



0 2007 1301701 6

California State Library

California State Library

CA 1921

Presented by Purchase

Date received 25-1-630.5

No. 35356 C15
2

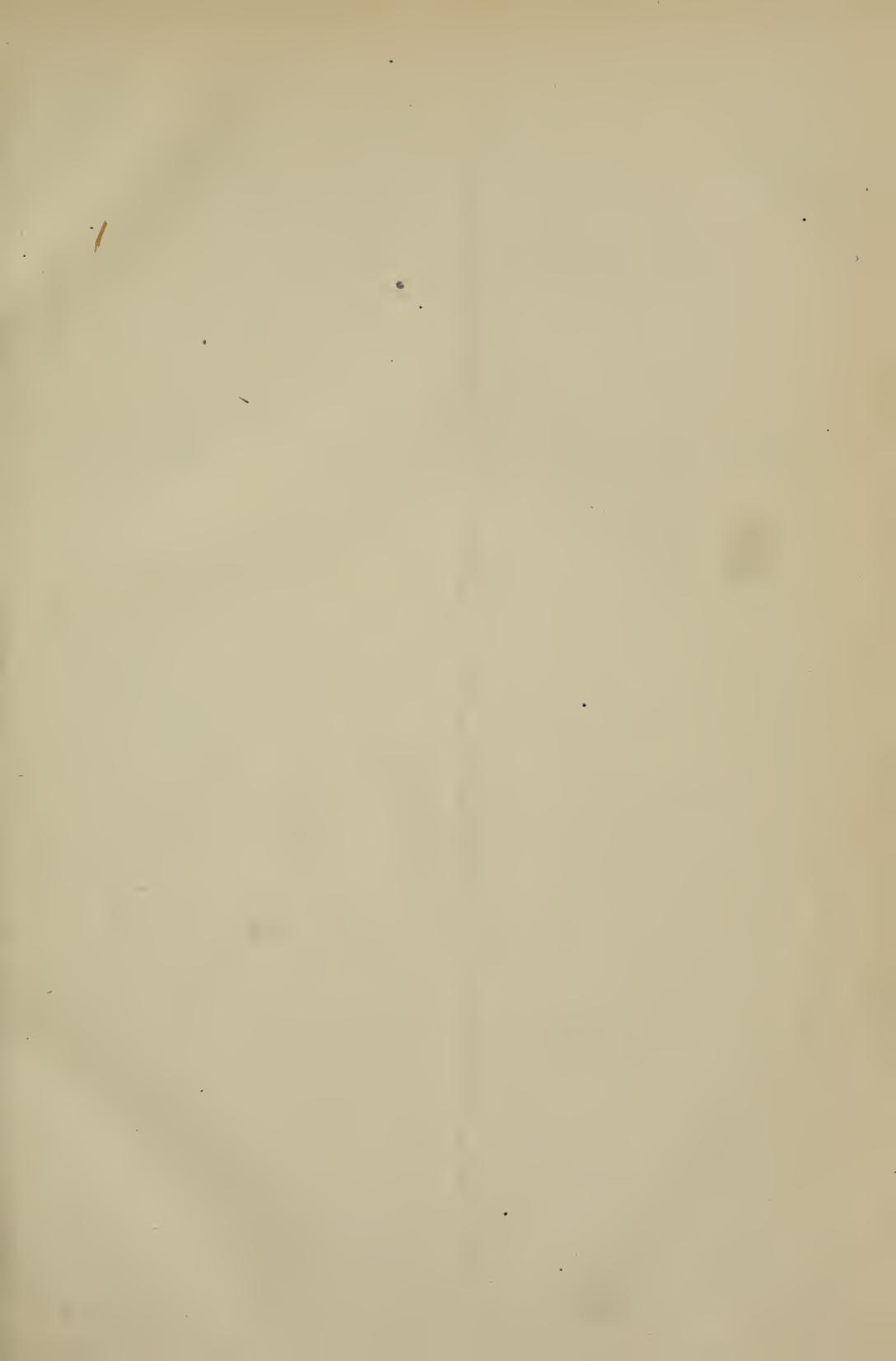
EXTRACT

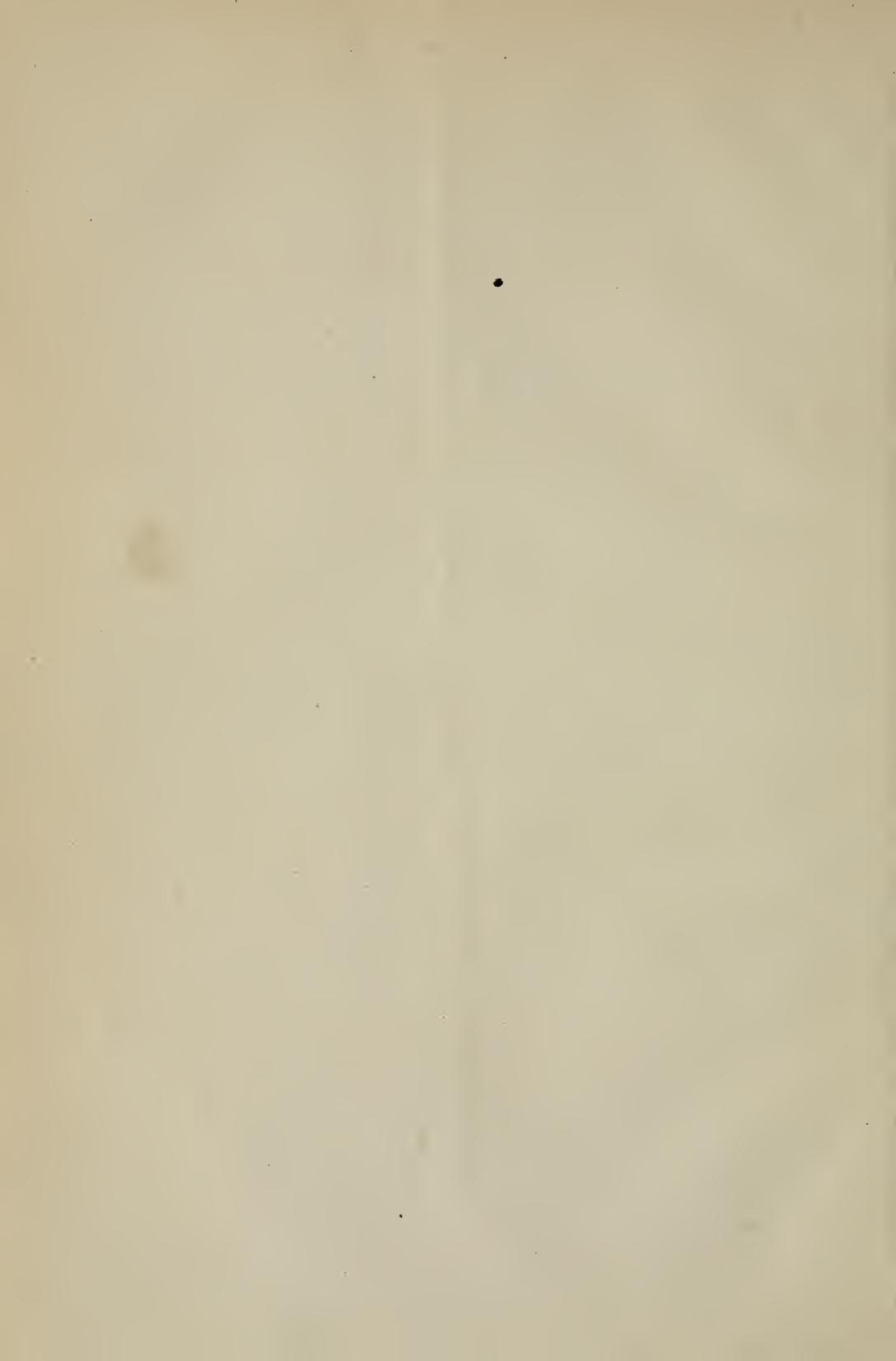
From an Act-prescribing Rules for the Government of the State Library, passed March 8th, 1861.

SECTION II. The Librarian shall cause to be kept a register of all books issued and returned; and all books taken by the members of the Legislature, or its officers, shall be returned at the close of the session. If any person injure or fail to return any book taken from the Library, he shall forfeit and pay to the Librarian, for the benefit of the Library, three times the value thereof; and before the Controller shall issue his warrant in favor of any member or officer of the Legislature, or of this State, for his per diem, allowance, or salary, he shall be satisfied that such member or officer has returned all books taken out of the Library by him, and has settled all accounts for injuring such books or otherwise.

Sec. 15. Books may be taken from the Library by the members of the Legislature and its officers during the session of the same, and at any time by the Governor and the officers of the Executive Department of this State who are required to keep their offices at the seat of government, the Justices of the Supreme Court, the Attorney-General and the Trustees of the Library.







H C

THE

INT. 1898

CALIFORNIA

HORTICULTURIST

AND

FLORAL

MAGAZINE.

VOLUME II. 1871—1872.

PUBLISHED BY F. A. MILLER & CO.,
SAN FRANCISCO, CAL.

CALIFORNIA

HORTICULTURIST

SAN FRANCISCO:

JOHN H. CARMANY & Co., Printers, 409 Washington St.

MAGAZINE

VOLUME II 1871-1872

Published by J. H. Carmany & Co.

San Francisco, Cal.

INDEX.

	PAGE.		PAGE.
Abies Douglasii, Growth of.....	127	Cranberry Culture.....	32, 191, 194, 231, 342
Acacia Melanoxylo.....	30	Currant-Cuttings.....	31
Acclimatization Society's grounds, near Melbourne, Australia.....	27	Cut Flowers.....	157, 337
Acclimation of Foreign Plants.....	31	Cultivation of Tobacco.....	24, 190
Acclimatizing Society.....	63	Currants.....	238, 354
Acorns.....	29	Curious Phenomenon.....	243
Achimenes.....	229	Cuban Tobacco.....	244
Agriculture, Annual Report of Commissioner of.....	62	Cucumber Bugs, Remedy for.....	249
Agriculture, State Board of.....	62	Currant-Worms.....	249
Agricultural Board of Directors, Meeting of.....	90	Cucumber Preserving.....	322
Agricultural Fairs.....	187	Delphinium Nutriculae.....	32
Agricultural and Horticultural Societies.....	209	Delegates, Meeting of.....	91
Agricultural Association, National.....	254	Depth to Plant Seeds.....	125
Agricultural Congress, Third Session of.....	272	Deutzia.....	129
Agricultural College of California.....	346	Decorative Plants.....	257, 289
Alvarado Beet-Sugar.....	30	Desirable Plant for a Dry Country.....	288
Alfalfa, Cultivation of.....	158	Distribution of Bedding Plants.....	32
Alaska Cedar.....	287	Dormant Vitality in Seeds.....	167
Amaranthus Salicifolius.....	185	Duties on Imported Plants.....	177
Annals.....	161	Editorial Portfolio.....	17, 51, 81, 115, 146, 177, 209, 242, 276, 317, 340, 372
Ants, How to Destroy.....	326	Editorial gleanings.....	26, 63, 125, 155, 189, 219, 255, 287, 319, 349, 375
Apple Cider.....	63	Egg-Plums, Canada.....	349
Apples, Keeping of.....	128	English Horticultural Exhibitions.....	27
Aphides (Green Fly) on House Plants.....	213	English Sparrows in Australia.....	338
Aphis Lanigera.....	219	English Chestnuts.....	45
Aquarium of the London Crystal Palace.....	127	Epacris.....	351
Aquarium, The great, at Brighton, England.....	328	Eucalyptus Globulus.....	349
Artesian Wells.....	64, 238, 248, 279	Evergreens from Cuttings.....	24
Arboriculture.....	189	Evergreens in the Eastern States.....	228, 287
Arranging Flowers.....	238	Exchange Table, Our.....	92, 183, 216, 249, 282, 318, 346
Army-Worm.....	286	Exhibition, The.....	301
Asphalt-Walks.....	125	Experimental Stations.....	336
Association, Vacaville Fruit-growers'.....	282	Farfugium Ligatum Variegatum.....	377
Australian Seasons.....	256	Facts, For Pomologists important.....	23
Australian Forest-Trees, Economic Value of.....	271, 313, 326, 355	Favors Received.....	50, 124, 153, 182, 216, 249, 283, 317, 346, 376
Azalea.....	65	Farmers' Club at Sacramento.....	62
Azalea-Cuttings.....	231	Farmers' Clubs.....	188
Bay District Horticultural Society.....	19, 121, 186, 281, 297, 345, 358	Fairs and Exhibitions.....	217
Banana Culture.....	343	Fern-Case, How to Make.....	26
Begonias, Raising from Leaves.....	28	Fertilizer for House-Plants.....	224
Berlin Project.....	125	Ficus Elastica, Propagation of.....	28
Beaucarnea Recurvata.....	185	Finesness of India Cottons.....	157
Beautifying our Homes.....	195	Figs—Drying and Packing of, Use of, etc.....	158, 219, 255
Bermuda Grass.....	210	Figs for Profit.....	225
Beet-Sugar.....	30, 213, 219, 235	Fish Culture.....	340
Beautify the Farm.....	320	Flowering Bulbs.....	1, 63, 97
Big Crop.....	32	Flowering Plants in our Public Squares.....	270
Borers in Fruit-Trees.....	157	Flowers, Changing the Colors of.....	319
Botanical Gardens of Melbourne.....	46, 200	Flowers as Disinfectants.....	286
Botanical Work.....	217	Flower Seed-raising.....	332
Botanical Garden for New York.....	282	Floriculture in the West.....	15, 61, 82, 87, 110, 112, 182, 208, 244, 246, 264, 288, 333
Botany in New York.....	255	Forest-Tree Culture.....	34
Brandy from Manzanita Berries.....	107	Forests.....	112
Brazil-Nut.....	316	Forests and Rain.....	113
Budding Fruit-Trees.....	373	Forests-Trees, Plea for.....	114
Button-hole Flower, Gentleman's.....	249	Forests, American.....	244
Cabbage-Lice, To Destroy.....	128, 213	Forest-Tree Salvation.....	80
California Vine-Growers' Association.....	143, 168	Fossil Forest, Notice of.....	178
California Butter in New York.....	224	Foreign Industries.....	20, 60, 86, 120, 152, 181, 215, 254, 285, 348
California Chestnuts.....	350	Fruit Market, Report on.....	30
Camellias, Management of.....	53, 333	Fruit-Trees of California.....	16
Camphor, Use of.....	158	Future Value of Timber.....	185
Camphor-Tree of Sumatra.....	191	Fuchsia, New Double.....	259
Canned Fruits.....	329	Fuchsias, Choice Varieties of.....	244
Catalogues Received.....	24, 93, 122, 154, 182, 217, 250, 283, 318, 346, 375	Garden-Walks, Coal-ashes for.....	95
Capitol Grounds.....	218	Geraniums, New Double.....	39
Carob-Tree.....	220	Gloxinia.....	158
Century-Trees.....	34	Gladiolus—Seedlings, etc.....	13
Cement for an Aquarium.....	211	Good Cement.....	150
Celery, Culture of.....	375	Golden Gate Park.....	192
Chrysanthemum.....	163	Good Seed.....	31
Cherry-Trees, Profits of.....	256	Grape Harvest in France.....	105
Chestnut-Trees.....	287	Grapes, Wines, and Raisins.....	214
Cherry-Currants.....	288	Growth in Plants, Increasing the Vigor of.....	231, 260
Cinchona.....	221	Grape-Growers' Association.....	160, 242, 254
City Parks of St. Louis.....	116	Grasshoppers.....	256
Cineraria.....	325	Grasses for Fixing a Shifting Soil.....	187, 287
Clearing Forest-Lands.....	45	Grape Crop, Injury to, etc.....	32
Clerodendron.....	168	Guano, La Plata or Carno.....	70
Cotton in California.....	24, 47, 64, 256	Hardy Vines.....	43, 70
Correspondence.....	25, 96, 286, 348	Help for our Silk-growers.....	241
Conifers in Pots.....	32	Hints about Wine-making, etc.....	263
Coffee, Substitute for.....	64	Horticulture.....	267, 292
Colony, Wintering of.....	95	Horticultural Reading-Room.....	19
College of Agriculture and Horticulture.....	187		
Cobaea Scandens Variegata.....	356		
Crawford Markets, Bombay.....	174		

