hundred species of *Begonia* known, only one is sweet scented, and this has been distinguished as *Begonia odorata* or *B. suaveoleus*. This particular one has been taken in hand by the German florists, and a new race called sweet scented *Begonias* developed from it.

ASTER MACROPHYLLUS.—This species grows wild "from Canada to Manitoba, and through the mountains of Carolina and Georgia," says *Garden and Forest*, which on page 48 gives a portrait of it. The root leaves are broadly ovate, cordate at the base, and eight or ten inches long by four or five wide.

VARYING TINTS IN AUTUMN COLORS.—It has been noticed that in two trees of maples, oak or other trees, coloring in Autumn, of the same species, one will often have much brighter leaves than the other. It should be remembered that though there must be certain chemical combinations before any color can be produced, the act of producing is a vital one, and can only operate under vital conditions. If we cut off a branch of any tree in Summer time, and throw it aside, the leaves turn black or brown, and without any brilliant color; but if the branch be only half broken off, or in some way injured, the leaves will color; as if the Autumn time has arrived. This shows that coloring is connected with a check to vital power, short of its total destruction. Hence, in the Autumn, the tree with the greater vital power will color less than the other.

A NEW ASTER.—Those who are interested in these beautiful fall blooming wild flowers, will find a new species illustrated and described in a recent number of the "*Botanical Gazette*." It is called *Aster Oreuttii*, and is from the Colorado desert in California. It is a very handsome species, and well worth cultivating. The flowers are not borne in clusters or panicles, as in so many Asters, but are singly on the ends of the stalks. The edges of the leaves are also so deeply cut as to be almost comb like, and very different in appearance to the ordinary run of the Asters, as we see them in the East.

A LARGE PARK.—Many of our cities and States are boasting of the size of their parks. Philadelphia contends for one of the premiums, by the fact that she has in Fairmount Park, some 2,800 acres; but our good friend Uncle Samuel can beat us all; he claims to have 2,760,000 in the Adirondack Park of New York State. This, however, is almost all forest, and beautiful as it may be in its wildwood characters, may not boast in real beauty what small parks would be capable of.

PARNASSIA CAROLINIANA.—In writing of the botany of water-falls we inadvertently spoke of the plant of Niagara Falls as *Parnassia palustris* instead of *Parnassia Caroliniana*, as it should have been. We are indebted to a Cambridge friend for the suggestion.

GENERAL GARDENING.

A DOUBLE AMERICAN APPLE.—Our readers of course know that the Apple of our gardens is an importation from the old world. We have, however, two native species, namely: *Pyrus coronaria* and *Pyrus angustifolia*. These are both considered slight forms of one species by some botanists, but to our mind, are as sufficiently distinct as many plants that are recognized as distinct species by the same botanists who would unite these. They are especially distinct from the old world species, in having a delicious fragrance, which those of Europe have not. We have just received from E. A. Bechtel's Sons, of Staunton, Ills., some fine specimens in flower, of the last named species, as double as roses, and of a bright crimson color. This, together with the delicious fragrance already referred to, of this species, must give it very great value to cultivators. In our opinion these gentlemen have happened on a very valuable addition to our list of ornamental shrubs. We use the word shrub, for although these American Crab Apples are usually classified as trees, they are really, as usually seen, not more than large shrubs. It has always been a matter of surprise to us that these two species are not more generally grown in gardens, where choice collections of shrubs are appreciated. The fragrance is exactly that of the rose, and when large specimens are covered with blossoms, the fragrance permeates the atmosphere to a large distance around.

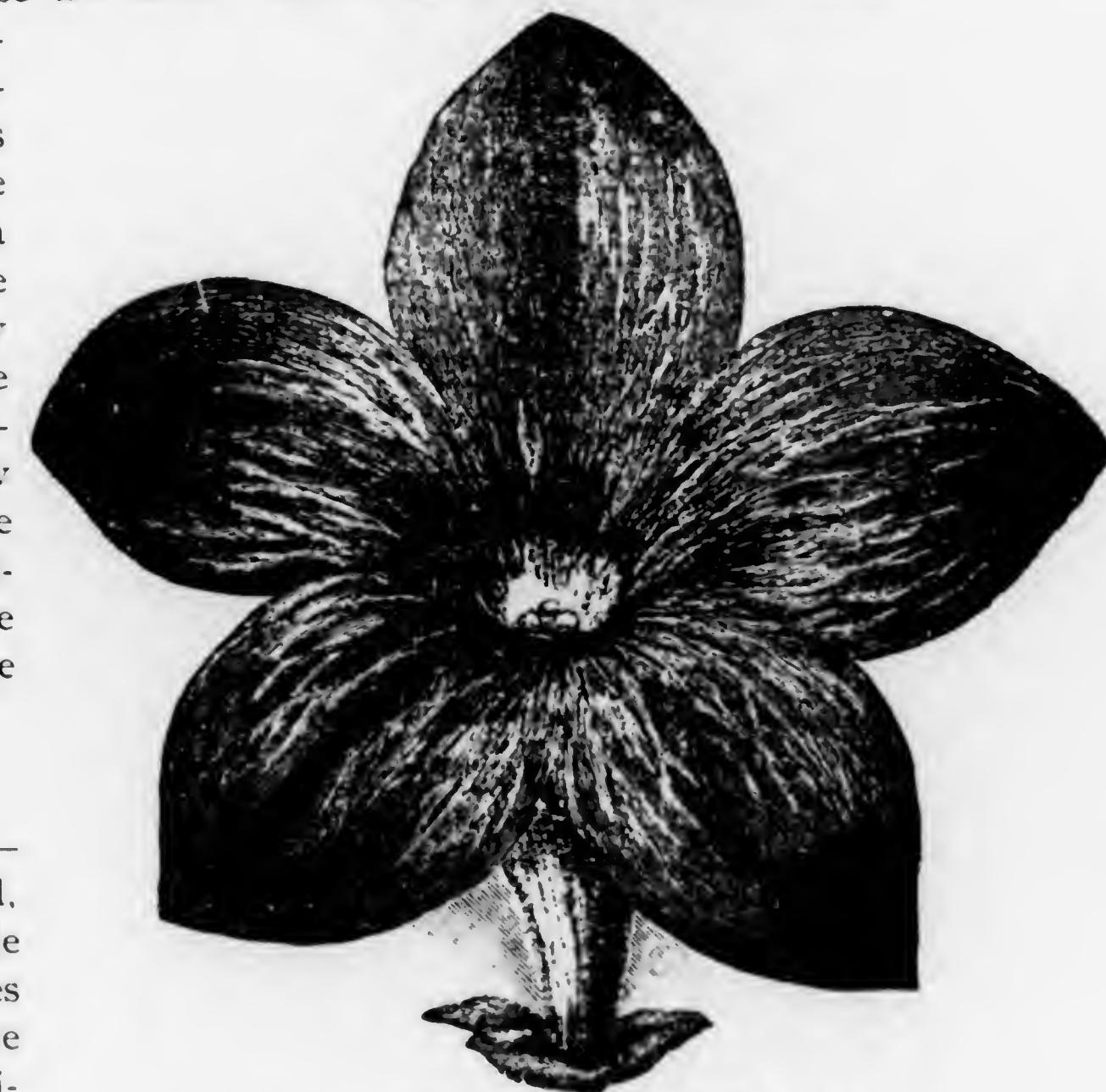
VAGARIES OF FRUIT CROPS.—Under date of June 20, a Springfield, Mass., subscriber says that while there are heavy crops of peaches north of them, there are none of any consequence in Connecticut.

FLORAL EMBLEMS.—European magazines are fond of railly on the taste of Americans in arranging flowers in the form of ships, anchors, and other things. But it would seem that mankind is much the same everywhere. Count Von Moltke, who died recently, had passed his 90th birthday, a short time before, and the citizens of Cologne presented him with a huge cannon ball, which took ten thousand violet blossoms to form. Why not a floral ship to an Admiral as well as a cannon ball to a Field Marshal?

CLEMATIS PETUNIAS.—A class of Petunia has been raised with the corolla so deeply lobed that they resemble some Clematises.

There are few garden flowers that have been broken up into so many distinct races.

The method is to take some variation in the line desired,—to save seed from that,—and mark and save seed again from those in the line of the proposed improvement.



CLEMATIS PETUNIA, FLOWERS PURPLE.

IRIS.—A correspondent inquires how to keep Irises in the greatest health, how best to preserve their beauty and bloom, and how to plant them so as to compare well with other plants in the general features of a garden. As a rule Irises are very fond of a mixture of rotten leaves and sand; the creeping rhizomes like to penetrate this rich sandy material, and although some species are found entirely in swamps they do equally well in rich garden soil of the character described. For grouping they are admirable along the borders of shrubbery. Of late the Japan forms of Irises, blooming so much later than others, have prolonged the season, so that taking *Iris verna* as among the earliest to flower, with *Iris Kämpferi* of Japan as the latest, it gives us a period of nearly three months in which various kinds of Irises may be in flower. The bright yellow Iris of Europe, *Iris pseud-acorus*, is also late, blooming just before the Japan Irises come into flower. As a rule Irises do not like hot broiling sun; *Iris Missourienis* of Colorado is however an exception. It may be noted that the rhizomes, or creeping stems of Irises, are little more than annual. It is only the extreme points that are in active life; and in some species like the *Iris Hartwegii* of California, not more than half an inch of the extreme points carries the plant over for another year.

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AZALEA AMENA.—This does not seem to be as generally distributed as it ought to be. A plant on the grounds of Mr. Samuel Emlen, in Germantown, is possibly one of the oldest in America, and is regarded as one of the most beautiful of all very early flowering shrubs. On the first of May, rivaling the lilacs, it is a perfect blaze of beauty. Mr. E.'s plant is about two feet high and across.

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HYBRIDIZING FLOWERS.—One of the most interesting occupations for the lover of flower gardening is the raising of new varieties from seed by hybridizing. The relationship must be near, as for instance two kinds of roses, two of geraniums, of fuchsias, or of other plants. It is best to open carefully the petals a day before they would do this of themselves, cutting off the anthers with a slender pointed scissors, and then dusting the stigma with the pollen from the flower of the other kind to be used in the operation. The stigma will in all probability not be in receptive condition for a day or two, but the pollen will remain in perfect condition until it is. This has been found a much safer plan than the one usually employed of enclosing the flower in a gauze net to prevent the use of foreign or the plant's own pollen by visiting insects, and then applying the desired pollen after several days. The garden geranium, or as the books now generally say, "Zonale pelargonium," takes very readily to hybridizing or crossing, and much pleasure can be had from experiments with them in watching the blooming of the seedlings.

CULTURE OF AQUATIC PLANTS.—The colored plate which we give this month is suggestive of aquatic plants in general, and a few words on their culture may not be out of place. Usually they have hard and bony seeds, which often remain a year without sprouting. If this hard coat is filed so that the water can get to the cotyledons they will sprout at once. Those who have no ponds to grow aquatic plants can have tubs of water sunk level with the earth. We saw once a garden of many species of water plants sunk in tubs in this manner. Plants which have their leaves easily destroyed by frost will yet often live over winter when the mud is deeper than the frost can reach. We believe the common Calla Lily, *Richardia ethiopica* will live out in the winter in this manner, and the so-called sacred lotus, *Nelumbium speciosum*, will also live out in the same way. The roots are not injured by so low a temperature as 45 degrees, which is about the temperature of the mud under water in winter time. Tropical water plants require warmer mud, and they rot when the temperature goes so low.

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HISTORICAL MONUMENTS.—It is to be regretted that monuments to commemorate great men or women or great events do not oftener take shape in something useful. Just now Philadelphians are asked to sacrifice one of the extremely few breathing spots they possess in order to build a huge monument costing hundreds of thousands of dollars, to the memory of Washington. If Washington could vote, he would rather cast it to buy a twenty-acre square for the good of the people, than take from them the little four-acre plot known as Independence square.

Ellwanger & Barry take a better view of things. They have erected in Highland Park,

cases we find them suffering from starvation. When growing in woods rotten leaves and underbrush collect food for the roots; on lawns and in gardens there is generally nothing whatever for them. Trees as well as corn or potatoes want food. If large trees, like those referred to, could have an occasional top dressing of manure there would be fewer complaints about. Branches when dead, or weak branches, when cut off from old trees, should be sawed close to the trunk and painted, so that the wood could be preserved until the bark grows over. It is the rotting away of dead stems which frequently causes permanent decay.

J. F. M.



MEMORIAL PAVILION IN HIGHLAND PARK, ROCHESTER, N. Y.

Rochester, at a cost of \$25,000 dollars, for ground, trees and all, a pavilion for the use of the school children of that city, to the memory of the late Patrick Barry. This will cover a little less than the monument to Washington. Thousands will look up and wonder at the great monument and give thanks to the great man who gave them a country—but the same thought would have been just as well excited by something intrinsically useful, as this memorial pavilion is.

HEALTH OF LARGE TREES.—Many inquiries come to us as to the preservation of old trees in parks or on lawns. In almost all

ROSES.—**DESCRIPTIVE CATALOGUES.**—Ellwanger & Barry, in their descriptive rose catalogue follow a good English practice of placing the name of the introducer, and the year in which it was introduced, after the name in the catalogues. This serves to identify the rose, as occasionally the same names are given to the different roses; for instance, describing the rose Annie Cook, after the name is put "Cook, 1888," then follows the description, "An American seedling from Bonsilene, delicate shade of pink, changing to white under glass in winter, vigorous and free blooming." In this way we get the whole history of the rose in a few words.

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CULTURE OF AQUATIC PLANTS.—The colored plate which we give this month is suggestive of aquatic plants in general, and a few words on their culture may not be out of place. Usually they have hard and bony seeds, which often remain a year without sprouting. If this hard coat is filed so that the water can get to the cotyledons they will sprout at once. Those who have no ponds to grow aquatic plants can have tubs of water sunk level with the earth. We saw once a garden of many species of water plants sunk in tubs in this manner. Plants which have their leaves easily destroyed by frost will yet often live over winter when the mud is deeper than the frost can reach. We believe the common Calla Lily, *Richardia ethiopica* will live out in the winter in this manner, and the so-called sacred lotus, *Nelumbium speciosum*, will also live out in the same way. The roots are not injured by so low a temperature as 45 degrees, which is about the temperature of the mud under water in winter time. Tropical water plants require warmer mud, and they rot when the temperature goes so low.

J. F. M.

HISTORICAL MONUMENTS.—It is to be regretted that monuments to commemorate great men or women or great events do not oftener take shape in something useful. Just now Philadelphians are asked to sacrifice one of the extremely few breathing spots they possess in order to build a huge monument costing hundreds of thousands of dollars, to the memory of Washington. If Washington could vote, he would rather cast it to buy a twenty-acre square for the good of the people, than take from them the little four-acre plot known as Independence square.

Ellwanger & Barry take a better view of things. They have erected in Highland Park,

cases we find them suffering from starvation. When growing in woods rotten leaves and underbrush collect food for the roots; on lawns and in gardens there is generally nothing whatever for them. Trees as well as corn or potatoes want food. If large trees, like those referred to, could have an occasional top dressing of manure there would be fewer complaints about. Branches when dead, or weak branches, when cut off from old trees, should be sawed close to the trunk and painted, so that the wood could be preserved until the bark grows over. It is the rotting away of dead stems which frequently causes permanent decay.

J. F. M.



MEMORIAL PAVILION IN HIGHLAND PARK, ROCHESTER, N. Y.

Rochester, at a cost of \$25,000 dollars, for ground, trees and all, a pavilion for the use of the school children of that city, to the memory of the late Patrick Barry. This will cover a little less than the monument to Washington. Thousands will look up and wonder at the great monument and give thanks to the great man who gave them a country—but the same thought would have been just as well excited by something intrinsically useful, as this memorial pavilion is.

HEALTH OF LARGE TREES.—Many inquiries come to us as to the preservation of old trees in parks or on lawns. In almost all

ROSES.—DESCRIPTIVE CATALOGUES.—Ellwanger & Barry, in their descriptive rose catalogue follow a good English practice of placing the name of the introducer, and the year in which it was introduced, after the name in the catalogues. This serves to identify the rose, as occasionally the same names are given to the different roses; for instance, describing the rose Annie Cook, after the name is put "Cook, 1888," then follows the description, "An American seedling from Bonsilene, delicate shade of pink, changing to white under glass in winter, vigorous and free blooming." In this way we get the whole history of the rose in a few words.

SEA-KALE.—There are few more delicious vegetables than Sea-kale, but it is rarely, if ever, met with in American kitchens, indeed the writer has never met with it at all in America. Possibly this is from the fact of its being useless until blanched, and as it cannot be blanched by earthing up, as celery can, it is probably considered too much trouble. It does not seem, however, to be generally known that the roots can be lifted and planted in boxes, and sown in a comparatively warm cellar, when they will grow and blanch naturally by growing in such dark places. It ought to be easy to propagate, as it grows by pieces of roots. It would be better, however, that the plant should be grown one year in the open ground, before taking up for forcing, or the product would be too weak; possibly it need not have even the trouble of being planted into boxes or pots, as the roots could be set in beds in some dark place. At any rate, with a little care there ought not to be any great labor or cost required in growing this delicious vegetable in our country.

CHERRIES.—The crop in the East has been simply enormous, while California has, for the first time, sent them East by the carload. Strange to say, the unusual influx did not break prices. Everybody wanted to buy cherries, and the extra demand kept up the price. The California Black Tartarians were sold by auction as they arrived, and brought from 55 cents to \$1.00 per box of 10 lbs., according to quality; while the California Royal Ann's, in some cases brought the enormous price of \$2.35 per box. The general retail price of cherries on the street was from 10 to 15 cents per pound.

A BEAUTIFUL CALIFORNIA CEMETERY.—It is said that the most beautiful cemetery in California is one called Mountain View, near Oakland, which was planned and laid out by Mr. Frederick Law Olmsted, in 1865. The landscape gardening work is said to be so completely in harmony with the idea of a cemetery, that few will compare with it anywhere in this respect. Of course, the climate of California being so favorable to many plants and flowers that will not thrive in the Atlantic States, gives so much more opportunity for fine results.

VINES ON WALLS.—A question often occurs whether vines which attach themselves to walls create dampness or not. Where they are confined entirely to the walls, they aid in drying rather than in creating dampness. The little rootlets are great devourers of moisture, and suck up everything of that character that gains access to the walls. There is nothing harder or dryer than the ivy-covered walls of old ruins, as every one who has visited the old world can vouch for. Wherever walls are damp, when vines cover them, it is owing chiefly to their being allowed to get into spouts and gutters, and in pipes. In addition to vines making walls dry, they keep them cool in summer and warm in winter. From any point of view, vines on the walls of houses are an advantage to health rather than an injury.

J. F. M.

RHODODENDRONS.—One of the sights which everyone who visits West Grove, Pa., drives out to see, is the fine mass of Rhododendrons on the grounds of Mr. Dingee, of the well-known Dingee & Conard Co. The specimen plants are probably from 8 to 10 feet high, and, forming a beautiful sight from the public road, do much to acquaint the world with the great beauty of these plants. The Rhododendron is getting better known as a garden plant from year to year. It is strange that but a few years ago it was supposed they were uncultivable in our country. The exhibition of the Waterers during the great Centennial, did much to popularize this grand flower with Americans.

FAIRMOUNT PARK CONSERVATORY.—It is proverbial that people seldom see anything wonderful when it is near their homes. They have to go away to be surprised. Just now the English papers are full of the great beauty of Philadelphia's Fairmount Park, with its grand conservatory. The Park comprises 2816 acres, and the large conservatory is considered by these English correspondents to be one of the most beautiful in the world. A recent number of the *Journal of Horticulture*, published in London, gives great credit to Mr. Charles H. Miller the Superintendent landscape gardener in charge of the Park.

T. B. M.

COPPERAS.—The use of copperas dissolved in water, as an invaluable remedy for all kinds of fungus troubles, is now getting to be known. No greater benefaction has been conferred on the cultivator than the knowledge which has been disseminated about the value of this solution. The "Country Gentleman" now tells us that its use is being extended to the cleaning of milk cans. It is said to be so perfect a remedy against the germs of typhoid, diphtheria, and other epidemic diseases, that its use in that line is likely to be as invaluable as to the plant grower. After all there is no reason why it should not be, as these germs are simply a low order of fungus growth. It should be noted, that blue copperas—sulphate of copper,—and not green copperas—sulphate of iron,—is the proper article.

J. F. M.

BLACKBERRY RUST.—A correspondent from East Stroudsburg, Pa., calls attention to the prevalence of red rust on raspberry and blackberry leaves this season. This is a small fungus easily kept down if cultivators will cut out the infected branches, or leaves, and burn them as soon as they appear.

PROTECTION TO NATIVE BIRDS.—Mr. Thomas C. Thurlow, of West Newbury, Mass., read a very interesting essay on this subject before a recent meeting of the Mass. Horticultural Society. Mr. Thurlow does not seem to exempt any birds, except the crow, from the list of those that are far more useful than destructive. He does not deny but that it is very trying to the fruit grower to see the robins running away with his cherries, but he insists that they only take a few of these, as a matter of after dinner dessert,—that their chief food is on destructive insects.

PRUNING TREES IN SUMMER.—A correspondent inquires whether the branches of street trees too low for hats or umbrellas may be cut off in Summer, or in March or April. So far as the tree itself is concerned, it really makes little difference. Of course, a branch cut off before June, if it is not too large, will allow a new growth of wood over the wound before the season is over, and this may be some slight advantage.

XANTHOCERIS SORBIFOLIA.—Mr. William Falconer believes that this is getting to be one of the most popular trees recently introduced into cultivation. It has the advantage over some other trees of flowering when only a year or two old, but old specimens are said to be particularly beautiful. Although illustrations of it have occasionally appeared we repeat it again in this place. It is certainly one of the most desirable of ornamental trees introduced into cultivation during the past few years. It is from Northern China.



XANTHOCERIS SORBIFOLIA.

ROSE EMPRESS AUGUSTA VICTORIA.—This new hybrid-tea seems to be pushed with vigor in Germany, whether the popularity is on account of its name wholly remains to be seen. The German publications say of it:—"A brilliant and most effective rose either for garden decoration, exhibition or forcing purposes, quite first-rate. Growth strong, large foliage; flowers borne on long, strong stems; bright pure white, in the centre orange colored; outer petals finely reflexed like 'The Bride,' exceedingly free in blooming during summer and autumn, every shoot crowned with a flower bud."

SPIREA ASTILBOIDES.—We have from Rea Bros., specimens of this handsome flower, recently introduced from Japan. It is closely related to our well-known wild flower, the Goats' Beard, *Spiraea Aruncus*, common through the Alleghanies, and is described by Maximowicz as Sp. *Aruncus* var. *Astilboides*. It is a good addition to the list of herbaceous plants.

NORWAY SPRUCE HEDGES.—Along the public highway, around a large country seat near Abington in Pa., there is a mile or two of hedge formed of Norway Spruces, which were planted some twenty-five years ago, under the direction of Mr. William Saunders now of Washington ; enclosing the country seat, then owned by a Philadelphia merchant by the name of Kent. This hedge has been admirably treated by being pruned in a conical shape. Notwithstanding its age it is to-day a marvel of perfect beauty. Close to the ground to the extreme top it is so thick that a bird could scarcely find its way through. To all appearance it would be still good for another quarter of a century. Much as we have known that the Norway Spruce makes a fine hedge, we have never seen one so extremely beautiful and successful as this of Mr. Kent's. J. F. M.

A YELLOW BON SILENE ROSE.—Mr. S. W. Crowell, of Huntsville, Ala., has a branch of this fine pink rose pushing out with yellow flowers. If this branch is propagated from, it might possibly be of great value. We suppose it would have something the appearance of Saffrano, which at one time was one of the most popular of the kinds grown by florists. Its exact value, however, will depend on other circumstances than its color alone.

EXOCHORDA GRANDIFLORA.—A correspondent from Salem, Mass., notes that this plant suffers in that section from a disease similar to that which attacks many rosaceous plants, such as the fire-blight in the Pear, and the well-known blight of the Dwarf Almond, and which has almost driven out of cultivation the beautiful Red Plum, *Prunus triloba*, of China, though he supposes the trouble to be from a want of hardiness.

CINNAMON VINE.—A correspondent, Miss Jackson, sends us a leaf of the Chinese Yam for name. It is known in the West as Cinnamon Vine. Just why a plant which has been so universally known as Chinese Yam, and sold at low figures, should be re-christened Cinnamon Vine, and sold at a much higher figure than under its old name, passeth the common understanding.

APHIS ON MAPLE TREES.—In reply to a lady correspondent we may say, that the best way to get rid of the Honey Aphis on street trees is to use the street hydrant, or a powerful garden engine, in cases where street hydrants are not available. They are very easily washed off by the force of the water, and the water besides is a benefit to the leaves. J. F. M.

CARNATION CULTURE.—Those who grow carnations for winter flowering often complain that they flower late. There are some kinds which have a natural tendency to bloom late; but lateness often comes from pinching them late in the season. One or two pinchings early in the season, to make them bushy, is all very well; but two pinchings is all the law allows.

CHINESE ARTICHOKE.—A new vegetable introduced from China under the botanical name of *Stachys tubiflora*, is getting popular in the old world, where it is being distributed under the name of Chinese Artichoke. The roots, which are eaten boiled, are not as large as Jerusalem artichokes, but are knotted much in the same manner.

RHODODENDRONS.—The Massachusetts Horticultural Society makes a specialty at its spring exhibition of the rhododendron. The exhibition this year was on the 5th of June, and was said to be one of the finest sights ever seen in the city of Boston.

JAPAN CEDAR.—A correspondent notices as among one of the most beautiful trees in Washington, a *Cryptomeria japonica* in Lafayette Square. Lovers of rare conifers visiting Washington, should look at it.

SAGITTARIA SINENSIS.—Mr. Hugo Mulerstt, who takes great interest in aquarium plants, says of this, "it is known as the Chinese arrowhead. A charming novelty of easy culture. It may be grown, similar to the Chinese lily, in water, moss, or soil, in vases, bowls, tubs or pots. It is a highly ornamental plant for in and outdoor aquariums, fish-ponds or the lawn." Our common arrow-heads, also sagittarias make excellent plants for aquariums.

BIOGRAPHY AND LITERATURE.

THE ROSE AND THE GARDENER.

"A FANCY FROM FONTENELLE."

"De Memoires de Roses on n'a point vu mourir le Jardinier."

"The Rose in the garden slipped her bud,
And she laughed in the pride of her youthful
blood,
As she thought of the gardener standing by—
'He is old,—so old ! And he soon must die !'

"The full Rose waxed in the warm June air,
And she spread and spread till her heart lay
bare;
And she laughed once more as she heard his
tread—
'He is older now ! He will soon be dead !'

"But the breeze of the morning blew, and found
That the leaves of the blown Rose strewed the
ground;
And he came at noon, that gardener old,
And he raked them softly under the mould.

"And I wove the thing to a random rhyme,
For the Rose is Beauty the gardener Time."

AUSTIN DORSON.

LEO WELTZ.—In the history of Western horticulture few probably have occupied a more prominent and useful position than this gentleman, who died on the 31st of December last, though, strange to say, no account of this loss to floriculture seems to have appeared in any prominent paper. He was born in Prussia on the 27th of January, 1825; his father being Prof. Weltz, a prominent botanist and geologist. He was especially interested, as a youth, in landscape gardening, and assisted the laying out of the Botanical Gardens of the University of Heidelberg. He subsequently became chief gardener to Alexander the III, Emperor of Russia. He returned to Germany and entered the army, receiving directly from the hands of the late King William four medals for meritorious conduct during the revolution of 1847. As a student he was connected with Alexander Humboldt. In 1851 came to America, locating at Huntington, West Va., removing to Ohio in 1852 as a landscape gardener. He laid out the grounds of Gov. Salmon P. Chase, Gov. Dennison, Hon. George

Pendleton, and others. He was especially interested in laying out cemeteries on the modern principles of landscape gardening. Sugar Grove Cemetery at Cincinnati, and the Cemeteries of London, Springfield, Martinsville, and others in the West, are from his designs. He commenced a nursery in 1855, removing to Wilmington in 1866; the land owned by him comprising over 240 acres. Like most intelligent nurserymen he has been frequently called to take part in public affairs. In 1875 he was elected a member of the State Board of Agriculture; in 1883 a member of the State Board of Public Works; in 1885 he was commissioned by President Cleveland to investigate the hardy trees and shrubs of Russia. He was especially fond of trees and flowers, and a large number that now beautify the State of Ohio, and other parts of the Union, were introduced there by him. He was married in 1853 to Anna Elizabeth Schwanenberger of Bavaria, who also died in May last, leaving six sons, whom it is pleasant to note have inherited the love of flowers and gardening which their father so eminently possessed. Outside of the loss to horticulture by Mr. Weltz's death, he was a man personally and socially beloved by all who came in contact with him.

GREENLAND EXPLORATION.—In the early part of May an Arctic expedition, under the lead of Lieutenant R. E. Peary, and organized under the auspices of the Academy of Natural Sciences of Philadelphia, left to explore northern Greenland. This is the third expedition sent with the encouragement of this scientific institution. Besides the examination of the country, natural history, and especially botany, will be looked after by the expedition. It is believed that this expedition will go nearer to the North Pole than those who have hitherto ventured towards that point. The other two expeditions were under the charge of Dr. Kane and Dr. Hayes, respectively.

JOHN C. CAHOON.—There were probably few young naturalists of a greater promise of usefulness in different branches of science than this gentleman, who lost his life on the 17th of April in Placentian Bay, Newfoundland, while engaged in ornithological pursuits. He was endeavoring to collect some eggs from a craggy spot called Shag Roost. The sea closed in closely around these rocks at the base, and he left his boat in charge of two young lads while he went around to the top of the cliff; on the top of this cliff he fastened a knotted rope, and descended some 150 feet to the nest of the birds for the eggs. In endeavoring to re-climb to the point of the cliff, for some reason or another the rope had got over a huge projecting rock, and pressed so tightly against the rope that it was impossible for him to get his hands around the rope in order to ascend. In this way he had to hang to the rope for a considerable time; when finding his strength give way, he had to drop from the rope into the sea, a distance of 200 feet, striking rock after rock in his descent. He fell into the water finally, and disappeared, leaving nothing but blood tinted water on the spot where he fell. His body was not recovered until the next day. In ornithology especially he had already made for himself an enviable name.

MONS. P. E. DE PUYDT.—Those familiar with Belgian horticulture must be very familiar with the name of this gentleman, who died at Mons, in Belgium, on the 20th of May. He was born in the year 1810, and for sixty years was continuously Secretary of the Royal Horticultural Society of the city in which he died. He undoubtedly did at least as much as any man of our times to bring Belgian horticulture up to the high position it occupies before the world.

DR. W. H. VON NAEGELI.—All those interested in the physiology of plants must have met frequently with the name of Naegeli. He was by birth a Swiss, and for many years curator of the Botanical Museum, and Garden of Munich. He died recently in his 74th year. He was a great opponent of Darwin's views. He was remarkably a modest man in the expression of his views, notwithstanding the high position which he achieved in this particular branch of botanical science.

ELISHA MOODY.—Few names are more familiar to horticulturists than that of Moody, of Lockport, N. Y., who was the founder of the large nurseries at that point, besides being intimately connected with many progressive movements which have given prosperity to that beautiful city. He died on the 19th of April. He was born at Unity, N. H., on the 27th of October, 1809, being therefore 82 years of age at the time of his decease. He established his nurseries in 1830, but removed the business finally to Lockport, in 1861. The ground covered some 150 acres, and, in fruit trees especially became famous. He was particularly fond of the Pear, and at one time had one hundred and twelve varieties for testing on his grounds. He was among the first to show that these could be raised from seed and grown to a profit on American soil; until his time America was dependent on importations from Europe. Like so many eminent nurserymen, he was honored by his fellow citizens with many positions of prominence. He was councilman in the city of Lockport, and in 1872 was Mayor of the city, also a member of the New York Legislature. It is pleasant to know that he has enterprising sons, who will continue the business established by their honored father.

ABSINTHE.—The readers of French novels, and indeed of other French books, must be familiar with the term, absinthe, a highly exhilarating liquor in use by the French people. Its use is extending more and more every year, and nearly as many gallons are used in some countries in the old world as of whisky in ours, but we believe it is not generally known in this country out of what plants or in what manner absinthe is made. This is given as follows:—

"The leaves and flowers of wormwood, or *Artemisia*, *angelica* root, anise root, sweet flag, and other aromatic roots are pounded together and soaked in alcohol for a week or ten days. The compound is a pale emerald color, and by the addition of anise oil absinthe is the result."

T. D. A. COCKERELL.—This well-known botanist, especially versed in Colorado flowers, has taken a trip to England in the interest of the science, and will make an exploration of Jamaica before his return to the United States.

JOHN BARTRAM.—After a struggle of many years against obstructive circumstances Councilman Meehan has succeeded in getting this saved from destruction. City Councils have taken possession of it as a public park. It was planted in 1720 by John Bartram, his father allowing him a portion of the estate for that purpose, when he was but nineteen years of age. Many of the large and fine trees planted by the botanist, and his son William, are still in a fair state of preservation. The Mayor of the city, the Director of Public Works, and other officials, with Mr. Meehan, and other members of the City Parks Association, paid it a visit for the first time, in their official capacity, recently. The magnificent specimen of the Yellow Wood tree, *Cladrastis tinctoria*, was in full bloom to greet the guests on their arrival there. The final arrangements for the preservation and improvement of the property have not yet been agreed upon. All that is done at present is to place a superintendent in charge, and policemen to guard the property from vandalism. At the end of this year an appropriation will be made to care for it in a more instructive manner.

COL. WHITNEY.—In our last magazine we gave a notice of the 100th birthday of Col. Whitney, of Franklin Grove, Ill., and some account of his great services to horticulture in that part of the world. The venerable gentleman has since died, the event occurring on the 11th of June. Besides his being a pioneer in horticulture in Illinois, he was the oldest living member of the order of Free Masons in the world, having been initiated into that fraternity on the 22d of June, 1817.

LAWSON VALENTINE.—Since our last magazine was prepared for press the death is announced of the above gentleman on the 5th of May last, aged 64 years. Mr. Valentine was one of the most enthusiastic supporters of the "Agricultural" and "Horticultural Press" of this country, and much of the great success that has followed the establishment of the "American Garden" and other periodicals was due to his enterprise. Undoubtedly his death is a great loss to the cause of American horticulture.

PROF. JOHN L. RUSSELL.—It is remarkable how tenaciously many scientific writers hold on to an idea, that hybrid plants are sterile. Outside of strictly scientific men, this has long been exploded. There are certainly cases where hybrids are sterile, but in a vast majority of cases the reverse is true. There are numbers of sterile plants, which are well known not to be hybrids, while on the other hand, it is also well known that plants which are often sterile, occasionally become abundantly fertile. So long ago as 1869 Prof. John L. Russell, of Salem, Mass., recorded the fact, that the common Golden-Bell, which is usually sterile, fruited abundantly for him in the year previous. As there was no other form of this species anywhere in the vicinity, it showed that it was simply a case where a plant, usually sterile, will occasionally assume productiveness.

DR. HEINRICH MAYR.—This gentleman made many friends during his examination of the American Forests for the German Government. He is now Professor of Forestry in the University of Tokio, Japan. He is publishing in the German language a work on the coniferae of Japan,—the colored plates being taken from native trees.

DR. SCHOMBURGHK.—The announcement of the death of this gentleman has been made. It is, however, the director of the Botanic Gardens of Adelaide, Australia, and not the Dr. Schomburghk who was the discover of the great Victoria Lily of the Amazon, who was his brother. Both of them, however, were distinguished botanists.

DR. J. M. MCFARLANE.—This eminent Scotch botanist, whose discoveries in regard to the structure of hybrid plants have much interested European scientists, will visit this country, and address the American Association for the Advancement of Science on the subject at its meeting in Washington the present month. The meetings of this association are always rich in botanical attendants,—and the personal intercourse adds largely to the interest their new facts produce.

GENERAL NOTES.

A LADY'S VIEW OF MEEHANS' MONTHLY.—The first issue of this welcome addition to the list of magazines devoted to our native flora is before me. It brings with it a double welcome from the compliment paid its Southern friends from having for its embellishment a picture of one of the South's most lovely native plants. The Editor calls it "*Gelsemium nitidum*," whilst we Southerners know it as "Yellow Jasamine," and botanically *Gelsemium sempervirens*. Had I known sooner (*i. e.* in March) that such a compliment was proposed, I would have begged the privilege of furnishing a spray which would have given a better idea of what the Yellow Jasamine can do under liberal culture. In its native haunts the cut is true to nature,—a delicate evergreen climber with sparsely scattered blooms. Under cultivation the sprays become shortened in a measure, which though, adds to its quality of blooms, these being crowded closely together as in sprays of the Weigelias. I cut numbers of sprays from my luxuriant vine this season from 8 inches to 18 inches long crowded with the fragrant beautiful blooms. I was told quite often that my plant was the pride and boast of the "West End" of our town.

M. I. THOMSON.

OUR NEXT PLATE.—As September is especially the season for Asters and Golden-rods, we shall give as an illustration *Boltonia glastifolia*, a genus nearly related to *Solidago* and *Aster*, and which we believe has not before been figured anywhere. As it is found in places over most of the States east of the Mississippi, flower lovers will be glad to see the face of a familiar friend.

PHOTOGRAPHS.—Photographs of any unique feature in wild flower scenery, or of any remarkable plant in our readers' grounds, or even of brief notes about them will always be thankfully received. The same may be said of sketches, or good living specimens.

(32)

MEEHANS' MONTHLY.—The kindly manner in which the Horticultural and Botanical press, in Europe as well as in America, have noticed the prospectus and first issue of our magazine, merits our warmest thanks. The conductor had come to believe that he had almost dropped out of memory—so fast does the world of to-day stride away from the days that are passed: and the warmth of this greeting is a pleasant surprise to him. After fifty years of service with the pen as a horticultural writer and teacher, he would not have dared the new venture only for the strong belief that the younger members of the firm will be fully able to continue the work long after he has to resign the charge. The very large number of subscribers who had such faith in us as to send in their names before a single copy was issued is also exceedingly gratifying. Our constant effort shall be that these good friends are not disappointed.

FRAUDS.—There possibly never was a time when so much appeared in the public prints about frauds in horticulture, as during the past two or three years. "Old and cheap things with new names and high prices." This comes in a great measure from a want of leadership in the horticultural papers themselves. No one who reads an intelligent journal will be caught by a fraud, and the very fact that frauds abound shows that the good papers have no readers, or that the readers of such papers do not get the intelligent guidance they should have.

POTTED STRAWBERRIES.—Those who labor for the advancement of horticulture, are sometimes disheartened at the slow progress apparent everywhere. But when wide periods are contrasted, they can see great advance. When the conductor of this magazine first recommended potting strawberry runners, so as to save a season in getting a crop, he hardly anticipated the immense trade so many nurseries now have in this article, would come so soon.



BOLTONIA GLASTIFOLIA.

BOLTONIA ASTEROIDES.

ASTER-BOLTONIA.

NATURAL ORDER, COMPOSIT.E.

BOLTONIA ASTEROIDES, L'Heritier.—Leaves lanceolate; achene broadly oval; pappus of few minute bristles and no awns. (See Gray's *Manual of the Botany of the Northern United States*.) *Boltonia glastifolia*, L'Heritier. Leaves lanceolate, ascending; achene obovate, broadly winged; pappus of several short bristles and two to three short awns. (Gray's *Manual of the Botany of the Northern United States*. See also *Wood's Class-Book of Botany*, and Chapman's *Flora of the Southern United States*.)

The author has collected this plant along the banks of the Susquehanna, and many have no doubt gathered it in similar situations, but no one, probably, has ever seen it approach the same plant in its cultivated beauty. It is naturally remarkably foliaceous, and the leaves seem out of all proportion to the flowers. But under culture the brown earth in the flower borders relieves the superabundance of green, and, besides this the flowering principle seems to be favored, and the overgrowth of leaves checked, by exposure to full light and air. The plant used for illustration grew in poor soil in a narrow border, reaching a height of about four feet, and in September formed one of the most striking objects in the writer's garden. Though flowering at a season when asteraceous plants are particularly abundant, it claims a full share of attention from lovers of beauty.

It is closely allied to the true asters, and in botanical classification would be placed between *Aster* and *Bellis* or daisy—the Gowan of the poets—and it is from this general relationship to *Aster* that its specific name—*asteroides*—was derived. The plant had, before the time of the French botanist L'Heritier, been classed with *Matricaria*, which may be characterized as the chamomile family; and it was named *Matricaria asteroides* by Linnæus some twenty years before the French botanist discovered the true distinction between the two genera. It is interesting to note by the specific name *asteroides* that notwithstanding the wide difference between *Matricaria* and *Aster*, as now understood, natural appearance was for once

wiser than scientific rules. L'Heritier established the genus in 1788, in a work called *Sertum Anglicum*—that is, a wreath or selection of interesting plants he found growing in English gardens; and he took *Boltonia* from *Matricaria* because, as he says, the *Matricaria* had no pappus, while in this the pappus is obsoletely dentate, and has two horns as we see at *a* in our fig. 3. He describes two distinct species, claiming for one, *Boltonia glastifolia*, that the lower leaves are serrate, while the other has all the leaves entire. He claims no other distinction between the two, though modern botanists have attributed other distinctions to the separate species, beyond what the original author saw, as we see in the descriptions of the two given at the head of our column. Professor Gray, who has made a special study of the genus in the light of modern experience concludes they are all forms of one thing, and will, in his *Synoptical Flora*,* adopt the name at the head of the chapter, probably from its being the original Linnean name, as *B. glastifolia* would have the priority in L'Heritier's work. Our illustration would have been *B. glastifolia* under former interpretations of the limits of species. The specific name refers to the saw-like or toothed edges of the lower leaves, which are supposed to be like those of the Dyer's woad—*Isatis tinctoria*, *Glastum* being the name of that genus with some botanists at that time, though at the present an almost unknown synonym.

At a congress of scientific men held in Bel-

* See, since the above was written, *Syn. Fl.*, page 166, Part II.



BOLTONIA GLASTIFOLIA

INTENTIONAL 2ND EXPOSURE

BOLTONIA ASTEROIDES.

ASTER-BOLTONIA.

NATURAL ORDER, COMPOSITE.

BOLTONIA ASTEROIDES, L'Heritier.—Leaves lanceolate; achene broadly oval; pappus of few minute bristles and no awns. (See Gray's *Manual of the Botany of the Northern United States*.) *Boltonia glastifolia*, L'Heritier. Leaves lanceolate, ascending; achene obovate, broadly winged; pappus of several short bristles and two to three short awns. (Gray's *Manual of the Botany of the Northern United States*. See also Wood's *Cass-Book of Botany*, and Chapman's *Flora of the Southern United States*.)

The author has collected this plant along the banks of the Susquehanna, and many have no doubt gathered it in similar situations, but no one, probably, has ever seen it approach the same plant in its cultivated beauty. It is naturally remarkably foliaceous, and the leaves seem out of all proportion to the flowers. But under culture the brown earth in the flower borders relieves the superabundance of green, and, besides this the flowering principle seems to be favored, and the overgrowth of leaves checked, by exposure to full light and air. The plant used for illustration grew in poor soil in a narrow border, reaching a height of about four feet, and in September formed one of the most striking objects in the writer's garden. Though flowering at a season when asteraceous plants are particularly abundant, it claims a full share of attention from lovers of beauty.

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* See, since the above was written, *Syn. Fl.*, page 195, Part II.

gium in 1879, the President, as reported in *L'Horticole Belge* for that year, doing honor to American botanists, refers to *Boltonia* as being given in honor of James Bolton, an "American" botanist. But James Bolton had no connection with American botany. His birthplace seems to be unknown, but like many men of humble origin he had natural talents which he cultivated between times of hard struggling for a livelihood, especially did he cultivate a love for botany, and artistic work. He lived when his labors made him famous at Halifax in Yorkshire, where he published a work on British ferns in which all the plates were drawn, etched, and colored by himself. He was a remarkable man for his time, and L'Heritier in culling material for his wreath of flowers from English gardens, did well in placing in his chaplet the name of such a worthy man. The histories of the plant and the botanist it honors have a pleasant association. One which in its natural condition is so homely, and becomes so attractive by culture, may well represent the bright genius which had but a humble birth.

In connection with the commemorative associations of this plant it may be noted that the *Boltonia asteroides* was among the earliest American plants to be cultivated in Europe, and that it found a place in the gardens of the French Carthusians who, among the numerous monastic orders of the Roman Catholic Church, gave especial attention to flower culture. For various reasons the flowers which they grew were dedicated to different saints, and this one was given to St. Placidus, who was a

pupil of St. Benedict, the founder of the order of Benedictines. Benedict built a monastery at Messina, on the Straits which divide Italy from Sicily, and made his pupil, Placidus, abbot, though but 26 years of age. The monastery was built in 541, but had but a short existence, for in 546 it was destroyed by pirates, and Placidus and all his monks were murdered. The flower was probably dedicated to St. Placidus chiefly because of its flowering late in October on or about that Saint's day; but there is much that is suggestive of the Saint's history as we have briefly recorded it, for it is fitting that a flower which is scarcely open before the frost comes to destroy it, should commemorate one whose career of usefulness, as he understood it, met with such an early end.

Taking the latest views of Dr. Gray on the identity of *Boltonia glastifolia*, and *Boltonia asteroides* to be sound, the genus is limited to three species, our present one being considered as the Northern, *Boltonia diffusa* the Southern, and *Boltonia latisquama* the Western representatives. Of the two former our present species will be readily recognized by the showy flowers, and the somewhat flattened or corymbose head, while the *Boltonia diffusa* has its small flowers panicled on slender branches. The Western one has rosy tinted flowers. None of the species are widely diffused. Pennsylvania is about as far north as *Boltonia asteroides* has been found, and it is collected in various places from there to Florida. *B. diffusa* is confined wholly to the Southern States.

EXPLANATION OF THE PLATE—1. Upper portion of a flower stalk. 2. Outline of a stem leaf. 3. Enlarged floret, with bristles of the achene at *a*.

WILD FLOWERS AND NATURE.

WITH A BOX OF POND-LILIES.

(For Meehan's Monthly.)

I saw them blooming on the city street,
In case of glass all hidden quite securely;
In Buddha's name I made obeisance mete,
And bowed myself before them quite demurely.

I said, "A lady I have sometime known,
Who would in full appreciate their beauty;
My well-won treasure I will make her own,
And crown myself with an accomplished duty."

I laid each blossom with a tender hand
Upon the cool, damp moss; to sleep confiding,
And knew the secret she would understand
Who fated was to rouse them from their hiding.

WILLIAM WHITMAN BAILEY.

MORE CONCERNING THE RHODODENDRON.

I spent a summer not long ago in the mountains of Western North Carolina, and saw a part of the Rhododendron procession that is such a famous feature of that sylvan region. The time of my going thither was the second week in June, and the *R. Catawbiense* and *R. Vaseyi* were already out of bloom, while the *R. maximum* and *R. punctatum* were just showing the delicious pink of their opening buds. The interval, meantime was superbly filled by the flame-colored Azalea—*A. calyculata*—which is the most splendid forest blooming shrub that I have ever anywhere seen.

The *R. maximum* well deserves its name, notwithstanding Dr. Hooker's discoveries in the Himalayan mountains, for it is not uncommon to find it from thirty to thirty-five feet high, with a bole at the base from ten to fourteen inches in diameter. It fraternizes perfectly with the Kalmia, supplementing it in flowering, and I have seen acres of the two a mass of bloom for weeks, forming a floral display well worth a long journey to see. A Rhododendron jungle is an interesting thing

to enter, because of the curious and sprawling way the branches reach out and interlace with each other. But they are detestable to the surveyor or woodsman, who readily calls them what the mountaineers do—"hells." They spring up abundantly from seeds, and they seem to thrive in clearings, quite as well as when surrounded by shade. I remember two particularly fine Rhododendron clumps, ten to twelve feet high and half as great, or more, in diameter, and beautifully spherical in shape, which grew on the north side of my aunt's house in Burlington, New Jersey, to which place they had been transplanted several years before from the Jersey woods. The trusses of flowers which they bore were very nearly white.

The *R. maximum* of the North Carolina mountains is a delicate pink, of varying shades. A sketch I made of what I then thought to be the *R. maximum*, in 1885, in the State of Washington, where it grows in the Puget sound region from ten to twelve feet in height, shows a highly colored flower, of a rich, deep pink—possibly the *punctatum*. The *R. catawbiense* with its purple flowers is probably the progenitor of most of the delightful varieties produced by English gardeners from what they call the "American Flower"—giving us a broad hint to adopt it as our national posy. It is not weed-like, after the manner of the vivacious daisy, or the rampant goldenrod, but elegant and patrician from leaf to flower, grows from New England to Alaska—at least I found the Kalmia, its twin brother, there—and all in all, is fine enough to please the most fastidious. The *R. Vaseyi*, which is deciduous, and has I believe only been found in the North Carolina mountains, is a shrub of great beauty, and is placed by some flower lovers at the head of all rhododendrons in point of beauty of bloom.

The Puget Sound basin, by the way, with its England-like climate, produces some growths which seem to us dwellers on the Atlantic coast as remarkable; for instance, I saw

a single vine-stock of English ivy mantling a house in Seattle, which was a foot in diameter at the base! MARY WAGER FISHER, Stoneby, Bryn Mawr, Pa.



SNOW-PLANT OF
THE SIERRA
NEVADAS.

SARCODES SANGUI-
NEA. PLANT AND
FLOWERS CRIMSON.

It was once supposed to be a parasite on the roots of trees. It is now believed to be symbiotic with fungi. Fungi prepares the nitrogen it requires, while the plant in turn receives food from the decaying or useless tissues of the plant; a huge coral-like mass of cellular tissue is usually attached to the base, and on which the fungus chiefly feeds. That is not shown in our illustration. It is said the plant can be propagated from this "mushroomy" base, but of this we are not assured.

SALIX HOYERIANA.—Dr. Dieck, of Zoschen, Germany, has described under this name a new species of willow, discovered by Lieut. Hoyer, in the Cascade mountains of British Columbia. It is said to be a parallel form of the Siberian *Salix pyrolæfolia*.

SARCODES SANGUINEA.—Mrs. Ross Lewers of Franktown, Nevada, sends us a specimen double the size we have ever gathered ourselves; and of which we give the annexed illustration. It was two feet in length and the stem below the flowers measured nine inches round.

It is commonly known as the "Snow-plant of the Sierras," and was supposed to grow only in snow. Dr. C. C. Parry once told the writer this was because the miners used to find them frequently under snow slides. The botanical name might be rendered in plain language "bloody meat," and the deep crimson flesh-like inflorescence—indeed of the whole plant—is so strikingly remarkable, that Torrey could have thought of nothing else when naming it.

THE NECTARINE.—A high class magazine, in a learned paper on the origin of fruits, makes the nectarine a "cross between the apricot and the plum;" when it ought to be well known that it is a sport from the peach, and yet the statement is no wider than many made by botanists, that this or that plant is "no doubt a hybrid." Very few really know how great is the power to vary, wholly outside of crossing.

ZAUSCHNERIA CALIFORNICA.—This is one of the most beautiful of the wild flowers of California, but not often found in the collections of travelers. It used to be found in some quantity in the vicinity of Shasta. It is a hardy perennial, and might be popularly described as an *Oenothera* or plant of the evening primrose family, with the flowers of a scarlet Fuchsia.

ASCLEPIAS CORNUTI.—This, the common milkweed of the Eastern States, is found to be very valuable to florists in decorative work. Under the name of milkweed balls, the seed vessels are now a popular article of trade with florists.

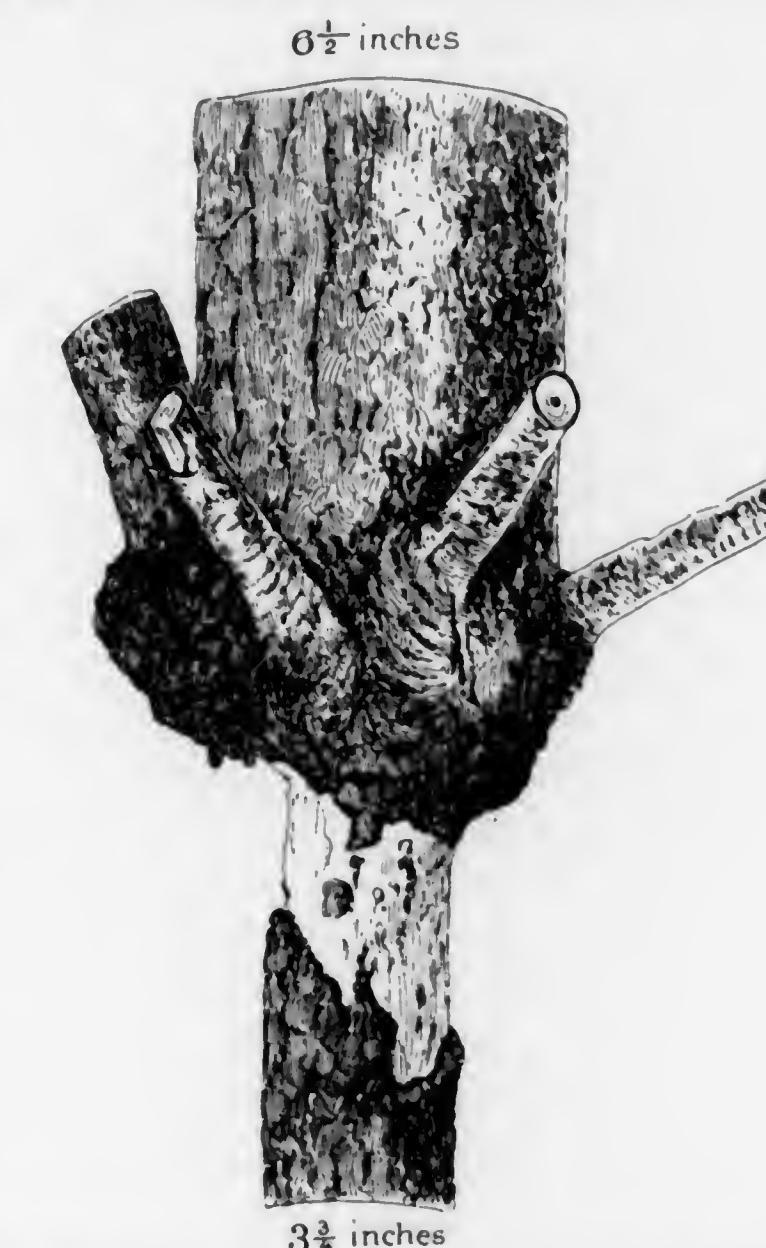
BUTTERCUPS.—It was singular to note in a trip to Southern Pa., that the common buttercups, *Ranunculus bulbosus*, and *Ranunculus acris*, have not yet appeared in that region. The one exception was in a field near Gettysburg, where there might have been a half dozen bunches in bloom. The intelligent agriculturists of that region might suggest to the owner of these fields the propriety of digging up and burning these pestiferous plants on their first appearance, otherwise they will soon crowd out useful vegetation, as they have done in fields elsewhere. It is too bad that so beautiful a plant as the buttercup should be so great an agricultural pest. In Southern Pa., however, a true American wild flower everywhere takes the place of the foreign buttercup, namely the Golden *Senecio aurea*. This plant is particularly abundant, and if the meadows are at all moist occupy the ground as freely, and have the same beautiful effects as buttercups elsewhere. We find here, as in some parts of Eastern Pa., the plant goes by the common name of Golden Daisy. There seems to be no reason why this name might not generally prevail.

WILD DAHLIAS.—Mr. C. C. Pringle, writing to the *Garden and Forest*, says of the wild Dahlia as he saw them in Mexico: "Walking among these wild Dahlias day by day, admiring the symmetry of their single flowers, and the rich contrasts of scarlet and gold displayed by the disc and rays of the one, and of purple and gold shown by the other, the aversion which the botanist feels for the monstrous forms of flowers produced in gardens was intensified in me; and it was with much satisfaction that I learned afterwards that single Dahlias are now receiving far more attention among cultivators than double ones. As yet, however, it is only the older double sorts that are seen in Mexican gardens."

APETALOUS APPLE BLOSSOMS.—A correspondent says he has an apple tree that always bears, though the flowers have never had any petals.

GIRDLED TREES.—The fact that if a tree be completely girdled, the upper portion of the bark being completely separated from the lower, will cause the death of trees, is well known; this indeed is the usual manner the woodman clears a large tract of land. Really the life of a tree is in the young wood immediately underlying the bark. It seems

incredible, that, a tree can possibly live when the bark and underlying wood are thus separated. Some years ago we had on our own ground an Austrian Pine, which had been completely girdled in this manner, and yet it continued to live as if nothing was the matter. The late Professor George Thurber could scarcely credit his eyes, so strange did it seem when it was pointed out to him, yet it lived a number of years before it finally died. We have now before us another illustration sent to us by Mrs. Ross Lewers of Franktown, Nevada. She says it was a young tree and about four feet up the trunk it is four inches in diameter.



A GIRDLED TRUNK OF PINUS PONDEROSA.
The lower part has four circles of wood and the upper part eight, showing that it lived four years after the girdling occurred, and made annual circles of wood in that time. It appears to have been girdled by porcupines. It belongs to *Pinus ponderosa*, which is called yellow pine in that part of the country. The fact seems to show that the two species of pine mentioned have the power to draw moisture, and possibly some other material, through the old wood,—a power which other trees do not possess—but that being deprived by reason of the girdled portion, the lower part of the trunk fails to get the benefit of leaf action, and no wood can be formed below the girdled part.

BRIGHT COLORS IN AUTUMN FOLIAGE.—Joseph Wharton long ago explained that when sap ceases to flow in the fall, and the natural growth of the tree ceases, oxidation in the leaves takes place. Under this oxidation the leaves change to red, or, with a slight change of the condition, it might be yellow or brown. This, however, is only the chemical explanation. Life, or as we would say, vital power, has to bear a part. If a branch is entirely cut off from the main plant no change of color occurs. On the other hand, if a branch is injured, though not entirely cut off from the tree, a change of color takes place, even if it be midsummer. In other words, chemistry alone cannot account for the bright colors of autumn foliage; the mysterious power we call life has to work at the same time.

GROWTH FORCE.—The conductor of this magazine contributed an article to the *Public Ledger*, endorsing a statement which had been made, that fungi when growing in the caves of Mexico, would have sufficient power to lift stones of ten pounds weight. The following interesting note from Mr. C. Schoneman, 619 Arch street, Philadelphia, gives an additional illustration:—"Mr. Meehan will find a confirmation of the lifting power of fungi nearer than Mexico. In July, 1888, the writer picked a portion of a growing toadstool from under a flag-stone, forty by eighteen inches, on a part of the sidewalk surrounding the church, southwest corner Tenth and Wallace streets; one end of the stone was about eight inches above the level of the pavement. The pastor or sexton may have observed the position of the stone and the cause."

THE GIANT TREES OF CALIFORNIA.—Those which are especially designated mammoth trees are *Sequoia gigantea*, but the red-wood or *Sequoia sempervirens* is not far behind it. Though these trees live to a great age, their growth when young is very rapid. A correspondent of the *Rural Press*, speaks of one near San Rafael planted in 1876, now fifteen inches in diameter, and eighty feet high. This is much less in girth in proportion to height, and indicates that the redwood and mammoth trees, do not attend much to girth until their great height is first achieved.

A REMARKABLE HEMLOCK SPRUCE.—Mr. J. D. Lyman says: "Between the city of Dover, N. H., and Great Falls is a remarkable hemlock tree, in shape of an admirable cabbage. The stem or trunk two or more feet in diameter and the cabbage shaped head apparently too close and thick for pigeon to penetrate. The body is perhaps ten or twelve feet from ground to limbs. Enlarge a well headed cabbage and you have the tree in outline. I have seen about half a dozen hemlocks whose spray was something like this."

IRRITATING PLANTS.—It is said that the florists complained the past season in New York, of the irritating character of some plant unknown to them as having such a character. The *Primula obconica* is said to irritate, but some ferns, especially of the hare's foot family—*Davallia*—are said to affect in this way susceptible persons.

THE HELIOTROPE.—This is the sunflower,—but not because "the leaves and flowers turn to the sun" as modern scholarship continues to teach,—but because the plant does not flower till summer solstice begins, continuing to flower only as the sun goes away from it, illustrative of the classical story of Clyte, who was in love with the sun who cared nothing for her.

JEWS MALLOW.—"At page 21 you say that the Jews Mallow is *Kerria Japonica*. I think that Jews Mallow is referred to *Cochrorus olitorius*, one of the so-called jute plants."

WILLIAM SAUNDERS.

[The English authorities noted at page 21, have evidently confused the two plants, the kerria having once been called a cochorus, and, as such, still known in English gardens. CONDUCTOR.]

WYCH HAZEL.—Professor Sargent says in "Garden and Forest" that he has seen at Malden, Mass., a plant of the Wych Hazel bearing bright red petals. They are usually green.

BLETIA APHYLLA.—This very pretty orchid has not been thought to extend to Kentucky, but we have seen a specimen that was collected there.

GENERAL GARDENING.

CEDAR OF LEBANON.

The specimen here illustrated, grows on East Walnut Lane, Germantown, and we obey the instructions, "please do not use my name." It was planted in 1872 and is now forty-five feet high, and at two feet above the

ground is five feet three inches. This is making an average growth of about two feet a year. It is therefore anything but a slow grower in our country. It is growing on a regularly mowed lawn, that is occasionally top-dressed. The spot was a quarry hole once, and



A YOUNG CEDAR OF LEBANON

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A YOUNG CEDAR OF LEBANON

filled in with the quarry "spalls" or refuse, when finally graded. The roots have been copiously watered,—the garden hose being allowed to run liberally,—but the perfect drainage kept water from stagnating. A pin oak near has reached the same height. Our friend considers that plenty of food and water in a well drained soil, conduces to healthfulness and hardiness. He says "many trees supposed to be not hardy are summer-starved before they are winter-killed," and we advise planters of rare things to "stick a pin in right there."

In another sketch we give a picture of an English tree, showing the characteristics of the Cedar of Lebanon with age.



A MATURE CEDAR OF LEBANON

The tendency of many coniferae is to grow conically until they reach the height they propose to go. Then they commence to go backwards. These are rarely longed lived trees. But others take to a development of the lateral branches which often become as large as the trunks of the other class of coniferae. The heads are then comparatively flat, as we see in the English specimen, and is the usual characteristic of the cedar as we see it in pictures of European scenery.

The Mammoth *Sequoia* of California develops its lateral branches in just the same way after reaching the destined height. It owes its great age to this fact, and no doubt

the Cedar of Lebanon would live as long under favorable circumstances.

The Deodar of India, is nearly related to the Cedar of Lebanon. It is considered sacred because a dead one from natural causes is never found,—and recent examination, by the Conductor, of cylinders from ancient Babylon shows that the "Tree of Life" of that period was the Cedar of Lebanon.

MOON FLOWERS.—The privilege accorded to Adam, the first man, of giving names to all things, has been jealously preserved by each man and woman of his descendants, and there is no municipal law against the fullest exercise of this privilege. It is exercised to the

fullest extent, and the florists are using it freely. Any one can give the oldest plant a new name, and if the name is catching, the plant goes at a famous pace. The old friend of the botanists, *Ipomoea bona nox*, which might be translated "good-night flower," made fortunes under the name of Moon flower. Profiting by the hint, another friend has started off the well-known pest of the tiller of the soil—the wild potato or "man of the earth"—botanically *Ipomoea pandurata*—and which was once called the fiddle-leaf, as the "day blooming moon flower." When the moon appears by day it is under an eclipse, and if this is to eclipse the fortune the original moon

flower made, it will be well. Many complain about the new naming of things; but no one tells what they are going to do about it.

PROPAGATING HERBACEOUS PLANTS.—It is not generally known, that in addition to seeds, and dividing the root-stocks, herbaceous plants can be propagated by making cuttings of the flowering stems. But this must be done before the flowers open,—while the stem is fresh and young. This is the method employed by skilled florists in getting up rapidly a good stock of hollyhocks, phloxes, and such like plants.

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T. B. M.

SPINACH.—Very few amateurs know how to raise a first-class grade of spinach, and yet nothing is easier. It should be sown about the time or a little before forest leaves color in fall. It grows then very rapidly under the temperate autumn weather. In the winter it requires a very light covering of straw, so light indeed that we can see the green leaves fairly well through the covering. The plant itself is hardy, no frost injures it. The use of the straw is chiefly to keep the frost from pulling it out of the ground and to keep the leaves from discoloring. No soil can well be too rich for this plant, the richer the soil the larger and more tender the leaves.



DECUMARIA BARBARA.
THE AMERICAN CLIMBING HYDRANGEA.
FLOWERS WHITE.

and of a feathery appearance, very pleasing to look at. We are indebted for our plant to Mrs. M. J. Thomson of Spartanburg, South Carolina.