Horticultural Exhibition.....	186, 276	Propagating Evergreens (E. L. Reimer).....	25, 136
Horticultural Hall.....	218	Preserving Flowers.....	67, 99
Horticultural and Agricultural Exhibitions in Australia.....	239	Preserving Grasses.....	130
Horticultural Fair in Portland.....	282	Protective Duties on Trees and Plants.....	176
Horticultural Hall in Philadelphia.....	334	Primula Japonica.....	166
Hop Culture.....	73, 256	Premiums for Flowers.....	217
How the South Americans make Fruit-Trees.....	155	Premiums Awarded, List of.....	309
How to keep Canary Birds.....	155	Preservation of Apples.....	957
House-Plants, Treatment of.....	139, 160, 261, 327	Public Grounds, Our.....	115
Honey, Production of.....	192	Public Improvements.....	118
Hyacinth Culture in Glasses.....	39	Pumpkins.....	29
Immigration.....	242	Quail, Importation of.....	183
Important Discovery in Tanning.....	156	Quinine, Supply of.....	128
Insects.....	74, 146	Raising Trout.....	236
Inexpensive Ornaments.....	208	Red Spider, How to Destroy.....	64
Intelligent Farming.....	222	Remarkable Plant.....	159
India-Rubber Trees.....	224	Rhododendrons, Himalayan, in Ireland.....	38
Industrial Exhibition at Cincinnati.....	282	Roots and Bulbs of California (Dr. A. Kellogg).....	366
Influence of Various-colored Light on Vegetation.....	320	Rose-Cuttings.....	64
Indelible Ink for Zinc Labels.....	332	Roses, Best White, in England.....	64
Insects of California (Dr. H. H. Behr).....	368	Rose, La Marque.....	127
Irrigation.....	78, 311	Rosebuds.....	233
Irrigation in the Malay Archipelago.....	357	Roses, The three best.....	234
Jarrah Jarrah.....	127	Roses, How to Have all the Winter.....	248
Lawns (R. Michelson).....	42	Roses, New way of Propagating.....	281
Landscape Gardening.....	195	Roses, Hints on the Propagation of.....	5
Largest Vineyard in California.....	206	Rose, Moss.....	223
Lawyer-Apple.....	218	Roses on the Lawn.....	377
Leaves, New use for.....	159	San Francisco Park.....	89
Lime as a Fertilizer.....	28	San Lorenzo (P. J. Ford).....	370
Literary Notices.....	93	Scuppernong Grape.....	14
Libocedrus Decurrens, Thuja Lobii.....	95	Scale-Insects on Trees.....	320
Lily of the Valley.....	103	Sea-Weed.....	155
Locust Timber.....	96	Sea-Anemones.....	350
London, the Landscape Gardener.....	202	Select Plants.....	294, 322, 352
Loquat Fruit.....	278	Secretary's Report for 1872, Bay District Horticultural Society.....	361
Majetin vs. Apple Blight.....	3, 35, 68, 100, 133, 165	Shade-Trees.....	159
Mammoth Fig-Trees.....	30	Shipping of Plants.....	279
Mammoth Flower.....	256	Shelter.....	31
Manuring Trees.....	160	Silk-worm Eggs, Regulating the Hatching of.....	21
Marine Aquarium.....	210	Slugs, Remedy for.....	319, 332
Marketing Grapes, Peaches, etc.....	278	Smoke of Dried Pumpkin-vine Leaves.....	14
Maranta.....	321	South Yarra Nurseries.....	229
Merits and Needs of a County.....	221	Soot, Value of.....	158
Mesquit.....	235	Spanish Bayonet.....	185
Mignonne, New Dwarf.....	185	Strawberry.....	214, 281
Moss, To Preserve.....	30	Statistics of 1870.....	255
Mulching.....	29	Stakes and Supports for the Garden.....	378
Mushrooms.....	207	Steam-Cultivation in Scotland.....	319
Napa Wine Product.....	39	Sunflower.....	123
Napa Valley, Visit to.....	214, 245	Sweet Violets.....	201
National Park.....	151, 285	Tamarack Evergreen.....	95
New and Rare Plants.....	23, 58, 95, 123, 154, 184, 250, 284, 347, 375	Tender Vines.....	102, 134, 166
New and Rare Fruits.....	59, 91, 123, 217, 251	Tea-Plant—Growing from Seed.....	180
New Bulbs.....	218	Thinning-out Fruit.....	59
New Vegetables.....	59, 252	Timber-Trees of Australia.....	8
New Books and Periodicals.....	183, 284	Tobacco Antidote.....	26
Notes on Fruits for California.....	6, 36	Tobacco-Growing in California.....	126, 244
Noxious Insects (Dr. A. Kellogg).....	196	Tree-Planting.....	63, 246
Nut-Bearing Trees, Fruits of.....	160	Trees, Want of, in California.....	113
Oakland Farming, Horticultural, and Industrial Club.....	187	Trees, Spoiled and Ruined.....	114
Oats, Weight of a Bushel.....	160	Trees as Protectors of Crops.....	293
Olive Production.....	30	Transactions of Bay District Horticultural Society.....	358
Olive in California.....	72, 329	Tropical Fruits for California.....	40
Olive-Tree.....	127	Trout-Fishing—Its Genial Influences, etc.....	76, 107, 141, 204
Ornamental and Landscape Gardening.....	12, 40, 335	Vancouver's Island.....	301
Oregon State Fair.....	20, 282	Vegetation in Alaska.....	194
Orange-Trees in Sacramento.....	94	Verbenas.....	227
Oranges and their Congeners.....	180	Vegetables, Fresh.....	252
Orange Scale-Insects.....	213	Vegetation in the Tropics.....	371
Orchids.....	193, 284, 269, 320, 398	Vineyard, How to Cultivate (M. M. E.).....	49
Osage Orange (<i>Maclura Aurantiaca</i>).....	43	Violet, How to Grow.....	343
Our Forests.....	369	Walnut-Trees.....	64
Partridges vs. Chinch Bugs.....	128	Walnuts, Los Angeles.....	126
Parks for Small Towns.....	189	Wash for Plants.....	96
Paradise of Flowers.....	288	Want of Rain.....	63
Pepperwood.....	63	Wet Lands.....	173
Peculiar Tree.....	127	Well-Boring in San Bernardino.....	188
Pears sent East.....	154	Weeping Willow.....	192
Pear-Growing.....	252	Wine Product of Los Angeles.....	80
Petunia.....	7	Wine Yield, Our.....	62, 80
Peat.....	261	Wine-Making in California.....	104, 137, 380
Pine, Destruction of.....	64	Wine-Tant, A California.....	128
Pinus Edulis.....	208	Wine Interest, Our.....	203
Pinching and Pruning.....	377	Wine Product in the United States for 1871.....	219
Planting Trees and Shrubs (P. J. Ford).....	25	Wine Overland.....	285
Plant Trees.....	64, 75	Window Gardening.....	291
Plant out Maples.....	178	Work for Month.....	21, 55, 84, 116, 148, 179, 211, 247, 280, 344
Planting Trees on the Plains.....	222	Woodward's Gardens.....	23, 89, 151
Planting of Trees on Private Property.....	315	Wood-Ashes for Wheat, etc.....	159, 187
Poppy Culture, Extensive.....	143	Yellowstone Park.....	285
Poison Oak, Antidote for.....	224		

THE
CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

VOL. II.

DECEMBER, 1871.

No. 1.

FLOWERING BULBS.

In one of our former numbers we have given our readers descriptions and the proper mode of treatment of Hyacinths and Tulips, they being the most popular of bulbous-rooted plants. In fact, Hyacinths and Tulips are entitled to as prominent a position among the bulbs as the Roses are among the flowering shrubs. Yet there are many other kinds of bulbous-rooted flowering plants which deserve most extensive cultivation, but few of which we see in our gardens—their absence being almost entirely attributable not only to the fact that they are but very little known, but also to the erroneous idea that their proper cultivation requires too much care. In regard to this latter point we may say, that the culture of hardy bulbous roots is comparatively easy, and for a short space of time during dry weather the bulb itself is self-sustaining, furnishing some nourishment to the leaves and flowers. The best general mode of treatment is to keep the soil loose and free from weeds. Bulbs prefer a deep soil, and manure should be applied sparingly and in a thoroughly decomposed state.

We shall now speak of the

PAEONIES,

which are divided into two classes—Herbaceous and Tree Paeonies.

The Herbaceous Paeonies are most popular

lar, and have become indispensable to flower gardens of any extent. They are perfectly hardy, and grow in almost any situation. The flowering season is far more extended than was the case in former years—some varieties blooming quite early, while others flower during the latter part of summer; many are also sweet-scented.

The Paeonies require a deep soil, but are satisfied with almost any kind of ground. They should not be crowded by other plants, as they require a great deal of room, when they form much better plants. The foliage is very ornamental, and the flowers are large and showy. The colors are also very vivid and striking. The flowers are either single or double, but the double ones are exclusively cultivated for ornament.

One of the oldest and most popular varieties is *Paeonia tenuifolia flore pleno*, producing a large double flower, five to six inches in diameter, and of a brilliant blood-red color.

Another much-admired variety is *Paeonia albiflora*, indigenous to Siberia, and originally single, but the art of floriculture has improved it, and we have now several varieties of fine double flowers from it, some of a fine rose color, and others of a pure white.

The more recent varieties are a decided improvement on the older ones as far as color is concerned. We mention

P. festiva maxima, very large flower, of a pure white, tipped with crimson.

P. grandiflora nivea, double white, with yellow center.

P. edulis, of a rosy-violet color, flowers fragrant.

Some of the large bulb dealers in the East advertise over three hundred varieties of all shades and all colors, which fact in itself gives evidence of the extent to which this class of plants is cultivated.

In California we often see mistakes made in the taking up of bulbous roots. Very little knowledge seems to exist as to whether roots should be taken up every year or not, and also as to the proper time for taking them up. In regard to Paeonies, we wish to say, that they should remain in the ground for a number of years. When transplanted, little growth and hardly any flowers can be expected during the first year. The second year is an improvement, and during the third and fourth years a near approach to perfection may be anticipated. However, it is at times desirable to propagate by dividing the roots, in which case the plants should be carefully taken up in the fall, so as not to break off the young shoots which are already formed, then divided and planted again as soon as the ground can be prepared for them. The roots should never be kept long out of the ground, and should always be well covered with soil. In dividing the roots, it is necessary to leave an eye or young shoot to every set which is to be planted, as although it is often the case that roots which have neither eyes nor shoots attached will form them after planting, yet we cannot advise trusting to such a chance.

Paeonies can also be raised from seeds. These will frequently lie dormant in the garden for a year or two, and finally make their appearance. But to obtain strong-flowering plants in this way is slow work, and, after all the trouble and anxiety, we may not succeed in obtaining anything which is worthy of cultivation.

The price of Paeony roots is now so low that we recommend the purchase of roots in all cases, if good varieties can be obtained.

There is still another way of propagating them, which is by letting the shoots pass through a flower-pot or box, which is placed a little above the surface of the ground. The stems, surrounded by soil, will make roots as far as they are covered with it, and may then be cut up into as many pieces as eyes can be found upon them. Each piece of the rooted stem, with an eye attached, will make a new plant.

The Tree Paeonies, *Paeonia arborea*, are natives of China and Japan, and are not as yet extensively cultivated, although they promise to form a very important feature in floriculture. They are reported to produce flowers of almost every color, blue and yellow not excepted. Their cultivation is probably well adapted to our Californian climate, and we should like to see them introduced extensively.

We shall next call the attention of our readers to the splendid class of plants called

GLADIOLUS,

which of late have attracted so much attention. No class of plants has within so short space of time made so many admiring friends as the Gladiolus. One of our principal florists in the East speaks of it thus:

“It would be difficult to conceive anything more beautiful than a collection of Gladioli in full bloom, with their tall spikes profusely covered with flowers of the most varied and richest hues. They are of many colors, ranging from vivid scarlet, orange and vermilion, to white, salmon, pink, carnation and many other shades, which are rarely to be met with in such close affinity.”

The Gladiolus has been found growing wild in Turkey, at the Cape of Good Hope, and at Natal on the Southern coast of Africa. But these are nothing in comparison with the numerous and elegant hybrids produced within the last few years by floral establishments; and we believe that the French have been more successful in producing new and excellent varieties than any other nation.

It is useless for us to name varieties, as we could not do justice to the large number of

them, and we must refer our readers to the various price-catalogues of responsible dealers in the East.

But we shall have to make a few remarks in regard to the proper cultivation of the *Gladiolus*. Contrary to the treatment necessary for the *Paeony*, the *Gladiolus* should be taken up every year. After the leaves have wilted, the young bulbs which have been formed around the old bulb should be separated and planted by themselves during the latter part of the rainy season, and then these little bulbs will form good and strong flowering bulbs in two or three years. Flowering bulbs may be planted here almost at any time, as we have seen them in bloom during nearly every month of the year, and we would therefore advise those who have a collection of them to plant them consecutively and from month to month, unless they are planted for contrast and effect in more extensive gardening.

After flowering the stalks should be cut off, unless it is wished to ripen the seed. The roots are very much weakened and exhausted by allowing the flower-stocks to remain; and if the bulbs are left in the ground too long, there is danger that vegetation may set in again, before they have sufficiently rested; in which case, little can be expected from them in the shape of flowers. The roots should be kept out of the ground for from four to six months, and during that time stored in a cool and dry place. The colors should be marked before taking them up, so that they may be planted again effectively.

Gladioli may be raised from seed, and this is mostly done to produce new varieties. The seed should be sown in boxes, soon after it has ripened; it should be covered with a very little soil and should be placed under glass. These little seedlings make flowering roots in about three years, and should be transplanted into new quarters every year.

We recommend the very extensive cultivation of *Gladioli*. They are of easy culture, strong and effective, and flower abundantly

for some length of time. California is well adapted for the successful growth of them.

THE "MAJETIN," vs. APPLE BLIGHT.

Through the kindness of W. H. Treen, Esq., of Melbourne, we have received his elaborately written essay on the above subject, and we purpose giving it to our readers in full by monthly instalments. Some of our fruit growers may doubt the propriety of affording so much space to an evil which has as yet hardly made its appearance in the orchards of the Pacific Coast, but we are of opinion that as we are liable to be annoyed by this pest at any time, a proper degree of caution on the part of our fruit growers can not be out of place.

This essay, which we propose to give to our readers, is ably written and must be interesting to our pomological friends throughout the country. We would also impress upon our readers the fact, that in climates similar to those of Australia and California, insects which have once effected a settlement will multiply to such an extent as to become very soon most injurious; while in cold climates, the heavy frosts destroy a large proportion of them, and thus hold them somewhat in check.—Ed.

"The Apple Tree is the most popular of all British fruit trees. In its wild state it is the common crab of the British woods, blossoms in England during the months of April and May, lives to a great age, affords valuable timber for the turner and cabinet-maker, and usually grows to the height of twenty feet. Unfortunately, of late years the apple has become more and more subject to blight, and much has been done, and more written with the intention of, in some way or other, arriving at satisfactory conclusions as to the best and most reliable means of preventing the apple blight scourge.