FORESTRY.—From Mr. Charles C. Binney of Philadelphia, we have the proceedings of the American Forestry Association. Among the especially interesting papers is one by Mr. Henry D. Vilmorin of Paris, on the Forest Administration in France. Mr. Vilmorin attended the meeting last year in Quebec. He says that the whole of France is divided into great forest districts, and the inspectors of these forests act under the general director. The papers given here are of more than usual interest on Forestry questions.

filled in with the quarry "spalls" or refuse, when finally graded. The roots have been copiously watered,—the garden hose being allowed to run liberally,—but the perfect drainage kept water from stagnating. A pin oak near has reached the same height. Our friend considers that plenty of food and water in a well drained soil, conduces to healthfulness and hardiness. He says "many trees supposed to be not hardy are summer-starved before they are winter-killed," and we advise planters of rare things to "stick a pin in right there."

In another sketch we give a picture of an English tree, showing the characteristics of the Cedar of Lebanon with age.



A MATURE CEDAR OF LEBANON

The tendency of many coniferae is to grow conically until they reach the height they propose to go. Then they commence to go backwards. These are rarely longed lived trees. But others take to a development of the lateral branches which often become as large as the trunks of the other class of coniferae. The heads are then comparatively flat, as we see in the English specimen, and is the usual characteristic of the cedar as we see it in pictures of European scenery.

The Mammoth *Sequoia* of California develops its lateral branches in just the same way after reaching the destined height. It owes its great age to this fact, and no doubt

the Cedar of Lebanon would live as long under favorable circumstances.

The Deodar of India, is nearly related to the Cedar of Lebanon. It is considered sacred because a dead one from natural causes is never found,—and recent examination, by the Conductor, of cylinders from ancient Babylon shows that the "Tree of Life" of that period was the Cedar of Lebanon.

MOON FLOWERS.—The privilege accorded to Adam, the first man, of giving names to all things, has been jealously preserved by each man and woman of his descendants, and there is no municipal law against the fullest exercise of this privilege. It is exercised to the

fullest extent, and the florists are using it freely. Any one can give the oldest plant a new name, and if the name is catching, the plant goes at a famous pace. The old friend of the botanists, *Ipomoea bona nox*, which might be translated "good-night flower," made fortunes under the name of Moon flower. Profiting by the hint, another friend has started off the well-known pest of the tiller of the soil—the wild potato or "man of the earth"—botanically *Ipomoea pandurata*—and which was once called the fiddle-leaf, as the "day blooming moon flower." When the moon appears by day it is under an eclipse, and if this is to eclipse the fortune the original moon

flower made, it will be well. Many complain about the new naming of things; but no one tells what they are going to do about it.

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PRUNING.—A correspondent, Mr. J. D. Lyman, Exeter, N. H., says: "Are you correct in informing your inquiring correspondent that it makes little difference to the tree, whether its branches be cut off in summer, or in March or April? From various instances, which came under my observation in my younger years, I concluded that the knots of large limbs cut off in March rotted and weakened the tree, while the knots of such limbs cut off in September seasoned and remained sound. I thought that I observed instances enough to prove this to be a general truth. Was I mistaken? It is a subject of considerable importance." This is one of the questions which can never be answered without qualification. As our correspondent properly suggests, it is the decay of the exposed part that brings the leading injury from pruning. A large wound should always be painted to prevent decay till the new wood and bark cover it. Again, as suggested by our correspondent, *fungus mycelium* spreads rapidly through wood when exposed in sap-flowing times.

On the other hand, a tree usually needs all the leaves it can possibly get, and summer pruning is at the cost of foliage. A severe summer pruning would be as great an injury as the chance of rotting in the exposed wood.

NEW USE FOR THE HOP VINE.—The *Gardeners' Chronicle* says on the authority of Mr. J. R. Jackson, of Kew:—"The application of the hop for the production of a non-intoxicating beverage is a novelty that has attracted some attention of late. It is stated that an Assam tea planter, at the close of the last hop season, settled down on the Medway, near Maidstone, and with drying-machines and tea-rollers, as used in Assam, succeeded in making a kind of tea, which, though it cost twice the price of excellent Indian or Chinese tea, is likely to become an important article for mixing with the better-known beverage of that name. The infusion is said to contain all the tonic, soothing, and nutritive properties of the hop, and when mixed with tea proper, counteracts its astringent and tanning properties. A company has been formed in London for the sale of this tea, and it is now to be obtained from any grocer. A sample is shown in the Kew Museum."

THE HEADING OF CABBAGES.—It has recently been stated, as the result of an experiment in one of the United States stations, that if cabbages are slightly tilted over with the plough in the fall, it produces a tendency to make them have larger heads. We now learn, as an experiment by Prof. L. H. Bailey, of Cornell, that if the cabbages are planted shallow and earthed up, the percentage of large and heavy heads is much greater. As a matter of physiological principles these two experiments in different directions both accord. It goes to show that whatever favors the nutritive power, is against their disposition to produce hard heads. In Mr. Bailey's experiment the plants got the benefit of abundant moisture and nutrition, when headed up. When not headed, or when not earthed up, or slightly tilted, there is an obstruction to complete nutrition. Although these experiments seem of a somewhat unimportant character, they afford very interesting lessons to the study of plant life, from a practical point of view. We think the experiments ought to be repeated in view of these valuable and suggestive lessons.

HYBRID GLADIOLUS.—So much has been said by scientific writers about the sterility of hybrids, that it is remarkable they do not oftener consult floricultural works, when they might readily find out that from the experience of these actual workers, hybrids are seldom any more sterile than other plants. The present beautiful race of garden gladiolus is a case in point. These are fertile, and the varieties that have been raised from these hybrid origins are enormous as everyone knows; yet the race, called *Gladiolus gandavensis* by Van Houtte, originated in 1837, through a cross-fertilization of *Gladiolus psittacinus* with *G. cardinalis*, by Mr. Beddinghaus, gardener to the Duke of Arenberg at Enghien. Souchet, a well-known French florist, soon improved on the idea and raised many new ones from these hybrids.

ELM SEED.—A correspondent who "fails to find elm seed as in other trees," will find them mature in early spring, soon after the maturity of the leaves. They retain vitality till the next year however; unlike, in this respect, the seeds of the silver maple.

GOOD PEARS.—It should not be forgotten that whether any one kind of pear is good or not depends as much on the treatment it receives from the grower as from its own efforts to be good. If a kind is inclined to bear large crops, the quality will be poor unless some of the great number be thinned out. Again, if a tree which usually bears fruit of good quality gets a little sick, bringing on premature ripening, the fruit will be poor. Still again, those pears which ripen very soon after gathering are much improved by being taken from the tree before quite mature, while late ripening kinds like to stay on as long as possible. Some ripen better in a dark room, and others in full light. In nothing is skill more at home than in the proper ripening of pears.

J. F. M.

THE ORIGIN OF DAHLIAS.—In 1787 an expedition was sent to South America by the French Government of Louis the XVI, and the director of the expedition, Menonville, reported on his return that he had seen in a garden at Oaxaca, a large Aster on stems as tall as a man, and with leaves like those of the Elderberry tree. This is conceded to have been the Dahlia, and it produced a great craving in the old world to get this great Mexican Aster. It was not till 1789 that a parcel of the seed was received at Madrid by the director of the Botanical Garden, Cavanilles. It was no doubt on account of this particular distribution of so rare an "Aster" that the desire to possess it led eventually to its early introduction.

THE AMERICAN ALOE.—Many complain of the great labor attending the removal to winter quarters of heavy tubs containing large plants of the American Aloe. It does not seem to be known that they do not mind transplanting at all. It is just as easy therefore to tilt the plants over and take them completely out of the earth, and then empty the earth out of the boxes, replanting the aloe again in the spring. The plants like to grow in the open air during the summer, and quite large plants can be set out this way, and preserved almost dry in the cellar in the winter without being in boxes at all. Although called century* plants they bloom often in less than every hundred years, if they have a chance to grow vigorously.

A WEEPING LAWSON CYPRESS.—There is a somewhat pendulous form of the Lawson Cypress in cultivation,—but is hardly worthy of the name. But a remarkably beautiful form has been introduced by Mr. Herman A. Hesse of Weener, Hanover, which is as drooping as the weeping Beech. Mr. H. calls it *Cupressus*



WEEPING LAWSON CYPRESS.

Lawsoniana pendula vera. We do not know but it will be as well to call it Hesse's Weeping Lawson Cypress. In this part of the world we want names for everyday use, and an admiring visitor would want to hurry to catch the train before we could get off a four-worded Latin name on him.

[Sept.,

CULTURE OF AQUATICS.—Something in the same line as noted in our last is the following good hint from Mr. P. H. Oberwetter, Austin, Texas:—

"I do not know whether it is known to plant lovers that *Hymenocallis lacera*, (*Pancratium rotatum*) can be cultivated as an aquatic. But that it can be done, a plant in a pot, nearly submerged to the rim, in a little water hole in my yard, where *Nelumbium*, *Pontederias*, and *Lymnocharis* grow, will prove. These plants, *Hymenocallis lacera*, grow wild in dry, sandy Post oak land, fifty miles east of Austin. There is another species of the same genus growing in the same localities, viz.: *Hymenocallis Galvestonensis*, which is a true aquatic, growing exclusively in ponds in shallow water; and I have no doubt that all the species of the genus *Hymenocallis* will do well as aquatics. My plant of *Hymenocallis* is just pushing the flowerstalk at a season it seldom is able to do in a wild state. I intend next year to try also *Hymenocallis crassifolia*, and *Ismene calathina* as aquatics."

PROTECTING PEACH TREES IN COLD CLIMATES.—Professor Popenoe of Manhattan, Kansas, states that in 1888, peach trees were pulled down as close to the earth as possible and then covered with poor hay or brush. It was a complete success, the trees having borne full crops of fruit. The cost of covering and uncovering, and placing the trees upright again in the spring, amounted to twenty cents a tree. In some parts of Canada they bend the tree down and cover them with earth and find the practice equally successful. The Canadian practice is to cut off the larger roots on two sides of the compass points, the roots of the two opposite sides of the compass then twist without breaking, so that the tree can then be bended completely under the surface of the ground and covered with earth. This seems an easier and better plan than the way it is done in Kansas.

PRUNES.—The extent to which the prune is cultivated in California is one of the remarkable incidents of fruit culture. In California, nearly one hundred thousand trees of the variety called Tragedy were sold last year by one nurseryman.

HARVESTING POTATOES.—An Oregon paper says: "When Andrew Young went recently to his ranch on Young's river to dig his potatoes he noticed several bushels already gathered. He looked around the patch, but saw no signs of anyone having disturbed the ground, and, to solve the mystery, he watched behind a tree. He was soon rewarded by seeing a flock of bluejays alight on the tree, and each bird had a potato in its bill, which was dropped into an opening in a limb and passed on down to the ground. He procured sacks, and as fast as one was filled another was put at the place, and in this way the birds harvested fifty bushels of potatoes for him from various patches around the country."

We incline to the belief that the Astoria *Express* must have a number of reputable fishermen on its reportorial staff.

DESTRUCTION OF INSECTS.—It takes a long while for good ideas to travel over the world. It is nearly half a century since it was discovered that water heated to 120° to 130° would destroy the scale insect on pine-apples. In the earlier volumes of *Gardeners' Monthly* this good idea was extended to all plants. It was found that fuchsias and similar tender leaved plants might be safely dipped for a second or so in water at 120°, without the least injury to the foliage, but with certain death to the red spider. Water, however, is bulky to handle in a regular garden, but Mr. Carman, the publisher and editor of the *Rural New Yorker* has employed hot water very effectually in destroying rose-bugs. With improved implements by which the hot water would not be wasted, so that every drop might do good, there is yet room for valuable application of this principle.

AN ENORMOUS CROP OF PLUMS.—It is stated that in one of the Briggs orchards at Visalia, in Cal., a plum tree has been known to produce the enormous weight of 1102 pounds of plums. It is a striking illustration of what an enormous weight a tree can sustain in spite of the power of gravitation. Occasionally fruit trees will bear enormous weights without breaking the branches; once in a while, however, assistance in the nature of props has to be given to prevent the destruction of the branches.

J. F. M.

BIOGRAPHY AND LITERATURE.

DR. I. A. LAPHAM.—It is a common remark that those who initiate the great works of untold value to humanity do not usually get the credit of the work; it is those who improve and carry out the original ideas that most commonly get the honors. Few know that the weather predictions which have now become an essential part of daily life, were first thought out by the great botanist, Dr. Lapham of Milwaukee. It was only after continual pressure from him that the Government first recognized the possibility of safe predictions. In 1869, Dr. Lapham sent his memorial to Congress which hastened the passage of the joint resolution of February 9, 1870, authorizing the meteorological observations. So well was Dr. Lapham's energy in this early movement understood that when the weather bureau was organized in 1870, he was tendered a position in Washington, as the head of the Department. The first prediction was made from Chicago, April, 1870; and the result was so exact, that there was no longer any doubt but that the predictions had come to stay. Dr. Lapham was one of the rare scientific men of America, whose work has never yet had full justice. As a botanist many plants have been named in his honor, and one genus, *Laphamia*, dedicated especially to him. He was not less great as a mineralogist, geologist, and in many of the kindred sciences. His unobtrusive modesty kept him very much in the background, and after all it was singular that he received even as much credit as he did, considering that he never in the slightest degree sought for any. Though it is now some years since his death, a first class biography would be very original reading.

BARON VON MULLER.—If a popular demand is to be considered proof of value, Baron Ferdinand Von Muller, of Melbourne, Australia, has every reason to be proud, for the eighth edition of the celebrated work, "*Select Plants*," is now being prepared for the press.

DR. GOV. EMERSON.—Dr. Ruschenberger has recently published a sketch of the life of Dr. Gouverneur Emerson, who died in 1874, and was one of the earlier members of the American Philosophical, and the Pennsylvania Horticultural Society. He was the author of a large number of standard works on agricultural science. Among them was an American edition of Johnson's "*Farmers' Encyclopedia*." He was the first discoverer of the value of mixing sulphuric acid with crushed bones as a fertilizer, and also the discoverer that the conceded superiority of Philadelphia's butter was due to the prevalence of the sweet scented vernal grass, *Anthoxanthum odoratum*, which abounds in the pastures around Philadelphia. From Emerson's letters a different account of the invention of the quadrant is given than appears in the published life of Godfrey. Emerson states that the source of the invention is as follows:—"Thomas Godfrey, glazier, was replacing a pane in a window on the north side of Arch Street, Philadelphia, opposite a pump; a girl filling her pail placed it on the sidewalk. Turning towards it he saw that the image of the sun was reflected from the window into the bucket of water, and from it back to his eye. This simple observation led him to study the law of the reflection of light, and to invent a quadrant with speculums to take the distance of stars, which he supposed might be of service at sea. A friend of Godfrey's, James Logan, communicated this discovery to Dr. Hally, President of the Royal Society of London." Godfrey, the inventor of the quadrant, is buried in Laurel Hill Cemetery, Philadelphia, and Dr. Emerson in the lot adjoining.

LEO WELTZ.—A New Hampshire correspondent says: "I was much pleased to read the tribute you paid to Leo Weltz, who was a gentleman in every sense of the word, and a thorough scholar so well versed on so many subjects as to be really a living cyclopædia."

FRANCIS PARKMAN.—Mr. Parkman is not only known as an eminent historian, but his name is also connected with many incidents in horticulture in which he has for many years been a successful amateur. On the grounds of the conductor of this magazine, is one of the earliest introduced specimens of the Golden *Retinospora plumosa*, which came into Mr. Parkman's possession direct from Japan. The beautiful *Lilium Parkmani* was also the result of Mr. Parkman's experiments in hybridizing lilies. His name is also attached to a number of other striking varieties of garden plants. His garden at Jamacia Plain, near Boston, is a complete treasury of beautiful flowers. He was born in Boston, on the 16th of September, 1823. Interested especially in history, that he might know exactly of what he wrote, he lived for some time among the Indians, chiefly in Colorado, and in the Black Hills. At twenty-seven years of age he married the daughter of Dr. Jacob Bigelow of Boston, a noted botanist. The result of his Indian experience was the well known book, entitled the "Conspiracy of Pontiac." In 1866 his "Book of Roses" was published,—and yet during the time he was working in these horticultural lines, he was also preparing his magnificent work, "The Pioneers of France in the New World." It is remarkable that one whose health has never been good, and whose eyesight has been so weak that a larger portion of his work has had to be transcribed by an amanuensis, should have performed such an immense amount of literary labors. It is pleasant to know that, notwithstanding his advancing years, and that age has considerably whitened his hair, he is still in the enjoyment of the usual health of his more recent years.

PROF. J. T. ROTHROCK.—This eminent botanist is not only famous as a traveller and author, but is also is remarkably successful as a botanical teacher. During the past spring one might travel in almost any direction in the vicinity of Philadelphia, and see ladies with botanical books and vases in the woods and fields collecting plants, and in almost all cases they would be found to be the pupils of Prof. Rothrock. Few men seem to have had the power of creating successful enthusiasm among his students, as the Professor.

JOHN CLARE.—It is not generally known that this sweet poet of nature of the last generation was in early life a student of horticulture. He was apprenticed under the head gardener of Burghley Park, in England, for three years, receiving eight shillings a week for his services during the first year, and an advance of a shilling a week for each succeeding year. After he had been there a year, the companionship of rougher men was so disagreeable to him that he ran away, and became an employee of a nurseryman about thirty miles distant; he remained a laborer in this nursery, however, only a short time, and with considerable dissatisfaction; and he engaged soon after as a laborer on a farm. He was, however, considerably restless in any position, and subsequently became a laborer in a limekiln at ten shillings a week. It was about this time that he determined to publish a small volume of his juvenile poems,—and, having saved up twenty shillings, with the money printed a small volume, but only obtained subscribers for seven copies; one of these copies, however, fell into the possession of a Stamford bookseller, who thought so much of these productions that he published, at his own expense, another volume, giving the poet a share of the profits. This was his first introduction to the public in his poetical capacity. His biographers contend that it was his early association with the garden and the farm that has made his poems more replete with natural allusions than we find in the works of many other poets.

JAY GOULD.—Famous in railroad management and in financial operations, Mr. Gould is also a devoted lover of flowers and gardening. His estate on the Hudson river comprises about 850 acres, and is known as Lyndhurst. It was once the "Sunny-side" of Washington Irving. Mr. Gould is especially fond of tropical plants, and about five acres of ground are devoted to greenhouses. It is said that of palms alone, his collection embraces 264 species or marked varieties. The collection of orchids comprises some 200 kinds. The fern house has about 1000 plants, but of course in plants of this character there are numbers of duplicates. For cut flowers there is specially a rose house. The gardens proper occupy about fifty acres.

ALEXANDER FRAZER.—Mr. Frazer stood among the leading horticulturists of Baltimore. He died on the 15th of July, in the Johns Hopkins Hospital, where he had removed for a surgical operation in the shoulder. He was about sixty years of age. He was born at Edinburgh in Scotland, studied when a lad under Mr. McNab of the Royal Gardens in that city, and was appointed head to the Gardens in Blairquhan Castle. Like so many of the first-class horticulturists in our country, he came to Philadelphia at the invitation and under the patronage of the late Robert Buist, and after some experience in the Southern States, he became chief gardener to the late John Ridgeley of the famous Hampton Gardens in Maryland. He had charge of the beautiful country seat of William T. Walters, at St. Mary's in Maryland, for nearly twenty-five years. Few people understood plants so well, and their wants for successful cultivation, as Mr. Frazer did. His great specialty was the cultivation of grapes under glass. In this it is believed he was unexcelled in the United States. He will be sadly missed by the Horticultural Society of Baltimore and similar societies elsewhere, where by his learning, intelligence and integrity he was frequently called upon to give his judgment on the exhibits. He was so judicious, that it was extremely rare that his decisions raised any questions. He leaves a widow and three children by his first wife.

HENRY EDWARDS.—Mr. Edwards was one of the most distinguished entomologists of our country, and his death on the 9th of June, in New York, is considered a great loss to entomological science. He was born at Ross, Herefordshire, England, the 27th of August, 1830, and was educated for the stage. He first took up warmly with the study of insects in Australia, where he remained twelve years. After spending several years on the Pacific, he removed to Boston in 1878 and in 1879 to New York, where for many years he was connected with Wallack's theatre. What to do with his magnificent collection of insects is a problem, as he left no will. One might judge of its immense value, by the fact that he had a policy of insurance to the amount of \$17,000 on it. Some great scientific institution ought to capture the prize.

DR. C. C. PARRY.—Most of our readers must be familiar with the name of this distinguished botanist, whose name is attached to so many flowers, and whose death a year or so ago caused so much regret. His immense botanical collections have now been properly cared for and catalogued and have been found to contain the enormous number of 18,000 specimens. Of these there are in actual species over 12,000, 5290 of these being North American. In the collection are 1400 unnamed genera, many of which may prove to be wholly new. A completed catalogue giving names of all species in the collection has been prepared by a competent botanist, so that those who desire to purchase know exactly what they are securing. Like most eminent scientific men Dr. Parry's life was spent in the acquisition of scientific knowledge for the benefit of mankind in general. In the language of Professor Agassiz, "He had no time to make money." This magnificent collection, with his botanical books, comprise probably the most valuable part of the estate which he leaves to his widow, Mrs. E. R. Parry of Davenport, Iowa. No greater benefaction to science could be made than by some one purchasing this magnificent collection and presenting it to some worthy institution.

PERCY BYSSHE SHELLEY.—A correspondent of the *Independent* says that a beautiful monument is to be erected to the great poet in the Protestant Cemetery at Rome, and describes the cemetery as being surrounded with ancient cypress trees, and that it is completely overgrown with sweet swelling violets and the great acanthus leaves, which, in just such a cemetery first suggested the idea of the capital which so distinctly marks columns in Grecian architecture.

The correspondent grows enthusiastic over the floral associations of the cemetery, and quotes :

" Go thou to Rome,—at once the Paradise,
The grave, the city, and the wilderness;
And where its wrecks like shattered mountains rise,
And flowering weeds, and fragrant copse dress
The bones of Desolation's nakedness,
Pass, till the Spirit of the spot shall lead
Thy footsteps to a slope of green access,
Where, like an infant's smile, over the dead
A light of laughing flowers along the grass is spread."

GENERAL NOTES.

THE PERSIAN WATER-LILY.

"Once, Emir! Thy unheeding child,
Mid all this havoc, bloomed and smiled,
Tranquil, as on some battle plain,
The Persian lily blooms and towers,—
Before the contest's reddening stain,
Has fallen upon its golden flowers."

[A correspondent inquires whether these lines, from Lulla Rhook, refer to the *Nuphar*? Hardly. A Water Lily would scarcely "bloom" and "tower" in a "battle plain."]

CHILDREN OF THE FOREST.—A correspondent says: Your remark, in speaking of the yellow nuphar, that Dr. Darlington tried to give the flower a common name, by translating the botanical, "Strange nuphar," reminds me how often translators make laughable expressions by a literal rendering, instead of grasping the spirit of language. A missionary in Alaska, addressing the wild men, commenced by saying, "Children of the Forest." The half-breed interpreter gave this to the natives, as "little people, among sticks," which produced indignation and came near spoiling the good man's efforts. A French author in a recent work, translates "he blushed," into "he turned into a red man," which seems silly to us. In an account of the manners of the Chinese, an author says that mottoes are placed over departed friends, and some children placed over the door porch about their mother:

"Her virtue was pure, and her heart as cold as ice."

It appears her husband died young, and yet she refused many good offers during half a century after. Of course the idea given in the original Chinese must have been very different from that conveyed by the translator. Your reference to the absurdity of the literal translation of the latin name of the splatterdock, brings to mind this generally prevailing absurdity of most translators."

OUR CIRCULATION.—People mostly know that in lithographic work a certain number of

(48)

copies must be stricken off in order to cover a fixed proportion of the cost on a two-dollar magazine. In other words, we have to get subscribers for a fixed number of copies before we cover cost. We therefore print every month the whole number of copies that will cover cost, sending the surplus over actual subscription, as sample copies to get subscribers. We hardly expected to see the list full till the first of next year, but to use the summer months in previously making the work known.

It is very gratifying to be able to state, that our friends have come to the support of the magazine much more promptly than we even hoped for. Though we have five months yet before we reach our appointed time for it, we have already one-third of all we require for this minimum edition — every mail adding bountifully to the subscription list.

OUR NEXT PLATE. — The readers of our magazine who are interested in Missouri, Kansas, and contiguous territory, will have special interest in our next plate, which will be a rare fern of that region, — *Notholaena dealbata*.

PLANT NAMES.—Just now there is a craze for changing the names of plants for which an older name by some good author is found. Sound as this principle of priority may be in the abstract, in practice it would throw gardening literature into confusion. It takes a long time for nurserymen and florists to familiarize the community with a plant's name. They cannot be expected to re-advertise over and over again to make corrections, because "somebody blundered." MEEHANS' MONTHLY will feel bound to continue names already in use, however wrong they may be in the abstract, provided they are the names adopted in some standard work. Plants' names in Gray, Chapman, Coulter, or Watson, may not always be the strictly correct names,—but it seems that it is best to allow these leading works to correct their own errors, if we would keep from endless confusion in nomenclature.



NOTHOLÆNA DEALBATA

NOTHOLÆNA DEALBATA.

WHITENED CLOAK FERN.

NATURAL ORDER, FILICES.

NOTHOLÆNA DEALBATA, Kunze.—Stalks densely tufted, wiry or capillary, nearly black, polished; rachis and all its branches very straight, capillary, black and shining; frond deltoid-ovate, four-pinnate at the base, gradually simpler above; pinnae mostly opposite; ultimate pinnules half to one line long, oval and entire, or some of them three lobed; upper surface green, under surface white-pulveraceous. (Eaton, in *Rothrock's Botany of the Wheeler Expedition*. See also Eaton's *Ferns of North America*, and as *Cheilanthes dealbata*, in Pursh's *Flora of North America*.

There are some who tell us they see in nature what appear to be contradictions which are yet produced under the same law. Others would modify this so as to read, "there are no rules without exceptions." At any rate we may note in nature striking contrasts when we place together the ends of the same line. When, for instance, we compare the little fern we now illustrate with the early history of plant life on the globe, we may see how great is the difference between its habits and condition, and what we must regard as its progenitors. In the beginning plant life commenced in water, and among the first to learn to live on comparatively dry land were ferns. If the earth were once the molten mass geologists believe, and is yet cooling gradually towards its centre, we may reasonably look for an atmosphere charged with moisture, before one part of the globe cooled more rapidly than another, and made differences in the temperature of the atmospheric current, so as to condense the mighty mass. This dense moist atmosphere would diminish light, and make conditions well suited to a race of plants just emerging from a watery world. Whether these conditions actually prevailed it is not safe to say positively; but it is certain that the only ferns of that period were such as were sub-aquatic, or required partial shade for their development. Some of the species or very near relations of the same species, which existed in these early times, have continued to our day, and they are all of a partial shade and moisture-loving character. But some ferns in our bright sunny area have not only learned to love the light, but to prefer high and dry rocky places, where there is so little earth and moisture that it

seems a mystery how they contrive to live at all. The early water-lover has allied itself with drouth; and when the writer on ferns tells us that they are inhabitants of moist places and shady woods all over the world he has to add, except a few which are found in rocky and exposed places. There is at least a valuable lesson to the student of nature from these considerations. The driest rock may be profuse in ferny beauty. No locality may be so barren and desolate but we may turn it to our advantage. To borrow a line from Mrs. Sarah T. Adams, those about to despair of fortune's favors might look on a little fern struggling in the cleft of a dry rock, as in the case of the one we now illustrate, and say

"Then with my working thoughts
Bright with thy praise,
Out of my stony griefs,
Bethel I'll raise."

Our little rock-loving fern *Notholæna dealbata*, has not, however, been able to make great headway through the world. It was first brought to notice by Pursh in his *Flora of North America* in 1814, where it is described as *Cheilanthes dealbata*, the description taken from a dried specimen communicated to him by some one not named, from "Rocks on the Banks of the Missouri." Mr. Nuttall, in his *Genera of North American Plants*, issued in 1818, notes his having seen living specimens, and says of its location, "in the crevices of rocks on the banks of the Missouri about fifty miles above its confluence, rare." This was probably near where the city of St. Charles is now. So far as known to the writer, this remained the only location known till Dr. Parry collected it in Kansas in 1873, some five hun-

(49)



INTENTIONAL SECOND EXPOSURE

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dred miles east of its original locality. Since then it has been found by many collectors in Southern Kansas, and always on dry rocks, though some report them somewhat protected by overhanging masses from the full sun. The specimens which furnished the illustration were collected by Mrs. J. J. Harden, of Dexter, who reports it as very abundant about there. Mr. T. L. Harvey notes in the Fifth volume *Botanical Gazette* that "it grows abundantly on limestone ledges which are isolated and have a southern exposure, in Northwest Arkansas, and as far south as Fayetteville." In the work from which our description is taken it is reported in collections from New Mexico and Arizona; and Prof. Eaton says he has seen a specimen reported to have been found in Texas. These locations found during the past few years, and all so wide apart, give reasons for believing that many intermediate stations will soon be noted for this little fern so long known only in the one spot on the Missouri river. On the opposite side of Kansas—that is, in Colorado—this species has not been found, but there we meet with a closely allied species, *Notholæna Fendleri*, which at first sight might be taken for it. On this Prof. Eaton remarks that *Notholæna dealbata* "is in many respects like *Notholæna Fendleri*. It has the same dense white ceraceous or farinose coating on the under surface of the pinnules; the frond is decomound; the pinnules equally minute, and very similar in shape. The stalks and rachises are perhaps more nearly black, and have a somewhat higher polish. The most evident distinctions are, however, first, smaller size and greater delicacy of the present species, and, secondly, the fact that in this fern the pinnae and pinnules of every degree are opposite in pairs, or nearly opposite. The ultimate pinnules are more generally entire than in the larger species, and have a tendency to become revolute, or strongly rolled under from both margins." To which might be added a point also noted by that distinguished pteridologist, Eaton, in the account of the ferns of the Wheeler expedition, that the branches of the rachis have a zigzag character in *Notholæna Fendleri*, which is wholly absent in our little species.

Formerly the ferns now known as *Notholæna* would have been included among those which like *Polypodium* have rounded masses of spores without any indusium or membranaceous covering. The genus *Cheilanthes* to which our plant was at first referred by Pursh, was established by Swartz in 1806, but in that genus there is an indusium. The genus *Notholæna* was established by Brown in 1806, and has the indusium reduced to a mere rudiment, and it was this fact which suggested its name—*nothos*, being Greek for spurious, and *chlaena* or *læna*, being cloak, and hence its common name, though not quite appropriate. Our enlarged drawing, Fig. 2, gives an excellent idea of the real character of the frond. In *Polypodiums* the round sori or masses of sporangia, are dotted over the whole surface of the frond, while in this they are confined to the margin, and are often so close as to seem like a line along the edge. But we see, in our illustration, a tendency to produce the little round masses irregularly, as well as in one marginal line. We also see well the "tendency in the ultimate pinnules to become revolute," of which Professor Eaton speaks. The white "ceraceous" or waxy matter which clothes the under surface is also shown, as well as numerous small green scales, which have not been noted by other authors. It is from this dense white under surface that the specific name was suggested, *dealbata*, signifying in the Latin to be whitened or made white, as if it were covered with whitewash. Our species is called *Notholæna dealbata* of Kunze, simply because he was the first to take the plant from *Cheilanthes*, where it had been placed by Pursh, to *Notholæna*, where it belongs. Some authors write it *Nothochlæna*, correcting Brown's original orthography; but as we have seen the original Greek admits of either name, so it must stand as the author wrote it.

The species of the genus are very numerous, especially in Chili and Peru. Quite a number have been discovered of late years in the States bordering on Mexico, but so far as yet known the *Notholæna dealbata* is the most Northern of all.

EXPLANATION OF THE PLATE.—A mass of small plants from Dexter, Kansas. 2. Enlarged drawing, showing under surface and fructification.

WILD FLOWERS AND NATURE.

AN OAK.

Brave monarch of the forest, armies warred
Around thee once; the scathful shot and shell
Like bolts of death among thy branches fell,
And thee unto thine outmost being jarred.
Yet thou, though wasted then and battle-scarred,
Seared even with the flaming breath of hell,
Art stancher grown. And thou art typical
Of this great Union, in whose cause was marred
Thy massive bole; those wounds are healed, and
all
The closer for them now thy bark doth bind;
While, 'neath thy corrugations, so are twined
And locked round many a deep-imbedded ball
The stern, warped fibers of thy life, that vain
Were brawniest blows to wedge thy heart in twain!
Belford's Magazine.

THE GOLDEN ROD.—President Harrison, in one of his car-platform speeches, noting the golden rod in bloom everywhere about him in his New England travels, paid to it the following beautiful tribute: "The beautiful golden rod! It is pleasant to think that in this plant, so widely distributed, slightly diversified in its characteristics, but spreading over nearly our whole country, we have a type of the diversity and yet the oneness of our people; and I am glad to think that its golden hue typifies the gladness and joy and prosperity that is over all our fields this happy year, and I trust in all your homes."

Though there are a few species of golden rod in other parts of the world, the great number of species and their wide diffusion, make them a special element of beauty in American autumn scenery.

COLOR AND CLIMATE.—In reference to some remarks in our magazine that color in fruits and flowers is heightened by a struggle with unfavorable circumstances, Mrs. Caroline Granger kindly sends us a box of North Carolina apples of high color. Our remark was intended to mean that the *same variety* would be higher colored in the North than in the South. These apples proved to be Gravenstein, and though well colored, are not as bright as Gravensteins ripened in Canada.

A SUMMER SCENE IN THE ROCKY MOUNTAINS.—Under date of July 22d, Rev. C. S. Harrison writes: "I have just returned from the Rockies; here the wild flowers were in their splendor of bloom. Near the foot hills the bush cactus were in all their beauty, some deep red some yellow. There also was a species of wild verbena which spread out in wide clusters. In the mountains I rode twenty-five miles one day, there had been plenty of rain, and everything in the line of flowers was on exhibition, there were acres of blue bells, and all the mountain side would sparkle with their sapphire splendor. Then there was the giant lark-spur growing four to six feet high, fairly radiant in its fullness of beauty; but perhaps the most attractive of all was the blue columbine. Often on northern slopes and in deep gorges I would come upon them where in the dark recesses with their coy beauty they could bloom unseen. It is seldom one sees so much of brilliancy. The tiger lily, *Lilium Philadelphicum*, grows there as a dwarf with often but one flower to a stem, but the color seemed concentrated as well as the form. Altogether that ride in the high altitudes with great draughts of 'the wine of the mountain air' was something long to be remembered."

THE EVENING PRIMROSE.—It seems a pity when beautiful flowers become common weeds, and yet they may as well grow in neglected places as nothing at all. One of the most beautiful sights in a drive through Maryland was large fields which had been abandoned by the cultivator for want of manure, wholly covered with the common Evening Primrose, *Oenothera biennis*. The morning being rather damp the flowers at nine o'clock had not yet closed. Acres and acres of them were to be seen, and if any eastern lover of rural beauty should claim distinction for the buttercup-covered fields of that section, Maryland might point with some pride to her fields covered with the beautiful evening primrose.

PECULIARITIES OF HYBRIDINISM.—Mr. Oberswetter, Austin, Texas, says: "I find in Bakers handbook of the *Amaryllideæ* the most recent authority on this order of plants, that it is not yet recorded by science that a hybrid between a *Crinum* and *Amaryllis* (*Hippeastrum*) was ever raised; but I find pleasure to inform you that I succeeded in raising a hybrid between *Crinum Kirkii*, pistillate, and a hybrid *Hippeastrum* as pollen bearer."

The plant was raised this Spring. The seed I obtained last year, but did not germinate till last Spring. I have been trying for years to cross these two genera, but never succeeded, so that I thought nature had interposed insurmountable barriers. Last year I tried simply to cross different species of *Crinums*, and when giving pollen to the stigma of a *Crinum Kirkii* the thought occurred to me that it would not do any harm if I put *Hippeastrum* pollen on the stigma before administering the *Crinum* pollen; I got about five grains of seeds, but owing to mismanagement only two plants came up this Spring, one a *Crinum* pure and simple with long leaves; the other had a different habit from the start; the first two leaves are not more than an inch long, but broad, ovate and acute. Then a perfect leaf was developed over four inches long, nearly an inch broad, folded doubly over in vernation, so that it looks somewhat plicate. The leaves are much harder to the touch than the leaves of its twin plant, appearing as if glazed, light bright green, very upright, bluntly, cordate, acute. Since that first fully developed leaf it has just perfected another, longer but same proportions. Will report further if you are interested."

THE MANZINITA.—A California correspondent who loves wild flowers, thought to excite our envy by sending us in a letter a twig of this pretty western wild flower. It came to us on the 11th of April, but by that time we had our own eastern trailing arbutus in flower—all of the same one family, and equally pretty we think. Our friends on the Pacific must try again next spring if they want to beat the *Epigaea*.

THE SNOW PLANT.—There seems to be no doubt that in many cases this plant persists for several years, although to all appearances merely an annual, but it has been noted that the flowering spikes come up weaker and weaker during the succeeding years of its first flowering.

A correspondent from Nevada doubts whether the *Sarcodes* is edible. She says the Indians certainly will not touch it, and one recently cautioned her little boy that he would die if he ate it. She had put some of the stalks in an aquarium, and all the gold fish and minnows died the next morning. This confirms the conductor's experience with a closely allied parasite found in Alaska, named *Boschniakia*. It was the habit to inquire of the Indians as to their vernacular names and properties of plants, but in regard to this parasite every Indian seemed to express an utter indifference for it, and one stated it was "Cultash,"—a term which we understand to mean "no good."

THE KENTUCKY COFFEE TREE.—So far as we know the Kentucky Coffee tree, and the western Cork Elm, *Ulmus racemosa*, have not hitherto been known to exist in Maryland. During a short ride out of Washington, to a locality known as Glen Echo, which is an original piece of forest land, recently opened up through the agency of an electric railway, both these trees were found growing there. When the writer mentioned this fact to the botanists of Washington, they were surprised at not having noted this fact before. It will throw some light on the geographical travels of these two species.

RANGE OF CATAWBA RHODODENDRON.—J. H. R., Seal Harbor, Maine, says: "You should not let your correspondents put forth such wild assertions as that of Mrs. Mary W. Fisher—that 'Rhododendron Catawbiense grows from New England to Alaska!'—at least not without protest."

It was a mere slip of the pen, but deserves correction. Mrs. F. is well aware that this particular species has not the wide ranges the wording suggests. She meant the range of the Rhododendron as a whole, had this distribution.

[Oct.

1891.]

MEEHANS' MONTHLY—WILD FLOWERS AND NATURE.

53

THE SPLATTERDOCK.—"The Splatterdock (*Nuphar advena*) so beautifully illustrated in MEEHANS' MONTHLY for August, has one local name not given by Prof. Meehan. In Maine, where it grows abundantly in the borders of ponds and slow-moving streams, it is known as the cow-lily, and by this name is mentioned in 'Birch Stream' a short poem by Anna Boynton Averill which Whittier included in his 'Songs of Three Centuries.' In this charming apostrophe Miss Averill, among the other attractions of the 'hermit stream,' describes the secluded nooks where

'The wild cow-lily floats
Her golden-freighted tented boats
In the cool coves of softened gloom
O'ershadowed by the whispering reed
And purple plumes of pickerel-weed
And meadow-sweet in tangled bloom.'

FLORENCE BROOKS,
South Penobscot, Maine."

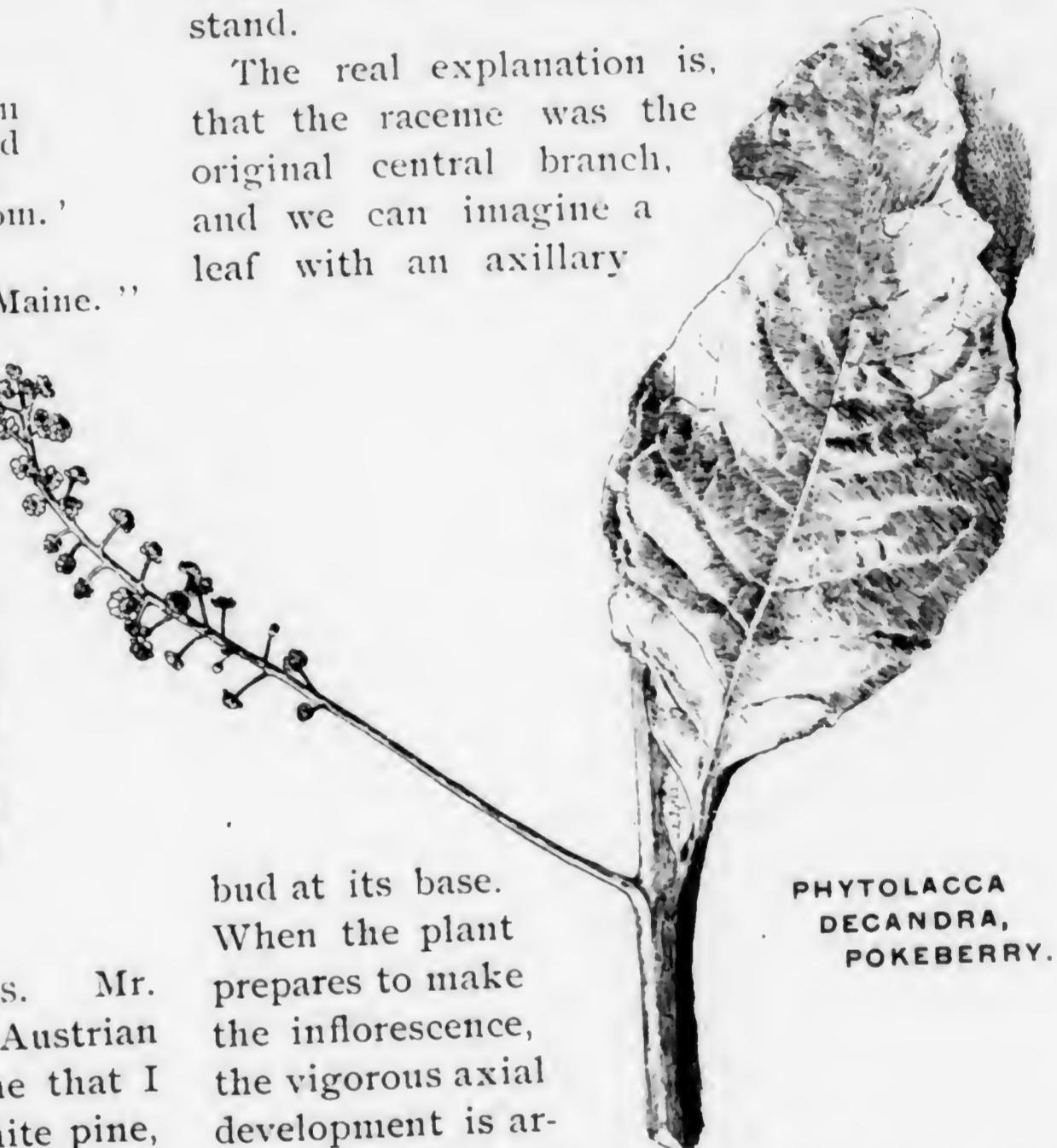
RUDBECKIA HIRTA.—This large sunflower-like plant is now becoming very common in fields in the Atlantic States. The color is of a bright orange red. Singular to state, around Philadelphia this season numbers have been found with a bright brownish red spot at the base of each ray petal. This variation of color is common in *Coreopsis*, but we have never known it to occur before in *Rudbeckia*.

GIRDLING OF CONIFEROUS TREES.—Mr. Lyman says: "The growth of your Austrian pine after being girdled, reminds me that I have seen many instances of the White pine, (*Pinus Strobus*) growing for years after being girdled by us boys in the Spring for the young, soft, sweet and delicious wood, if you call it wood, which we shaved off and eat under the name of sliver. I wish this strange phenomenon could be explained by some one. It puzzled me much in youth. Apple trees stripped of their bark at a certain time in Spring will live. I have known the bark completely stripped from their trunks to make the trees grow faster. But in this harsh treatment the sliver or embryo wood is left, and I suppose is the means of saving the tree. What saves the cork oak when it is stripped of its bark every eight or ten years, from fifteen to one hundred and fifty years of age, I do not know."

AXILLARY FLOWERS.—A flower spike is only a branch transformed. The proper place for a branch to spring from, even if it is in the form of a raceme or spike, should be at the base of a leaf stalk. That is to say, it should be axillary—from a bud on the main stem, at the base of the leaf.

But there are many cases, where the inflorescence is on the opposite side from the leaf, where there is no leaf, and from no axillary bud, as in the pokeberry herewith illustrated. Many elaborate explanations of this are given in the text books—explanations that few can understand.

The real explanation is, that the raceme was the original central branch, and we can imagine a leaf with an axillary



PHYTOLACCA
DECANDRA,
POKEBERRY.

bud at its base. When the plant prepares to make the inflorescence, the vigorous axial development is arrested for the purpose. The vegetative department is not however so easily put off. The axial bud pushes out strongly, and becomes the main stem, pushing over the inflorescence, which will no longer do that duty, to one side. The whole thing is extremely simple, where thoughtfully considered, and never fails to give pleasure to students when explained to them.

VERBASCUM PHILOMOIDES.—Mr. Ernest Walker of New Albany, Ind., writes that this species of mullein, a native of France, is becoming naturalized in that region.

[Oct.

THE POKE-BERRY.—A question has arisen as to how this well known plant received its common name and some have gone so far as to suggest that it was named in honor of President Polk, but this will not do as it was common in Pennsylvania before the President was born. The similarity in names caused school children and others to wear sprigs in their hats and bonnets during Polk's campaign for the presidency. The plant, by the way, was not called poke-bush but poke-berry, this indicating that whatever had been the origin of the name, it had some connection with the fruit. The chief use of the fruit in Pennsylvania has been to make "genuine" Port Wine, whiskey and poke-berry juice forming this "genuine" article. *Phytolacca decandra*, is the botanical name.

CURLED LEAVED WILLOW.—A correspondent sends us a twig of this variety of weeping willow, stating that a branch of the common weeping willow is growing out of the same tree. This does occur occasionally. This variety of willow originated by a branch from the common weeping willow tree, just as some of the new roses have originated by sports in the same way. These branches are either cut off and rooted, or grafted and then become hereditary. There is always a slight tendency to push out a branch bearing the character of the original variety.

J. F. M.

THE BITTER SWEET.—The Bitter Sweet of English writers is *Solanum dulcamara*, as its specific name well affirms. In our country the *Celastrus scandens* has received this common name. Its orange and red fruit renders it very conspicuous in autumn and early winter, as it twines around bushes and small leafless trees. Near Philadelphia it is found along the rocky banks of creeks, chiefly. Dr. Hill tells *Garden and Forest*, that it also grows in the sands along the Western shore of Lake Michigan, where a number of other things found in rocky places further East, also delight to grow.

ASPIDIUM FRAGRANS.—The fronds of this fern, which have a scent similar to that of the raspberry, are much esteemed in the north of Asia for their anti-scorbutic properties, and are used as tea by the Mongols, says Mrs. John R. Jackson of the Royal Museum, Kew.

THE AGE OF A TORTOISE.—What is the average age of the tortoise has never yet been definitely ascertained. Recently one was found in Oxford, Penna., which had the initials of Samuel Wilson, 1792. This one was therefore over one hundred years old. Another has been found marked by Andrew Passmore, 1839.

FIRE-CRACKER FLOWER.—This appears to be the common name given in California to the *Breevoortia coccinea*, a bulbous plant of the Pacific Coast. The flowers do indeed resemble, both in color and every respect, a bunch of Chinese fire-crackers. If all flowers had as expressive common names there would be fewer objections made against them.

THE FLOWERING OF WILLOWS.—It has been noticed that when the flowers composing the male catkins of willows proceed to open, those in the centre of the catkins push out the stamens first, and all the flowering is then downwards and upwards from this central point.

EARLY AND LATE WILD FLOWERS.—Principal Jackson of Worcester, Mass., says that in that vicinity the last flowers of the season are the Fringed Gentian and the Wych Hazel. The Hazel nuts are the earliest. Between these there are 600 species blooming successively between spring and fall.

LATHYRUS SPLENDENS.—Our excellent contemporary, *Vick's Monthly*, has given a colored plate of this new California annual. The flowers are narrower than those of the ordinary sweet pea and of a brilliant scarlet crimson. The flowers are in long slender spikes. It has recently been discovered in California.

GROWTH IN DARKNESS.—Some wooden props, oak and Spanish chestnut, in a coal mine in England, one hundred feet beneath the surface in perfect darkness, sprouted and sent out shoots; the chief interest in this case was that though utterly deprived of light, the branches were absolutely in a perpendicular line.

GENERAL GARDENING.

PEACH YELLOWS.—Dr. Erwin Smith of the Pathological Department of the United States Department of Agriculture, who has specially studied and written much on this disease, announces that he is yet unable to pronounce confidentially on its nature. His examination of the subject last year only confirmed what has long been the experience of nurserymen, that a bud from a peach with the disease carries the disease with it. He will no doubt conclude, as the Conductor of this magazine did years ago, that the attack of a mushroom, *Agaricus melleus*, on the peach roots, is responsible for the trouble.

THE STRAWBERRY GRUB.—A correspondent from Allegheny County, Virginia, writes that strawberry plants, planted from pots, are often totally destroyed before fall by the strawberry grub. Where there is danger from this trouble it ought to be easily remedied by dipping the balls in a solution of paris green before planting. This remedy, by the way, might be applied to hyacinths, tulips and other roots planted in the fall which are liable to be preyed upon by mice or other rodents. Paris green will not hurt the roots, while certain death to the creatures who attempt to feed on the roots that have been prepared by it.

HARDINESS OF PEACHES.—Over two hundred years ago the Spaniards introduced the peach tree into Texas, and seedlings were raised from these continuously until a race has been produced which appears to be entirely free from all diseases which seem to be connected with trees raised in other sections. Seedlings of these old Spanish peaches raise plants, which side by side with the others, last a number of years, free from all disease, while those introduced from the North are short-lived and soon disappear. There is no doubt, from these facts, that whole races may become enervated from some peculiarity in the method of cultivation, or from conditions of climate.

COLORADO BLUE SPRUCE.—This is not always blue, sometimes quite green, and of various shades between it, but when deep blue is a very beautiful evergreen. Especially is it beautiful in Spring, when the young growth has a particular shade, in striking contrast with the foliage of last year. When it was first discovered in 1861, on Gray's Peak in Colorado, by Dr. C. C. Parry, it was supposed to be identical with the *Abies Menziesii* of the Pacific coast. It is now conceded to be distinct, and named *Abies pungens*. Some that Dr. Parry collected was sent to Cambridge, and plants from this seed have been distributed; one before me, presented by Prof. Sargent, is probably twenty feet high, and a model of beauty. It has not, however, shown any sign of producing cones. Although so closely allied to the form from the Pacific coast, with which it was first identified, it is much more hardy than that species. On the other hand it grows so comparatively slow, that it will never achieve the forestry reputation which the form from the Pacific coast has reached. It is sometimes confused with another blue species from the Rocky Mountains, called *Abies Engelmanni*, or the Engelmann spruce. It can, however, be readily detected, by not having as sharp leaves as the other, which is called *pungens* on account of its peculiar sharp-tipped leaves, and again it can be distinguished by the growth of the side branches. In the one known as Colorado Blue Spruce the branches are perfectly horizontal, while in the Engelmann species the branches push out at an angle of say 45 degrees.

J. F. M.

A POPULAR GOOSEBERRY.—An English firm claims to have sold 270,000 plants of Whindham's Industry gooseberry. This variety, like all of the English breed, does well in Canada, and the northern portions of the United States, but requires a shady place or cool soil in order to keep clear of mildew in the regions where the summer is hot and long.

(55)



CURIOS FOXGLOVES.—A correspondent sends us specimens of a new race of Foxgloves now attracting attention, in which the terminal flower has become regular. In the normal condition the Foxglove has all the flowers irregular—we give illustrations of both, so that the differences may be appreciated. It has already been noted by Mr. David F. Day, a

other row of corn, as soon as they were formed, leaving the other row only for fertilization, increased the weight of the crop of seed one-fourth.

Hand labor is usually too hard to find, or too costly when found to make it profitable to follow this practice; and yet the fact is well worth remembering.

BEST TIME FOR PRUNING TREES.—“As at present informed I would advise those who are compelled to remove large limbs from trees to do it in September, and of course protect the knot. In sawing logs and splitting wood I found some knots of removed limbs rotted in the trees, and others dried and remained sound even when the knots had not been protected. Perhaps the knot had better not be painted, or otherwise protected, till it has had time to dry, on the principle that wood rapidly decays if its pores are stopped up by paint before the wood is dried.

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PLANTING PEACH TREES IN FALL.—“Please inform me if peach trees can be safely transplanted in the fall in Western Pennsylvania, as regards growth, if well planted and the soil banked up around them, and mulched with strawy manure.” WALTER M. HILL,
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[Most trees do as well or better planted when the leaves change color, as in spring,—but the peach tree seems to lose its sap by cold winds faster than the roots can supply the waste. We have not thought best to advise fall planting peach trees, unless they are severely pruned.—CONDUCTOR.]

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REMOVING TASSELS FROM CORN.—Mr. I. P. Roberts of the Michigan Agricultural College found that removing the tassels from every

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MANAGEMENT OF GRAPE-VINES.—One of the most novel points brought out at the meeting of the State Board of Agriculture at Gettysburg, was by Dr. Powell of New York, President of the Combined Farmers' Institutes. He called attention to the fact that all vines were more floriferous and fruitful after they had reached the end of what they were growing on, and had the opportunity of suspending some of their branches. He would therefore train a vine along a single wire or trellis line, and then allow the fruiting branches to hang pendent, bearing their fruit bunches on these hanging branches. It may be noted that this is all in the line of observations that have been made on plant growth during the last few years.

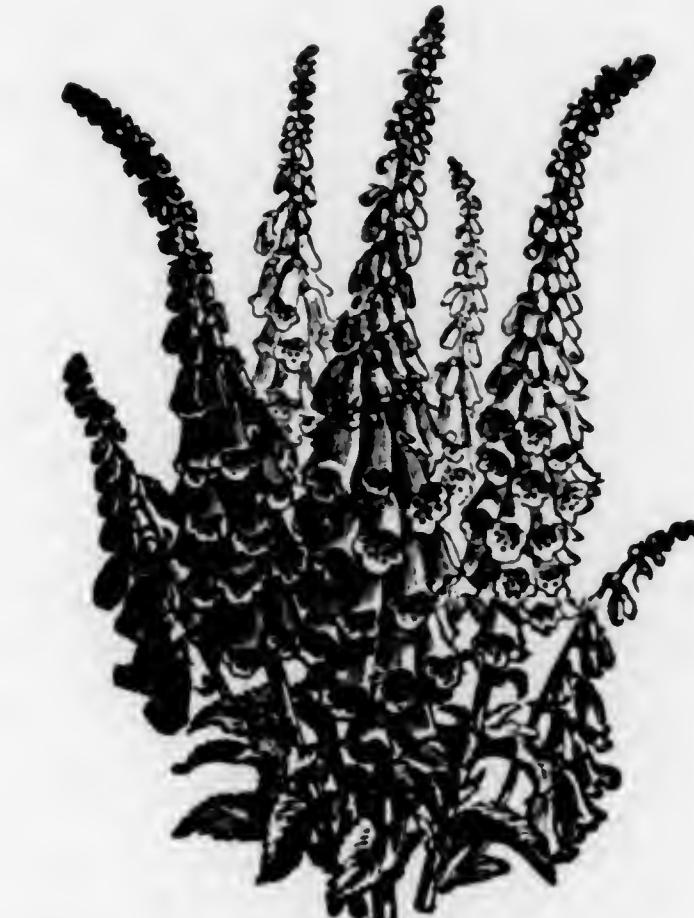
ABIES CONCOLOR.—Prof. Lemmon has come to the conclusion that the Colorado form of this plant and the Pacific form are entitled to specific distinctions. He maintains for the Colorado species the name of *Abies concolor*, and for the Pacific species *Abies Lowiana*. He proposes for the Colorado species the vernacular name of Colorado Fir. We remember that the same species from the Pacific and from Colorado, vary very much in hardness; the former being tender, while the latter is perfectly hardy in the Eastern States. The common name proposed is a very good one as it would indicate at once that we are cultivating the hardier variety.

CACTUSES.—There are societies nowadays of all sorts of things, but the last thing to be thought of would be a society to encourage the cultivation of cactuses, yet this is the title of an organization that has been formed in Baltimore. After all, it is a very meritorious society. There are few things more interesting than cactuses. As a general thing nearly all of them have gay flowers, although blooming but a few days or weeks in the year; and when we come to their cultivation, although many persons think it must be very easy, there are few things which are more thankful for good culture than plants of this family.

CRINKLE ROOT.—A correspondent from Rochester inquires what is the botanical name of a plant known under the above title? We have never heard of it.

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MAGNOLIA HYPOLUCA.—We have this in flower from a seed given the conductor a few years ago by Mr. Peter Henderson, and which appears to be correctly named. The flower is smaller than the *Magnolia parviflora*, which Mr. Parsons exhibited for the first time last year. The habit of the tree is somewhat that of the *Magnolia tripetala*, but the general characters would indicate a closer relationship to the ear-leaved magnolia, *Magnolia Frazeri*. On our grounds it comes into bloom just after those two species have gone. The flower is of a creamy white, with pink stamens, which give it a distinct appearance. J. F. M.



FOX-GLOVE, NORMAL CONDITION—SEE PAGE 56

A GARDENIA ON THE GRAVE.—A pathetic incident in the history of the Austrian countess, who for love of the Crown Prince committed suicide with him, is the last dying request to her intimate friend that on that day annually she should place a Gardenia flower on her grave. It is said life is made up of inconsistencies. Here is a case where one has a bosom friend to whom she unveils her inmost secrets, whom she does not want to be away from, and by whom never forgotten—and yet deliberately separates herself, and places herself on the high road to forgetfulness. It is useless to moralize on these inconsistencies. Should even the bosom friend be struck by the inconsistency, the Gardenia flower will probably go on the grave all the same as it should do.

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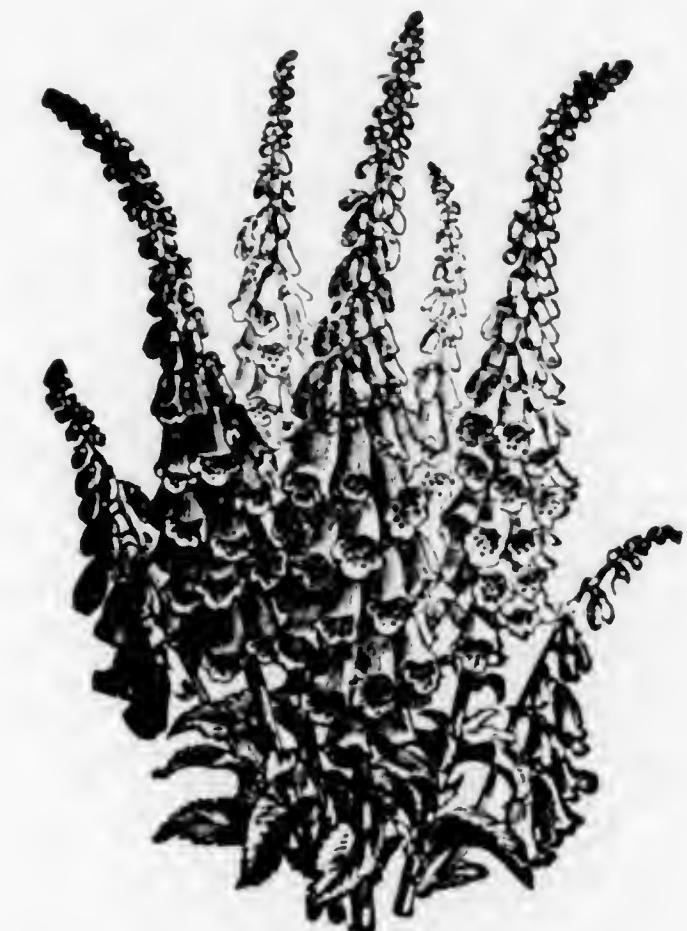
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PLANTS WITH BERRIES.—One never tires of reading about the Holly, and chiefly from the numerous associations connected with its bright red berries, and bright green winter leaves. One cannot always have this happily suggestive plant at hand, but there are good substitutes. One of the prettiest of these is an African plant *Ardisia crenulata*, which, among a collection recently exhibited by H. A. Dreer, was especially striking. It is rather an old occupant of greenhouses,—but is so easily grown, that it makes one of the prettiest window ornaments imaginable.



ARDISIA CRENULATA, BERRIES RED

CURRANTS.—The wild currants of California, many of them with beautiful flowers, do not thrive well in Atlantic States. The garden currant, like the native, does remarkably well in California. Hundreds of acres are devoted to currant culture. In one county alone in California, it is estimated that 11,000 chests of 120 pounds, were the product for the season. These bring $3\frac{1}{2}$ c. a pound at wholesale. In many parts of California they are sold at $2\frac{1}{2}$ c. per pound, at a great profit. This very fact shows how enormously the currant must be cultivated in that region. J. F. M.

LARGE PEARS.—In some parts of the continent they are comparing notes to find who has the heaviest pears. Californians so far contend that they get the heaviest, but the Texans boast that they can produce the Le Conte to the weight of 27 ounces. This is probably as heavy as any Californian pear.

BOUWARDIAS.—All the treatises on this plant in the old world speak of raising them from cuttings. This would be a slow way in America, where the plants are raised by the thousands for winter flowering. Here they are very easily propagated by cutting up pieces of the roots, cutting the roots into small pieces of one-half inch in size; and no one ever thinks of raising them from cuttings. The pieces are usually cut up in autumn, and one might say sowed like seed in large flat boxes, and put into a little heat. They are fine plants by spring, and after remaining a short time they are transplanted in small pots. They are planted in the open ground about the middle of May. Early in the autumn they are moved with a ball of earth, and planted in shallow benches of soil, and in this way are very easily raised and cultivated. J. F. M.

PERENNIALS.—In the cultivation of hardy perennial plants it must be remembered that numbers of them grow naturally in the partial shade afforded by woods or thickets, or in most garden places where the soil never gets dry. When these are removed to the open garden they have more difficulty in maintaining their existence, although they will do so pretty well generally for a year or two. It is wise to raise new plants occasionally from seed, in order to take the place of those which die for want of energy. T. B. M.

FORESTRY.—There are many miles of excellent forest timber in the vicinity of Bigler-ville, Southern Pennsylvania, which will never be disturbed by forest fires, in consequence of cattle raising being carried on in connection with forestry. Cattle being allowed to graze under the trees keeps down all underbrush, and when there is no dead underbrush there can be no forest fires.

WEEDS ON LAWNS.—A correspondent sends us specimens of a rank weed called Prince's Feather, *Amaranthus reflexus*, supposed to be the Canada thistle, which was feared would give a great deal of trouble to the lawn. It is an annual and easily eradicated. All lawns require hand weeding the same season grass is sown.

1891.]

MEEHANS' MONTHLY—GENERAL GARDENING.