"The *Aphis lanigera* (or the American woolly blight), is one of the most mischievous of the whole *Aphis* family. It often reduces apple trees to sterility. It is of the

middle size, pitch brown color, and envelops itself in white silky down. In spring a slight hoariness appears upon infested trees, and as the season advances this increases, and becomes cottony, and towards the end of the summer it looks like thick down upon the lower sides of the branches. Quantities of small wingless insects lie concealed in this downy substance, and are preying beneath upon the bark of the tree. The sap of the wood being wounded by them, rises up and nodes, and the branch thus deprived of its nourishment becomes sickly, loses its leaves, and perishes. Branch after branch is thus assailed and dies, and finally the stem and roots, deprived of every connexion with living leaves, decay beyond all remedy. *Aphis pomi* has prevalingly a yellowish-green color; its ears and legs are dark brown, the remaining parts of it are black, its eggs also are black and oval, and are deposited on the spurs of apple trees in the autumn, and hatched at the budding of the leaves in the spring. The *Anthonomus pomorum*, has long been distinguished as a formidable pest in all apple orchards. Its color is pitchy red, obscured by a sprinkling of short ash-grey hairs. This insect passes the winter beneath the bark of the apple trees, and in early spring emerges from its winter quarters, and begins to rove our orchards or fruit gardens. The female lays her eggs when the flower-buds of the apple trees are either beginning to expand or have fully developed, and with her long auger-like proboscis she pierces a deep hole in the calyx, and deposits her eggs beyond the reach of small birds, etc. A small white grub speedily evolves from the egg, eats up all the interior parts of the flower, utterly destroys its powers of fructification, and occasions it soon to assume the shriveled form and sickly brown color which is popularly denominated "apple blight."

"*Aphis lanigera* must be classed as one of the most destructive enemies the cultivator has to contend against; for, although an active warfare has been carried on by growers against them for a long period, still they decrease not; the economy of their natures is

so favorable to their reproduction, and so small is the modicum of knowledge, as regards their natural history, in the possession of the majority of growers, that the various schemes for their annihilation have hitherto failed, and they are still left in possession of the vantage ground, to the yearly loss and discomfort of cultivators. The study of entomology has only of late years been called in to the aid of the grower; the beneficial effects resulting therefrom are already becoming duly appreciated, and in some cases abundantly demonstrated. The study of entomology is simple, and not attended with any great expense in its pursuit. It is also pleasing and interesting, and may be pursued with equal success by those in the humblest as well as in the higher walks of life; for by carefully observing the different changes which these insects undergo from the embryo to the attaining their perfect form, so much of their habits will be discovered as will materially aid in devising effective means for the destruction of those species which are most injurious.

"The introduction of *Aphis lanigera* into England has been traced to the year 1787, at which period it appears to have been brought from America to an old nursery situated in Sloane Lane. Fifteen years after this time, this great pest had extended itself into most parts of Britain and Ireland, and now it is indeed difficult to enter a Victorian garden or orchard where its destructive effects are not more or less evident; and although the late Sir Joseph Banks investigated the history and economy of this insect, *Aphis lanigera*, and also Mr. Joseph Kirk, of Brompton, a cultivator of great experience in the management of fruit trees, both of whom laid down what appeared to them to be effectual modes of disposing of it, so far as dressing and anointing the trees with numerous compounds and washes, still nothing seems to have been done by them, or others, at that time, with regard to the finding out or the introduction of "*Aphis lanigera* resisting stock;" but one of the principal reasons of this might have been, the roots not having been infected at

that period to such a serious extent as of late years. The greater part of their study and attention was most likely devoted to the *tops* and *boughs* of the trees, when no doubt many of the remedies proposed by them for the extirpation of this destructive insect, as far as the tops of the trees were concerned, if properly applied and constantly persevered in, were effectual. But when it is considered that the celebrated naturalist, Reaumur, states that one insect in five generations may be the progenitor of 5,904,900,000 descendants, and it is supposed that in the course of twelve months there may be no less than ten generations, thus exceeding in fecundity that of any other known animal, I think it will be obvious to any one reflecting for a moment, that the difficulty of destroying and of keeping clear such an insect is a very serious one.

“In experimenting with the numerous washes and compounds so much in vogue for dressing apple trees for blight, I have come to the conclusion that in lieu of many of the various compounds, most of which are expensive, or at least soon become so, where many trees are cultivated, the great secret of success is the “way in which it’s done.” A simple solution of soap and water, if properly applied, is generally all that is necessary; for it is thorough brushing, and going minutely over each bough of the tree requiring to be operated upon, in fact energetically applying the brush to all crevices, that is really effective; for unless the silky down enshrouding this insect—*Aphis lanigera*—is broken, the insect still lives, even though the solution used be of great strength. For instance, boughs thickly covered with blight, having been immersed in strong solutions of lime-water, lime-wash, caustic potash, and even sulphuric acid, and afterwards taken out, it was found that this insect even then not only lives, but still thrives; whereas, if a tree receives a thorough brushing all over with simple soap-suds, the silky down or protection enveloping this pest being broken, the insect is, for the time being, effectually destroyed. During these exper-

iments the only solution that seemed to break through the silky down on the bough by simple immersion was a powerful solution of carbolic acid. Such being the case, many of the expensive compounds for tree-dressing can, I think, be very well dispensed with, and a thorough and careful brushing with soap-suds substituted in lieu thereof, thereby also avoiding any chance of injury to the wood of the tree by the use of noxious compounds.”

HINTS ON THE PROPAGATION OF ROSES.

If the operation of making rose cuttings has not already begun, it is now high time to commence. I for my part usually begin making them about the 15th of October, and have always succeeded well.

It should be understood that a bed should have been prepared two or three weeks previously, of either good fresh horse manure or of tan bark, firmly packed in the frame, which should be covered with a sash; in a few days the manure will have heated, and if needed it should be well tramped down again, covering the surface with some light material from four to six inches, say tan bark or leaves if they can be had; the sash should be lifted during the day, so that the steam may escape.

I generally take flat boxes one and a half feet wide by two and a half long, and from three to four inches in depth; I fill them with sand, well pounding it down and wetting it thoroughly. Everything being prepared, I commence with hybrid perpetuals, as it takes them a little longer to root than either Teas or Bourbons. I take the last ripe shoots of the season, and cut them up with a very sharp knife into lengths of from two to three eyes—but not more—leaving part of the leaves on the cuttings, which will prevent them from pushing out too soon. Particular attention should be given to keeping the knife very sharp, or the bark will be bruised in the cutting, and consequently a great many will not grow.

The cuttings so prepared should be firmly planted about one inch deep in the sand in the above mentioned boxes, but not too thickly, say about half an inch in the rows, which should be about an inch apart: if the bed is sufficiently cooled down, the boxes so filled with cuttings should be placed in it as near to the glass as possible, keeping them well shaded; you may either apply white-wash on the glass, or use light canvass—I prefer the whitewash.

The frame should be kept very close, unless steam should gather, when the sash may be lifted a very little during the middle of the day for about an hour or so. The rose cuttings should be sufficiently watered before putting them in the frame, so that they keep moist enough for thirty or forty days; this is a great point and must be strictly attended to, for I have found by my own experience, that if I had to use water during the first forty days I lost a great many, sometimes whole boxes of them.

In forty days the rose cuttings so treated will have all caloused, and mostly rooted. After this time a little more air may be given by degrees, and in the course of ten weeks or so they may be planted in two inch pots, or left in the boxes until planted in the ground—I prefer putting them in small pots, as fewer will be lost by this plan. After planting them in the small pots, they should be well watered and kept in a close frame well protected from the hot rays of the sun, for about three weeks, after which time they may get a little air every day until hardened off enough to take off the glass; they will then be fit to be planted in the open ground.

Roses so raised will make better plants than those cuttings planted in January or February in the open ground; they will have a fine lot of fibrous roots, instead of one long root running deep into the soil. They will all be fine plants, Hybrids as well as Tea, Bourbon and other kinds, in one season, and will be fit for the market. E. L. REIMER.

DECIDUOUS AND EAERGREEN TREES AND SHRUBS should be planted out during November and December.

NOTES ON SOME FRUITS WORTHY OF CULTIVATION IN CALIFORNIA.

Black Tartarian Cherry.—This fruit is a favorite with cultivators and consumers in every locality where the cherry flourishes. But in very wet seasons, and when the tree is overloaded, the fruit is more liable to rot than most other sorts. However, it is admirably adapted for the generally dry climate of this State, and has no superior among black cherries. It is of Russian origin, and was brought to England in the latter part of the last century. It has a remarkably rapid growth, though that is not so important in this wonderful climate and soil for rapid growth of all vegetation. Its leaves are large, and the habit of its head very erect. The fruit ripens here in May; its skin is glossy, and of a bright purplish-black; flesh purplish, thick, (the stone being quite small) half tender and juicy; flavor very rich and delicious.

Skinner's Seedling Apple.—I have neither seen nor eaten this now much praised fruit. But from the descriptions of it, from reliable authority, it must be greatly deserving of the attention of orchardists; it is a native of San José; it is said to be the very best, and most desirable early cooking and early eating apple in the country. The seed was planted in 1854; the fruit began to attract attention in 1857. There is hardly any other part of the world where the tree would have fruited so early from the seed. Since then, it has become a favorite with many cultivators. A writer in an agricultural periodical, says: "The size and shape of the fruit resembles the Spitzenburg, (I presume the writer means Æsop's S.) but the color of the fruit is much the same as the Bellflower, but not so yellow. The flavor, also, resembles the Yellow Bellflower, while the flesh is finer, and the pulp quite as juicy as the Rhode Island Greening. We regard the crispness and richness of the fruit, as even superior to the Gravenstein, which has always been our leading favorite among early apples. One of the most important qualities of Skin-

ner's Seedling, is its persistence in hanging upon the tree. It will rot and dry up before it will drop."

Early Rivers Cherry.—This has originated from the seed of the Early Purple Guigne; but the latter being liable to canker and gum, and being, also, of too delicate habit, the former most desirably takes its place. The fruit of the Rivers is as large as that of its parent, a very little later, but very rich and good, and the tree more luxuriant and much more healthy. The fruit is produced in large clusters of ten or twelve, two to four on a very short, common peduncle. Fruit nine tenths of an inch in diameter, at the East—here it would be larger. Skin black, flesh very tender, sweet, and agreeably flavored; stone extremely small, perhaps, the smallest in any cherry. I think it would be well for our orchardists to obtain this fine fruit and test it in California.

Knevett's Giant Raspberry.—This is another fine fruit I should like to see introduced here. It must be recollected that none of the most tender raspberries are too delicate for California. They, of course, need no protection here, at any rate, on most lands not too elevated. Manning, the business editor of *Tilton's Journal*, and a fruit expert, remarks: that if he could plant but a single variety of the raspberry, for his own use, it would be this kind. It will bear carriage, probably as well as the Red Antwerp. It was first introduced into the United States by Hon. M. P. Wilder. It came from England, origin unknown. Its fruit is of a deep red, large, roundish conical, sometimes double, approaching cockscomb shape; grains large, adhering slightly to the core, but still may be easily gathered, and does not crumble; flesh pretty firm; flavor sweet and rich.

The Lawrence Pear.—This fruit is so good and valuable that some of the best fruitists, in speaking of the most profitable kinds, often rank it as equal to the Bartlett; some even preferring the Lawrence. The Bartlett, owing to its great plenty, and to its appearance, in the height of the peach season, is beginning almost to surfeit the public taste.

It is, therefore, probable that good later varieties may prove as profitable, and even more so, to fruit raisers. The Lawrence, with many, is beginning to head this list. The tree of the Lawrence is not a too rampant grower, needs but little pruning, comparatively, and holds its foliage extremely well. As to the quality of the fruit, it can, perhaps, hardly be improved; if anything, for some palates it may be too sweet. The Seckel, in flavor, can only surpass it; it keeps well, and is not liable to rot at the core; it possesses a fine complexion, and is handsome in form, although medium in size—compared with the largest California pears—and it does not attain the size of the Bartlett nor the Flemish Beauty. It blooms early, but that is no detriment here, the spring frosts being of no importance. It is very prolific, and requires thinning. E. J. HOOPER.

PETUNIA.

Petunias are cultivated as bedding plants, and produce much better effect in masses than if planted out singly. With us they flower the whole year round.

The flowers of the Petunia are either double or single, and, although the double ones are rarer and generally higher-priced, the single ones are far richer in color, and for planting in masses are far more effective.

Double Petunias are propagated from slips or cuttings, but to strike readily should be placed under glass, and even then it is sometimes difficult to prevent their damping off just at the time when the roots should begin to form. In our practice, we give them plenty of air and shade, and water sparingly. As soon as they are rooted we pot them in the smallest-sized pots, keep them in the shade for a few days, and then place them in the open air, where they are protected from the heavy winds. Petunias should be treated here altogether as outdoor plants, except in their propagation. Under glass the plants soon grow tall and spindling, while out of doors they will branch out and soon become

very bushy. The principal varieties, which are readily obtained in our market, are: Pure White (*Queen of Whites*), rather fragrant, flowers very double, a free bloomer; Double Purple (*Albert Victor*), very fine bloomer; Crimson Scarlet (*Atella*), much lighter in color than the former, flowers large and full; Purple, marbled with white, (*Baltimore Belle*), very fine, and as yet rare with us, free bloomer, and very desirable; Rose, with pink and white bars (*Rosaline*), one of the best bloomers, with perfect flowers. All these will thrive well in the open ground with very little care, and are valuable for planting as single specimens, as well as in small masses.

The single Petunias, which are almost exclusively used as bedding plants, are richer, and much more varied in color. They are raised from seed, but much, of course, depends upon the quality, and we therefore advise care in purchasing only from responsible parties. The varieties are so numerous that we refrain from giving names. The finest are those displaying various colors, and which are striped, mottled, blotched, edged, veined or spotted. In order to retain or propagate a desirable variety, cuttings must be made from it, or the seed must be obtained from that particular flower, but even then we cannot rely upon the seedlings being true, if other colors have been permitted to grow in close proximity.

The seed of the Petunia is very fine, but germinates quickly and easily; it should be sown in sandy soil, either in boxes or in the open ground, care being taken not to cover it too deeply: in fact, it is better to sprinkle the seed on the surface. A light rain or sprinkling will carry most of it deeply enough into the ground to ensure its germination. Under glass the seed may be sown at any time, while for open-ground sowing the most favorable time is in the earlier part of spring, as we have no frosts of sufficient severity to harm them.

We recommend the cultivation of single and double Petunias extensively, and particularly where effect is desired. The flowers

of the Petunias soon wilt after they are cut, and are, therefore, not well adapted for bouquets or cut-flowers, but, like Scarlet Geraniums, they do much to brighten up the flower garden or the lawn.

TIMBER TREES OF AUSTRALIA.

By Baron Ferd. von Mueller, M. D.

[Continued from page 359 of last number.]

Fraxinus excelsior.

Ordinary Ash of Europe and West Asia. Height eighty feet; of comparatively quick growth; known to attain an age of nearly two hundred years. Rich soil on forest rivulets or river banks suit it best; wood remarkably tough and elastic; used for agricultural and other implements, for oars, axletrees, and many other purposes. Six peculiar kinds of Ash trees occur in Japan, some also in the Indian Highlands. All might be tried here.

Without irrigation, we have not much confidence in the successful growth of the Ash as a timber tree, although some very fine specimens are growing in Oakland and a very few about San Francisco. With a little attention and care, the young trees may be established so as to withstand the dry seasons, but river banks and moist places are more congenial to them.—Ed.

The best varieties of the Ash for California, are, probably:

Fraxinus quadrangulata.

The blue Ash of North America, growing seventy feet high; it yields excellent timber.

Fraxinus viridis.

The green Ash of North America; height seventy feet; wood excellent.

Gleditschia triacanthos.

The deciduous Honey Locust tree of North America; height up to eighty feet; wood hard, coarse-grained, fissile. Sown closely, this plant forms impenetrable, thorny, not readily combustible hedges.

The Honey Locust thrives well in California, and in a very few years a plantation of

Locust trees would be remunerative ; very little care is required in their cultivation.—Ed.

Grevillea Robusta.

Our beautiful Lawn tree. Indigenous to the sub-tropical part of East Australia, one hundred feet high ; of rather rapid growth, and resisting drought in a remarkable degree ; hence one of the most eligible trees for desert culture. Our cultivated trees yield now already an ample supply of seeds. The wood is valued particularly for staves of casks.

This is a remarkable tree both for ornament and profit, and we have every reason to believe that it will do fully as well as the *Eucalyptus* family. For lawns and for public avenues and parks, no handsomer tree exists. Besides the extremely ornamental foliage and its rapid growth, the seeds germinate rapidly, and the young plants are easily transplanted. But at the present time the trees can only be purchased at a high price, on account of their scarcity here. We hope that our Australian friends will help us with a good supply of seed.—Ed.

Gymnocladus Conadensis.

The Chiroc. A North American timber and avenue tree, attaining a height of eighty feet ; allied to *Gleditschia*, but, as the name implies, thornless. The wood is strong, tough, compact, fine-grained, and assumes a rosy color.

Juglans cinerea.

The Butternut tree of North America. About fifty feet high ; stem-diameter four feet. Likes rocky places in rich forests. Wood lighter than that of the Black Walnut, durable and free from attacks of insects.

Juglans nigra.

Black Walnut tree. Attains a height of seventy feet ; trunk four feet in diameter ; found in rich forest land in North America. Wood purplish brown, turning dark with age, strong, tough, not liable to warp or to split ; not attacked by insects. Seed more oily than the European Walnut.

Juglans regia.

The ordinary Walnut tree, of Europe, but of Central Asiatic origin : it attains a height

of fully eighty feet, and lives many centuries. Wood light and tough, much sought for gunstocks, furniture and other things. The shells of the nut yield black pigment, trees of choice quality of wood have been sold for £600, the wood being the most valuable of middle Europe. Can be grown in cold localities, as it lives at two thousand feet elevation in middle Europe. The Californian Walnut tree (*Juglans rupestris*, Engelmann) and the Chinese Walnut tree (*Juglans mandchurica*, Maxim.) ought to be introduced here.

Leucadendron argenteum.

The Silver tree of South Africa is included on this occasion among forest trees, because it would add to the splendor of our woods, and thrive far better there than in our gardens. Moreover, with this tree many others equally glorious might be established in our mild forest glens as a source of horticultural wealth, were it only to obtain in future years a copious supply of seeds. Mention may be made of the tall Magnolia trees of North America (*Magnolia grandiflora*, L., one hundred feet high ; *M. umbrellata* Lam., forty feet ; *M. acuminata*, L., eighty feet ; *M. cordata*, Michx., fifty feet ; *M. Fraseri*, Walt., forty feet ; *M. macrophylla*, Michx., forty feet), *M. Yulan*, Desf. of China, fifty feet ; *Magnolia Campbelli*, Hook., of the Himalayas, one hundred and fifty feet high and flowers nearly a foot across ; *M. sphaerocarpa*, Roxb., also of the Indian Highlands, forty feet ; the North American Tulip tree (*Liriodendron tulipifera*, L.) one hundred and forty feet high, stem nine feet in diameter ; the Mediterranean *Styrax* tree (*Styrax officinalis*, L.) ; *Stenocarpus sinuosus*, Endl., of East Australia (the most brilliant of the *Proteaceae*) ; the crimson and scarlet Ratas of New Zealand (*Metrosideros florida*, Sm.,) the *M. lucida*, Menz. ; *M. robusta*, Cunn., eighty feet high ; *M. tomentosa*, Cunn. ; forty feet) ; *Fuchsia ex-corticata*, L., also from New Zealand, stem two feet in diameter ; the crimson flowered *Eucalyptus ficifolia* of West Australia ; *Rhododendron Falconeri*, Hooker, from Upper India, fifty feet high, leaves eighteen inches long. In the Sassafras gullies, here alluded to, also

may be planted the great *Melaleuca Leucadendron*, L., the true Asiatic Cajuput tree which grows to a height of one hundred feet; even the North European Holly (*Ilex aquifolium*), which occasionally rises to sixty feet, though both from regions so distant.

Liquidambar Altingia.

At the Red Sea and in the mountains of India and New Guinea, at three thousand feet, and probably hardy in the warmer parts of our colony. The tree attains a height of two hundred feet. It yields the fragrant balsam known as liquid Storax.

Morus rubra.

The Red Mulberry tree of North America is the largest of the genus, attaining a height of seventy feet, it produces a strong and compact timber. The White Mulberry tree *morus alba*, with others, which afford food to silk worms, should be planted extensively everywhere, for hedges and copses.

All our our readers know how well the Mulberry thrives in California. On the coast range, in the valleys and in the higher mountain regions, it thrives with equal success. No tree has been cultivated more generally and with better results.—Ed.

Maclura aurantiaca.

The Osage Orange of North America. Greatest height sixty feet; wood bright yellow, very elastic, fine grained. For deciduous thorn hedges the plant is important; its value for silk worms needs further to be tested.

Platanus occidentalis.

The true Plane tree of the East part of North America. More eligible as an avenue tree, than as a timber tree; diameter of stem at times fourteen feet; wood dull red.

Platanus orientalis.

The Plane tree of South Europe and Middle Asia. One of the grandest trees for lining roads and for street planting; deciduous like the other Planes; rather quick of growth, and not requiring much water; attains a height of ninety feet. The wood is well adapted for furniture and other kinds of cabinet work.

Platanus racemosa.

The Californian Plane tree. Wood harder and thus more durable than that of *P. occidentalis*, also less liable to warp.

Populus alba.

The Abele or White Poplar of Europe and Middle Asia. Height ninety feet. It proved here an excellent avenue tree, even in comparatively waterless situations, and gives by the partial whiteness of its foliage a pleasing effect in any plantation. *Populus canescens*, Sm., the grey poplar, is either a variety of the Abele or its hybrid with the Aspen, and yields a better timber for carpenters and millwrights.

Populus tremuloides.

The North American Aspen. Height fifty feet. It extends west to California, where a particular species *P. trichocarpa*, Torrey, occurs. All Poplars might be planted like all Willows, in our gullies, to intercept forest-fires, also generally on river banks.

M. Mueller next enumerates the different varieties of Oaks, all of which are useful as timber trees, and some of them highly ornamental. We mention a few of them, which might be readily introduced here.—Ed.

Quercus falcata.

North America. Foliage deciduous. Lives in dry, sandy ground. A good sized tree with excellent tanner's bark.

Quercus Ilex.

The Holly Oak of South Europe. Height of tree fifty feet. Wood in use for ship building, bark for tanning. From varieties of this tree are obtained the sweet and nourishing Ballota and Chestnut acorns.

Quercus Robur.

The British Oak, extending through a great part of Europe and Western Asia, attaining a great age and an enormous size. Extreme height one hundred and twenty feet. Two varieties are distinguished: 1. *Quercus sessiliflora*, Salisbury. The Durmast Oak, with a darker, heavier timber, more elastic, less fissile. This tree is also the quicker of the two in growth, and lives on poorer soil. Its bark is also richer in medicinal, dyeing

and tanning principles. 2. *Quercus pedunculata*, Willd. This variety supplies most of the oak timber in Britain for ship-building, and is the best for bending under steam. It is also preferred for joiners' work.

Quercus serrata, Thunberg.

One of the twenty three known Japan Oaks. It yields the best food for the oak silk worm (*Bombyx Yamamai*.)

Quercus Sideroxylon, Humboldt.

Mountains of Mexico, at eight thousand feet elevation. An Oak of great size, of compact timber, almost imperishable in water. *Q. lanceolata*, *Q. chrysophylla*, *Q. reticulata*, *Q. laurina*, *Q. obtusata*, *Q. glaucescens*, *Q. Xalapensis*, (Humb.) and *Q. acutifolia* (Nee), are among the many other highly important timber Oaks of the cooler regions of Mexico.

Quercus Suber.

The Cork Oak of South Europe and North Africa; evergreen. It attains an age of fully two hundred years. After about twenty years it can be stripped of its bark every six or seven years; but the best cork is obtained from trees over forty years old. Height of tree about forty feet. Acorns of a sweetish taste.

Quercus vivens.

The Live Oak of North America, evergreen, fifty feet high. Supplies a most valuable timber for ship building; it is heavy, compact, fine-grained; it is moreover the strongest and most durable of all American Oaks. Like *Q. obtusiloba*, Michaux., it lives also on sea shores, helping to bind the sand, but it is then not of tall stature. Of many of the three hundred Oaks of both the Western and East portion of the Northern hemisphere, the properties remained unrecorded and perhaps unexamined; but it would be important to introduce as many kinds as possible for local test growth. The acorns, when packed in dry moss, retain their vitality for some months. The species with deciduous foliage are not desirable for massive ornamental planting, because in this climate they shed their dead leaves tardily during the very time of our greatest verdure.

Tilia Americana.

The Basswood tree or North American Linden tree, growing to fifty two degrees of north latitude. Height of tree eighty feet, diameter of stem four feet; wood pale and soft. *Tilia heterophylla*, Vent., the Silver Lime of North America, and *Tilia Manchurica*, Ruyr., of South Siberia might be tested.

Tilia Europea.

The common Lime of Europe, extending naturally to Japan, the large leaved variety of South European origin. Height up to one hundred and twenty feet, exceptionally fifty feet in girth. The wood pale, soft and and close-grained, sought for turnery and carving; the bast excellent for mats.

Ulmus alata, Michx.

The Whahoo Elm of North America. Height of tree thirty feet; wood fine-grained.

Ulmus Americana.

The White Elm tree of North America, a tree fond of moist river banks, one hundred feet high; trunk sixty feet, five feet in diameter.

Ulmus campestris.

The ordinary Elm, indigenous to South Europe and temperate Asia, as far East as Japan, several marked varieties, such as the Cork Elm and Wych Elm, exist. The Elm in attaining an age of several centuries becomes finally of enormous size. The wood is tough, hard, fine-grained and remarkably durable if constantly under water; next to the Yew, it is the best of European woods, where great elasticity is required, as for archery bows. It is also used for keels, blocks and wheels. Bast tough.

Ulmus Floridana. Chapman.

The West Florida Elm, forty feet high.

Ulmus fulva, Michx.

The Slippery or Red Elm of North America, sixty feet high: wood red, tenacious.

Ulmus racemosa, Thomas.

The Cork Elm of North America.

ORNAMENTAL AND LANDSCAPE GARDENING.

When we first entered upon the publication of this Magazine, it was our intention to devote a certain space in each number to the much-abused art of Ornamental and Landscape Gardening, and that the articles should appear as a series of connected papers. To give our readers, by this method, all we have to say on this most important and interesting subject, would occupy a number of years, and we would be compelled, by this systematic treatment, to ignore at present many subjects which require our immediate attention. We, in consequence, came to the conclusion that our readers would be better pleased and the public interest much better subserved by making this section of our Magazine more varied, and subject to continuously-recurring contingencies.

In the future, therefore, under this department we shall treat upon small and large grounds, public squares and parks, and all private and public improvements which may come within this field.

WALKS.

The laying out of walks is one of the most important operations in making a garden. Where ground is limited, no more walks should be formed than the occupants have use for every day; they should most conveniently connect with the street, the house, and the outhouses and backgrounds; and, as convenience must be the paramount consideration, there can be but little uncertainty about their direction and width. The main walks from the entrance-gate to the door should be direct and not intersected or obstructed by flower beds, groups of shrubbery or fountains, as is so often the case. The width of the walks must also be in accordance with the extent of the house and the grounds.

The laying out of walks over extensive grounds requires much more judgment, and we refer to what we have said in our last number on this subject.

Parties desirous of laying out grounds usually call upon a gardener to draw a plan,

and he generally succeeds in presenting one with a number of walks so nicely curved and so pleasing to the eye that his taste and knowledge are no longer questioned, and his ideas, whether original or copied, are at once adopted. But few have any idea how different these lines and walks will appear on the ground from the design on paper, and how absurd the arrangement will appear after being carried out according to plan. A gardener who endeavors to please the eye of his employer in this manner does not understand his business; and we caution those who are desirous of laying out grounds not to employ men who will exert themselves to gain their confidence by drawing showy little pictures, which, if developed into reality, will present a most ridiculous and intolerable appearance. A professional gardener will consult the ideas and wishes of his employer, adapt them to the already-existing features, and on the basis of these he will, with the aid of his professional experience, present a plan or design of what he proposes to do. His ideas, when exhibited on paper, may not be pleasing to the eye, but the execution of the work will be in conformity with all that may be reasonably expected.

PORTSMOUTH SQUARE.

Of late this much-frequented public square, of San Francisco, has afforded us considerable cause of complaint. For the last three months the gardener who is in charge has exercised his skill in giving to the trees their present unsightly appearance; and he still continues using his shears and his pruning-knife on any and everything that comes in his way. Now, we should like to ask our Supervisors whether this man in charge has an unlimited power of action, and whether he is merely kept there for the purpose of occupying his time that he may be retained on the pay-roll. Are our Supervisors aware of the fact, that if this mode of treating trees is continued a few years longer, they will be an eyesore to every one who has occasion to pass through the square? It is useless for us to attempt to prove here that this unmer-

ciful clipping and cutting of evergreens is both injudicious and injurious; every professional gardener knows it. Proper pruning is beneficial and necessary to protect trees against our strong winds and to give a pleasing appearance, but we most earnestly object to the disfigurement of a place which is intended as an ornament to that portion of the city.

It is absolutely necessary that some competent man should be entrusted with the full charge of all our public grounds; and our Supervisors should no longer neglect to give this matter their particular attention.

SAN FRANCISCO'S PARK.

We understand that it will be one of the objects of our next Legislature to create a Board of Public Works for this city, and we are induced to believe that such a measure will be beneficial to the people and tax-payers. The City Hall, the parks, the alterations of streets, and other public improvements may be very satisfactorily managed by one Board, provided that competent men are selected to constitute that Board.

In regard to our Park, little doubt exists that much more could have been accomplished, if the Commissioners appointed had been well qualified for the position. We doubt if any of them made themselves very familiar with the Park ground and its requirements, or measures would ere this have been inaugurated which would have resulted in greatly improving the condition of the ground. It is well known that two thirds of the Park Reservation consists of drifting sand hills, and it would be unwise to attempt any improvements on the Park grounds before the drift sand is arrested. We are convinced that a small outlay would have covered the larger portion of these sand hills with vegetation sufficient to have arrested the drifting of sand; and if the Commissioners had accomplished that much, many other large property owners would have availed themselves of the experience thus gained to have covered other tracts in a similar condition with vegetation.

It must be admitted that nothing can be done in the way of grading or planting until the drift sands are arrested; and whether our great Park is to be established on the present Reservation or at the Presidio, the covering of the sand hills with vegetation would have proved of immense value.

Whatever our Legislature contemplates doing in regard to a Park, we hope it will be done effectually, by having a general Superintendent appointed who is well posted in regard to the nature of our soil and climate, and in the proper method of securing a quick growth of trees and shrubs.

The most effectual manner of creating a Park in a bare country like San Francisco and its surroundings, is to cover the ground with vegetation of some kind or other. This action must be followed by planting the ground with the seeds of such trees and shrubs as are likely to germinate and grow under reasonable protection; and when these young trees have been established, there will be time enough to think of avenues and other improvements. Very little grading should be done. In this way a wonderful change could be effected in five or six years at a very small expense.

We require a Park, and we should also open a field for the laboring classes, but the matter must be entrusted to competent men who are able to avail themselves of all the resources at our command. If the work is taken hold of in this manner, we shall soon accomplish the desired end.

A GOOD CEMENT.—Gutta percha, dissolved in chloroform, so as to make a fluid of the consistence of honey, produces a good Cement. When spread, it will dry in a few moments, but it can be softened by heating. Small patches of leather can be cemented on boots by its use, in such a manner as to almost defy detection, and some shoemakers employ it with great success for this purpose. It is waterproof, resisting all the elements but heat.