59

TUBEROUS BEGONIAS.—It has been the reproach of American florists that they do not take in hand the improvement of garden flowers with the same zeal and energy exhibited by foreign florists,—that we have to depend on Europe for all of these improvements. It is a pleasure to note the receipt of a magnificent collection of improved tuberous Begonias from Thomas Griffin of Westbury Station, N. Y.,

flower lovers. There is one morphological point in connection with these flowers that is well worthy the attention of botanists. It is well known that in many cases the doubling of flowers results from the changing of stamens to petals. When we saw in this collection of Mr. Griffin's a number of female flowers which have no stamens, with comparatively double blossoms, it occurred to us that probably a



IMPROVED TUBEROUS BEGONIA, FLOWER CARMINE

which are some of them five inches across, and of many brilliant colors, from the deepest crimson to yellow, rose and white. It is not so many years ago since the single form was introduced from Bolivia, and no one could have predicted that in so short a time such a magnificent variety could have been raised from it. They thrive admirably in the open air in our climate during summer, and this gives them an additional claim on the attention of American

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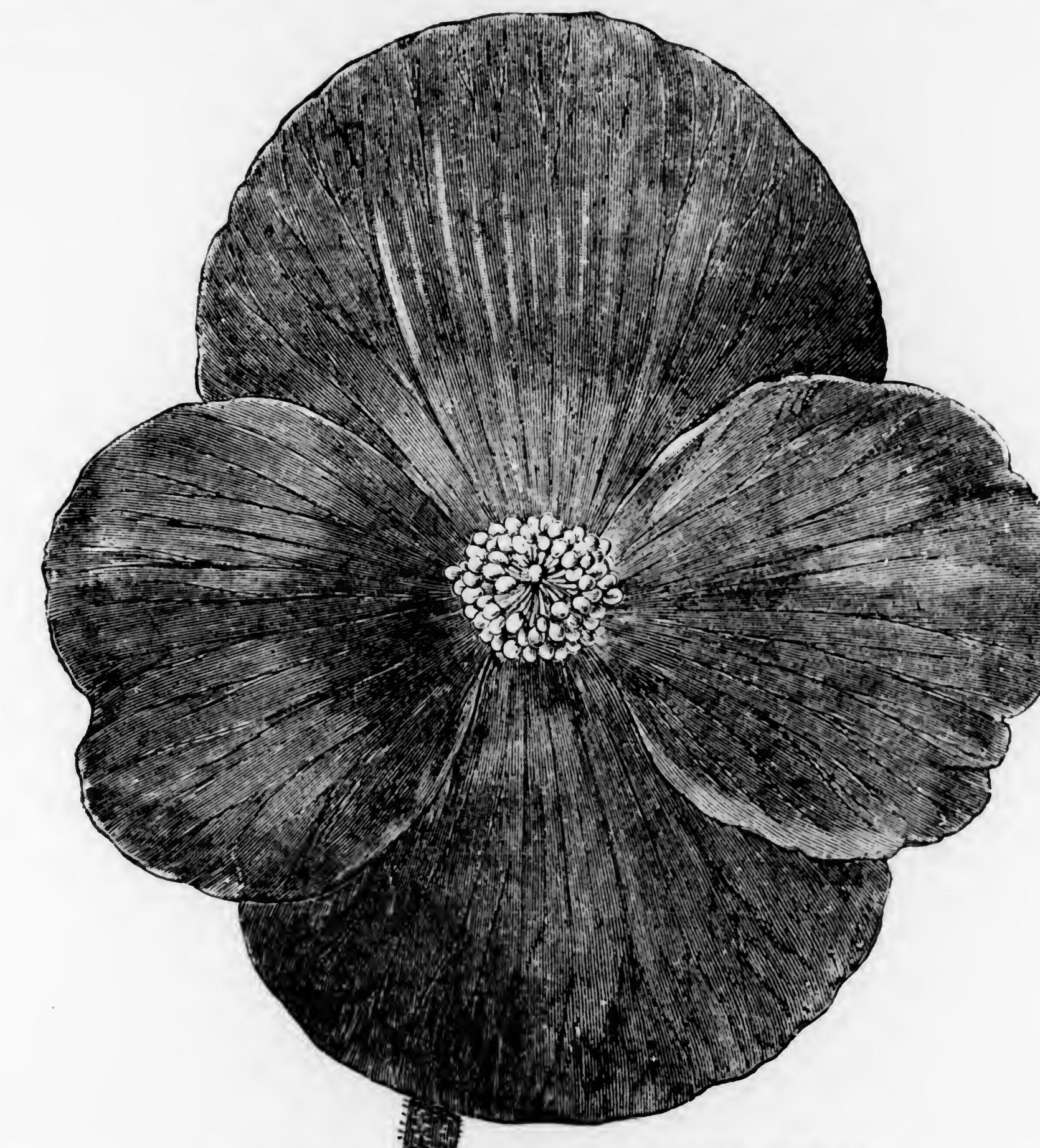
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PRETTY BIND-WEEDS.—The great popularity given to the old *Ipomoea Bonanox*, by simply calling it "moon-flower," has brought prominently forward the great beauty of many of its congeners. What is known as the "man of the earth," the *Ipomoea pandurata*, has been recently given some fancy name, and it is now going, as the common expression is, "Like wild-fire." People will give one dollar for an old plant with a new name, where they wouldn't pay a quarter for it under its old one. Unfortunately some of these beautiful flowers become permanent pests, and this is the case here, for the "old man of the earth" has received its name from the utter impossibility to get rid of its immense roots. It penetrates the earth many feet, growing to an enormous size. It will not be surprising if some of these originators of new names do not soon make a craze for the white English bindweed, *Convolvulus sepium*. Its white flowers are certainly beautiful, but then its roots are worse than couch grass. When the plant is once introduced into gardens, it not only refuses to leave when ordered, but selfishly pushes out everything else.

DANDELION SALAD.—In the old world dandelion has been so carefully selected that there are now many fine varieties, and it is almost as popular a salad as lettuce or endive. The endive is an improvement on the common chicory, and of this also quite a number of improved varieties have been obtained. The French call one of these varieties the *Barbe de capucin*. *Wittloof* is the name they give to another large variety. The roots are sold for planting in cellars or hot beds, so as to get the forced article before that from the natural season comes in. *Wittloof* is a very broad leaved kind, and the leaf ribs are considered of more value as a salad than the leaf blade itself.

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BOLTONIA ASTEROIDES.—Much was said in the chapter on this plant in the September monthly, in regard to its value as a border plant. But it has exceeded itself this year. It made as bright a show among the herbaceous plants as anything in its season—middle of August. As a little later the Aster season begins, it gives a foretaste of that autumn pleasure.

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THE APPLE SCAB.—The little black mossy looking spots that are common on apples grown in countries or situations not entirely favorable to the apple, is caused by a small parasitic fungus called *Cladosporium dentitri-ama*. The "crack" in the pear is considered to be due to another fungus, nearly similar, but named *Cladosporium Pyrinum*. The usual copper solution sprayed over the tree, when the fruit is a little larger than peas, is said to be a sure preventative to the operations of these fungi.

STRAWBERRY CULTURE, SOUTH.—The great difficulty in the superior cultivation of fruits and vegetables in the South is said to be the want of manure. Cattle are allowed to roam in winter, as the winters are not severe. Manure piles of any size are few and far between. A correspondent of the *Country Gentleman* states, the want of ability to enrich the soil as the Northern grower can do, is a difficulty in getting large crops. A thousand quarts to the acre is the maximum product of a Southern plantation.

LILY OF THE VALLEY.—There is no error in believing that the roots of the Lily of the Valley, obtained from Germany, flower stronger, and make a much brighter show than those raised in America. We believe, however, that if attention were turned to their cultivation, with as much skill as is given to the culture in Germany, we could raise them just as well here. Gardening is more of an art with the Germans than with us. It is skill and not the climate which makes all the difference.

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A LARGE ROSE GARDEN.—The Rochester Express devotes two columns to the immense rose garden of Ellwanger & Barry, of that city. The garden occupies twelve acres.

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HENRY SHAW.—As most of our readers know, this gentleman left a large amount of property in order to establish forever a botanical garden near St. Louis. A garden which was to be alike in the interests of horticulture as well as botany. So many men philanthropically inclined, leave establishments of this kind which only lag in usefulness for want of sufficient funds to maintain them. His far-sightedness not only established the garden during his lifetime, and placed it on the basis that he wanted to continue, but also led him to invest money in various directions, the proceeds of which were to maintain the garden on the grand scale on which he had established it during his life. By the report of the director of the garden, just issued, we find that the annual income last year reached the handsome sum of \$120,841.93. A public spirited citizen, who is able not only to leave that which he desires in the exact condition of usefulness he wishes it to be, but is also able to leave over a \$100,000 a year to maintain it after it is established, possesses no ordinary wisdom, and the fact that this garden has been so established, and is so well maintained, shows Mr. Henry Shaw to have been no ordinary man.

J. C. SCHMIDT.—In our July number was briefly noted the death of this head of the great Prussian firm of Henry Schmidt. We learn from a correspondent in Monrovia, that his death was rather a sad one. He had been stricken with light paralysis, and went to that part of Africa in the full belief that sun baths in that clime would certainly produce a cure. Our correspondent aided him to one of these "baths" on the hot burning sand, where he insisted on lying in the full blast of the sun. They proved disastrous instead of beneficial, and he was hastily removed to Teneriffe, dying in one week after his last "bath."

J. M. TROWBRIDGE.—Mr. Trowbridge is the author of a useful little work called the "Cider Makers' Hand Book," in which everything relating to the manufacture of cider is treated of. It is not a large work, covering over 117 pages, but it contains a much fuller account of the manufacture of cider than many a much larger work. It is indeed one of the best treatises on that subject that has come before us.

AUDUBON.—A New York paper remarks that "it is perfectly extraordinary that not even a head-stone marks the grave of the great naturalist, Audubon, buried in Trinity Church Cemetery, in this city. There is a committee, with Prof. Thomas Egleston of this city as chairman, trying to collect money for a suitable monument from the scientific men in the country; but they are not rich and the monument lags. New Yorkers ought to do it, with a good subscription from Trinity Church."

The great trouble with these things is that too expensive monuments are projected. One who did so much for the lovers of nature as Audubon should have some mark of respect, but there is no reason why it should be costly. Five hundred dollars would build a monument wholly worthy of such a good naturalist as Audubon, and New York would do this in a few hours if it were properly asked.

S. S. JACKSON.—Possibly the oldest living nurseryman in the whole Union is S. S. Jackson, of Cincinnati. He was born in Philadelphia August 22, 1803,—his father and mother being also natives of that city.

Cincinnati was largely settled by Philadelphians, as was many parts of Ohio. Mr. J. was one of the earliest to create a love for trees and flowers which has made that city famous among garden lovers,—and his grounds contain many specimens of beauty unequalled in the State. We give with this an illustration of a fern-leaved, or as it is sometimes called, the cut-leaved Beech, which is among Mr. Jackson's choicest treasures.

T. V. MUNSON.—An exchange says that one of the recreations indulged in by this Texan gentleman is the hybridizing of different species of grapes. He has already fruited a number raised in this way. There has been no one in the South engaged in this work since Dr. Wylie of Chester, South Carolina, did this good work a number of years ago. Instead there have been few in this field, Mr. Rogers of Salem, Mass., and Jacob Moore of Rochester, being the only other prominent ones. Most of our improved grapes are mere accidents. It is a great field for usefulness, and we can all wish Mr. Munson every success.

A. BLANC.—There are few things more interesting from many points of view than the very large tribe of plants known as Cactuses. Nurseries, as a general rule, cannot keep them for sale at profitable prices, because so few are sold in comparison to the large number they have to keep on hand. It is therefore a great public service when any one person enters into the field to keep and offer for sale collections of them. One of these public benefactors is Mr. A. Blanc, of Philadelphia. Mr. Blanc commenced to keep Cactuses simply for the love of them. He formed, as an amateur, a very large collection. It was not long before inquiries came to him requesting him to part with them. Little by little, therefore, he has had to enter the field, in a measure, as a dealer in Cacti. His collection is really one of the finest in the United States. It is an extremely difficult family to get the names of properly, and it is one of the merits of Mr. Blanc's collection, that he takes every pains to get the names of his plants correctly. Although one frequently hears the saying that a plant will grow as easy as a Cactus, it is by no means an easy thing to grow them properly. Mr. Blanc's experience as a specialist in this line is therefore particularly valuable. He has recently issued a little work, entitled "Hints on Cacti," which, considering his long experience, will certainly be of great value to those who are interested in this particular class of plants.

DR. H. N. HARKNESS.—The April number of *Zoe* has a portrait and sketch of the life of this gentleman, distinguished as the President of the California Academy of Sciences of San Francisco, and well known in connection with the study of the lower Cryptogamic plants. He was born in Pelham, Massachusetts, May 25th, 1821, and took a degree of medicine in the Berkshire Medical College in 1847, and in 1849 he joined a party crossing the continent, reaching California after a tedious journey. In 1869 he retired from practice with a competency, and has since devoted his whole life to the advancement of science. He was the first President in 1853 of the local Board of Education at Sacramento. His collection of the Lower Cryptogams exceeded 10,000 species, which great treasure he has recently conveyed to the Academy.

GEN. RICASOLI.—The "*Gardener's Chronicle*" refers to this eminent man, whose sudden death has recently been recorded, the title of "father of horticulture in Italy." It is said that not merely horticulturists, but botanists and scientific men in every direction, regret his decease. In early life he was passionately fond of all the natural sciences, but especially of botany. He was particularly instrumental in the introduction of the Chrysanthemum to Italy, which occurred about 1835; that is to say, the improved forms of the Chrysanthemum. As a military man he was known as equally eminent as a horticulturist and botanist, as he fought on the Plains of Lombardy in 1848 and '49, and also in the campaign in Sardinia, and with the Italian contingent in the Crimea. He was the first to introduce agricultural machinery on to his Italian farms, and it is chiefly through his endeavor, battling against all kinds of prejudices, that Italy today is as prosperous through its improved machinery and agriculture. He was particularly interested in the planting of vineyards, and improvement of the grape. Many of the advances in wine culture in Italy during the last twenty years are attributed to him.

CARDINAL HAYWALD.—A number of dignitaries in the Roman Catholic Church have been prominent in Botanical Science. The Abbe Cavanilles of Madrid, told us so much about Mexican and other plants, at the beginning of the present century, that his works are standard authorities to-day. The monk Barrelius left a whole monument in his *Icones*. The *Gardener's Chronicle* says that the recently deceased prelate, Cardinal Haywald, was among the foremost of Italian botanists. The beautiful *Cypripedium Haywaldii*, was named in his honor as a botanist.

"By this, the boy that by her side lay kill'd
Was melted like a vapour from her sight,
And in his blood that on the ground lay spill'd
A purple flower sprung up, chequer'd with white,
Resembling well his pale cheeks, and the blood
Which in round drops upon their whiteness
stood."

A question has arisen as to what flower Shakespeare had in mind when writing the above in "Venus and Adonis." English commentators make it one of their wild Anemones, but Venus and Adonis could hardly be suspected of walking the woods of Britain.

GENERAL NOTES.

MEEHANS' MONTHLY.—As the preservation of the expensive colored plate is a matter of first-class importance unusual in magazines of this class, we have had much difficulty in so arranging matters with the post-office authorities. Our paste-board roll made it unmailable as second-class, and we had to pay two cents postage on every copy sent, a cost we could not stand. We then introduced the paste-board sheets to prevent folding in the mail,—but this was "not part of the magazine," and still kept us out of mailing rules. The thick cover we have now introduced satisfies the government officials, and henceforth we can send at usual magazine postage rates.

Should any carrier fold the copy during delivery, a note to your post master will correct it.

We trust our efforts to place in the hands of the public, plates at a cost so low as never before to have been attempted either in this country or in the old world, will bring to us friends everywhere to make our work known, and to save us from pecuniary loss. Of course the circulation in three short months cannot be up to the mark of safety to us,—but it is a great pleasure to say that the result so far has fully equalled anticipation. If our friends continue to help us in the next twelve months as they have done the past three, we shall be well satisfied.

ENGLISH NAMES OF FLOWERS.—"In your September number you say editorially:

'We do not know but it will be as well to call it Hesse's Weeping Lawson Cypress. If this part of the world we want names for everyday use.'

So this 100,000,000, English-speaking people say AMEN, with fervent unction.

Botanical text books in an unknown tongue form an impassable barrier which stands between the American people and a knowledge of that most delightful of sciences.

(64)

In behalf of unnumbered millions who speak English only but nevertheless love flowers and would know them better I tearfully ask, must this barrier always stand?

DUDLEY W. ADAMS,
Tangerine, Fla."

[Botanical names, as now employed, are regarded by botanists as a necessity in systematic work. They do not object to an English name when it becomes universally accepted, such as Sweet William, Pansy, etc., but welcome them as readily as the "common people."—CONDUCTOR.]

ENCOURAGING WORDS.—One of the pleasures connected with our efforts is the encouraging words accompanying so many subscriptions. The following from the respected President of the American Pomological Society, is a type in condensed form, of many more freely expressed :

AUGUSTA, GA., August 4, 1891.

MESSRS. THOMAS MEEHAN AND SONS,
MY DEAR SIRS.—I am glad of an opportunity to secure such a valuable magazine as "MEEHANS' MONTHLY," and enclose \$2.00 for my subscription.

You have, in your publication, added a most interesting contribution to æsthetic Horticultural lore and made many of our wild products appear in an artistic and new light.

With best wishes I am yours sincerely,
P. J. BERKMANS.

OUR NEXT PLATE.—Our western readers will be glad to know that we have selected for our next chief illustration one of the most beautiful of the wild flowers of the prairies, *Lepachys columnaris*.

We shall close the first volume of six parts with a representative of Canada and the North-eastern States.



LEPACHYS COLUMNARIS

LEPACHYS COLUMNARIS.

COLUMNAR LEPACHYS.

NATURAL ORDER, COMPOSITÆ.

LEPACHYS COLUMNARIS, Torrey & Gray.—Strigose scabrous, branched from the base, one to two feet high; radical leaves usually undivided, spatulate-lanceolate, caudine ones pinnately parted, the upper sessile, segments linear lanceolate or oblong, rigid, mucronulate, entire, rarely somewhat lobed; disk columnar, longer than the five to eight oblong or obovate-oval, recurved yellow rays; chaff with woolly tips. Disk one inch or more long. (Porter's *Flora of Colorado*. See also Torrey & Gray's *Flora of North America*.)

There are few more interesting studies connected with wild flowers than the geography of plants. Plants are essentially travelers. Not even the most steadily disposed remains perpetually in one place. The bulb produces a bulblet at its side, beneath or above it, and then dies, leaving vacant the spot which it occupied. Sometimes the plant travels faster by offsets, or runners, and is still wider distributed by buds or seeds. It is only a question of time for the slowest plants to advance to immense distances, and we may reasonably conclude that no species of plant has been always in the location where we now find it. There is, of course, a retrogression as well as an advance, and the same ground may have been occupied and reoccupied a number of times. It is just possible that a species abundant in any one location may always have been there from its first appearance on the earth, but bearing in mind the known essential character of a plant to travel, we may reasonably believe the probabilities to be against that conclusion, and hence the effort to trace the plant to its original home is clothed with peculiar interest. There are many agencies by which plants travel, independently of those which are parts of their own natures. Animals carry both the plants themselves and their seeds, and the winds and waters are ever at work on the task of distribution. Rivers especially have a very important part, and the plant-geographer generally finds the range of a species much greater in the line of a stream than in lateral directions. As to where any one species first made its appearance, nothing has yet been discovered. There is reason to believe that they did not ap-

pear simultaneously,—some are certainly more recent than others; but though new species are continually being discovered, no one has yet been found that could be pronounced a modern creation in the sense the average mind would understand by modern times. But though this field of study seems hopelessly impenetrable, the earnest student is often furnished with glimpses of the interior, and which keep him in hopes of a better reward some day. Our present plant, *Lepachys columnaris*, is one of these welcome aids in these interesting researches. It was first discovered by Bradbury or Nuttall, most probably the former, in the lower portion of what was once the great Missouri Territory, and which embraced at one time nearly all the land we now possess between the Mississippi and the Rocky mountains; but since that time it has been found by almost every Government expedition along the lines of most of the streams examined. Thus one reports it as found on "the Upper Canadian;" another, "prairies along the Canadian;" another, in the "Upper Arkansas," and as we proceed along almost every river that runs into the Missouri up to its very source the *Lepachys* is found. And it exists on the high prairie ridge which divides the waters of the South from those flowing north, and the plant follows the Saskatchewan in its northeast course towards Hudson's Bay. A plant which had its ancient home in a warm climate would be able to resist but very little cold, and its northward travels be limited by the winter temperature. It is therefore probable that the *Lepachys* sprang first into life in the Upper Missouri region, and then spread north and south through the river



INTENTIONAL SECOND EXPOSURE

LEPACHYS COLUMNARIS.

COLUMNAR LEPACHYS.

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[Nov.

agencies chiefly, and, once established in new localities, spread east and west, meeting each colony from side to side.

We may now say a few words on its botanical history. As already noted, the seeds were probably collected by Bradbury, who supplied Mr. Nuttall with many seeds and plants of his collecting beyond the Missouri, and the seeds were given by Mr. Nuttall to Mr. Frazer, an English nurseryman, who flowered it in England about 1813. Pursh, in his *Flora of North America*, issued in 1814, refers to it, probably having seen the plant at Frazer's, as he was then in England preparing his work. It was however at this time known as a *Rudbeckia*, and it is described in Nuttall's *Genera of North American Plants* as *Rudbeckia columnaris*. In 1819 Rafinesque, who with many eccentricities, had a wonderful power of discrimination, made several new genera out of the old one of *Rudbeckia*, and in a French magazine, the *Journal of Physic*, described two of them, one *Rutibida* and *Lepachys*. Botanists who succeeded him did not recognize his distinctions, and we find in many authors who succeeded him *Lepachys* and *Rutibida* given as synonyms. Torrey and Gray seem to have been the first to recognize the validity of the genus *Lepachys*, and it is now generally accepted. Our plant was in Rafinesque's genus *Rutibida*, which is not regarded as distinct from *Lepachys*, and was *Rutibida sulcata*.

The name *Lepachys* is derived from the Greek, *lepis*, a scale, and *stachys*, thick, according to Dr. Asa Gray, which the thickened apex of the chaffy scale of the receptacle (see a. a. Figs. 3 and 4), may be regarded as appropriate. Many of the genera allied to *Rudbeckia* have, however, hard and peculiar chaffy scales, and the variations in these scales are taken into material consideration in analyzing the generic relations of this group of compositæ.

In this genus the scale almost encloses the flower in its younger condition, as represented in Fig. 4. In Fig. 3 we have the scale (a) removed, affording a good view of the immature achene with its pretty vase-like corolla, the united short and thick mass of stamens and the two branches of the pistil with their thickened apices. Almost all composite plants have their little flowers or florets, very beautiful in form when seen somewhat magnified; but this one, though rather heavy in appearance, is by no means unworthy of admiration by the art critic.

The plant varies very remarkably in some localities, so much so, in fact, that before the lines of variation in this species were known, some of these forms were thought to be good species, and have had distinct names. Sometimes the receptacle with the disk flowers, which in the illustration herewith is long and slender, is short and almost globose. In others the ray florets are much shortened and are of a much darker color. Indeed, in some cases the flower reminds one of the common French marigold of gardens, and, once thought to be a species, was named *Lepachys Tagetes*, in accordance with the resemblance.

Torrey & Gray say the disk has the odor of anise when bruised, and the bruised leaves have in some slight degree the same character. But the plant is not known to have any use in the arts. As a hardy perennial border flower, it is, however, very welcome. It has the excellent character of taking care of itself, though with little encouragement from the florist; and when once it commences to bloom in July, it continues through the whole summer season.

EXPLANATION OF THE PLATE.—Upper portions of the plant growing about a foot high, from Kansas specimens. 2. Flower over-blown. 3. Floret divested of its encircling scale (a). 4. Unopened floret enclosed by scale (a).

WILD FLOWERS AND NATURE.

PRIMEVAL CHURCHES.

The groves were God's first temples,
Ere man learned
To hew the shaft, and lay the architrave
And spread the root above them; ere he framed
The lofty vault to gather and roll back,
The sound of anthems,—in the darkling wood,
Amid the cool and silence, he knelt down
And offered to the mightiest solemn thanks
And supplication.

BRYANT.

POISONOUS PARSNIPS.—It seems a matter of surprise that so wholesome a vegetable as the parsnip should sometimes be poisonous. Every spring we have accounts in the daily papers of parties meeting their death through eating them. Late this spring an account came of three young men of Wilkes-Barre, Pa., ate them, supposing they were artichokes; one of whom died a short time afterwards. To those not acquainted with the actual facts, it is difficult to believe that the parsnip really causes the troubles. It has frequently been attributed to other plants, of which the well-known Hemlock of Socrates, is a member. In order to test the matter accurately, the writer sent to the authorities of a town in which some children were said to have died from eating parsnips, to get some of the roots for a direct examination. In one case the roots sent to us had the marks of the teeth of the children who had eaten of other portions of the root, showing conclusively that that was the root of which the children had eaten. Planting these roots, including that of the one that was partly eaten, and waiting for its growth, it was found to be the true parsnip. Just why the parsnip in its early stage should be poisonous, and not so at other times, remains to be investigated; but that it is really the parsnip that has caused this trouble, is without the shadow of a doubt.

RED SNOW.—The rare phenomenon of red snow occurred the past spring at Salt Lake City. This is caused by the development of a minute fungus which likes to germinate in snow under favorable conditions called *Protococcus nivalis*.

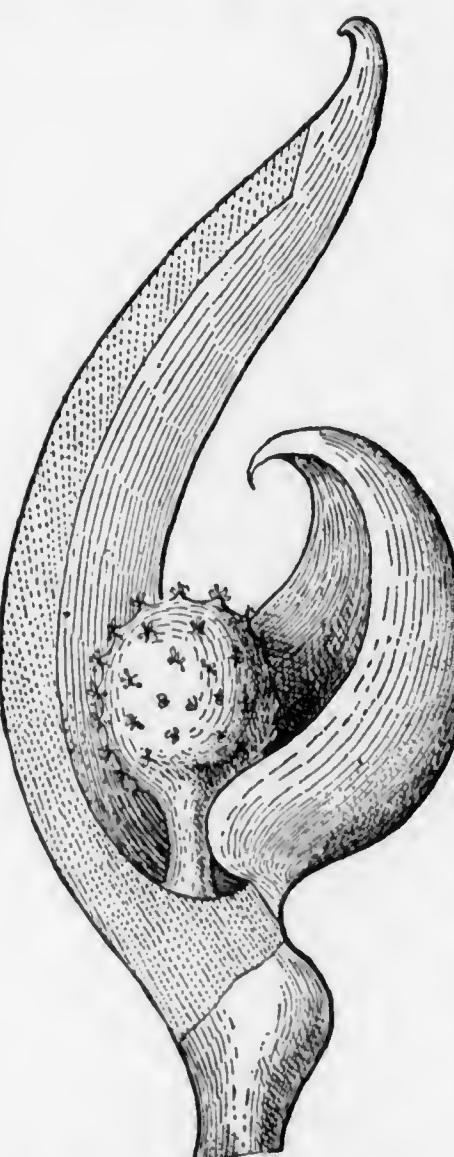
THE STRUCTURE OF FERNS.—When flowering plants usually make seed, that is generally the last effort of plant life,—the seed is the beginning of the life of the new plant. Ferns, however, only produce spores for reproductive purposes. These spores germinate, and go through the same process subsequently that flowers go through in the production of seeds. The spores expand when the germinating time comes, and form a flat green membrane; what are then really the flowers appear on this membrane. As a general rule, after these fern flowers have matured, the membrane dries up and disappears. In one family of ferns, however, natives of New Holland, named *Platycerium*, this green blade is permanent and continues to enlarge, becoming really a portion of the plant. Every year a new blade is formed, which spreads over the old ones. The large plant is of a totally different character, having the fronds of ordinary ferns. The illustration which we give on page 77 explains what has been written. The green membranes are growing over the wooden block, and the fern proper can be seen growing from the centre. This particular species is *P. alcicorne*, or, as it is commonly known in cultivation, the stag's horn fern. Among flowering plants there is the analogy of some plants having permanent cotyledons. These membranes are not the exact analogies of cotyledons, but they serve to illustrate the points made in this paragraph.

ERIOGONUM HAUSSKNECHTII.—European botanists seem to have got ahead of the botanists of the Pacific coast, by discovering a new species of *Eriogonum*, a very large western genus. One under the above name is discovered and figured in a recent number of the German *Gartenflora*. The flower stems are very short, not longer than the diameter of the head, which is about one inch. It was received from Mt. Hood in Oregon, by Dr. Dieck, from his collector, Dr. Haussknecht, after whom the species is named.

FIRE WEEDS.—After forest fires numerous plants spring up in numbers that were not seen before. They are called "fire weeds." In New Jersey, and probably elsewhere, the "fire weed" is a composite allied to the *Senecio* class, called *Erechtites hieracifolia*. It has no beauty. But beauty is characteristic of the Northern fire weed, which is *Epilobium angustifolium*. Its beautiful rosy flowers form one of the prettiest effects in New England forest scenery.

THE DOUBLE SKUNK-CABBAGE.—The calla lily of our greenhouses is occasionally seen with a double spathe, and is regarded as a great curiosity. The skunk-cabbage of our eastern swamps, *Symplocarpus foetidus* is a close ally of the calla lily, but no record has been made that any one has ever been found double. In the *Proceedings of the Academy of Natural Sciences* just issued, one is recorded as having been found near Philadelphia. We give an illustration showing the two spathes cut through vertically, in order the better to show their conformation. It is a remarkable fact that the same

plant, common in the Eastern States, is also a native of Japan, and in a Japanese work on botany, called the "Phonzo Zoufou," there is one figured with two spathes; the outer spathe is a purplish violet, with orange stripes within, and darker lines without; the smaller spathe in the interior is striped with white and having a greenish border. The botanical explanation of these double spathes is, that the whole flower stalk is made up of a mass of leaves united together, the leaf stalks forming the solid stem, and the blades forming the spathes. In these double instances two of the combined leaf stalks have produced these blades instead of only one as usual.



DOUBLE SKUNK-CABBAGE.

A singular fact connected with this skunk-cabbage is in regard to the odor from which it derives its specific name. It has been supposed that this odor is given to the flowers for the purpose of attracting carrion flies, and thereby securing cross fertilization. The author of the paper in the Academy's proceedings states, however, that the flowers are absolutely odorless, and that the fetid character rises from the plant only when the flowers or leaves are broken or bruised.

BOUNDARIES BETWEEN ANIMALS AND VEGETABLES.—A correspondent from the Botanical Department of the University of Minnesota, criticises the expression on page 21, where, speaking of the toad-stool plant, we say, "and yet such is the unity of plan in nature, there are dividing lines, when one may be well doubtful to which great family some questionable subject should be referred." This is, of course, a specimen of slovenly writing, for if there is an apparent dividing line it would then be easy to properly refer the questionable subject. It was intended to say, that there was no exact dividing line. We are very glad that correspondents take on themselves to suggest such corrections as this, as it is a point with the conductors, that the magazine should be scrupulously accurate, and we always regret when, for want of care in properly constructing a sentence, or from some other weakness, matters are not presented in their true light; and besides, it shows a special interest by our readers in the work, when they watch everything so closely.

THE TOMATO.—Few persons know the origin of this common name. It originated in this way: the earlier experimenters with the fruit believed that it had a great effect on the spleen,—that is to say, it made persons liable to crossness, good natured,—gave them, so to speak, a lovely disposition, and for this reason the plant was known to the ancient Spaniards as the Love-Apple. By the name of Love-Apple it is still known in many English speaking countries. The word tomato is derived from the same source, that is to say, from the original Latin word *amo*, to love, although we use it now as a Spanish derivative; tomato being a Spanish expression.

REPRODUCTION OF FERNS.—The progress of knowledge regarding plants and flowers can only be appreciated by comparing what we now know with but a few years ago. When Linnæus formed his sexual system of botany he knew nothing of the nature of ferns in this respect. He called the class he formed for them *Cryptogamia*, because of the hidden condition in which this branch of knowledge was. To-day we call the study of this branch *Cryptogamic* Botany. But in 1844, a German botanist discovered that they had reproductive characters in common with other plants. Since then experimenters have raised innumerable hybrids, thus giving practical effect to the theoretical discovery.

FRAGRANT WOOD.—Few of our native trees have odoriferous wood like the sandal wood of the islands in the Indian Ocean; but a few of the coniferae on the Pacific slope have sweet scented woods. The fine church at Metlakatla built by the civilized Indians of Alaska, is as fragrant as if incense was continually floating through the air, from the wood of the great *Arbor Vitæ*—*Thuja gigantea*—of which it is built. *Libocedrus decurrens*, found further south, is known as "Incense cedar" from its fragrance. The yellow cypress, *Cupressus Nutkaensis*, and the Monterey cypress, *Cupressus macrocarpa* have also scented wood. In the Atlantic States red cedar and *arbor vitæ* have scented wood.

EARLY SPRING FLOWERS OF CALIFORNIA.—A correspondent of *Garden and Forest* from Ukiah, California, gives the following as among the earliest blooming wild flowers of that section: *Arctostaphylos Menziesii*—the manzanita, *Dodecatheon Meadia*, the American Cowslip, *Cardamine paucisecta* and *C. angulata*—two of the water-cress family, the California buttercup—*Ranunculus macranthus*, and *Fritillaria lanceolata*, and one of the "painted cups," *Castilleja parviflora*.

MY LADY'S WASH BOWL.—Mrs. E. L. H. Willis says, this is the common name in the South for the *Saponaria officinalis*. In this part of the world its common name is "Bouncing Betsy."

FLY CATCHING PLANTS.—A number of plants have long been known as possessing viscid secretions whereby insects are caught; others have particular arrangements for capturing them; one of the most remarkable being the Venus fly trap of North Carolina. The ends of the leaf blades are like an old-fashioned rat-trap, and like a rat-trap they close when anything falls between. We give, herewith, an illustration of the plant. Mr. Darwin was the first to prove that the viscid secretions acted like the digest ferment in animals, and in this way plants make use of the insects caught as food. From this circumstance the class has been called carnivorous plants, or flesh eating



DIONEA MUSCIPULA--VENUS' FLY TRAP.

plants. Mr. William Canby, of Wilmington, proved this in a very conclusive manner. Small pieces of meat were given the plant to catch, and small pieces of meat placed on a board; the meat on the plant was dissolved, and disappeared long before that on the board, showing that the plant actually consumed the food. Attention has recently been called to this plant again by some additional observations of great interest, made by Dr. McFarlane of Edinborough, Scotland, before the American Association at its last meeting at Washington. The Doctor showed that some kinds of material were more sensitive to the leaf blades than others. The whole paper was of great interest, and its publication in full will be eagerly looked for.