THE SCUPPERNONG GRAPE.

I have strong reasons for believing that the above grape has not been grown in California. One of the reasons that it has not been, is, that it will not succeed from cuttings. On this account it has been condemned by northern writers and cultivators. There are several varieties of the Scuppernong. It is one of the most valued grapes in all the South and in part of Texas. It is used to a very great extent for wine and also for the table. The two chief kinds are, the Black and the White S. The Black is the most common. Like other fruits, they vary much from the seed. Most of the seeds run into the Black species. They also differ much in excellence. The White variety is said to make the best wine. Instead of being pruned closely, this vine is allowed to climb trees, and is, comparatively, but little pruned. There is a Black Scuppernong in Georgia, thirty-five years of age, which is reported to yield annually seventy-five to one hundred gallons of wine. Both the Black and the White are equally hardy, but this, of course, is immaterial in this region. A friend, Mr. Frank Hills, sent me, from Arcola, La., three rooted plants of this vine, but as I had to plant them on a ranch some distance from San Francisco, I was not able to attend to the irrigation of them myself, and in the late dry season they all died. To show how much this grape is valued in the South, vineyard-men there make, annually, from one to two thousand gallons of wine to the acre, and sell the same for from two to four thousand dollars. This grape is indigenous on Roanoke Island, or rather that is the locality where it was first noticed. The colony of Sir Walter Raleigh discovered it growing wild on that island, about 297 years ago, and strange to say, though not the less true, the same vine was seen in 1852-3 by Sydney Weller, of North Carolina, as reported in the United States Patent Office Report, in 1853. Judge Heath, of Memphis, saw the vine in 1856, and had no reason to doubt it was then flourishing; thus this vine

must be at least 300 years old. A vine that *never* fails to bear immense crops, certainly seems worthy of some attention. This may be going, probably, too far, but Dr. Jackson, of Berton, N. C., who analyzed thirty-eight kinds of grapes, wrote to a friend, stating that finer wine could be made from the Scuppernong than from any other vine in America. So long ago as 1853, it is reported that Mr. Weller, of North Carolina, made six different kinds of wine from this grape, which sold at from one to six dollars per gallon in gold.

Although the Scuppernong may not flourish in the north, it would, of course, do well here, although it might not turn out of much, or indeed of any superior value comparatively, where all kinds, both hardy and tender, do so well. Yet, as a matter of curiosity, I should like to see it tried, on account of its wonderfully prolific nature and its freedom from blight or mildew, insects or the effects of light frosts. Good Sparkling Champagne is made in the South from this grape, as well as still-wine—at least such is the information sent me. In the South this vine flourishes best in rich, low, moist, open, sandy and porous bottoms, near water-courses, where the Southern Muscatine is found growing in wild luxuriance. The Scuppernong belongs to the Muscatine family,

At the exhibition of fruits, at the meeting of the American Pomological Society, at Richmond, Va., this grape was shown in quantities, and surprised some of the delegates, who were not previously acquainted with it, by its good quality.

If any of our vine growers wish to experiment on this grape next year, on writing to G. F. Hills, Arcola, La., I believe he will cheerfully send them a few plants of this grape for trial here, or, probably, he might send them a few seeds. E. J. HOOPER.

SAN FRANCISCO, November, 1871.

SMOKE OF DRIED PUMPKIN-VINE LEAVES.—It is said that the smoke of the dried leaves of pumpkin-vines, burned in a bright fire, will either kill or instantly drive out all the flies from an apartment.

FOREST TREE CULTURE.

The cultivation of forest trees has evidently attracted the attention of the whole civilized world ; and we are highly gratified that the matter is so earnestly discussed in our own State, which will be benefited by the cultivation of timber trees more than many other countries. Australia is making strenuous efforts in this direction, and as our climate so closely resembles that of Australia, we may learn much from their experience.

With pleasure we refer to a lecture delivered by Baron Fred. von Mueller, of Melbourne, on this subject, and make such extracts from it as may apply with equal force to our own State. He says :

“How forests beneficially affect a climate, how they supply equable humidity, how they afford extensive shelter, create springs and control the flow of rivers : all this the teachings of science, the records of history, and more forcibly still, the sufferings and even ruin of numerous and vast communities, have demonstrated in sad experiences, not only in times long past, but even in very recent periods.”

Mr. Mueller further shows how the forests, as slow conductors of heat, lessen the temperature of warm climes, how they influence and attract the current of vapors, how they condense the moisture of the clouds by lowering the temperature of the atmosphere ; how whole mountain districts of Southern Europe became, with the fall of the forests, utterly depopulated. It should be borne in mind, that the productiveness of cereal fields is often increased at the rate of fully fifty per cent., merely by establishing plantations of shelter trees ; that the progress of drift-sand is checked by tree plantations, and that a belt of timber not only affords protection against storms, but also converts sandy wastes into arable meadows. Why not imitate the example set by an Egyptian sovereign, who alone caused, during the early part of this century, twenty millions of trees to be planted in formerly rainless parts of his dominion.

Dr. H. Rogers of Mauritius, issued this year a report on the effects of cutting down of forests, “on the climate and health of Mauritius.” Still, in 1854, the island was resorted to by invalids from India, as the “pearl” of the Indian Ocean, it being then one mass of verdure. When the forests were cleared to give space for sugar cultivation, the rain-fall diminished even there ; the rivers dwindled down to muddy streams.

We may add here that but a few years ago, when the Oakland hills were covered with Redwoods, lively springs of water were found everywhere, while now, after the hills have been stripped of almost every tree, the surface shows no indication of moisture, the former springs being entirely dried up.—Ed.

But what is to be done to encourage the planting of forest trees? Mr. Mueller recommends the creating of Forest Boards in the different districts, which should be held as honorary positions, so as to involve no direct expense. Each locality, he says, shows peculiar adaptabilities for special trees to be selected. Each Forest Board can best frame its own by-laws, or local regulations, subject to higher authority. Each Board should have its cultivator, who could also perform the duties of forest ranger.

Now, we are of opinion that a law should be passed by our Legislature for the protection of forest trees, and that honorary Forest Boards might be appointed for every county, who would enforce the observance of such law. Seeds, with proper instructions for their planting and management, might be distributed by the State to these local Boards, who, again, could distribute them to such settlers as were willing to cultivate forest trees.

The State could not be under any very great expense, in obtaining the necessary seeds, and we have no doubt that a fair beginning of forest tree cultivation would soon be inaugurated.—Ed.

In connection with this subject, we clip from the *Bulletin*, of November 7th, the following, in relation to Southern California :

“So far as general agriculture is concerned,

the light rainfall and heavy droughts render it probable that this locality will never succeed to any great extent. There is little land that will warrant the culture of cereals. There are a few small fertile valleys along the water-courses, which are unsurpassed for any kind of crop; but the greater part of the land is *mesa* or table land, which cannot be irrigated successfully. The most of this *mesa* land is exceedingly fertile, so far as fertility is supplied by the composition of the soil. It is mainly composed of rich adobe, sometimes black, and sometimes mixed with sand or clay.

“There is one purpose to which this *mesa* land will eventually be put, and with good success—that is

TREE CULTURE.

“The fact that the northern country is barren of trees, is no argument against the practicability of raising them. There is indisputable evidence that forests of considerable extent once existed there. Old Spanish voyagers have left ample record to that effect. In 1602 the Bay of San Diego was entered by Spanish explorers, who sent on shore Ensign Alacon, Captain Pequero, and eight soldiers to explore. Following is an extract from their memoranda:

“They first direct their steps to a heavy forest which lies on the north side of the bay. This is ascertained to be about three leagues in length, and about one and a half in breadth. The trees are chiefly oaks, with an undergrowth of fragrant shrubs.”

“A latter portion of their memoranda says:

“All desirable preparations being made, they sail from this beautiful Bay of San Diego. While they have tarried in it, many of the crew who have been sick of the scurvy, have recovered. It is a sorrowful occasion for those who still live, to part from the graves of their companions. They are interred on the borders of the magnificent forest northeast of the bay, and the well-known trees which spread their branches over them are discernible as they leave the land.”

“No traces are now discernible of the ‘magnificent forest’ which existed two cen-

turies and a half ago. It was doubtless swept away by fire, as some have been within the memory of those now alive.

“Within the last four years a space of country thirty miles in length and fifteen in breadth, just back of the town of San Diego, was burned bare in three days. Even now, occasional stunted trees may be seen in the gulches of the *mesa* lands, having sprung from the roots of the burned parent trees.

“It is the opinion of many intelligent men in that section, that no part of the world is better adapted to tree culture than the Counties of Santa Barbara, Kern, San Bernardino, Los Angeles and San Diego. They believe trees have grown there, and will grow again if once rooted and kept from fire. There are many kinds of trees, bearing semi-tropical fruits and nuts, which root as deeply and as persistently as the indigenous shrubbery with which that vast section abounds. And once rooted, there is nothing in the climate which would not favor their most bounteous production.”

THE FUTURE VALUE OF TIMBER.—It is impossible to predict the extreme prices to which timber may advance before the present generation passes away. We have before us a statement from an English paper of the prices realized from thirty oak trees sold at auction in Burghley Park, as follows:—One tree brought \$360, another \$310, and a third \$324; the whole thirty brought \$4,500; averaging \$150 each. These must have been large trees, but smaller trees are proportionately valuable. There is but little doubt that within a century or less timber will be as scarce in America as it is now in Europe, and it is not probable that a sufficient substitute will ever be found to occupy its place in the industries of mankind. Therefore, plant trees, and plant the right sort, especially those most required in building.

TOBACCO ANTIDOTE.—Coarsely ground gentian root, chewed instead of tobacco, the chewer swallowing the saliva, will, it is said, destroy all desire for “plug” or “fine-cut.”

Editorial Portfolio.

The present number commences the Second Volume of THE CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE, and we feel it incumbent on us to offer a few remarks to our subscribers and the public in general, in reference to our past experience and our future prospects.

During the past year we had to struggle with many adverse circumstances; we have met with many disappointments, but we have sought through all difficulties to make the Magazine what we promised in our first number, "a medium through which all might set forth their experiences, observations, and ideas on the Horticulture and Agriculture of the Pacific Coast. How far we have succeeded, and whether we have met the expectations of our readers, we cannot ourselves determine; but it is a source of regret to us that more interest has not been manifested by the many able horticulturists in this State who have been earnestly invited, to whom our columns are always open, and whose contributions would have been most cordially welcomed. We can only attribute the want of co-operation with us to culpable negligence; there are some praiseworthy exceptions, however, and we have to return our thanks to a few of our friends for many excellent articles.

We now trust that this period of indifference has passed, as we have received assurances of aid from numerous talented and experienced men whose practical contributions will materially assist us in fulfilling a promise, which we are fully justified in making—that the Second Volume of the Magazine shall far surpass our First in intrinsic value as a record and manual of the Horticulture of the Pacific Coast, and a work of special interest to our friends abroad who seek information respecting our botanical treasures.

Pecuniarily we have suffered severely, but we have faith that during the coming year, the Magazine will become self-sustaining,

and probably reimburse us some of our losses. For the purpose of bringing the Magazine within the reach of all, we have reduced the price of subscription from four to two and a half dollars per annum, thus placing it in the hands of even the smallest cultivators. For this we hope to be compensated by a largely increased subscription list, and a fuller record of advertisers; and we hope by thus widening its circulation and by its advocacy of the important interests of California, to contribute our fair quota to the general need.

We omitted publishing a number for the month of November, for the following among other reasons:—It was suggested to us by many of our friends that the first of the month would be a more suitable day for publication, and for a similar reason we are desirous to issue the first number of the Third Volume on the 1st of January, 1873, by either omitting the publication of the December number for 1872, or if successful with our subscription list, by giving our readers thirteen numbers in this our Second Volume. This arrangement of publication is the one adopted by every other Horticultural Magazine, and we do not desire to be singular in this respect.

And now for all our sins of omission and commission during the past year, we most humbly crave the indulgence of our friends and the public, hoping that for the welfare of all, ourselves included, an increased interest will be felt in the development of our Agricultural and Horticultural resources, on which the future prosperity of California so seriously depends.

As our Legislature will shortly meet in Sacramento for the purpose of deliberating upon the public interests, we gladly avail ourselves of this opportunity to suggest some enactments, whereby our Horticultural and Agricultural interests may be advanced and better protected. When we take into consideration how much California depends on the cultivation of the soil, it may reasonably be expected that our representatives should give their most careful consideration to en-

actments, by which the cultivator is encouraged and by which the productions are increased.

We, therefore, respectfully call the attention of our Legislature, in the first place, to the importance of forest tree cultivation, which is now being so strongly advocated all over the civilized world, and which urges itself so imperatively upon the people of California.

Next in order, but equal in importance, comes the subject of irrigation, which demands good and judicious legislation. We do not desire grand schemes on paper, which, however plausible, may lack the possibility of being carried out. The entire State is interested in the inauguration of a practical system of irrigation, and the subject should be taken up heartily and with unanimity.

We consider it would be a wise step on the part of our Legislature, to grant small appropriations from the State Treasury to our Agricultural and Horticultural Societies, which have proved to be so highly advantageous in stimulating and instructing the cultivators of the field and garden. These societies could do much more good if they received a little aid from the State. Their exhibitions and fairs have proved to be of practical value, except where horse-racing has been the sole attraction to all the visitors. And we would certainly like to see State aid withheld from every society which makes this the principle feature of its fairs. But societies which endeavor to disseminate knowledge, to instruct the cultivator, and to give information to emigrants and new settlers, should receive State aid. A law could be passed by which such societies might be required to render certain services, such as the giving information to settlers and emigrants, and by encouraging the introduction of new productions. We have already taken steps towards bringing emigrants to California, and we consider it necessary that the new comers should be familiarized with the peculiarities of our soil and climate, and our modes of cultivation,

etc. All this might be very properly done by such societies.

Our State Agricultural Society receives a large amount every year from the State, and we consider it only fair and judicious that an association, such as the Bay District Horticultural Society of California, should receive some aid. We are certain that this young society, consisting as it does of many practical horticulturists, would in return do all that might reasonably be expected of it to benefit the State at large.

Finally, we strongly advocate, on behalf of the people of San Francisco, some better and more satisfactory means for the establishment of a park, which has now become a necessity. Where nature affords so little shelter for those who desire to avail themselves of the open air, a park, with proper plantations of trees and shrubs, is an improvement which the people of San Francisco can no longer dispense with. The matter should receive the earliest attention from our Legislature, and practical men should be selected to carry out the enterprise.

A great deal of money has been expended during the past two years without any practical result, while a small amount properly invested would have resulted in much good. In another article on this subject we have suggested a proper *modus operandi* for laying the foundation of a park, and we hope that our ideas will be endorsed by the intelligent public and by their representatives at Sacramento. Even setting aside the necessity of a park, it should be the established maxim, in every large community, to provide labor for the unemployed, at the same time inaugurating such improvements as are indispensable with the progress of a large city.

We refer our readers to the advertisement of John Rock, who is known to us as a reliable nurseryman. He is located in the thriving City of San José, where he undoubtedly finds a remunerative field for his labors.

BAY DISTRICT HORTICULTURAL SOCIETY.

A regular meeting of the Society was held on Saturday, October 28th, at their new rooms, No. 622 Clay Street, where the reading room of the Society is also now established.

Dr. Kellogg presented a branch and flower of the so-called *Desert Rose*, a native of Australia; and also a branch with fruit similar to the Hazelnut, pronounced by Prof. Bolander to be a *Simmondsia*, a native of California, and found near Shasta.

The Constitution and By-Laws, as revised by the committee, were read, and with very few alterations adopted.

Officers for the coming year were nominated, the election to take place on Saturday, November 25th.

A number of valuable publications were recommended for the library of the Society, and orders were given to purchase them.

The regular meeting for November, took place on Saturday, November 25th.

President H. N. Bolander in the chair.