THE CHINESE SACRED LILY.—This is said to be one of the numerous forms of *Narcissus Tazetta*.

REGULAR FLOWERS.—In our last we called attention to a remarkable fact, first brought prominently to note by Mr. David F. Day, of Buffalo, that irregular flowers were usually pendulous on the flower stalk. We have seen strong confirmation that irregularity and curvature are closely related, by the fact that when such flower stalks become erect, as they occasionally do, the irregular flower becomes regular. We have seen a remarkable instance of this in the well-known greenhouse plant called *Gesneria oblongata*. The first flower that opens in the raceme, that is to say, the terminal one, is almost always erect, and then perfectly



GLOXINIA.—UPRIGHT FLOWER.

regular. The *Gloxinia* is a case in point. The erect forms are always regular, as in the accompanying illustration, only the drooping ones are irregular. We recur to the matter again because it is one which the young botanist, who loves to study the behavior of living plants, will find great pleasure in investigating. The subject is almost wholly new, and there is a wide field for interesting discoveries.

HICKORY SPROUTS.—Edward Bancroft, Souderton, Pa., inquires "whether it is a common thing for the shellbark hickory to send up numerous suckers." It is so very unusual, that we should suspect young seedlings had inarched with the main roots. This inarching of roots is extremely common.

HETEROMELES ARBUTIFOLIA.—This is one of the most beautiful of the wild shrubs of California. The berry-laden branches enter into Christmas festivities as the holly does elsewhere. It is closely related to the Hawthorn family, and critics will possibly object to the people calling these haws berries. It has a number of common names in California which attest its popularity: pigeon berry, red berry, Christmas berry, holly, red holly, thorn apple, are some of them. A correspondent of *Rural Press*, suggests the Indian name *Toyon* as better than any.

CHESTNUT TREES IN RHODE ISLAND.—The progress of civilization, by which land is redeemed from the wild forest, is often so unfavorable to the preservation of the wild flora as frequently to entirely eradicate some species. A correspondent of *Garden and Forest*, shows certainly that in the early history of Rhode Island, the chestnut was a striking element in its flora, though none are found in the Island now. The name Rhode Island, according to the same correspondent, is derived from the red clay giving to the Island a reddish tint, and hence in German "Roodt Eylandt."

INDIAN CREEPER.—Mrs. E. L. H. Willis tells us that what we term in the North trumpet vine, or trumpet creeper, is known in some parts of Georgia and South Carolina as Indian creeper. Botanically it is *Bignonia radicans*. The late Dr. Berthold Seemann had been studying this plant just before he died, and contended there were two species well distinguished by the seeds. He also thought that under the "law of priority" the genus should be called *Campsis* and not *Bignonia*.

FASTING FISH.—It is said that a number of the larger fish never eat anything when traveling up rivers to deposit spawn, at least nothing is found in them when caught. As the period of the year is about the time of Lent, they probably have respect for the occasion.

AZALEA VISCOSA.—A Chicago correspondent says that in the vicinity of Nantucket the *Azalea viscosa* is known as "swamp apple."

GENERAL GARDENING.

PLANTING OF THE APPLE TREE.

Come let us plant the apple tree;
Cleave the tough green sward with the spade;
Wide let its hollow bed be made;
Then gently lay the roots, and then
Sift the dark mould with kindly care,
And press it o'er them tenderly,
As round the sleeping infant's feet
We softly fold the cradle sheet;
So plant we the apple tree.—BRYANT.

THE BEAUTY OF EVERGREEN TREES.—In deciduous trees one of the greatest charms is the broad head; the wider the spread of the branches, the greater is our estimate of the tree's beauty. In the coniferous evergreen, our views are reversed; its chief beauty consists in the broad spread of its lower branches, although when some of these coniferous trees become aged, there is considerable beauty in the broad spread of the heads, which they then assume. This is perhaps especially true in Cedar of Lebanon and the Italian Stone Pine, the broad spread of the heads of which form such conspicuous objects in Italian scenery.

Among evergreens which we particularly admire on account of the broad spread of its lower branches, the Norway Spruce is a familiar example; the wider and richer its lower branches, the more highly we appreciate; and when we say that a Norway Spruce is beautiful, we mean especially, that it has vigorous and richly colored lower branches. This point is so well appreciated, that we frequently make efforts to get Norway Spruces in what is called good shape, by shearing them into thick conic masses, in which, however, there is no beauty whatever to the eye of taste. They resemble far more the little tree toys used by children than beautiful natural objects.

It is not generally known, however, that coniferous trees, and Norway Spruces especially, may be made to throw extra vigor into the lower branches, and assume a dense mass of healthy verdure of a natural character, by

simply taking out the leading shoot and training up one of the side branches to occupy the position as a leader. When this is done no further trimming or shearing of any kind is required to produce the dense mass of vigorous green lower shoots so desirable. In cutting back this leader it is best not to take it wholly out the first year, but to leave a portion of it standing as a stump. To this stump then the lateral branch is tied,—the lateral branch which is to take the place of the leading shoot finally. This lateral branch is tied up to the stump and so remains for a few months or the first year, when the stump is cut away close to its base. But it soon heals over and the lateral shoot then remains erect, and forms the ultimate leading shoot. This check is all that is required to force the vital power into the lower side branches. An actual test with knife and string will explain more particularly how this is done. Not only the Norway Spruce, but all pines and firs can be treated in the same way, and the result of this simple treatment is specimens of beauty, which could hardly be appreciated by those who have had no experience with such work.

This article applies more especially to the Norway Spruce, because there is an impression prevailing in some quarters that this Spruce is not well adapted to our climate, on account of its getting poor at the base in so many instances; but this all comes from not throwing the vital power into the lower branches in the early periods of the tree's life. When treated in the manner described in this chapter, it will remain a beautiful object during the most of its existence. It is only when circumstances unfavorable to the full development of the lower branches, either by poverty of the soil, crowding, exposure to winds, or by allowing the heavier top branches to overcome by their strength the lower ones, that Norway Spruces in our climate ever fail to give the satisfaction, when full grown, that they always do in the younger stages of their existence. M.

TRIMMING SHRUBS.—“Will you kindly tell me, when is the best time for trimming bushes and shrubs? I have noticed that sometimes after trimming they fail to bloom the following season.”

G. H. N.

[Our correspondent evidently refers to the annual shearing which it has been customary to give of late, and by which the bushes have been brought to look like a worn-out broom. To our mind there is nothing like the natural form, aided a little by art. If we desire a plant to be kept bushy, and it seems to grow tall or sprawly, it is best to cut out to the ground any very strong shoots, so as to throw strength into the weaker ones. As an abstract principle this is best done just after flowering; but there is so little difference found in practice, that it may be done in winter or summer. We should not “trim” the ends of the branches at any time, unless a sort of hedge is desired.]

RHODODENDRON DISEASES.—A correspondent says that the leaves of his Rhododendrons are yellow, dropping off, leaving the plants almost wholly denuded of their foliage. He says they are planted on the outer edge of his lawn, sloping from the house, and that the ground is damp where they are, but not any more so than in places where he has seen Rhododendrons do well. There may be at least three reasons for this, and it is difficult to tell which it is. Although Rhododendrons will grow in damp places they will not grow where the little fibers are absolutely under water. They luxuriate if they can get on a rotten log in a swamp, where the little roots can penetrate through the moss which is above the water, but when they are in heavy ground, where water or air cannot penetrate, and where water cannot pass away, the leaves will turn yellow. They like vapor, but not water. If the ground is so wet as to hold water, the Rhododendron ought to be planted right on the surface of the ground in little hillocks where the water can come up by capillary attraction, and not be held in suspension by the earth. Again, leaves of the Rhododendron frequently get yellow on account of the attacks of a root fungus, very similar to the root fungus which causes the yellows in the peach. This is the spawn of a mushroom, called *Agaricus mellens*. It was at one time thought that the spawn of a fun-

gus would not attack healthy vegetation, but this particular fungus seems to be a parasite on healthy vegetation. Plants which have their roots attacked by this mushroom have yellow leaves, and in other ways show signs of disease. Examine the earth and ascertain if it has the mushroomy smell, if so, sulphur worked in the soil will destroy it, as discovered long ago by landscape gardener Charles H. Miller, of Fairmount Park. Solutions of blue vitrol would also no doubt destroy the fungus. From what our correspondent states, however, we should incline to the opinion that the trouble comes from the soil holding too much water, and a thorough underdraining, and mixture of the soil with broken bricks or gravel, or even sand, to keep it open, would be all that would be required to make his Rhododendron culture a success.

ANTS IN GARDENS.—A subscriber desires to know how to destroy ants which are troublesome in flower beds? There is no known remedy except such as may be troublesome to apply. Hot water, or hot salt water, poured into their holes will destroy them; but, of course, this injures the plants as well as the insects. It is one of those difficult questions that have never been properly answered.

Gardening Illustrated says that they may soon be completely rid of these pests by placing small gallipots about half full of milk and a little sugar on their “high road,” into which they will soon find their way, congregating in hundreds round the edges of the milk, when by constantly tapping the gallipot the ants are shaken into the mixture and drowned. Some have tried the paraffin and other dodges, but found none succeed like this. The mixture must be renewed when necessary.

CARE OF CEMETERIES.—The Spring Grove Cemetery of Cincinnati, one of the most beautiful in the United States, if not in the world, has a method of keeping forever their cemetery lots in proper order, by the deposit of a certain amount of money by the owner for that purpose. On a very large lot, if \$1,000 be invested with the Company, they agree to perpetually care for all the grass, trees, and shrubbery on the lot, and whatever may be necessary to keep the monuments in first-class order.

[Nov.

1891.]

MEEHANS' MONTHLY—GENERAL GARDENING.

73

DAY LILIES.—Much attention has been given of late to recording lists of those plants which thrive under the shade of trees. Among all these plants, few things seem to do better than the family of day lilies, of which, in the form of *Funkia ovata*, we give herewith an illustration. The plants will thrive in the deepest shade, providing the locality is not too dry, and even in dry situations they do tolerably well. There are some four or five species in cultivation, natives of Japan, and they range from white through all shades of lilac and blue, and there is one variety with leaves striped with creamy white. Although we have given this

PLANTAIN ON LAWNS.—A correspondent of Delaware county, Pa., asks what manure or application can be given to a lawn that will destroy plantain. Nothing of this kind will do; whatever will destroy the plantain will destroy the grass as well. A sure method of getting rid of plantain, however, is to employ a few boys to weed them out with a sharp knife. This is so easily done that there is no excuse for having this weed among the grass on lawns. It seems like a big job to dig them out one by one with a knife, but it is wonderful how large an area can be gone over by a smart boy in a day.



FUNKIA OVATA—JAPAN DAY-LILY.

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LILACS.—It has been a matter of surprise to many that a plant so capable of improvement as the common lilac has not received more attention. This reproach seems to be in a fair way of removal, for at a recent meeting of the Massachusetts Horticultural Society, one collector has thirty-four varieties on exhibition.

ILEX LÆVIGATA.—This plant is a very attractive plant in the autumn wild-flower scenery in the vicinity of Toronto. It is a deciduous holly, very near the Black Alder, *Ilex verticillatus*, but readily detected by a little practice by the paler green tint of its smooth leaves.

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DISEASE IN CLEMATIS.—A correspondent from Highland Park, Ill., inquires the cause of the sudden death of Clematises, especially of Jackmanii. Though the cause has not been exactly defined, there is no doubt but it is of fungus origin, and closely allied to what is known as the fire blight in the pear. It has been found by experience in other lines of horticulture that a solution of copper, that is to say, made by dropping a piece of blue copperas, about the size of an egg, in a barrel of water, is an effectual remedy against any of the lower orders of fungi, and we have little doubt but that if the plants were watered with this solution early in the spring, it would be a complete preventive of the disease. The fungus attacks the plant just at the collar, so that all that would be required would be to draw the earth away, so as to make a small basin to insure the contact of the solution with the stem of the plant. It is safe to say that thousands of these beautiful plants are every year destroyed by this disease. To such an extent has it prevailed that many florists scarcely dare to sell a Clematis, for fear of complaints about poor stock from their customers.

MAGNOLIA STELLATA.—As this very beautiful Magnolia flowers so young a general impression prevails that it is very much of a dwarf. On Mr. Saul's grounds at Washington the writer saw a magnificent specimen, probably six feet high, and ten or more in diameter. We should say that its ratio of growth was in about the same proportion to that of the purple Magnolias. Though not a mere dwarf, it does not grow so large or so strong as the well known Chinese species.

LAWNS.—A lawn looks best when of one uniform shade of green. The writer saw a lawn last spring that had as many shades as a patch-work quilt. The gardener complained that he could not account for the patchiness, as only the best lawn mixture of grasses had been applied.

MOUNTAIN FLEECE.—This appears to be the common or English name given to a species of *Polygonum* from the Himalayan Mountains, namely *Polygonum amplexicaule*. It is one of the most beautiful of recently introduced herbaceous plants.

PANSIES.—Pansies flower so freely from seed the same year that the seeds are sown, that it is not generally known that they are perennials, and may be kept over from year to year with great success; but in these cases they must not be allowed to flower profusely. As soon as first large flowers have been produced, and the later small ones appear, the flowering branches should be cut off. People often have peculiar varieties that they would like to preserve, but do not know that it is very easy to do so under the system suggested.

THE SWAMP WHITE OAK.—"Garden and Forest" of the 27th of May, has a good word to say for the Swamp White Oak. This is in exact accord with our own experience. Notwithstanding its name of Swamp White Oak, it thrives in any ground that any oak will grow in and do well. It is more popular, however, than people generally suppose, a large number having been planted by different people on their grounds in various parts of the Union, during the past ten years.

SULPHATE OF IRON.—Although recommendations for the use of copperas in the destruction of fungi are particular to state that it must be blue copperas or sulphate of copper, and not green copperas, which is sulphate of iron, it is now stated that the latter is extremely useful for a fungicide. We have not seen this, however, as a result of our own experience. When copperas is mentioned in our pages sulphate of copper is intended.

REMOVAL OF LARGE TREES.—An elm fifty years old, measuring at three feet above the ground 8 feet 2 inches in circumference, with a height of nearly 70 feet and a head of branches having a diameter of 50 feet, was removed in Graceland Cemetery in Chicago last year. Cost of moving was between six and seven hundred dollars. It pushed out into leaves this year and seems likely to be a success.

WHAT IS FORESTRY.—Under this title Professor B. E. Fernow has prepared an elaborate treatise which has been published by the United States Department of Agriculture. It is full of admirable suggestions, and will aid considerably those interested in forest planting or forest management.

CHANGES IN THE FORMS OF IVY LEAVES.—A correspondent sends us a branch, of which we give an illustration, asking its name. It is only the common evergreen ivy of Europe, of which we illustrate a leaf in Fig. 2, which has reached its flowering stage. It may be remarked that almost all plants change their leaves somewhat when they reach a flowering condition. Botanists call them when changed leaf-bracts,—and really, therefore, these particular leaves on the ivy are in the nature of bracts. In the case of the ivy, and indeed in other things, the changed leaves are so far below the flower that few suspect that they are simply changed leaves, and people frequently imagine that they have some new form of ivy, when they recognize the fact that it is an ivy at all. This changing condition of the leaves to bracts in flowers is so well illustrated by the ivy, that, for the information of our younger students, we have given sketches of the forms.

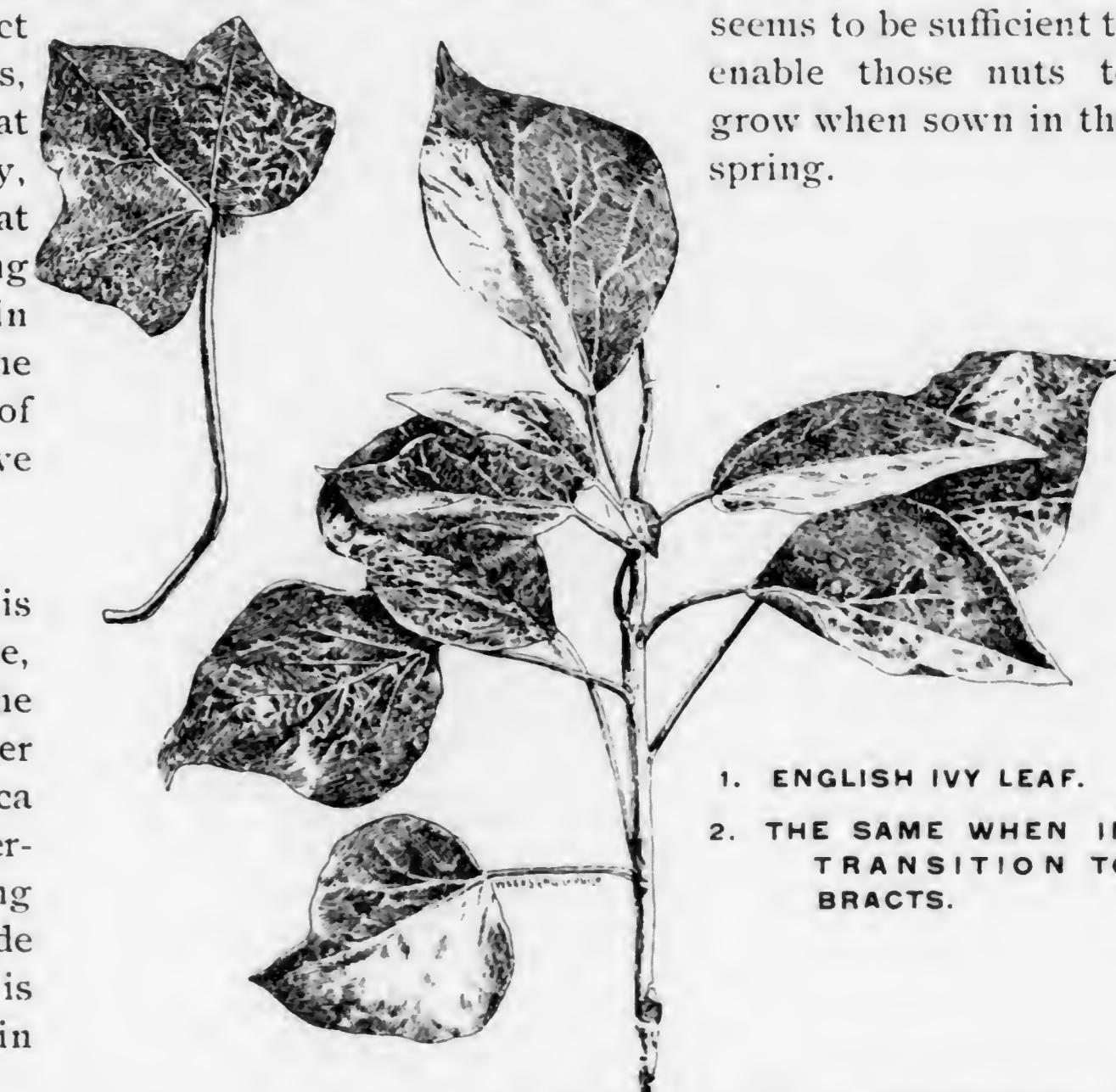
CEPHALOTAXUS FORTUNEI.—This was introduced, by Mr. Fortune, from North China in 1849, and the English people say that it is rather tender in their country. In America it is found as hardy as any evergreen, and it is rather surprising that more use has not been made of it by ornamental planters. It is fully equal to the famous Yew in hardiness and beauty.

CITY TREES.—It is extremely difficult in these modern times to have city trees. People want telephones, electric lights, electric cable cars, and all sorts of things with overhead wires, and wherever there are overhead wires they soon increase in numbers until street trees are doomed. It should be the effort of every lover of city trees to endeavor to have wires placed in conduits under ground.

SHRUBLET.—This is the term *Gardening Illustrated* uses to designate low shrubby plants like the trailing arbutus, which though woody, are not large enough to come under the popular idea of a shrub.

FRUITS AND VEGETABLES.

PLANTING OF NUTS.—A correspondent inquires how walnuts, hickory nuts, and similar wild nuts should be treated for planting. The treatment is very simple; when they can be obtained in the fall, they should be planted at once, if the ground is sufficiently open; or, if not, be mixed with earth or sand in barrels, and sown very early in the spring. It does not seem necessary to keep the soil particularly damp, otherwise they sprout too soon and rot. If the earth is comparatively dry, it seems to be sufficient to enable those nuts to grow when sown in the spring.



1. ENGLISH IVY LEAF.
2. THE SAME WHEN IN TRANSITION TO BRACTS.

LINDLEY'S EVERBEARING STRAWBERRY.—All the everbearing strawberries so far introduced into cultivation have been varieties of the Alpine, *Fragaria vesca*. When this was introduced, we supposed it to belong to that class. The Alpine has never been very successful in cultivation, American summers being too hot for the Alpine classes. They bear continuously, but the fruit is very small. A plant from Mr. Lindley, of Emporia, Va., shows this one not to be of that class, but apparently of the ordinary garden strawberry. The specimen was received in September, and had a quantity of ripe fruit on it. They were quite as large as the ordinary garden strawberry, and we see no reason why it might not be a very popular amateur fruit.

FRUIT PACKING.—It is interesting to note how a very small fact, when clearly perceived, will lead to great commercial results. No one knew better than the fruit grower that when an apple was bruised it would rot. When, therefore, apples first became an article of commerce, and were packed in barrels, they usually arrived at their destination rotten, because of the bruises they received in transit; but when it was discovered that it was the action of the atmosphere on the bruised portion which caused decay, and that a bruise, if it did no expose the interior of the apple to the atmosphere, was of no great consequence, then the transportation of apples became a business. We may now take an apple out of a barrel, squeezed into squares, hexagons, octagons, and all manner of shapes, without the apple suffering any material injury, because the pressure causing the bruise is of such a character as not to crack the skin; in fact, the great success of apple transportation consists in pressing them thus tightly into the barrels. It is the exposure to the atmosphere of the interior portion of the fruit, and not the bruise in itself, which causes decay. This principle may perhaps in time be applied to other fruits. Recently fruits have been separately packed in paper, but possibly a slight pressure to the fruit in the case, as given to the apple, which will pack them tightly together without causing the outside coating to crack, would do just as well as the paper enclosure.

NEW STRAWBERRIES.—The remarkable fact that while in our country we have to be continually introducing new varieties of strawberries, to take the place of varieties which are continually degenerating, in the old world those which were originated a half century ago are just as popular as ever they were. A variety named Keen's seedling, which is nearly three-fourths of a century old, is still regarded as among one of the best English varieties.

CHOCHO.—In the west a bloom is being started for this—*Sechium edule*—as a new vegetable. In the West Indies it is cooked like a squash, and tastes like it. It is more troublesome to grow, and less productive than the squash.

THE GRAPE-VINE PHYLLOXERA.—We have a letter from the Hon. the Consul of the Republic of France, inquiring what the different States of the Union, or the United States, are doing to prevent the march of this insect through the vineyards of our country? In the old world it is absolutely destroying all the leading vineyards. It does not yet seem to be known in some quarters that the phylloxera does not materially injure the American grape. They are found on almost all old grape-vines in our woods and gardens, but on account of the deep rooting proclivity of the American grape vine, and the freedom with which branch roots are formed, they seem to get through the earth faster than the insect can follow them, and on this ground no particularly serious injury has occurred to make any legislation whatever necessary. Our markets are filled with an abundance of grapes, and our vineyards yield in profusion, notwithstanding the existence, possibly for many centuries, of this little root insect. It is mildews and moulds that affect the leaves and fruit, which make the great troubles of the American vine grower—the phylloxera gives him no concern. It is for this reason that there has been such an immense importation of American vines into France. The famous wine growing sorts of that country are grafted on the American kind, simply because the roots of these American kinds are not materially injured by the attacks of the phylloxera, and not because the insect does not attach itself to these kinds of grapes.

THE ELBERTA PEACH.—Every section of the country has its favorite variety of fruit. As regards peaches the most popular in the South appears to be the variety called Elberta. Usually early peaches are not large. The Elberta besides being early is said to bear fruit of medium size. Besides these two good characters it is said to bear more regularly in the South than some other varieties.

GROWING CELERY.—There have been many ways suggested for blanching. It is said that in the old world, where first class celery is desired, instead of burying up the plant in the earth, they simply tie up the leaves, and then wrap them in coarse brown paper. It is said that much better celery can be obtained this way than by any other method of blanching.

AN ENEMY TO THE HONEY BEE.—At this season of the year, that is to say, the early part of September, honey bearing flowers are comparatively scarce. On our grounds bees depend more on the flowers of the *Aralia spinosa* and the Franklin tree than on anything else. The trees are loaded with blossoms, and these again loaded with the honey-seeking bee. There is, however, a well-known insect called the soldier beetle, but which entomologists call *Reduvius novenarius*, which lurks among the blossoms and captures a large number of bees. On a single tree one may observe dozens of this insect preying on the bees. It is not uncommon to find large spiders capturing bees that visit flowers, but in no case have we ever seen so much slaughter of these industrious creatures as the *Reduvius* perpetrates. This *Reduvius* is on the whole considered a friend to the cultivator. At other seasons of the year it preys largely on caterpillars and beetles which are destructive to vegetation. It is only at this season that it seems to be actively engaged in the war on the denizens of the hive.

WASHING THE BARK OF FRUIT TREES.

—**In spite of** many professional theories about the nature of bark, and the injury to them from being coated with outside material, the German farmers of Pennsylvania have extremely healthy apple trees, by washing the bark with lime. No cleaner or healthier bark may be seen on apple trees anywhere than these German trees present. The white color of the lime is of course objectionable, but that can be readily obviated by putting a little yellow clay, or even coal ashes in. There are many washing receipts for the bark of trees, such as soda, soap, and other materials, but plain lime wash alone is all that is necessary to make healthy bark on apple trees.

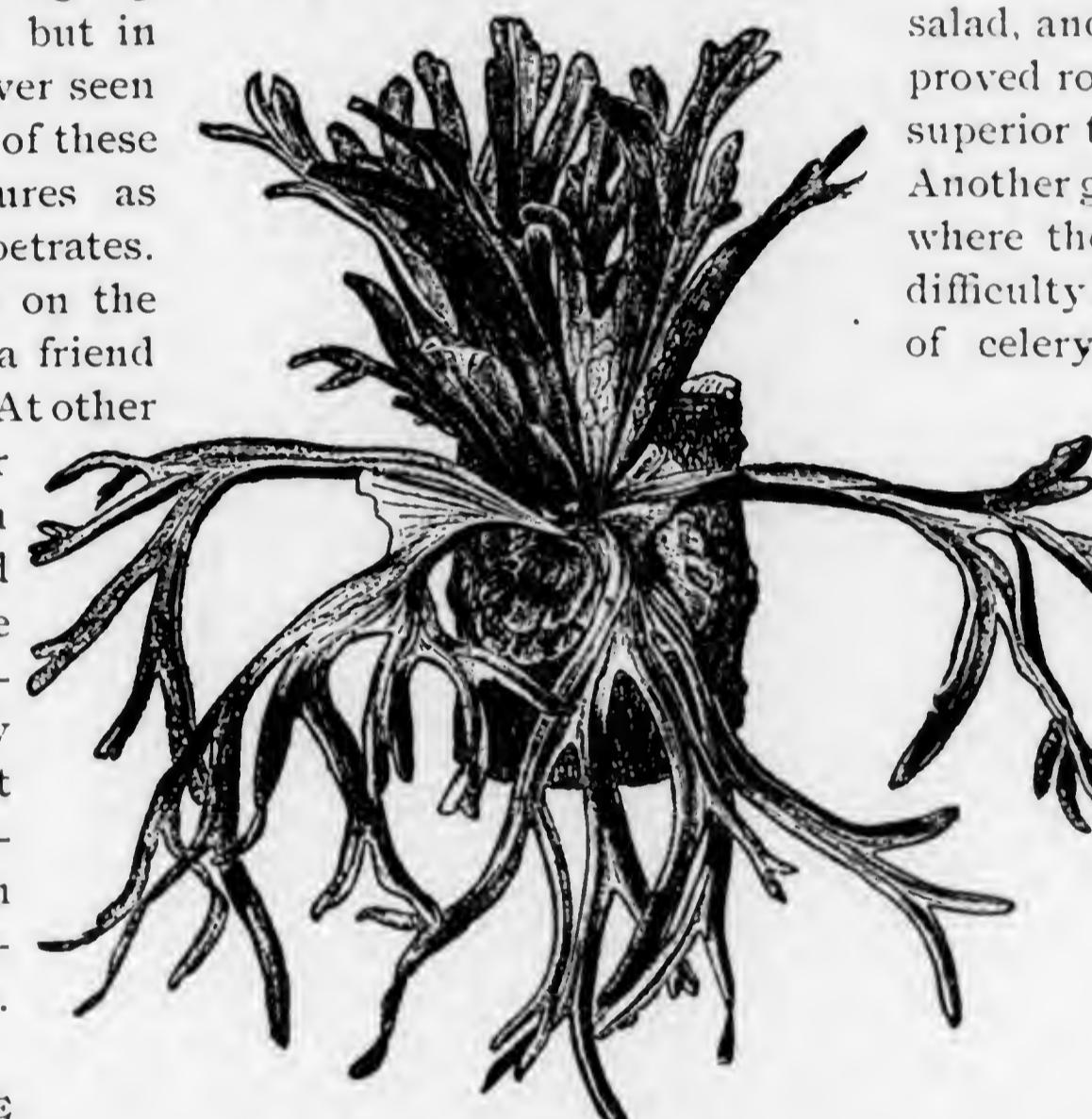
STAG'S HORN FERN.—SEE PAGE 67.

TURNIP-ROOTED CELERY.—In preparing celery for the table it is common to cut off most of the root, leaving only the blanched stalks for use. To many persons the root is preferable to the leaf stalks, providing it can be grown in a tender manner. In the old world efforts are made in this direction, and if one has a variety with soft and tender roots, it is considered quite a fortune. Of late years particular attention has been given to producing good and tender varieties of the turnip-rooted celery, as they call it, and some are now in the market which will weigh under good circumstances as much as five pounds to each root. They say that as an ingredient in chicken salad, and other salads, these improved roots when sliced are far superior to the ordinary stalks. Another great advantage is, that where there is a great deal of difficulty in preserving the stalks of celery through the winter season, as they either rot away or sprout with the least rise of the temperature of the vegetable cellar, the turnip-rooted kinds can be kept until quite late in the spring.

THE FIG GAR- DEN.

—It is surprising that more attention is not given to fig culture by amateur gardeners, much farther north than we generally find them. On our table are some delicious samples at the end of September, from Mr. J. Sibson, gardener to H. P. M'Kean, Esq., near Philadelphia. The branches are bent down and covered with earth in winter. No doubt they have been grown successfully much further north. We should be glad to hear of such cases.

A LARGE LETTUCE.—It is said that a variety called the New York will grow nearly as large as some cabbages. This is a case where the name, cabbage lettuce, is certainly not a misnomer.



BIOGRAPHY AND LITERATURE.

HIS WORK SHALL LIVE.

Yet after he was dead and gone,
And e'en his memory dim,
Earth seemed more sweet to live upon,
More full of love, because of him.

—LOWELL.

WILLIAM H. KEMBLE.—Mr. William H. Kemble, whose death has recently been announced, was well known from the prominent position he occupied in public life. He was a good patron of gardening, and his beautiful place near Philadelphia, named Marylawn, was an admirable specimen of landscape gardening. It was designed by the well-known garden artist, Mr. Charles H. Miller. Mr. Kemble was in a great measure the architect of his own fortune, having been born at Woodbury, N. J., in comparatively humble circumstances. As an illustration of his public spirit, the case of the famous Johnstown flood is well known in the community. He paid out at once a half million of dollars for the immediate relief of the sufferers, trusting to the honor of the State to reimburse him. This was done at the last session of the legislature. For rare plants and trees his garden was famous.

S. S. SHULTZ.—Among the well known intelligent patrons of gardening whose death has recently been announced, is that of Mr. S. S. Shultz, the superintendent of the insane asylum at Danville, Pa. He, probably more than any other man in the United States, was among the earliest to note the influence of gardening and flowers in the treatment of the insane. The gardens attached to this particular asylum were especially beautiful, and well filled with a large variety of trees and flowers. At the time of his death he was fully impressed with the great importance of supplying insane patients with cut flowers, and was preparing to erect a large range of houses, expressly for the purpose of raising roses, carnations and other similar things as presents for the insane in his establishment.