After the reading of minutes, the following gentlemen were proposed as candidates for election as members:

R. B. Betge and L. H. D. Lange, as regular subscribing members; and E. J. Hooper, as a life member. On a suspension of the rules, they were unanimously elected.

The Report on the Constitution and By-Laws was again taken up, and finally adopted. The Secretary was authorized to order one thousand copies printed.

The annual election of officers, for the ensuing year, was then declared in order, and the following members were unanimously elected:

President, H. N. Bolander; Vice-President, E. J. Hooper; Secretary, F. A. Miller; Treasurer, William Meyer; Trustees, E. L. Reimer, F. Luedemann and Cha. Stephens.

Mr. Woodward kindly tendered his valuable assistance in making the necessary arrangements for the next Horticultural Exhibition.

Mr. Bolander was authorized to procure those books which were recommended at the previous meeting, and which are published in England.

Mr. E. J. Hooper donated twenty-four volumes of valuable Horticultural and Agricultural books to the Society, and received a hearty and unanimous vote of thanks from all the members present.

The Trustees of the Society will meet for the present on the last Saturday of every month, at 7 o'clock P. M., at the rooms of the Society.

On account of the approaching holidays, the next regular meeting will be held on the first Saturday of January prox., when the annual reports of officers will be received, and the newly elected officers will assume their duties.

Professor Bolander will also deliver a lecture on the Indigenous Shrubs of California. Adjourned.

HORTICULTURAL READING ROOM

And Library of the Bay District Horticultural Society.

As will be seen by the proceedings of the above Society, in another column, a Horticultural Reading Room and Library has been inaugurated for the benefit of its members. This is a step in the right direction. We regret to say, however, that the Society being young, is unable to do much in the way of purchasing books at present, but it was well to make a beginning. We hope that contributions of books will be made by friends of the Society and advocates of horticultural and agricultural progress. With such aid, and with judicious management, we anticipate the shelves of the library will soon be replete with many of the best and most valuable publications, and that the library will soon be recognized as a source of reference on this speciality. In these times of progress, we must avail ourselves of every opportunity of acquiring knowledge, as well by reading and verbal interchange of thought, and by the experience of others, as by practi-

cal experiments, which cost money and consume much time.

We are authorized to state that the Secretary will be most happy to receive any contributions and donations, which the friends of the Society may feel disposed to present. The office hours are from 2 to 4 P. M., during week days; when he will furnish any information which may be desired.

THE OREGON STATE FAIR.

The late Oregon State Fair has not gratified the expectations of the managers, although very creditable exhibits have been made in many departments. It seems that many of the most prominent cultivators did not participate. In our opinion, those men are staying at home because horse-racing seems to form the principal feature of these Fairs. This horse-racing, we have no doubt, is productive of some good; but under the present management of our State Fairs, gambling and betting are entirely too much encouraged, and our more quiet and industrious people, who would make the exhibition a success, as far as quality and quantity are concerned, are averse to being brought into contact with gamblers and sharps, who seem to be in the majority.

An exchange says: "The Oregon farmer prides himself on his horses, and certainly many not without good cause. The improvement of the stock is made the excuse for the race track for "the trial of speed," as it is termed. It is certainly a misnomer to call these races a trial of speed. They would be more properly known as a trial of skill in horse jockeying, of attempts to deceive the bystanders, in a word, a perfect gambling shop. While telling the truth in this matter, let me exonerate at least a large majority of the gentlemen managers of the Society and Fair. Their aim has been, and is, higher than merely to draw a crowd and give them an opportunity of betting. In the matter of this race track they have an elephant on their hands, that is yearly degenerating the char-

acter of the Fair, which in part will account for the meagre display in many departments, and which will eventually cause many of the more thoughtful people to withdraw their support altogether.

REPORT ON THE FRUIT MARKET.

Owing to the lateness of the season, the glory and the brilliancy of complexion and coloring of the various fruits on the stands, are sadly fading away. Fruits will not bear comparison in brightness and variety, with the splendid painting of nature in the autumnal tints of foliage, but owing to their maturity and ripeness, may be said rather to have fallen into their "sear and yellow leaf." Apples preserve their different beautiful colors better than pears and grapes, but among the last, the magnificent Tokay still retains much of its rich, lovely and "flaming" red.

There are not enough of strawberries, by their crimson hue, to contribute much to enliven the soberness and somberness of the general effect. There are still a few of these berries in market, being about the tenth crop of this very favorite fruit. They retail now at 35 cents for about two thirds of a quart. They are chiefly Longworth's Prolific.

About ten days since, California Oranges, from Los Angeles, made their *debut* for this season with us, on Pomona's boards. A small consignment of Hawaiian Oranges, has also reached the market. But how much superior are the home specimens of this refreshing fruit, compared with those from the Islands! Excepting now and then, a few individuals, the latter are insipid and watery, compared with their more florid-hued congeners.

Grapes have been received lately, of course, in much less abundance than in the hey-day of the vintage, a month since; and their quality has not improved by age, as their rich juice, after fermentation, does in the shape of wine.

Pears are much diminished in variety, but the supply is better kept up than that of

grapes, although the few good sorts are chiefly confined to Winter Nelis, Beurré Clairgeau, Glout Morceau, (rather scarce) Easter Buerré, and the large and fine baking and cooking Vicar of Winkfield.

Apples are in plenty and quite good this year, compared with the last. There is a large variety; that fine, rich and tender apple, the Bellflower, is running a good race with the renowned Newton Pippin, and the choice, fine, rich and deliciously flavored *Æsopus Spitzenburgh*. Cranberries are plentiful, ready to serve as piquant sauce with the turkeys.

The different nuts are becoming plentiful. English Walnuts, Native common Walnuts, from the East, Softshelled Native Almonds, and large Hickorynuts, Eastern Chestnuts and Brazilnuts.

Dried German Prunes are abundant, fresh and luscious. They make a delicious and most wholesome dish stewed. Their price is five to eight cents per pound with pits, and twenty-five cents without them. Dried Apricots and Nectarines are fifteen cents per pound.

Green Peppers and Sugar Peas are no longer to be seen, but there is a sufficiency of fine Egg Plants, Brussels Sprouts, Jerusalem Artichokes, Rhubarb, Spinach, Oyster Plants, Artichokes and Cauliflowers, with other good vegetables, to cause our citizens to be in good humor with our wonderful growth-prolonging climate.

In the East, at this time, they have to endure frost, snow, cold rains, sleet, hail storms with biting cold gales, while we are revelling in a balmy spring atmosphere and enjoying many of the fruits and vegetables of Spring, Summer and Autumn, to say nothing of the feast to the eye of the numerous still blooming shrubs, plants and flowers. Have we not abundant reason to be satisfied with, and to glory in our California, notwithstanding she has some defects, and at the present time some drawbacks, inseparable from the pressure of the times in relation to business, and cannot claim absolute perfection of climate,

from lack in some years of reasonable rains and moisture? The late liberal showers have cheered all hearts and wonderfully raised the spirits of our agriculturists. E. J. H.

SAN FRANCISCO, November 28th, 1871.

WORK FOR DECEMBER.

Since the issue of our last number, we have had some fine showers of rain, which were highly acceptable, particularly so, where summer-fallowing has been adopted. Nearly every newspaper in the State has advocated summer-fallowing, deep plowing and early planting; but very few agriculturists indeed have availed themselves of the good advice, the very great majority still adhere to the good old-fashioned ways of our fathers and grandfathers. It is true, that summer-fallowing is not applicable to all kinds of soil, and much of the valley land is not fit to be plowed in late-summer. But nearly all of the up-lands will yield larger and surer crops by this process. The same reason will apply to the first rains in the fall; one or two such showers as we had during the earlier part of November, are sufficient to permit the planting of most lands, and of all sandy and light soils; but it requires a much larger quantity of rain to moisten Sacramento or San Joaquin valley lands, sufficiently for active operations. It is, therefore, of the greatest importance that we should soon have more rain and plenty of it. Our usual supply of moisture will give many of our discouraged farmers a new impetus to make up for the losses of last year, and it will stimulate business in every direction.

Meanwhile, let us hope for the best, and let no one neglect to be fully prepared for active work as soon as the necessary rains shall have blessed the country.

In those districts where aid is needed to plant the fields, we have no doubt that proper measures will be taken to supply their wants, if appeals are made to our more wealthy business men.

At the same time, let us consider well if it is within the power of human efforts to increase the rain-fall, and if so, what steps can be taken, and let us also enlarge and utilize our resources for irrigation.

While we are waiting for rain, let us prune our fruit trees and vines, and give the orchards and vineyards a thorough overhauling. We refer again to what we have said in respect to pruning in our last number.

In the Kitchen Garden some work may be done to good advantage. The late rains have had a very good effect upon garden soil; we take it for granted that light soils have been selected for garden spots, and that the more thorough cultivation to which we subject our gardens, necessitates much less moisture for sowing and planting. While cauliflower, cabbage and tomatoes, may be sown in frames for early transplanting, we may plant seeds of turnips, radishes, lettuce, carrots, early peas, etc., in the open ground. We have frequently remarked, this rule will apply more particularly to the localities where no heavy frosts are experienced; light frosts, such as we have in San Francisco, Sacramento and other similar localities, will not affect any of the above vegetables, except tomatoes, and these must be protected, if early fruit is desired.

To our Flower Gardens, the late rain has been a great help. While it gave the foliage of trees and shrubs a thorough cleansing and brightened up the general appearance of plants, it has rendered the removal and shifting of plants far more easy and less hazardous.

If seeds are found to be ripe, they should be gathered at once, and hung up or shelved in a dry room, where rats and mice cannot reach them.

Bulbs, such as Dahlias, Galidolus, Hyacinths and Tuberose should be taken up at once, if it has not already been done; they should be exposed to the sun for a few days to evaporate the superabundant moisture, and should then be stored away in the same manner as seeds, in a dry and airy room,

after the varieties and colors have been properly marked. During a rainy day the seed may be cleaned and the offsets of Galidolus, Hyacinths and Tuberose separated from the old bulbs. These offsets may be planted again as soon as the ground can be properly prepared, while the old bulbs should be kept upon the shelves until the early part of spring, when they may be planted for flowering. Old Tuberose are not apt to flower the second time, but they may be replanted to form offsets, which in another year will make good flowering bulbs.

Roses and deciduous flowering shrubs, which are intended for sale during winter or spring, may be taken up and heeled in. During November, flowers are not so plentiful after the plants have just made their full growth; but if we resort to the pruning knife at once and cut back Roses, they will soon force out their young shoots and produce, under favorable weather, new buds and flowers within a short period.

Greenhouse plants will have to be content with less water, unless there are good facilities for heating. Young and tender plants, such as Coleus, Cinerarias and other soft-wooded stock, will suffer much if more water is given than is necessary.

Plants which have outgrown the two and three inch pots must be shifted, in order to advance their growth for the spring trade. Greenhouses should be aired and ventilated during the early part of pleasant days, and closed early in the afternoon.

Cinerarias should have plenty of room, good sized pots and a sunny exposure.

Camellias will soon come into flower, and form the chief attraction in the bouquet stores. To keep them moderately warm and well supplied with water, will ensure a more speedy development of the flowers, and very few buds will be lost.

Narcissus, Hyacinths and Crocus, should be planted for forcing and window culture.

GOOD BRANDY.—The Grass Valley *Republican* reports that the best quality of Brandy can be manufactured from Manzanita Grapes.

WOODWARD'S GARDENS.

As usual, with the spirited proprietor of these gardens, still further changes, which are also great improvements, are in progress. We esteem this establishment, not so much a private speculation, as a public benefit, tending not only to the improvement of taste, but to the advancement of knowledge, especially in the absence of any State institution for the purpose.

Although not a very brilliant period of the year for visiting gardens and conservatories, yet we found much to gratify our taste for flowers and choice plants. Our favorite *Esperitu Santo* is still in bloom, as also fine specimens of *Cypripedium insignis*, and *Hibiscus Cooperii* in flower. We were much pleased with a new *Begonia*—*Baron de Caigney*—and a numerous collection of Marantas, among which we noticed *M. tuberspatha*, *M. sanguinea*, *M. discolor*, *M. Varzewiigii*, *M. nutans* and *M. rosea linearis*; and we counted about twenty varieties of Ferns, of which *Pteris tremula*, *Asplenium Veitchianum*, *Evansiana* and *Alsophilla excelsa* (tree fern) met our eye.

Among numerous other plants and shrubs that attracted our attention we may name a fine *Yucca*—*Bonafartia tuncea*, *Cypripedium venusta*, *Cycas revoluta*, (sago palm) *Coffea Arabica* (coffee tree) in full berry, *Aloe zebрина*, *Graptophyllum pictum* and *Carcolobia patyclada*, with many others which space will not permit us to enumerate.

NEW AND RARE PLANTS.

Cyrtodeira is a new tribe from the gold regions of South America. They require a moist atmosphere, when in a growing state, with a rough, sandy, vegetable soil, to keep them beautiful and fresh; they can be propagated every spring from the tips of the shoots. They are capital basket plants for shaded situations.

Cyrtodeira metallica has bright scarlet flowers, with thick oval-shaped leaves of an olive green, with a central pink band on the

midrib, and the laterals diverging through their hairy surface.

Cyrtodeira chantalensis.—The flowers are an inch in diameter, white, shaded with lilac, and they appear in profusion for several months. The foliage is purple on the under side, and on the upper side it is a shaded green, sparkling with a golden metallic luster—a very charming plant.—*Tilton's Journal of Horticulture*.

Dendrobium Crassinoda.—One of the most remarkable Dendrobes hitherto discovered, whether we take the singularly formed stems, or the distinct and beautiful flowers.

The stems are produced from nine to eighteen inches in length, and formed throughout of swollen internodes, closely set together, giving them the appearance of rows of large beads.

The flowers are from two to two and one half inches in diameter, abundantly developed from the upper nodes; they are white, with broad rosy tips to the sepals, petals and lip, with a large bright yellow disc to the latter.

This is another of the many beautiful plants sent to Veitch by Col. Benson, who discovered it on the Arrakan Mountains, at an elevation of two thousand five hundred feet.—*Gardner's Monthly*.

ANSWER TO "S. C."

In answer to our worthy correspondent, "S. C.," in our last number, we would state that his observation of the growth and habit of fig trees cannot have been very close. Fig trees, like all other fruit-bearing trees, must put forth blossoms, as without them no figs can be produced. However, the blossoms are not showy, on account of the entire absence of the corolla (blossom leaves). The blossoms of the fig tree are *monœcious*, male and female; the female blossom has one pistil, and the male has three stamens. The fig tree is classified under *Polygamia*, *Diœcia*, (*Monœcia Androgynia* Spr.) and belongs to *Urticeæ*.

EVERGREENS FROM CUTTINGS.

A contributor to *Moore's Rural New Yorker*, communicates the following on the propagation of *Junipers*, *Arborvitæ*, *Thuïopsis*, etc., he says:

"I have boxes made eighteen inches by two feet, and four inches deep; these are filled with fine, sharp sand, into which the cuttings are set about two inches deep, and as thickly together as convenient to place them. The cuttings are made at this season, (October) and from the ends of small branches. They are cut about four inches long, the leaves on the portion to be covered, are cut away smoothly with a sharp knife, and the lower end of the cutting, also, *cut off*—not crushed off with dull shears or knives. When a box is filled, it is placed under the stage, in the green-house, as far away from the hot water pipes as possible; for it is not well to try forcing ripe-wood cuttings too rapidly, until the callous on them is formed. If the cuttings are properly cared for, they will be ready to place in a warm position in about two months, and by spring they will be well rooted. Plants of some of the more rare sorts are potted, and as soon as the new growth is produced it should be taken for cuttings; these usually strike root in a few weeks."