(78)

GEORGE S. CONOVER.—Every American lover of trees and flowers has heard of Geneva, second only to Rochester in its floral fame. Much of this has been due to the influence of Mr. George S. Conover. In the love of roses especially Mr. Conover has been well known. Once honored by the citizens of his town as Mayor of the village, he still enjoys the love and respect of his fellow citizens. Probably the earliest plant of *Ampelopsis Veitchii*, or Japan Ivy, which is now so well known over the Union, had its merits first made known by the covering of Mr. Conover's house. Views and photographs of this early plant helped to make it known through the country. Mr. Conover takes great pride in historical studies, and is the author of a number of excellent papers in connection with Indian history. The old "*Gardeners' Monthly*" had frequently accounts of historic trees, knowledge of which had been developed by Mr. Conover's labors. Mr. Conover's studies are mainly from love of the subject. A thorough history of Kanadesaga and Geneva has been prepared by him; only three copies, however, are made, one he will retain for his family; the other goes to Buffalo Historical Society, and the third to the State Library at Albany.

WILLIAM C. HARDING.—Forest Hill Cemetery near Boston, is conceded to have one of the finest collections of rare trees, shrubs, and plants, than possibly any other cemetery in the United States. It is said that this excellent reputation is due to Mr. William C. Harding, one of the originators of this cemetery, and whose death has recently been recorded in the proceedings of the Massachusetts Horticultural Society.

H. W. S. CLEVELAND.—This eminent landscape gardener is the designer and director of the system of parks being developed by the city of Minneapolis. The members of the Nurserymen's Convention recently held in that city speak in high praise of the work.

1891.]

MEEHANS' MONTHLY—BIOGRAPHY AND LITERATURE.

79

ILLUSTRATIONS OF AMERICAN WILD FLOWERS.—It is well known that when the *Flowers and Ferns of the United States* was started it was the hope of the author that it would be the beginning of an enterprise, that would end only when all the plants of the United States should be illustrated. He hoped within his limited means to do for America what abundant means had done for many countries of the old world. When two series had been finished, the publisher suddenly died, and after waiting a few years in vain for a new publisher, the author of that work thought best to issue it in connection with his own business establishment, because it was evident that no such a calamity as that which befel the former publisher, was at all likely to occur. The author knows of no reason why the work may not continue for many years in the future, and become a standard work of reference for American Botany and American Gardening.

We make these remarks now, because the real foundation of a full volume of twelve numbers, will begin with the January issue, and we know our friends will exert themselves to get in for us a heavy list of subscribers; and we want to have suggested to those who may become subscribers, that our publication is not an evanescent periodical but one that will become a work of standard reference for all time. For hundreds of years to come, as we have every reason to hope, what we are doing now will be a welcome addition to any first-class library. The work will, in fact, get increased value with age, and we are quite sure the presentation of this fact by our friends will help us materially.

DR. W. WOOLLS.—Dr. Woolls is one of the active botanists of Australia. About ten years ago, when residing at Parramatta, he had suggested to him by Baron von Mueller the propriety of providing a list of plants indigenous to the neighborhood of that town. He has now prepared and published a similar list of the plants indigenous to the neighborhood of Sydney, embracing an area of twenty or thirty miles around that city. The mean temperature in the shade during the coldest month at Sydney is but 45°, and the mean temperature of the hottest month at Sidney is 79°. Yet occasionally, he states, the thermometer will

sink below zero in the winter, and rise in summer to 114° in the shade, and the climate is subject occasionally to long droughts and desolating floods. Many plants in the vicinity of Sydney have disappeared, he says, through cultivation, others have been introduced. These latter number 175. He finds the number of species to be 1290, including the naturalized species; of these there are 851 Dicotyledons, 362 Monocotyledons, and 77 Acotyledons. It is interesting to notice how very few of the natural orders have any correspondents with the orders which abound in our country, although Leguminosae is an exception. Of Acacia there are 25 species in the vicinity of Sydney.

WILLIAM C. STRONG.—This gentleman was educated for the legal profession, and was in partnership with the well-known Edward Everett, of Massachusetts, who was at one time on the national ticket as Vice-President of the United States, with Mr. Bell, of Tennessee. With a fondness for horticulture he abandoned the profession and started a nursery at Brighton, one of the suburbs of Boston, which was for a long time the only place where a very large and varied collection of trees and shrubs could be obtained. Although like many of us advancing in years, his love for his profession seems to increase with time, and he has now moved the whole of his establishment to another suburb, Waban, on the Boston and Albany Circuit Road. It is said to be much better adapted for the growth of trees and shrubs than the old locality; and, remembering how useful Mr. Strong's efforts have been to horticulture all over the Union, his new move will have the best wishes of every friend of this delightful pursuit.

LINUS WOOLVERTON.—Mr. Woolverton is the secretary of the Fruit Growers' Society of Ontario, and has just issued the annual report of that society, chiefly the doings of the annual meeting, in which the representative fruit growers of the province participated. It is worthy of note, in view of the coming Columbian Exhibition at Chicago, that this society dates the great prosperity of Canadian fruit culture from the Centennial Exposition. It is now a source of great revenue to the Dominion.

GENERAL NOTES.

NAMES OF PLANTS.—As noticed recently, there is a movement on the part of some botanists to insist that the first name given by a competent botanist shall in every case be adopted. This has been an acknowledged rule ever since botany became a science, but the authors of large dictionaries and botanical monographs, who have not been informed as to the oldest name, and for some other reasons, have not always adopted them. We have contended that although this law of priority should undoubtedly prevail, it is scarcely for what may be termed the rank and file in local botanies, to make these alterations, because the practical result is to bring nomenclature into general confusion. The proper course should be, it seems to us, that the authors of these larger monographs, botanical dictionaries, and lexicons should be brought to see that they should adopt these prior names in these larger works, and that the authors of local Floras have done their duty when they called attention to these prior names. We are glad to have a note from Prof. E. J. Hill that he agrees with similar views to those expressed by Prof. Bailey in a recent *Botanical Gazette*.

PRESERVATION OF THE COLORED PLATE.—We should be glad to hear from our subscribers whether the means we have taken to preserve the plate from injury through the mails are successful. Of course, if it comes in good shape no response is necessary. As before stated, we have difficulty in meeting the requirements of the postal laws. If we are compelled to fall back on thick pasteboard we shall have to add 25 cents to the subscription price for postage.

POSTAL RULES.—We have had to omit from our blanks sent with the magazine, the request for the names of such lovers of nature or gardening as would probably be glad to see a specimen copy, it being decided to be against the postal laws. We shall have to ask in this

place, that friends when sending their subscriptions, will kindly send us such names.

It must be readily seen that this enterprise is of so costly a nature that there cannot be any great profit unless a very large circulation is reached. We feel that we are in a great public enterprise, and may fairly look for public spirit to aid us to success.

THE AMERICAN GARDEN.—It is announced that this popular gardening magazine is to be combined with the equally popular *Popular Gardening*. Mr. Elias Long, of the latter, will be the editor of the former, and the magazine will be issued hereafter at \$1 a year, instead of \$2 a year. It seems like a good move in the interests of horticulture, and has our best wishes for its success.

OUR NEXT PLATE.—We shall have for our next plate an illustration of that peculiar American Pitcher plant, the *Sarracenia purpurea*, which as a work of art we believe will be conceded to be one of Prang's very best productions. The chapter which accompanies will give an account of all that has been known regarding this curious work of nature. Our pictures, we are pleased to learn, are taken as models for drawing schools, thus bringing our magazine into a much wider field of usefulness than that of merely ministering to the progress of horticulture and popular science.

THE AMERICAN POMOLOGICAL SOCIETY.—A recent meeting of this society at Washington, was characterized by an unusually large number of intelligent fruit culturists from all parts of the Union. In addition to this practical feature, there were a number of speakers distinguished in science, among these to make addresses were Prof. Byron Halsted, Prof. L. W. Bailey, Prof. C. V. Riley. It was generally conceded to have been as instructive a meeting as has been held by the Society for many years. Mr. P. L. Berckmans was re-elected President.



SARRACENIA PURPUREA

SARRACENIA PURPUREA.

SIDE-SADDLE FLOWER.

NATURAL ORDER, SARRACENIACEÆ.

SARRACENIA PURPUREA, Linnæus.—Leaves short, decumbent, inflated most near the middle; lamina broad-cordate. Wood's *Class Book of Botany*. See also Gray's *Manual of Botany of the Northern United States*, and Chapman's *Flora of the Southern United States*.

The history of this curious plant is as interesting, probably, as that of any of our wild flowers. The pilgrims who landed in the Mayflower paid considerable respect to the *Epigaea*, if the ideas of our poets are to be trusted; but they did not seem to have noticed this, for John Josselyn, who styles his profession "Gentleman," and who wrote a work on "New England Rarities" in 1672, was led to "wonder where the knowledge of this plant hath slept all this while, *i.e.*, above forty years." He gives a rough sketch of the plant and the following quaint description: "Hollow leaved lavender is a plant that grows in salt marshes overgrown with moss, with one straight stalk about the bigness of an oat straw, better than a cubit high, upon the top standeth one fantastical flower, the leaves grow close from the roots, in shape like a tankard, hollow, tough, and always full of Water; the root is made up of many small fibres, growing only in the Moss, and not in the earth, the whole plant comes to its perfection in August, and then it has leaves, stalks and flowers as red as blood, except the flower, which hath some yellow admixt." But even "John Josselyn, Gentleman," might exclaim "there is nothing new under the sun," for in spite of his wonder where the "knowledge had slept" till he discovered it, it was known to Charles de Clusius, who in a history of rare plants, published at Antwerp in 1601, describes it as a plant "allied to the sea lavender," which then as now was the common name of the *Statice Limonium*. In those days plants were grouped according to their external resemblances; and those who are familiar with the broad, thick, dark green leaves of our common sea lavender, will not wonder that our early botanists saw in our pitcher plant a close ally, but with a hollow leaf. It may be interesting to observe that according to Mr. Tuckerman, who edited Josselyn's work, "Clusius' figure was derived from a specimen furnished to him by Mr. Claude Gonier, apothecary at Paris, who himself had it from Lisbon, whither we may suppose it was carried by some fishermen from Newfoundland coast." So that we may look back

on near three hundred years since this remarkable plant was known to Europeans, and it was, perhaps, one of the first plants of our continent to make its bow to the lovers of plants in the Old World. As a cultivated or living plant, however, it does not seem to have been further known till Dr. Sarrazin sent it to the Royal Garden at Paris, from whence Tournefort described it in 1700. It was about this time that the true relationships of plants were becoming understood, and Tournefort, seeing the distinctness of the plant from *Limonium*—the Sea Lavender—made a new genus, calling it *Sarracenia*, after his friend Dr. Sarrazin. But we have no account of its culture in England till the time of Peter Collinson. In the notes he made of his garden, and which were published by Dillwyn under the title of "Hortus Collinsonianus," he says, "*Sarracenia candensis*," which was Tournefort's name, the *i* being finally added by Linnaeus, "has for some years flowered annually, being placed in large pots, and the roots set only in moss, and no earth, and then the pots set in pans of water, kept always full; this makes an artificial bog, in which they naturally grow; the plants were sent to me from New York anno 1755." We can further trace these plants by the correspondence of Dr. Colden, published some years ago by Prof. Gray, in which a letter appears from Collinson to Colden, dated June 9th, 1755, in which he says "the Sarracenias you sent me are now in flower." Of late years the plants of the genus have been brought strongly before the general public through the impression that their singular structure was especially designed for catching insects, and this has led to a more general culture of our present species particularly than ever before. It has also been employed by the late Dr. David Moore, of Dublin, Ireland, as one of the parents in hybridizing the various species of *Sarracenia*, of which numerous curious and interesting examples have been produced. The exact use of these pitchers of water in the economy of the plant has long been a subject of speculation, and one by no means satisfactorily settled. Philip Miller in the "Gardener's Dictionary,"



INTENTIONAL SECOND EXPOSURE

SARRACENIA PURPUREA.

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issued in 1758, saw no further use than as a provision to aid, and not as a lure to living creatures. He says "The English who first settled in North America gave to this plant the title of Side-saddle flower, from the resemblance of the stigma to a woman's pillion; and some of the first writers who described the country have given imperfect accounts of this plant. They have taken particular notice of the leaves always having water in them; and one of them mentions his being often refreshed with this water in great droughts, when he was at a distance from any other supply." Of the lid at the top of the pitcher he says: "This top or ear is supposed in hot, dry weather, to shrink and fall over the mouth of the tube, and serve as a lid to prevent the exhalation of the water; so that in the greatest droughts birds and other animals repair to these plants, where they always find water to refresh them."

The plant is often called "The Huntsman's Cup," and it is quite likely Miller's account is made up in imagination from the name. He was evidently under the impression that the cups were filled by rains, and that therefore the lids were to prevent evaporation, whereas it is now known that the pitchers are filled through the roots, and that the process goes on in dry as well as wet weather. Moreover, the plant never grows in dry ground or away from water in the driest time, so that living creatures could get all the water they needed without resorting to these. As to the Huntsman, who in a dry time was "refreshed," if he had attempted it, he would have seen that in the water were numbers of dead insects, and he would have been anything but refreshed by the draught. It seems to have been the custom with many writers in the past times to give their impressions for the facts, and is in striking contrast with the strict fidelity to facts demanded in the modern writer.

As already noted, insects, as well as water, are generally, and as far as the writer of this knows, always found in the pitchers; and modern investigators believe that their capture is the chief design of this wonderful structure, and that after capturing, the dissolved elements of the insects are used as food. In New Jersey, from whence the plant used in illustration was taken, the writer has never examined the leaves without finding living larvae which, as well as the living plant, were evidently

feeding on the dead material, and in plants on tussocks of wet sphagnum moss, so surrounded by water that only winged insects could get there of themselves, others which could not have crossed the water of their own volition have been found in the pitchers. Sir James E. Smith has recorded that a gardener in the Liverpool Botanic Garden had seen larger insects, probably Ichneumons, carrying others into the pitchers, and he infers that most of the insects are thus placed there as food for its own larvae.

Besides the common names already noted, Professor Douglass, of West Point, who accompanied the Cass expedition to the Great Lakes in the summer of 1820, notes in the Fourth Vol. of Silliman's Journal, that he found the plant about the upper waters of the Mississippi, especially at Point Keewenah on Lake Superior, and that it was known to the Indians as "Owl's Mockasin"—in their language "Ko-Ko-Mokasin."

Sarracenia purpurea is the most northern of all the species, and grows over a greater extent of territory than any native species. It is found in Newfoundland and Hudson's Bay, and extends West to the Mississippi River, beyond which it has not been seen. Southwardly it reaches Florida. Generally preferring low lands,—it is not, however, unusual to find it in swamps at high elevations. Pursh found it on the Pocono Mountain, as he records in his diary, and a correspondent of the second volume of the "Entomologist and Botanist," notes it in Northern Wisconsin, and the curious fact that wherever found it is always in the sub-carboniferous formation, as if that were the period when it was first created. It is generally uniform in its character; but varies in color with the season. In early Spring it is quite green,—in the Autumn dull brown. Our artist has taken it just as it is passing from the green to the brown. The flowers are generally always of a brown-purple; but sometimes these are produced as green as the leaves, and with some leaf variation in connection, and have suggested to some authors to make of the form a distinct variety as *Sarracenia purpurea heterophylla*. Mr. E. S. Miller once found a plant at Hampton, New York, with the flowers double.

EXPLANATION OF THE PLATE.—A plant, full size, from Hammonton, New Jersey, sent by Mr. W. F. Bassett; taken at mid-summer.

WILD FLOWERS AND NATURE.

OLD MEMORIES IN DECEMBER.

Old fields, and clear blue summer days,
Old meadows, green with grass and trees,
That shimmer through the trembling haze
And whiten in the western breeze,—

Old faces,—all the friendly past
Rises within the heart again,
And sunshine from our childhood cast
Makes summer of the icy rain.

—LOWELL.

CRINKLE ROOT.—A goodly number of friends have responded. We suppose crinkle root is from the crinkled appearance of the roots, though this word in our language has become obsolete,—wrinkle being the usual word now. Of the many notes, we append that from W. H. S., Chicago, Ills. :

"This is a common name for *Dentaria diphylla*. It is also called Pepperwort, Pepper root, and Tooth wort. It is often eaten in spring as a salad—that is the root is. The root is fleshy, white, brittle and pungent." A correspondent from Syracuse, N. Y., adds still another item to this much discussed plant, stating that the children in that part of New York collect the root in the woods and eat it with their bread and butter.

Another friend says that it is good enough to eat alone, leaving the bread and butter out. It is interesting to note that so much that has not been generally known should have been developed by the simple inquiry as to what plant this name referred to.

THE RED SNOWBERRY, OR INDIAN CURRANT.—Nothing in a wagon tour through North Carolina more impressed the writer with its great beauty than the *Symporicarpus vulgaris* of which we annex an illustration. See page 84. The numerous red currant-like berries are in themselves striking, but the wand-like branches give a peculiarly graceful character to the whole bush. In the vicinity of Asheville large masses of many feet in diameter where observed, suggesting that it would have an admirable effect in landscape gardening.

THE FRINGED GENTIAN.—A correspondent states that she has been unable to raise seeds of the Fringed Gentian, although several attempts have been made. It so happens that we have often heard this statement in regard to this flower, and do not know that any one ever raised seeds of it. Why this should be so we cannot imagine; the seeds seem to be perfectly sound. As in the case with orchids, it may be that some very nice conditions of heat and moisture are requisite to make them germinate, and that this combination of conditions happens only occasionally. We think this very likely. But the Fringed Gentian shows no disposition to increase in number wherever it has been found growing wild; about the same number of plants are found in the same locality every year, which indicates that the seeds do not germinate more readily in a state of nature than when we try to grow them.

THE BLACK SUGAR MAPLE.—Mr. C. L. Lochman, of Bethlehem, Pa., asks for the distinction between the ordinary sugar maple of the East and the black sugar maple sometimes called *Acer nigrum*. The distinction is readily noted in the growing trees. The under surface of the ordinary sugar maple is somewhat silvery; the black sugar maple is green on both sides, and curved over at the edges as if they were suffering for want of water; the leaves are usually broader and less lobed. The chief difference, however, is at the base of the leaf blade; in the common sugar maple this is more or less truncate, or cut square off; in the black sugar maple the base is rounded; in fact, occasionally almost cordate. It is proper to say, however, that in these characteristics the common sugar maple itself is somewhat variable, at times being not so pale beneath as at other times, and having a tendency to the rounded lobes at the base of the leaf; still these characteristics are never so well marked as in the form known as the *nigrum*.

GROUPS OF WILD FLOWERS.—A correspondent observes: "I note that you call attention to the beautiful groups, which single species will often make when growing together by themselves in a landscape. I doubt, however, whether these beauties will at all compare with variety in small masses, which we often see in nature. Recently I came across a batch not more than twenty feet square, which had growing in the centre the common Elder bush, around it were growing the following plants, all in full bloom, namely, the white turtle head, *Chelone obliqua*; the *Impatiens fulva*; a very showy Aster, namely, *A. puniceus*; the Penn-

buckwheat, or *Polygonum Pennsylvanicum* and another



THE RED SNOWBERRY, OR INDIAN CURRANT.
SEE PAGE 83.

low *Prunella vulgaris*. I took no note of the grass, sedges, and ferns which were intermixed among the other species forming this group, but the observant lovers of wild flowers can readily imagine how these helped to make up the beauty of the picture. In a September day, if any of your readers know of any combination of wild flowers prettier than these that I have described, I am sure I and others would be glad to know what made it up."

COW LILY.—Prof. Davis, of Alma College, Mich., says of the yellow pond lily, *Nuphar advena*, which we recently illustrated, that he never heard the plant called by any other name than cow lily in New Hampshire and Maine.

EDIBLE AROIDS.—Mrs. Willis writes that the roots of *Peltandra Virginica*, closely allied to our Garden Calla, or Ethiopian Lily, were used by the Cherokee Indians as an article of food. She states also that the colored people of the South call the plant "Life Preserver," for it is very good for medicine. All the plants of this family have starchly matter in the root, and no doubt may all be used as articles of food. They have, however, to be either roasted or boiled before the acrid character can be taken from them. The ordinary Indian turnip of the woods is also well known to be edible, as also is the *Caladium esculentum*.

But though the roots of many species are thus useful, only one has been found of value for the sake of its fruit. This is a native of the Mexican province of Oaxaca, and of Guatemala. The fruit is of the size of an ear of Indian corn, and made up of a number of separate berry-like fruits, giving the whole still more the appearance of an ear of white flint corn—though a cook would say it was a dirty white. It is now well known in collections of rare plants as *Monstera deliciosa*, though it has been distributed as *Philodendron pertusum*, by some who consider it distinct from the former genus. We give an illustration with this on page 89 from a plant growing in the celebrated Missouri Botanical Gardens. It may be seen in Fairmount Park, Allegheny Park, and other public gardens or rare collections.

PINK INDIAN PIPE.—A Philadelphia correspondent says:—

"In the woods two or three times this summer I have come across little patches of Indian Pipes, whose flowers, instead of being white and drooping as I had always noticed them before, were erect, with a decidedly pinkish cast. Was this, do you suppose, the ordinary *monotropa uniflora*? Gray speaks about the flower being erect in fruit, but says nothing about the pink color."

Only that our correspondent seems able to understand the distinctions, one might suppose his query referred to the "Pine Sap" *Monotropa Hypopitys*, which is pinkish, and is found in the woods with the other species. A truly pinkish "Indian Pipe" would be considered a rich botanical find.

RUDBECKIA HIRTA.—The note which we gave recently, that in the past year *Rudbeckia hirta* had been found with brownish spots at the base of the golden rays, has very much interested different botanists. Mr. Isaac Sprague, the eminent botanical artist and botanist, tells us that no tinge of orange or brown has been noted near Boston, where the plant sparingly grows; but that an allied plant, *Lepachys columnaris*, the plant illustrated in our last issue, has been gathered in some localities with a spot of rich brown more or less covering the base of the rays; and Prof. Davis, of Alma College, Mich., recalls the fact that Mr. Sprague has illustrated this peculiarity in that plant in Part the Fourth of Goodale's elegant "Wild Flowers of America." The notes are interesting, as showing that, when



CRIMSON FORMS OF COREOPSIS TINCTORIA.

plants of this class vary, the variation is in corresponding lines. The well-known garden plant, *Coreopsis tinctoria*, is an illustration of the same point. The yellow ray florets are sometimes brown at the base, extending occasionally to the whole of the ray, and there is really a species of *Rudbeckia*,—*Rudbeckia bicolor* from the southwest, which has been named expressly from having the brown tinted base, already noted in this *Rudbeckia hirta*.

WILD FLOWERS OF JUNIATA COUNTY.—Mr. D. E. Robison sends us beautiful specimens of the Ladies' Traces, botanically *Spiranthes cernua*; a delightfully sweet scented full-blooming orchid, and also of the river Aster, *Helenium autumnale*. Although usually growing by the side of river banks, it takes remarkably well to cultivation, and is a beautiful border plant. The specimens are from Port Royal.



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CALLA PALUSTRIS.—This is one of our prettiest native bog or aquatic plants, and is found along the sea-board Atlantic States from Pennsylvania northwardly. A colored plate appears in the Flowers and Ferns of the United States. The spathe is white like the Ethiopian lily or calla of greenhouses, which indeed, except for the creeping habit of our calla, it much resembles. Of late it has become popular as an aquarium plant.

DIPLOAPPUS LINARIIFOLIUS.—This aster-like plant is one of the most beautiful features of comparatively dry, barren ground in Eastern Pennsylvania and New Jersey. Mr. Berckmans tells us that it is an equally beautiful feature in the floral make up of wild flower vegetation near Augusta, Ga.

[Dec.

GROUPS OF WILD FLOWERS.—A correspondent observes: "I note that you call attention to the beautiful groups, which single species will often make when growing together by themselves in a landscape. I doubt, however, whether these beauties will at all compare with variety in small masses, which we often see in nature. Recently I came across a batch not more than twenty feet square, which had growing in the centre the common Elder bush, around it were growing the following plants, all in full bloom, namely, the white turtle head, *Chelone obliqua*; the *Impatiens fulva*: a very showy Aster, namely, *A. puniceus*; the Penn-

buckwheat, or
Polygonum
Pennsylvanicum
and another



THE RED SNOWBERRY,
OR INDIAN Currant.
SEE PAGE 83.

low *Prunella vulgaris*. I took no note of the grass, sedges, and ferns which were intermixed among the other species forming this group, but the observant lovers of wild flowers can readily imagine how these helped to make up the beauty of the picture. In a September day, if any of your readers know of any combination of wild flowers prettier than these that I have described, I am sure I and others would be glad to know what made it up."

COW LILY.—Prof. Davis, of Alma College, Mich., says of the yellow pond lily, *Nuphar advena*, which we recently illustrated, that he never heard the plant called by any other name than cow lily in New Hampshire and Maine.

EDIBLE AROIDS.—Mrs. Willis writes that the roots of *Peltandra Virginica*, closely allied to our Garden Calla, or Ethiopian Lily, were used by the Cherokee Indians as an article of food. She states also that the colored people of the South call the plant "Life Preserver," for it is very good for medicine. All the plants of this family have starch-like matter in the root, and no doubt may all be used as articles of food. They have, however, to be either roasted or boiled before the acrid character can be taken from them. The ordinary Indian turnip of the woods is also well known to be edible, as also is the *Caladium esculentum*.

But though the roots of many species are thus useful, only one has been found of value for the sake of its fruit. This is a native of the Mexican province of Oaxaca, and of Guatemala. The fruit is of the size of an ear of Indian corn, and made up of a number of separate berry-like fruits, giving the whole still more the appearance of an ear of white flint corn—though a cook would say it was a dirty white. It is now well known in collections of rare plants as *Monstera deliciosa*, though it has been distributed as *Philodendron pertusum*, by some who consider it distinct from the former genus. We give an illustration with this on page 89 from a plant growing in the celebrated Missouri Botanical Gardens. It may be seen in Fairmount Park, Allegheny Park, and other public gardens or rare collections.

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RHODODENDRON MAXIMUM.—A North Carolina correspondent says: " *Rhododendron maximum*, as painted in your initial number is too highly colored for this section, where it is nearly pure white." Our friend has overlooked the fact that our illustration is from an opening head, only five flowers having actually expanded. Here, also, the flowers are whitish the day after opening. We think he will find them in North Carolina, just as it is here painted, when in the same stage of opening.



CAROLINA ROSE, BERRIES BRIGHT RED.—SEE PAGE 84.

THE GOLDEN ROD IN CALIFORNIA.—The *California Fruit Grower* remarks:—

In a journey of some fifty miles through the mountainous region of the San Fernando and adjacent country, made during this month, we observed some splendid specimens of golden-rod, and wherever it was in bloom it was almost bending under the multitude of bees at work upon it. It has been said that bees do not frequent the plant for honey, and some say that the golden-rod does not grow in California, but many of the more sheltered canyons, especially those supplied with constantly running water, furnish immense quantities and gorgeous growths of the National flower. Where it has once established itself the plant will flourish, even in very dry years, and gives considerable bloom that yields good nectar, though honey made from it is not as light as that produced from the sages.

THE RED CEDAR.—Mr. Nagel, of Santa Fe, New Mexico, sends specimens of red cedars growing in that vicinity, to show the extraordinary difference in character which the separate trees present. This is a common feature with red cedars; even this far east no two trees are found to be exactly alike. By the way, Mr. Nagel thinks that that part of the country is likely to be one of the best portions of the United States for the growth of pears and plums.

THE OAK LEAVED HYDRANGEA.—It is said that one of the finest specimens of this hydrangea is growing in the old garden of Washington, at Mount Vernon, Virginia. In olden times it was considered polite on the part of a host to invite a distinguished visitor to plant a memorial tree as a souvenir of his visit. It is said that this fine specimen of hydrangea was planted by Lafayette when on a visit to Washington.

LARGE OAKS.—It would be interesting to know just how large some of our existing oaks are, especially in cases where 'Woodman, spare the tree!' is a prayer not likely to be responded to. We often hear of their great size, after they have been destroyed. One felled in Branch county, Mich., recently, measured five feet in diameter, and, "according to the rings on the stump, was 496 years old."

THE MISTLETOE IN FLORIDA.—A correspondent of the *Farmer* and *Fruit-grower* says: In thirty feet of my back door stands a large black jack tree with bunches on it. In forty paces of my front door three-fourths of the top of a willow oak about fifteen feet high, is covered with mistletoe. But little of the top shows except the mistletoe. At a distance of 100 yards stands a persimmon bush with a bunch on it; and 125 yards another way a scrub oak bush not over two feet high has a bunch on it. Two miles north of my place, a scrub oak bush six feet high, has a mistletoe top *entire*. I was on a sneak hunt for deer this morning and I ran up with a wild plum bush, which had a nice bunch on it which the deer had been budding. This was in the sand hills, where I have no doubt I could collect a ton or two of it from the black jacks on one square mile.

[Dec.

GENERAL GARDENING.

THE JUNE ROSE.

"Thee, ever gentle Rose, we greet!
We worship thee, delicious sweet!
For, though by mighty gods caressed,
You deign to make us mortals blest."

"Go, Flora" (said the impatient queen
Who shares great Jove's eternal reign),
Go breathe on yonder garden thorn!
Wake into bloom the emerging Rose,
And let the fairest flower that blows,
The fairest month adorn."

—WHITEHEAD.

TRANSPLANTED EVERGREENS.—J. F. M. says: "Too much cannot be said in favor of evergreens, for hedges and ornamental planting that have been transplanted two or three times. A young seedling naturally needs support and much nourishment. The roots first formed, generally three or four straight ones, seek deep soil and moisture, going straight down, as the surface is too dry to give the necessary food. When the plant is transplanted into rows from the seed beds, all growth is suspended for a time. When it has become firmly established in its new situation, and growth is again resumed the large first roots send out fibers which botany teaches are really the mouths of the plants. Of course the oftener the tree is moved the more fibers are formed and more chances for living are claimed."

"Scotch and Austrian pines especially need frequent transplanting in the nursery."

TAMARISK.—A correspondent sends us from Cape May, N. J., a specimen for name, which proves to be *Tamarix Gallica*. It is not generally known, what even this specimen indicates, that this plant is one of the best possible flowering shrubs where there is salt spray. A considerable quantity of salt water can be thrown over the plants without their receiving any material injury; aside from this the heath-like foliage gives the plant a peculiar character among other shrubs; while the delicate rosy flowers produced in numerous panicles make it a showy object in the summer time.

CHANGING THE COLORS OF FLOWERS.—It does not seem to have been recognized as a fact that what a branch cut and placed in water will do is no criterion of what the same branch will accomplish through the aid of its natural roots,—but there is evidently a great distinction. No matter what we may water a plant with, when it is in a healthful, growing condition, no perceptible influence is made on the color of the flowers, but if we cut off a branch and place it in water, which contains a little ether added to a small quantity of liquid ammonia, the flowers will take on various colors. This difference is well worth noting, because many of the facts which we accept as such in vegetable physiology have been founded on what branches do when they are cut and placed in water. Many persons have supposed that they can change the color of the Hydrangea from rose to pink by watering with various liquids, or by adding ingredients to the soil, but it is now known that Hydrangea flowers cannot be changed in this way. Whatever it is that causes the change in the Hydrangea, it is connected in some way with vital power, and not with any element in the soil.

HYDRANGEA PANICULATA GRANDIFLORA.—It does not seem to be well known that there are two forms of this plant. *Hydrangea paniculata* is a very different plant from *Hydrangea paniculata grandiflora*. The latter has a large artificial-looking head. It is the one in general cultivation, and the one which is propagated so largely by florists and others. It is a very artificial looking thing, notwithstanding its great popularity. The other form, *Hydrangea paniculata* simply, is a much more feathery and flower-like affair. The spike is long and slender, and the barren flowers comparatively few; indeed it is particularly productive, producing an enormous amount of seed. To many persons this form is much more agreeable, because less artificial than the one which is so universally popular.