This method works well with us here in California. We may propagate in this way others besides the above named sorts, such as our *Thuya Libocedrus*, *Tsuga*, and perhaps our California Nutmeg. The cuttings may be made here at any time, from October to December, and the boxes containing them should be set in the open air, where they are well shaded and somewhat protected. It has been said that plants raised from cuttings, will not make as good trees as seedlings. This, however, applies more to trees of a regular or symmetrical habit of growth.—Ed.

COTTON IN CALIFORNIA.

J. M. Strong, of Snelling, Merced County, has picked, from thirty-seven acres of land, forty-four thousand pounds of cotton; this

will give about fifteen thousand pounds of lint, which, calculated at twenty cents per pound, will bring three thousand dollars for the entire crop, or eighty dollars per acre. We do not know what the expenses have been, or what they are likely to be in the future, per acre, but should judge from the present good yield and the unusually dry season, that the raising of cotton will be remunerative. The material now being placed in our market, capitalists should take immediate steps to establish a factory on this coast, and thus to utilize, at least, the home production.

TOBACCO RAISING.

According to a correspondent of the *Pacific Rural Press*, M. J. D. Culp, of Santa Clara County, cultivates twenty acres in Tobacco. The varieties cultivated, are the "Havana" and "Connecticut Seed Leaf." Mr. Culp is manufacturing Smoking Tobacco on his rancho, and Cigars at Gilroy.

CATALOGUES RECEIVED.

We have just received the advance sheets of *Vick's Floral Guide*, which is the most elaborate Seed Catalogue, which has come to hand this year. The illustrations are beautiful, and true to nature. The catalogue contains much valuable information for the treatment of seeds and plants. We refer to *Vick's* advertisement in another column. While he sends it free to customers, it may be obtained by others at a price which will hardly pay for the paper on which it is printed.

GOOD GARDENERS WANTED.

Inquiries are frequently made of us for good gardeners, and we find that it is difficult to obtain *good men*. Men who thoroughly understand their business, and can show a creditable record, would do well to call at our Office, Room 9, second floor, No. 622 Clay Street, between the hours of 2 and 4 P. M., we shall be happy to be of service to employers requiring men, and to men seeking situations. P. O. Box, 128.

Correspondence.

SAN LEANDRO, NOV. 23d, 1871.

Editor California Horticulturist:

DEAR SIR: In compliance with your invitation I send you a few remarks on Planting Deciduous and Evergreen Trees and Shrubs.

In the Eastern States and in Europe it is not desirable to make a general planting of these, at this period of the year. But in a climate and soil such as we have in California, and particularly in San Francisco, and the adjoining bay counties, my experience has proved, and I believe that nurserymen and gardeners will agree with me in saying, that during the months of November and December, is the best and surest time for planting out Deciduous and Evergreen Trees and Shrubs. But it is not advisable to make a general planting of hardy green-house plants at this season of the year, especially of the more delicate roses, geraniums, fuchsias, etc., the roots of which are apt to rot off; and nothing can be more injurious to a plant than to bed its roots in very wet, or adobe soil, as the tender rootlets either perish or are cramped forever afterwards.

The soil, at the time of planting, should be so friable as not to adhere to the spade, which is a good rule in planting, in any soil, at any season.

P. J. FORD.

SAN FRANCISCO, NOV. 28th, 1871.

Editor Horticulturist:

DEAR SIR: I offer for your acceptance and insertion in your Magazine, if you deem them suitable, the following Hints on the Propagation of Evergreens.

The propagation of all kinds of evergreens should have begun with the last month. I will not now attempt to teach practical men, but will offer these few hints to amateurs, and those less experienced in the art of propagating.

I will first treat of CONIFERS, which are the most popular varieties in our State, such as

Cupressus funebris, C. Lucitanica, C. Lawsoniana, C. glauca, C. occidentalis, etc., etc.

The following is my method with the above, and others of similar character: I take shallow boxes of not more than four inches in depth, and not too large; I fill these with sand, watering well and compressing it firmly in the boxes. Then I select my cuttings from off such plants as have stopped growing, taking care at the same time not to disfigure them. I never take cuttings longer than about three inches at the most, and clean about one inch of the lower portion of them from the leaves, with a sharp knife, and plant them about an inch apart, and about the same depth in the boxes, which I place in a cold frame covered with glass and well shaded; I keep them close for about fifteen days, after which on bright and warm days I give a little air, say for about three hours, but keep them well shaded from the hot rays of the sun.

After a month or six weeks, I place the boxes in a bed of tan-bark previously prepared, say of about three feet in depth, keeping them as near to the glass as possible; I keep them close and shaded for two weeks more, after which, if the weather is fine, I give daily a little air during the middle of the day.

I prefer tan-bark for cutting-beds, if it can be had, especially in our mild climate, as the heat of the bark will keep longer, and never be so intense as manure.

The following are other popular varieties of Conifers which can be readily raised from cuttings under the same treatment as above: *Libocedrus decurrens, Cedrus Libano, C. deodora*; all kinds of *Taxus, Thuja, Juniperus, Thuyopsis, Cryptomerias, etc., etc.*

In the course of four months cuttings of the above-named evergreens will be well rooted; they may be either put into small pots or kept in the boxes until the ground is prepared for planting, but they should be well exposed for some time to the air previously to planting them in the ground. For my part, I have grown all the above-named

Conifers year after year very successfully, as it has been very difficult to obtain seeds of a greater portion of them, and with a little extra attention those raised from cuttings will make as fine trees as those raised from seeds.

AUSTRALIAN EVERGREENS may also be successfully propagated at the present time, but my experience has been that the months of October and November are the most suitable months in our California climate for raising these beautiful trees and shrubs from cuttings.

I have found that almost every kind of plants indigenous to Australia, thrive better by putting down cuttings, in the above-named months, than at any other time.

It must be understood that they should, by all means, have a gentle bottom-heat and should be kept in a close frame or propagating house, until new leaves begin to develop; this is a sure sign that the greater portion of them have rooted.

It will take about three months before they are well-rooted, when they should not any longer be kept in boxes, but should be potted into two inch pots, and placed in a well-shaded frame or low greenhouse; they will still need a slight bottom-heat, for if they do not have it, a great many will be lost after potting.

I will now name a few varieties which can be easily grown from cuttings, viz: *Acacia linariis*, *A. Saligna*, *A. armata*, *A. conspicua*, *A. Latrobe*, *A. pulchella*, *A. rubra*, *A. imbricata*, *A. gummifera*, and a great many others; *Pitosporum nigra*, *P. tobira*, *Melaleucas*, *Metrosideros*, *Chorizemas*, *Leptospermum*, *Erica*, *Diosma* and a great many other varieties, too numerous to mention here. All these may be treated as cuttings in the propagating house, more or less alike, but they will hereafter require different treatment, of which I will speak at some future time.

C. L. REIMER.

THE LOS ANGELES ORANGE CROP promises to be considerably above the general average.

Editorial Gleanings.

HOW TO MAKE A FERN CASE.—“The use of glass cases for growing ferns and ornamental foliage plants is yearly becoming more general. We shall attempt in this article to give a few directions by which they may be made at less expense than has heretofore been thought possible, in the hope to induce those who have never yet enjoyed the beauties of a fern case, to undertake the pleasant labor of making and stocking one.

“For the case itself, all that is necessary is five panes of glass, of such shape and size as to form a case of agreeable proportions. Three panes, twelve by eighteen inches each, one for the top and the other two for the sides, with two panes, each twelve inches square, for the ends, will make an excellent shape and size, though we think a little deeper, say thirteen or fourteen inches, is still better. Of course it can be made as large as wished, retaining the same proportions. A perfect cube would not look badly, but the oblong is better. Then as to the base, if you are not handy with carpenters' tools yourself, the cabinet-maker will furnish you one at small expense. The first thing is a piece of inch board for the bottom, which should be two or three inches larger all around than the case is wanted. The base should be about three inches high, and may be plain or moulded, as is most convenient, and nothing is more agreeable to the eye than an ogee moulding, like an inverted cornice, with a bead above. There should be a groove or a rabbet in the inside of the upper part of the base to receive the glass. The base looks well made of black walnut, but may be made of any other wood. Sometimes the case is made with the glass reaching to the bottom, but then the panes must be larger and no rabbet will be needed.

“The glass is to be fastened together by pasting over the angles silk galloon, about half an inch wide. The lower edges, which go into the base, should be set in putty. Then bind the edges of the top and the sides

and ends with the same galloon, and the case is done. The paste used must be powdered gum tragacanth, dissolved in water; the apothecary from whom you purchase it will tell you how much water to put in it. The cover is simply laid on top of the case; of course it will not be air tight, but it will be tight enough to answer every purpose.

“But we cannot grow our plants directly in the bottom of the case, and therefore must have a pan, which is best made of zinc, say three inches deep, so as to have the top about even with the top of the base, and just wide and long enough to go into the case. Have a hole made in the middle of each end near the upper edge, so as to hook in a bent wire to lift the pan out of the case, else you may find it difficult to get it out when you want to.”—*Tilton's Journal of Horticulture*.

THE ACCLIMATIZATION SOCIETY'S GROUNDS NEAR MELBOURNE, AUSTRALIA.—Considerable improvements have lately been carried out by the Society, under the superintendence of the energetic Honorable Secretary, which have already added greatly to the numerous attractions of the grounds. A substantial fence has been erected three quarters of a mile in length outside the Society's boundary fence, and at every half-chain there has been planted the *Pinus insignis*, which are also well fenced round. The inside of this new fencing forms a handsome broad grass drive, which in summer will be cool and refreshing, and when it once becomes thoroughly known, being so near to the city, it will, we predict, become a second “Rotten Row.” On entering the garden we found that the large oval bed fronting the gates had been altered, a quantity of the worst trees, etc., being removed; the best varieties and the specimens have been well thinned and pruned. A nice collection of bedding plants have been put in, such as geraniums, petunias, fuchsias, verbenas, etc., which will give a lively and refreshing appearance to the entrance. The fine circular basin of ornamental water near to the collec-

tion of birds, etc., has been deepened to a depth of seven feet at the centre, and planted with aquatic plants. A tree fern occupies the middle, and over this the fountain plays. This large basin contains English “Perch,” which are thriving excellently. The shrubberies have been well and judiciously thinned of many of the worst plants, which had become injuriously thick. Young ornamental plants are now dotted at intervals over the lawns and open spaces. Large quantities of native-tree seeds have been sown in places requiring shelter, to act as break-winds. The whole of the beds and borders are in good trim, having been well cleaned, and re-arranged. Among the most important inhabitants of the grounds are the deer, of which there are some five or six varieties. Twenty fine animals have been sent away this year, and the stock in the grounds at the present time consists of thirty splendid fellows. The flock of ostriches has, it appears, done well; the Society commenced with only four, they now number seventeen, the whole of which are up on the Wimmera thriving capitally. The Society intends to turn out a number of Guinea fowl this season in the forests removed from settlement. These will soon become very valuable to the country. The pheasants are looking we'll, being evidently in the best of health; their quarters are suitable in every respect. The different varieties of ducks bred are numerous and fine, the ornamental water for them being large and suitably arranged; the young ducks each season are allowed to fly away with the native wild ducks. It appears that the variety known as the Indian Black Duck is one of the very best eating kinds, the New Zealand Paradise Duck being also excellent in this respect; the whole of the varieties seem contented and happy. A splendid lot of trout ova arrived at the gardens on the 25th August from Tasmania, numbering two thousand two hundred and fifty in all. These were at once placed in the house prepared for them, with all the appliances of a running stream, etc., etc., required for hatching purposes. They were received in fine order, and the young trout

will be distributed into the various Victorian rivers in the months of October and November next. The value of these will be very great to the colony, and we trust they will be as successful as it is possible to be. The valuable flock of Angora goats is away in the country, with the exception of a few kept in the grounds for the inspection of the public, and they are doing exceedingly well. The other collections of animals and birds in the gardens are all looking well, including parrots, cockatoos, monkeys, native animals, etc., etc.

RAISING BEGONIAS FROM LEAVES.— Variegated Begonias are usually propagated from leaves. To treat them in this way, select of this season's leaves, such as are grown nearly or quite to their full size, and consequently are firm and not likely to damp off. Take the leaves off with about one or two inches of leaf-stock, and if you require as many plants from a leaf as you can obtain, take an ordinary shallow seed-pan, and after preparing it in the usual way, insert the stalk portion of the leaf near the side of the pan, and peg the leaf flat down upon the surface. Before doing this, it is as well to cut through the principal ribs or veins with a sharp knife. Plenty of roots will soon be emitted from the cuts, and finally young buds will start, and tiny plants will be the result. Plants will also be produced where the pegs are punched through the leaf. It is impossible to say how many leaves a pan will hold, for this part of the question depends entirely upon its size and that of the leaves. We cover the entire surface of our pans, keeping the stalks by the side of the pans. If we have plenty of leaves to deal with, we adopt a slightly different method of procedure. Instead of using the leaf in its entirety, we take the leaf with a couple of inches of stalk, as before, and then trim the blade of the leaf away, leaving a small portion, about two or three inches in diameter, adhering to the stalk. These we insert around the edges of the cutting-pots, in exactly the same way as an ordinary cutting. It is not advisable to

keep these cuttings too close, or give them too much water, for both conditions, either together or separately, are sufficient to cause them to rot. When they are nicely rooted, and the young plants are formed, pot off into sixties, and grow them liberally until the end of September, when they must have less water and be kept rather quiet. It is a very bad plan to keep this section of Begonias growing all the winter, for the constitution of the plant becomes so thoroughly weakened, that they are unable to make a free, vigorous growth in the spring, when it is required of them.—*Floral World*.

LIME AS A FERTILIZER.—In order that a plant may feed on the organic matter in the soil, or indeed, on any matter, it must be brought into a soluble state. Plants feed only on liquids and gases; they have no power of assimilating solid food. If, however, we add caustic lime to a soil, it renders these insoluble substances soluble, and prepares them for the use of the plant.—*Boston Journal of Chemistry*.

FIGUS ELASTICA PROPAGATION.—*Ficus elastica* is by no means difficult to propagate, and the present moment is very suitable for the work. Cut the well-matured portion of the stem into lengths of two inches each, with a pair of leaves to each, then split the stem down the centre, and lay the pieces on the greenhouse shelf for a few hours. Insert them singly in pots filled with light, sandy soil; bury a portion of the stem about an inch below the surface, and secure the leaf to a short stake to prevent its becoming loose. The cutting-pots should be placed in a warm corner of the greenhouse, unless you have the convenience of a cucumber or melon frame; the frame is preferable, but they will strike in an ordinary greenhouse at this season of the year. Although *Ficus elastica* is valuable for the decoration of in-door apartments and conservatories during the summer season, it requires a temperature rather higher than that of the ordinary greenhouse during the winter to keep it in good health. In winter-

ing it in the green-house, it is essential to keep the plants rather dry at the roots.—*Floral World.*

ENGLISH HORTICULTURAL EXHIBITIONS.—Mr. James Vick writes to the *American Rural Home* from Liverpool, that he attended a horticultural exhibition at St. George's Hall the day after he arrived there, and that it was remarkable only for splendid specimens of hot-house plants and pine-apples; and these he found to be the leading features in all the horticultural exhibitions which he attended in England.

THE DAILY SALES OF FRUIT in Denver, Colorado, amount to two thousand dollars; the fruit markets are almost exclusively supplied from California. The *New York Horticulturist* thinks that the successful culture of standard fruits in Colorado, is very doubtful and risky, unless the climate there can be ameliorated by the judicious planting of trees for shelter.