(87)

THE AMERICAN OAK.—Those who live far south, as well as those who live far north, can have no idea of the great variety and beauty of the many species of oak which are found everywhere in the central States. This fact particularly impressed the writer of this paragraph on a visit to Arlington, the former home of General Lee. While the White oak abounds on these extensive grounds, and forms the chief feature of oak scenery, there are a large number of particularly handsome specimens of trees of other kinds of oak, and some trees of kinds of oak rarely seen north or south of this line. One of the handsomest trees one may see in a long journey is a specimen of the Post Oak, *Quercus obtusiloba*. One remarkable peculiarity of this tree is that there is little tendency to send out side twigs to the main branches; the main branches therefore extend from the trunk, like huge crooked limbs with abundance of foliage along the line, but no great length of twiggy branches. As we see it in New Jersey and Maryland, and again further west in Missouri, it is rare to see any isolated trees that have had a chance to develop. At Arlington, where for many years they have had an opportunity of growing singly, this species shows exceptional beauty. The same may be said of the Spanish oak, *Quercus falcata*. As usually seen this is but a sprawly, straggly headed tree, but in America there are some magnificent specimens,—as regular in the formation of their heads as a Red oak or Black oak. It is pleasant to note, as showing how great the love of fine trees prevailed in the past age, that when the carriage drives were laid out at Arlington through the original forest, occasionally fine specimens of oaks would come within the lines of the roadway, yet all these have been suffered to stand where they were, so long as there is room for the carriage to go between them. In many a modern improved place no mercy would be shown to such trees,—they would remorselessly be given over to the woodman's axe, as interfering with the office of the carriage drive. Much as we have all come to venerate the names of the great founders of the Arlington estate, for their many virtues in public life, the writer felt enlivened veneration when he saw how tenderly they had dealt with these children of the forest.

SMALL PARKS.—Every large city should aim to have one large piece of ground for a public garden, on which the best features of landscape gardening could be exhibited, but at the same time attention should be given to providing a large number of small squares where the poorer people, who cannot spare the time or the cost to go to the larger places, may have some opportunity of sitting a while in the open air. Many of our larger cities are now engaged in looking after these small squares. Philadelphia in its earlier career set apart some half a dozen, which have been highly appreciated by its inhabitants; but for a generation or more since these were established, it has gone on piling up miles and miles of brick buildings without a thought for these open places. Some five years ago it woke up to the necessity of doing something more in this line. It has, however, only gone so far at present as the placing of a considerable number, ranging from one to twenty acres, on the city plan. This will preserve them for parks in the future; but, up to the present time, it has for financial reasons only taken absolute possession of three of them. Everywhere, however, as well as in Philadelphia, the necessity for these open places is growing stronger every day.

SIGNS OF SUCCESSFUL TRANSPLANTING.—An entirely new and useful fact has been brought prominently forward by Mr. Joseph Meehan, in the horticultural department of the *Practical Farmer*. He recommends with good reason, that plants should be set out very early in the fall. He contends that there is no more harm in stripping leaves from the trees by hand, when the wood is ripe, than there would be by having an early frost do the same work. A number of leaves, however, are left on the trees. If the transplanting is to be a success, the leaves themselves will disarticulate from the branches, and fall off of their own accord in a few days. If, however, the leaves die on the trees and show no indication of falling, it is a sign that the growing powers of the plant are weakened, and the plant will probably die. If the leaves fall off thus freely of their own accord nothing further is necessary to be done, but if the leaves incline to stay on without falling, the use of the knife by pruning off some of the branches will be a great assistance in making the transplanting a success.

COPPERAS SOLUTIONS.—Mr. Lochman, of Bethlehem, Pa., remarks that the term copperas in many drug stores is confined to the green form, or sulphate of iron, and mistakes may be occasionally made, if simply asked for under that term. It is better, therefore, in all cases to expressly state that sulphate of cop-

per is desired, when to be used for the destruction of small funguses. He thinks also that much care should be used by fruit growers in its application, or there may be legislative measures against its use. He has seen enough remaining on bunches of grapes to warrant complaints.



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FOREST PLANTING.—In the coal regions of Pennsylvania nearly every piece of available timber has been cut away to form props for the archways, and for various other uses in connection with coal mining. Nearly every stick and every piece of plank used in these regions now, all have to be brought from a distance. The Girard estate has endeavored to solve the problem by making some small plantations as a test. Eight years ago a large number of Larches and Scotch Pines were planted; plough furrows were simply driven through the underbrush growing up where the old forests had been cut away, and one year old seedling Larches and Pines planted. The Larches average now some 17 or 18 feet high, and are particularly healthy and thrifty. There can be no doubt, from these experiments, that forest planting in these regions would be an undoubted success. It may be noted that the Larch was the most popular of forest trees in the early planting on the western prairie, but the leaves were attacked by a fungus; the timber, therefore, did not properly mature. It finally fell into disfavor for forest planting. On these early experiments the Larch has suffered much in reputation, but it must be remembered that the western prairies furnish unfavorable conditions for the Larch. It is a mountain tree, one thriving in comparatively poor soils, and the low altitude and rich earth of western prairies was entirely foreign to its nature. The Girard plantings are some 1400 or 1500 feet above the level of the sea; these are the conditions of its own home, and the remarkable healthiness of these trees shows that they appreciate the position in which they find themselves.

LILUM WALlichianum BULBILLE.—Mr. James McPherson says: "I am not aware that attention has been called to the fact that this splendid lily produces bulblets at the base of the leaves, in the same manner as *L. tigrinum* and *L. bilbiferum*. This is, so far as I have observed, exceptional with the *longiflorum* section, and is certainly not the case with the South Indian, *L. Neilgherriense*. I have never grown *L. Philippinense*, which is no doubt much more nearly allied to *L. Wallichianum* than any other of the section, and I would be interested to hear if the leaf bulblets have been observed in that species."

KILLING ANTS.—A Chicago correspondent says:—"I note mem. in regard to Ants—I had lots of trouble here with them and tried 'everything' and failed—I finally saw them killing 'Gophers' in California with Hydro-Sulphide (Hydro-Sulphuret) of Carbon and last year when the Ants showed up I tried it and succeeded and did the same this year. It costs, retail, 20 cents per pound. It is a liquid, and very explosive if in contact with fire. I used it close to vegetation and found no ill results. I make a hole about half to one inch in diameter in the 'nests' and four to six inches deep and pour in from a teaspoon to a tablespoonful according to the number of ants in the nest and immediately cover the hole with soil and press it down snug. One dose as a rule does the work. In one case (in grass) this year I found at last a pint of dead ants had been brought to the surface by the ants that had not been killed!—another dose 'fixed' the rest of them. They are killed by the fumes. It smells villainous enough to kill 'the old boy' himself."

LAWNS.—The *Country Gentleman* makes a good point, that Kentucky blue grass on soils where it flourishes is one of the best of all grasses, without any further mixture for making a good lawn; and it further makes a good point, which has not received the attention that it ought to have, that it should not be cut close. No strong growing grass should be cut close. There is no way of destroying a lawn more readily than by cutting grass close down. If all lawns were not cut lower than a quarter of an inch from the ground they would look quite as well, and the grass we desire to constitute the lawn would not be cleared out as they frequently are now by creeping veronicas, and other weeds of that class.

LOMBARDY POPLARS.—A query comes to us as to how to raise the Lombardy Poplar from seed. It does not seem to be generally known that this variety of poplar never seeds; it is simply a variety of another poplar, and has to be increased wholly from cuttings. The pollen bearing form, so far as known, is not in this country. The plant is wholly pistillate.

MAILING CASES.—We received some specimens of leaves affected by fungus from Secretary Edge, of the Pennsylvania State Board of Agriculture, which were enclosed in a case, which seems to us worthy of more general use. It is made of tin, with a screw in the centre inversely fixed; the wooden lid is then screwed down tightly to the case, so as to be readily opened if desired by the postoffice officials. It is just the thing for sending cut flowers, specimens of leaves affected with disease, or any small samples that are perishable, and yet require to be sent to long distances. In tin cases, closely fixed as these are, there is no evaporation whatever, and nothing is required in the way of packing to envelop the articles. We have sent perishable articles of this kind so far as Australia without any packing whatever, but just the article itself put in a tin case. These tin cases appear to be made by the Howe Mailing Co., of Detroit, Mich. Any one who desires to send any perishable article through the mail, if it were only a piece of wedding cake, would find a small supply of these on hand to be very useful articles. We append with this an illustration, which will perhaps more clearly explain than the description which we have given. It shows the manner in which the lid is screwed on the box.

Rhus Osbeckii.—Mr. Murdock, of Pittsburg, sends us a branch from a plant, originally growing near Trenton, N. J. It proves to be a Japan Rhus, *Rhus Osbeckii*, and we take the opportunity to observe that it is one of the best additions from Japan that American gardens have had for many years. It grows larger than most of the American species of Rhus, and is covered in September with huge bunches of white flowers, coming at a time when very few other shrubs have any flowers at all.

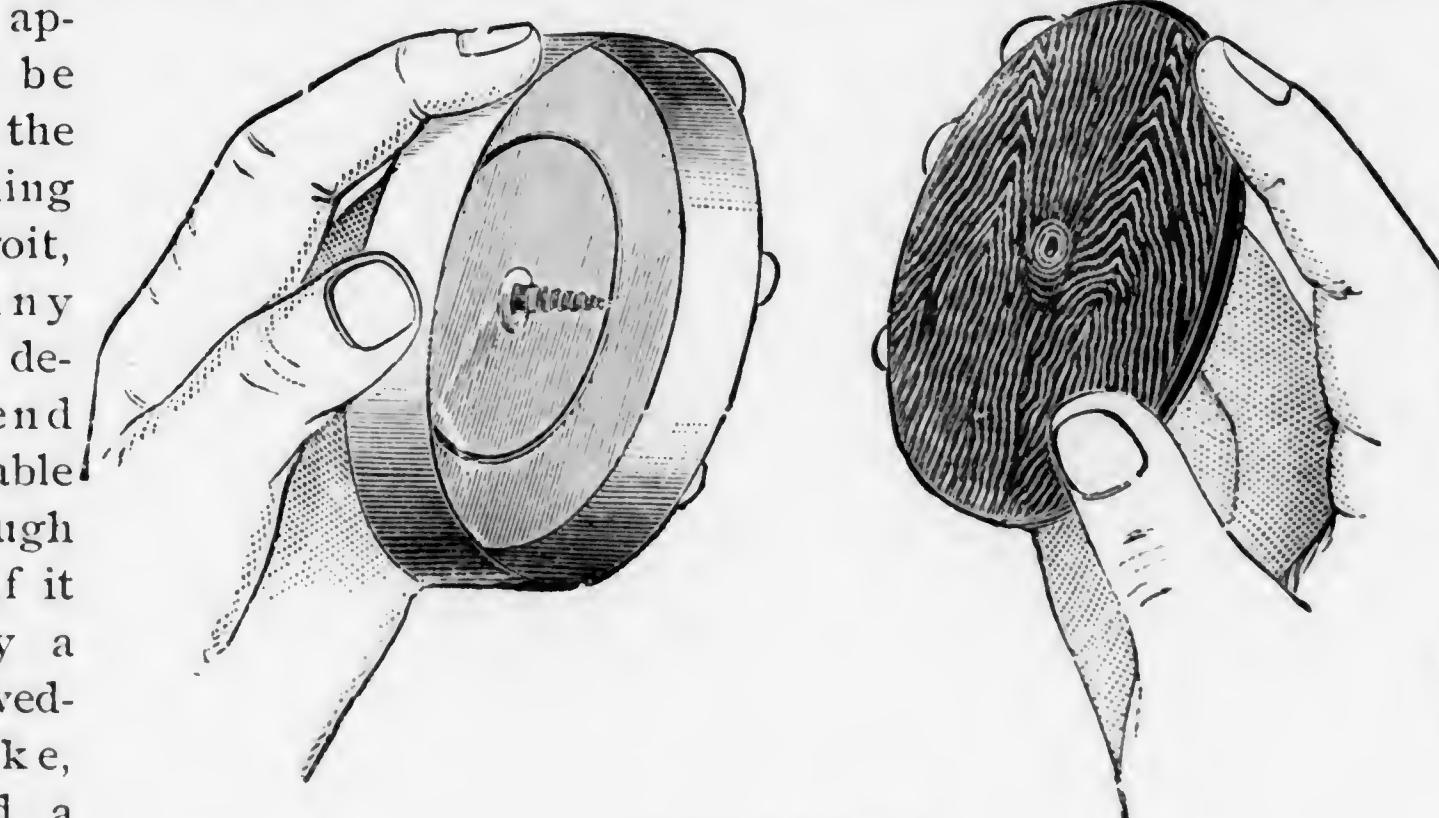
FRUITS AND VEGETABLES.

PLUM CULTURE.—A crate of remarkably beautiful green gage plums, from Mr. S. D. Willard of Geneva, brings forcibly to mind how much the fruit world is indebted to this gentleman. For many years the attack of the plum curculio was so vigorous that the insects were left in full possession of the field. No one cared to plant a plum. The fruit was rarely ever seen in any market in eastern America. It was long discovered that the insect could be kept down and plums obtained by jarring the trees two or three times a year, but those who had comparatively few trees could hardly apply this method. It seemed to take too long to get to work, and to prepare crutch-like implements to jar the trees, and with so many matters pressing on the amateur

fruit grower, no time could be given to this extra work. Mr. Willard, however, saw that by getting an orchard large enough to make it worth while to employ one person continually at this work, the in-

sect could be very readily kept down. He started on this track, and by simply making a business of tree jarring he succeeded beyond expectation. Since Mr. Willard's grand success in this line, he has had numerous imitators. Whereas years ago scarcely a nurseryman had any demand for plum trees, now the demand is nearly as regular in every nursery for these, as for fruit trees of other kinds.

A LARGE EARLY PEACH.—Referring to a note recently made in regard to the desirability of a large early peach, Mr. Oerther, of Germantown, sends us one from a seedling in his garden early in August, quite as large as Ward's late. The flesh is white and juicy, with quality above the average. Much worse kinds have been named and distributed.



MAILING CASE.

GRAPE DISEASES.—There is no doubt of the inestimable value of sulphate of copper in preventing the disease of the vine. In Egg Harbor City, N. J., the whole prosperity of the population depends on its grape crop. Every year for many years mildew and black rot had been growing more destructive, until the whole industry of that portion of the country was threatened with total destruction. Under the advice of Prof. Lamson Scribner the sulphate of copper solution was introduced. At first it was not used until the grapes were the size of peas, and little good results followed. It has been found, however, that the solution to be effective should be applied before the vines push vigorously into growth. This has proved remarkably successful; no less than 100,000 gallons of wine have been made this year. It is not said to be difficult to apply; two boys with sprayers apply the liquid, and five or six acres a day can be applied by one boy. Operations were commenced on the 29th of May. It is one of those dangerous blessings, however, that will have to be used with extreme caution, or else a reaction will arise against its use. Where it is not properly mixed with the water, a large portion of the copper will rest in one place, and when it is used late in the season, for which there seems to be little necessity, portions may adhere to the vine stalks. All of these details should be thoroughly understood by those who use it; like gunpowder in the hands of a child so may be this invaluable element in successful grape culture. It is no argument that it is sometimes dangerous, that it should not be used at all; the same argument might be applied against the use of gunpowder. The true course is to educate the people up to its dangers, and teach them how to use it properly.

A LARGE TEXAS APPLE ORCHARD.—It is said that Mr. William McKenney, of Garza, Texas, is the first native born Texan to engage in fruit culture. He was born in Cass county on the 25th of March, 1847. His orchard is said to be the largest in North Texas; apple trees alone comprising 3500. He is said to have made it a great commercial success. Among the largest and most successful of the Texan orchardists is Mr. William Watson, of Brenham, a native of England, but a long time settler in the Lone Star State.

BEAUTIFUL APPLES.—It is said of a canny old Scotch gentleman, giving advice to his son about to enter into the world, to be particularly careful of his love affairs. He was told that in looking after a wife it was just as easy to find a lady who had money and plenty of the world's goods, and to fall in love with her, as it was to fall in love with one who had nothing. This advice is not often appreciated, and perhaps ought not to be,—but there is no reason why it might not apply to a selection of apples. There are some apples which are pretty good, and yet are not at all attractive to the eye; on the other hand, there is a large class which are just as good as the plain ones, and have beauty thrown in. One of these extremely beautiful and very valuable apples, is the Pewaukee, of which a very beautiful colored plate appears in a recent number of the *Canadian Horticulturist*. The crimson, red, and yellow are splashed in equal proportions over the whole fruit, while it is a fruit of the largest size. It must be noted, however, that the *Horticulturist* speaks of it as being especially valuable for canning, saying nothing about its eating qualities; but if our friend had come across some of the specimens it has been the good fortune of the writer of this to test, he would have added that it was also an excellent dessert fruit. It belongs to the same class of fruits as a number of other beautiful apples of which the Duchess of Oldenburg, and Alexander, and Red Astrakan are types. All of these are well known for their beauty, and are generally sought for, even in the smallest collections.

GRAFTING PERSIMONS.—Dr. Young, of Vineyard, N. J., inquires as to the method of grafting the Japan Persimon. They are usually in nurseries grafted on the common Persimon without any difficulty. He says he has tried grafting and budding but failed. Nurserymen usually graft them precisely as they graft apples in winter time, only employing collar grafting instead of cutting up pieces of the roots. We have never heard of any more difficulty in making them succeed this way than follows the grafting of any other fruit trees.

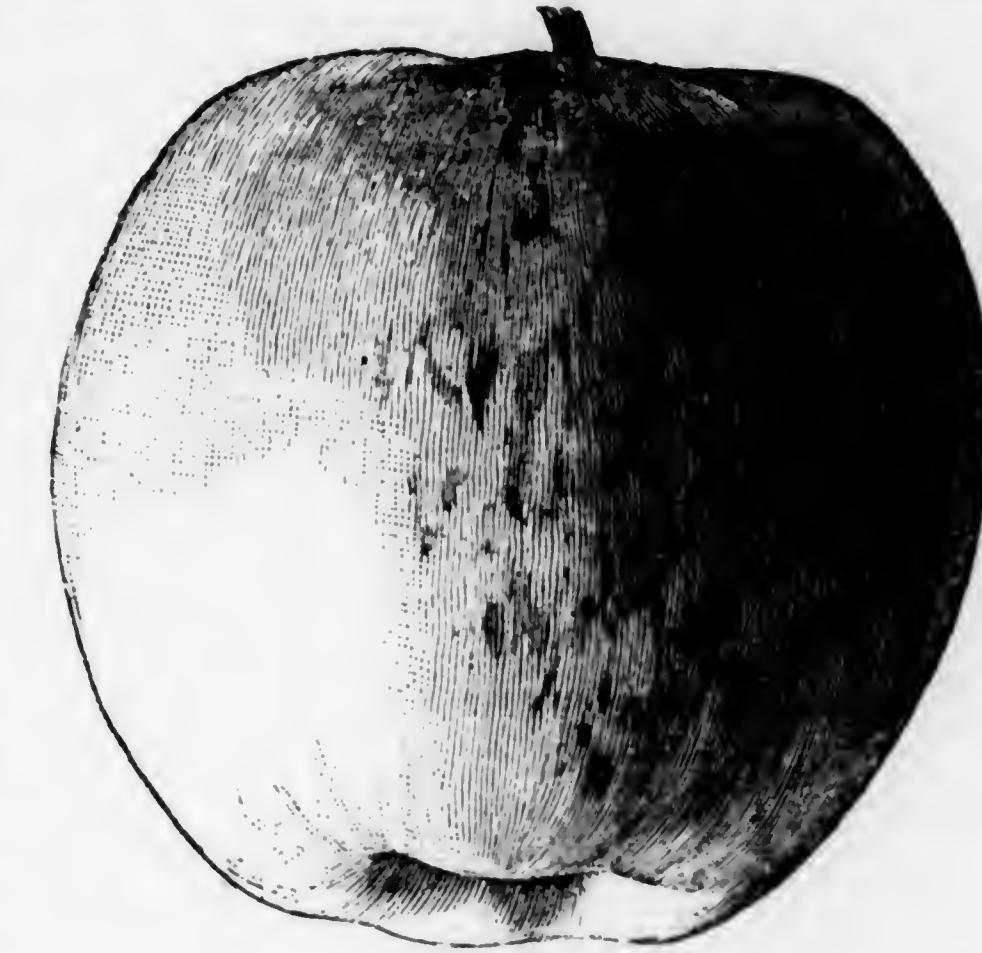
PROFITABLE GRAPES.—It is said that in Western New York, vineyards will yield a fair profit though the fruit only brings two and a half cents per pound.

THE FIRST ORCHARD IN OREGON.—Oregon was first discovered by Capt. Gray, of Boston, crossed by Lewis and Clark in 1804. It was settled as a trading post in 1811, and was turned over to the United States by Great Britain in 1827. In 1841 it codified its laws, and in 1845 started a provisional government; made a territory on August 14, 1848, and became a State in 1854. Before it was even formed as a territory, in 1847 Mr. Edison Lewelling, of Iowa, started across the plains with a wagon, carrying with him several hundred yearling fruit trees; these were set near the little township site of Milwaukee, in Clackamas county, and a fellow traveler, named William Meek, brought a sack of apple seed. The two formed the firm of Lewelling & Meek, and thus the first nursery was started there in 1848. We gather these interesting facts from the *Prairie Farmer*. Mr. Ladd started a nursery in Oregon in 1850, and Mr. Settlemeir, one of the most successful of Oregon nurserymen, arrived the same year. In 1854, 500 bushels of apples were shipped from Mr. Lewelling's start, and are reported to have returned a profit of from \$1.50 to \$2 a pound. At the present day the fruit industry of Oregon is said to be something enormous.

PEARS WITHOUT CORES.—Writers often express surprise that there should be an orange without seeds, but this experience is met with in almost all kinds of fruits. There is an apple called Mennechor's Nocore, so named expressly from the total absence of seeds. An illustration of this is in the Rutter pear; it is extremely rare that seed is found in it, although they are occasionally there. The common currant, Zante currant of the stores, is simply a grape which does not produce seeds. A singular feature about these varieties is, that they seem to increase in productiveness by reason of this want of perfection in the seed. The Rutter pear is especially a great bearer; there seems almost as many pears as leaves on the tree. Unfortunately, if allowed all to come to perfection, the fruit is of inferior quality, but when properly thinned out the flavor is delicious.

THE BENONI APPLE.—It has often been a subject of remark that varieties of pear, although they may be natives of the old world,

generally do just as well or better in this; on the other hand, American varieties also do well in the old world. It has not been found the case with apples; varieties originating in one country have proved generally worthless in others. Among the exceptions to this is our American early apple, known as Benoni, which originated at Dedham, Mass. This variety does well over many parts of the United States, and seems to do equally well in the old world. The *Journal of Horticulture*, of London, has recently called attention to its value for English planting. It is one of those small sized varieties that would never be popular for market purposes, but for a tree in an amateur's garden, few would excel it in its season. Mr. Josiah Hoopes, the well known



BENONI APPLE.

pomologist, regards it as second to none of its season. As a rule illustrations of fruit are somewhat unsatisfactory, as no one can tell certainly from a drawing what the fruit represents; still it is a guide as far as it goes, and we give with this an illustration of the variety.

THE CHAMPION PEACH.—Notwithstanding the large number of varieties in existence, Western authorities believe that a new one, the Champion, raised in Illinois, is a good addition. Its quality is said to be superior, and it bears regularly when other crops are scarce. Moreover, it is said to be large, often ten inches in circumference: ripens in central Illinois about the 5th of August. It is a white free-stone, with red cheek.

BIOGRAPHY AND LITERATURE.

A FORSAKEN GRAVE.

Strange that on his burial sod
Harebells bloom, and Golden-rod,
While the soul's dark horoscope
Holds no starry sign of hope!
Is the Unseen with sight at odds?
Nature's pity more than God's?

—WHITTIER.

GOOD SENTIMENTS.—At a recent meeting of the Congress of American Physicians at Washington, Provost Pepper of the University of Pennsylvania, in a well-merited eulogium on the remarkable characteristics of the late Dr. Joseph Leidy, said:—

"Only a few days before his death, as I stood by his bedside, he chanced to notice the flowered pattern of the carpet on the chamber floor and said: 'How can they work flowers in a carpet? We love flowers! No one would tread on flowers!' And with his heart full of such gentle thought he lapsed into peaceful unconsciousness, like a tired child falling asleep in the bosom of the Nature he had loved so long and so well."

Here again we have an illustration of the conflicting sentiments which govern the human mind. The conception of such a thought as that expressed by Dr. Leidy, is surely characteristic of the tender heart and loving soul. No low or grovelling mind could have taken such a view of things. Yet Dr. Leidy, as the writer of this very well knows, would be the last to recommend that flower patterns should not be used in carpet designs.

MEMORIAL TREES.—We have all heard of the Charter Oak in Connecticut and the Elm tree in Philadelphia under which Wm. Penn stood when making the treaty with the Indians. It is not so generally known that the first colonists of Maryland assembled under a Mulberry tree to establish their Government. A shaft 36 feet high with a base six feet has recently been erected to mark the spot.

(94)

JOHN THORPE.—Mr. John Thorpe, who stands at the head of floriculture and intelligent horticulture in our country, was born in 1842 in England, and came to America in 1874, and the *American Florist* well says, "has been in the van of the wonderful advances made by horticulture on this continent during the last thirty years." He was the one who first thought of the organization of the Society of American Florists, and was the first president of the Society. He has recently been made the chief of horticulture for the great Columbian Exhibition, to be held in Chicago. In his application for this position he was endorsed by nearly all the leading floriculturists and horticulturists in the country. It is believed that under his management the very best that can possibly be done for floriculture will be done in connection with this great exhibition.

THE INDIAN AS A CULTIVATOR.—The popular idea of the Indian roaming over prairies, living on the fruits of the chase and just what he can gather, does not properly characterize all of the tribes. Some of the Indians of the South and Southwest were excellent agriculturists. In Georgia and Alabama, when the white men first went among the Natchez Indians, he found them all cultivating maize, beans, sunflowers, sweet potatoes, melons, pumpkins, and a large number of the native fruits growing in orchards,—persimmons, honey-locusts, mulberry, black walnuts and shell-barks of the best kind were sorted and planted by them. Many of the New Mexican and Arizona Indians were also far advanced in the agricultural art.

HILL OF CALVARY.—The hill near Jerusalem where the crucifixion of Jesus occurred is formed of limestone. The shores of the Dead Sea are lined with pumice stone, showered out of some volcano that destroyed Sodom and Gomorrah, which cities finally sank beneath the waters of the Dead Sea.

1891.]

BENJAMIN FRANKLIN.—Among the many-sided features of Franklin's character, no one seems to have noticed that he had any interest in wine culture, or the improvement of the grape in our country. In clearing up an old house belonging to the Livezey estate in Germantown recently, the following letter to Mr. Livezey was found, which we give in full.

"LONDON, Feb., 20, 1768.

"SIR:—I received per Capt. Falconer your kind Letter of November 18 with a very welcome Present of another Dozen of your Wine. The former has been found excellent by many good Judges; my Wine Merchant in particular was very desirous of knowing what Quantity of it might be had and at what Price, in which I could give him no Satisfaction. I only said that as the Grapes being uncultivated, were not very Juicy, I apprehended so many of them must be required, and so much Labour in gathering, and pressing them to produce a little Wine, That the Price could not be very low. I shall apply this Parcel as I did the last towards warming the Hearts of the Friends of our Country, and well-wishers to the change of its Government: The Partisans of the present may, as you say, flatter themselves that Such Change will not take place till the Proprietor's death, but I imagine he hardly thinks so himself. Anxiety and Uneasiness are painted on his Brow and the woman who would like to see how he would look when dead need only look at him while living. In that respect at least he appears to be as good a Christian as one that dieth daily. With great Regard and many thanks for your kindness to me, I am Sir,

"Your much Obliged Friend and humble Servant,

B. FRANKLIN."

"To Mr. Livezey."

JEAN B. J. VAN VOLXEM.—All lovers of rare plants will recognize Van Volxem as one frequently used in plants' names; a number have been given in his honor. He died on September 4th, at Brussels, in his 62d year. He had a large Arboretum in Belgium, in which he endeavored to collect everything that was hardy in the shape of trees and shrubs. In his younger days he traveled largely over many distant portions of the

world in search of rare trees and shrubs. He did not confine his observations to plants alone, but was one of those rare minds interested in everything that concerned humanity. Even the commonest social custom, if different from those of his own countrymen, was sure to attract his attention. On his return from Japan a number of years ago, he honored the writer of this paragraph with a call. While traveling together along one of the public highways, a lady, the wife of one of the most distinguished officials of the State of Pennsylvania, stopped to ask a question; on receiving the reply, in the politest manner possible she returned her thanks for the information. Mr. Van Volxem looked amazed, and remarked after she had passed on, "Is it not something very remarkable that an American lady should thank a gentleman for courtesies extended to her? We have an impression in Belgium that American ladies take everything as a right, for which no thanks are required." He seemed indeed surprised to learn that, on the contrary, American ladies were probably more courteous in this respect than the ladies of any other portion of the globe. The anecdote is mentioned as showing this particular characteristic of Mr. Van Volxem, of being a close observer of everything of interest that was passing from day to day.

SAMUEL PARSONS, JR.—Mr. Samuel Parsons, Sr., is well known to horticultural literature by one of the best books on the history and culture of the rose that has been issued. The son is now taking steps in his father's literary course, and has just issued a magnificent work on landscape gardening. It is beautifully illustrated, and although much more might be said than is here spoken of, and perhaps much more information given of a practical character, there is still enough of the highest interest in the work to render it one of the most useful contributions to the literature of landscape gardening. Some of the names attached to the illustrations have evidently been transposed; *Weigelia rosea*, for instance, is evidently the common yellow *Cochchorus*, while the true *Weigelia* is labeled for the *Cochchorus*. These and similar little defects will no doubt be corrected should another edition be called for, as the work evidently deserves.

GENERAL NOTES.

COMPLIMENTARY NOTICES.—The numerous complimentary notices MEEHANS' MONTHLY receives from the press is very encouraging to the publishers. The following appreciative remarks from the Philadelphia *Public Ledger* are reproduced for the pretty thought expressed in relation to the flower illustrated last month :—

"The sphere of usefulness of "Meehans' Monthly" is enlarged beyond purely horticultural limits, as the drawing schools are beginning to look for models in the handsome floral plates lithographed by Prang for the frontispiece of the monthly. The subject for November is *Lepachys columnaris*, supposed at one time to a *Rudbeckia*. The peculiar shape of this flower and its glowing color renders it not unlike a golden shuttlecock poised in mid-air on a slender stem. The beautiful picture presents a lively impression of the flower's arrested flight."

—
EUROPEAN APPRECIATION OF OUR MAGAZINE.—A correspondent from Pallanza, places us under obligations by writing to say that while staying at the leading hotel at this place in the edge of Lake Maggiore, it was visited by the King and Queen of Italy and the Queen of Roumania. Our magazine was in the reading room, and our biographical notes on the two great Italian botanists highly commended. The personal card of Signor Rovelli, who will represent Italy in the forthcoming Centennial, was forwarded to us in token of Italian appreciation of the magazine's notices. We know that our readers, who are interesting themselves so warmly in our success, will be as gratified as we are, with these kindly feelings for our work in these distant lands.

—
MOON FLOWER.—This old plant had a good run under its new name.—A Kentuckian has now re-baptized it as *Fleur de Lune*. In Latin as the *Bona-nox*, in English, Moon Flower,—and French, *Fleur de Lune*, it is getting rather over-loaded with common names.

(96)

ENGLISH NAMES FOR PLANTS.—A Cincinnati correspondent observes, "that he thinks the remarks made, commenting on Mr. Dudley Adams' notes, were well timed." He would like to know, among the multiplicity of English names, which particular one, in any case, Mr. Adams would adopt for general use. He says that the common Caladium of gardens is generally known as the elephant's ear; at the same time a low growing Begonia from China, *B. Evansiana*, is equally well known as elephant's ear. Which of these would Mr. Adams choose for the accepted name? Botanists no more than Mr. Adams would use Latin names for plants, if there were any way of avoiding them. Systematic botany could not be carried on with English names. It is a necessity and not a choice. Instead of railing at botanists for not doing what they think they cannot do, it would be better for gentlemen, like Mr. Adams, themselves to formulate a system based on English names.

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BINDING THE MAGAZINE.—This month, December, finishes the first volume of our magazine. It was started last July—an unusual time for such efforts—so that the public might become thoroughly aware of the nature of the work before the regular January subscription time arrived. It was our thought that as the first volume of six months would be rather thin, the first and second volumes of eighteen months would probably be bound in one; and we shall therefore prepare a complete index at the close of the second volume in December, 1892.

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OUR JANUARY PLATE.—With the approach of spring, we think of buttercups, dandelions, violets, and other familiar flowers. The most popular buttercups are foreign introductions. We shall introduce to our readers' notice a genuine American, *Ranunculus fascicularis*, as the first picture in our new volume.

**End of
volume**