ACORNS seem to be more plentiful hereabouts this year than for two years previous, and the Indians are busily engaged, with their big baskets, laying in a store for future use. Live pork, too, is walking around snouting up and devouring all it can get hold of, and the little woodpecker is also gathering the nut and putting it away after its own peculiar fashion. We are told the plentifulness or scarcity of the acorn makes a great difference in the hog yield in some parts of our county.—*Exchange.*

PUMPKINS.—Mr. John Higgins, whose big corn and pumpkin crop was noticed last week, brought a specimen pumpkin to the Post Office for exhibition, which measured six and one half feet in circumference one way, and eight feet the other, and weighed one hundred and fifty pounds. He had several other pumpkins nearly as large.—*Russian River Flag.*

IMPORTANT FACTS FOR POMOLOGISTS.—We make the following extracts from the address of the Hon. M. P. Wilder before the American Pomological Society at Richmond, on Mulching, Thinning-out of Fruit, and on Shelter, subjects to which we have frequently alluded. He says, in regard to MULCHING:

“While on this subject we will add, as another of the lessons of experience, which may be said to be fixed, the advantage of mulching for dry seasons and soils, whereby the temperature and the moisture of the soils are kept uniform, and the fertilizing elements in a soluble state, an essential condition for the production of perfect fruit.”

On the THINNING-OUT OF FRUIT, he says:

“This is another lesson which we have learned, and the necessity of which we have often endeavored to impress upon cultivators, and which every successive season teaches with stronger emphasis. It is absolutely necessary for all who send fruit to market, to send large fruit, and the markets are constantly and progressively requiring large and fine fruit. Even the Seckel Pear, which once commanded in Boston market the highest price, will not now, unless of extra size, sell for any more than, if as much as, common varieties of large size. A medium-sized fruit, or even one of smaller size, may be more economical for use, but until some decided change in the preferences of the majority of purchasers shall take place, large fruit will sell better than small. To produce this, the fruit must not only have good cultivation, but must be thinned, and we agree with Mr. Meehan that ‘one half the trees which bear fruit every year would be benefited by having one half the fruit taken off as soon as it is well set, and the overbearing of a tree will within a few years destroy it.’ We lay it down as a certain rule, that excessive production is always at the expense of both quantity and quality, if not in the same season then in succeeding ones; for when branch is contending with branch, leaf with leaf, and fruit with fruit, for its supply of light and food, it would be indeed an anomaly in nature if

this should not result in permanent injury to the tree as well as to the annual crop."

OLIVE PRODUCTION.—The Old Mission in San Diego, one of the oldest in the State, has been rented to a party who is busily engaged in picking the fruit and making oil for table use. With improved methods of manufacture, the oil is of superior flavor and the same amount of olives yields more largely, thus doubly profiting the lessee. From San Diego to Santa Barbara the olive flourishes. The tree attains a great longevity, is a prolific bearer, and in proper hands may be made to yield large profits to the owners.—*Los Angeles News.*

THE FRUIT MARKET OF LONDON.—The *Pall Mall Gazette* says: "Perhaps one of the chief reasons why there is so much intemperance in this country, is to be found in the difficulty of obtaining any good fruit at a reasonable price. How small a percentage of the inhabitants of London have ever tasted a peach, for instance! Grapes are a luxury only within the reach of the wealthy, and except sour apples and oranges, the poorer classes have no fruit which they may call their own. For some reason or other, fruit appears to become more scarce each year in this country. Nectarines and apricots, once common, are now rarely seen, and in a few years will probably disappear entirely."

MAMMOTH FIG TREES.—It is said that there are two fig trees standing in a garden on the banks of the Tuolumne River, near the Town of La Grange, which measure seven and one half feet in circumference, and are about forty feet high. These trees stand only eight feet apart, and mingle their redundant branches as in one tree. These twins are thirteen years old, and are of remarkable thrift and beauty.

ALVARADO BEET SUGAR.—The last lot of sugar made by the Alvarado Sugar Refining Company, is said to be superior to any hitherto produced. It is of a white granulated order,

and sweeter than any imported article. The prospect is fair that in a few years we will be able to supply our home demand, and perhaps export sugars to the outside world, thus keeping in the State an amount not less than three million dollars per annum.

ACACIA MELANOXYLON.—Baron von Mueller, of the Botanical Gardens, at Melbourne, in a recent letter to the Secretary of the Bay District Horticultural Society, recommends very highly the extensive cultivation of the *Acacia melanoxyton*, as affording the best of timber for furniture and manufacturing purposes.

Dr. J. R. CRANDALL, of Auburn, has grown a pear twig, thirteen inches in length, bearing ten Easter Buerré pears, weighing twelve pounds, from seven months growth of a graft inserted on the 20th of March last. The same gentleman sent a twig to Ohio, bearing six pears of the same variety, which weighed nine and a half pounds.—*Exchange.*

M. CUSHING, of Dalles, Oregon, recently exhibited a lot of apples raised about fourteen miles below the Dalles, which measured twenty four to the bushel. The same gentleman has some large squashes, the largest of which weighs seventy-eight pounds.—*Exchange.*

A BEET SUGAR FACTORY has been started in Sacramento, and has just begun active operations, with what success we have not learned.

TO PRESERVE MOSS.—Dissolve one grain of nitric acid and about fifteen grains of indigo in two quarts of water; tie the moss up in small parcels; throw these into the solution while boiling, and leave them in for a minute; afterwards dry them in the open air, and the moss will last for an almost indefinite time without alteration.—*Florist and Pomologist.*

THE WINE PRODUCT of Los Angeles County, is estimated this year at one million two hundred and fifty thousand gallons.

ACCLIMATION OF FOREIGN PLANTS.—Many of the experiments which have been made with foreign trees, shrubs and plants in this State have been successful. There are in all probably twenty varieties of the Australian Gum Tree, which are not only growing rapidly, but as an ornamental and timber tree, will add largely to the resources of the State.

Now, the University has a large tract of land at Berkley, some portion of which is to be set apart as an experimental farm. Such a farm might include all that is desirable in a botanical garden. The discovery of one valuable timber tree, or of one new kind of grass adapted to this climate, would more than balance all the cost of establishing such a garden. We may assume that any tree or shrub which would flourish in the open air at Berkley, would thrive in any part of the State. The grounds are ample, the soil and climate are favorable, and the agricultural department of the University ought to make these experiments with very little cost to the State.

SHELTER.—The necessity of shelter was not as soon perceived as some of the other lessons which I have named; yet, with perhaps the exception of a few favored spots, its importance year by year is becoming more generally appreciated, especially on our open prairies and in the northern and northwestern portions of our country. The fact is established, that the removal of forests diminishes the quantity of rain, increases the evaporation of moisture, reduces the temperature, and subjects our fruit to greater vicissitudes, so that the peach and many of our finest pears can be no longer cultivated at the North except in gardens or sheltered places. The importance of shelter was well understood as long ago as the time of Quintinye, who, in his work on gardening, gives full directions for planting trees for shelter. This was in a country long settled and denuded of its forests; and though our ancestors, planting fruit trees in a virgin soil, thickly covered with wood, failed to perceive its

necessity, we in our older States, who have come to much the same conditions as existed in the time of Quintinye, experience the same want.

There may be exceptions to this rule, as in the South, where the fruit season is warm and dry, producing similar conditions to those afforded by shelter under glass. We may find varieties, and probably shall, adapted to exposed situations; but at present the larger majority of our finer fruits will be benefited by the shelter of belts of forest trees. We are glad, therefore, to see the recognition of the advantages of the forest trees on the part of the managers of our Pacific railways, not only as affording shelter, but as collecting moisture from the atmosphere, and so rendering available vast regions previously uninhabitable from drought. This good work has already been commenced on the line of the Kansas Pacific Railroad.

CURRENT CUTTINGS.—We notice that some very careful directions are given about currant cuttings in the fall. But why in the fall? We should say that the spring was much to be preferred. If set out in the fall, they are liable to become loose in the freezings and thawings of winter; but if in the spring, say early in April for this section, there is no difficulty about it at all. If the new wood is only taken, set firmly in the ground six to eight inches, and well pressed with the foot, watered when necessary, and mulched when hot suns come, ninety-nine out of a hundred will grow. But, remember, if you want to raise trees, cut out every eye going into the ground; but if bushes, which are the most lasting, as well as the most productive, set the cuttings as you take them, and from every eye a branch will come forth. This is the way we do in our garden. Properly set out, cuttings will bear fruit the succeeding year.—*Germantown Telegraph*.

THE GRAPE HARVEST in France will be less than an average, but the quality of the wine will be superior.

DELPHINIUM NUDICAULE AGAIN.—The *Delphinium nudicaule*, recently introduced by Mr. Thompson, of Ipswich, proves to be a much finer garden plant than was at first supposed. It is a tuberous-rooted and hardy species, with the usual finger-lobed leaves; but what are more remarkable about it, are the brilliant scarlet flowers which contrast so strongly with the usual blue tint which pervades the genus. We have, indeed, already had a scarlet larkspur in the *D. cardinale*, but in that the flowers were of a dull red only, and the plant itself seemed unmanageable. Here, on the contrary, the color is bright and effective, and the plant appears to grow freely enough, planted out in moderately light soil. The flowers with these rosy spurs are very suggestive of some brilliant *Tropæolum*, such as *T. tricolorum*, only that the mouth of the calyx is more widely spreading than in the flowers of that plant, approaching in size and form very nearly to those of *D. sinense*. Every one should try whether this fine novelty will thrive under the conditions which his garden affords; and those who find that it will do so, will discover that they have added a gem to their collection. There is an opinion abroad, formed possibly from the exhibition of indifferent examples, that the plant is less meritorious than it really is seen to be when growing in the garden, and Mr. Thompson informs us that he has himself been surprised at the different effect produced by bringing the plant into an ordinary sitting-room. In the open ground, whether in strong or weak light, the color is glowing, and in a mass very striking, but in a room it is dull. Our own opinion, formed from watching the development of the plant in the open ground, is, that it is a really good plant.—*Gardener's Chronicle*.

BIG CROP.—Mr. J. Luce, a farmer on the east side of Russian River, beyond Fitch Mountain, had eleven and a half acres of corn from which he gathered nine hundred and thirty-one bushels, or eighty-one bushels to the acre. Who can show a better crop?

We clip the following item from the October Report of the Department of Agriculture:

“**LA PLATA OR CARNO GUANO.**—The residuum of the flesh used in the establishments of Buenos Ayres for the purpose of preparing Liebig's Extract of Meat, is now to be met with in commerce under the name of La Plata, or Carno Guano, and is recommended very highly as a manure. Analysis shows that this contains nine parts in one hundred of water, forty-one of organic matter, nineteen of lime, magnesia, oxide of iron, etc., ten of phosphoric acid, from one-half to one part of potash, and the rest of insoluble matter, such as sand, clay, etc. The nitrogen amounts to nearly six per cent.”

DISTRIBUTION OF BEDDING PLANTS.—The surplus bedding plants in the parks of London are to be distributed among the poor inhabitants of that city.

THE CRANBERRY CROP of New Jersey is unusually large this year, and the fruit is of excellent quality.

CONIFERS IN POTS.—At the late exhibition of the Pennsylvania Horticultural Society, Messrs. Hooper Bros. and Thomas, exhibited one hundred and sixty species of Conifers in pots.

CRANBERRIES grown in Wisconsin, under cultivation, are selling in our market at twenty dollars per barrel, which price should be an inducement to cranberry culture in this State.

GALLS ON HORSES.—Sponge daily with strong soap suds. Then bathe immediately with a solution of a quarter of a pound of saltpetre and a pint of spirits of turpentine. Apply it with a feather several times a day. As soon as the wounds begin to heal the application may cease.

THE CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

VOL. II.

JANUARY, 1872.

No. 2.

GLOXINIA.

This exquisite greenhouse plant derived its name from Gloxin, a French botanist of the latter part of the eighteenth century. In 1874 the first Gloxinias were also introduced by a French botanist, under the name of *Gloxinia maculata*. It may seem strange, that a plant, producing such rich and exquisite flowers, as the Gloxinia, was not brought to more extensive notice during the earlier part of the present century, but it is nevertheless a positive fact. It is true that the first varieties known did not approach in beauty and elegance those which are now cultivated, yet the merits of the plant have long been appreciated by the majority of the prominent florists of Europe. In 1817 the *Gloxinia speciosa* created quite a sensation with its beautiful blue flowers, and the English florists have ever since been successful in producing new and constantly improving varieties.

While we are here cultivating a very large number of plants in the open air with perfect success, which are greenhouse plants in the East and in Europe, we cannot introduce the Gloxinias into our gardens, but must continue to treat them strictly as greenhouse plants.

We have no doubt that the plants themselves would grow out of doors, but we cannot expect flowers from them, and if they did produce them, they would certainly present a very meagre appearance. They are indigen-

ous to South America and principally from Brazil, and therefore require glass cover and careful treatment.

Plants of the Gloxinia are partly produced by seeds, while old or desirable varieties are propagated from leaves.

The planting of seeds is a delicate operation, and must therefore be done with much care. The seed is very fine and soon loses its vitality; early planting is, therefore, imperative. The seed should be sown in shallow boxes with good drainage of broken pieces of pots. The soil should be rather coarse, in fact some prefer to sow the seed upon very coarse pieces or lumps of earth; we prefer the soil partly in a coarsely pulverized condition. The seed should be planted without covering it, but should be pressed gently with some smooth piece of wood, so as to bring it into close contact with the soil; after giving a slight sprinkling of water, we cover the box with a pane of glass, giving it a warm place in the greenhouse or other glass frame, with a little bottom heat, if convenient, and an occasional sprinkling of water, so as to keep up moisture.

In about three or four weeks the young plants will usually make their appearance, and then a little less water and occasional airing will preserve them from damping off. As soon as they may be safely handled, they should be transplanted, either into boxes again or into small pots—frequent transplant-

ing seems to be favorable to them; the second year they may be expected to produce flowers.

The propagation of old and favorite varieties from the leaves, is an operation similar to the propagation of the *Begonia rex*, only instead of placing the leaves as with the *Begonia rex* on the surface of the soil, the leaves of the *Gloxinia* may be cut up into a number of pieces and planted like seeds with a very slight covering of earth. If placed in a warm situation, little bulbs will soon be formed and plants developed very rapidly. The best time for the propagation of Gloxinias by this method, is undoubtedly after their flowering season, which cannot be exactly given here, as we have seen Gloxinias in bloom at all seasons: but we recommend the latter part of Spring as a very judicious time for California.

Whether it is best to let the roots of the Gloxinias remain in the pots in which they are expected to flower or have already flowered, we are not fully prepared to state—both ways are practiced with success; but it is evidently reasonable that, in order to give them a good rest, they should be taken up annually and buried in dry sand or light soil until the proper time comes for replanting and forcing them. If the roots are left in the pots after they have flowered, the leaves must be allowed to decay by giving water sparingly; and after they have so decayed, no more water should be given until the season for forcing is at hand. Water should then be again given sparingly, and only after the leaves have made their appearance will increased moisture be beneficial.

A light soil is best for Gloxinias—one half leafmould and sand, and one half of light loam, will answer very well; in all cases good drainage is indispensable.

The Gloxinias may be divided into two classes, one comprising all the varieties with erect flowers, and the other those with drooping ones. Both classes are equally beautiful, the former are known botanically, as *Gloxinia hybrida erecta*. There are other distinctions made by florists, such as *Gloxinia hybrida*

da robusta, which are of a robust habit of growth and produce very large flowers; another class are called *Gloxinia speciosa hybrida*, the flowers of which are beautifully marked, but the above distinction is sufficient for us.

The colors of the Gloxinias are of the most delicate shades of blue, lilac, crimson, rose, red and purple.

We will name a few of the best and most popular varieties:

Candida, of a pure white, flowers drooping.

Purpurea, dark purple, flowers drooping.

Victor Lemoine, rosy violet, erect flowers.

Rubra, color crimson, flowers drooping.

Apollo, beautiful violet color, flowers drooping.

Rose Castilione, dark rose, flowers erect.

P. S. While writing this article, our memory was refreshed as to an old method of propagating Gloxinias, viz: by taking off the leaf with a portion at least of the eye at the base of the leaf also attached to the stem. This was inserted into a small bottle filled with water, which was placed in a warm situation, (with bottom heat if possible,) and the roots would form in from two to four weeks. We do not know if any one practices this method; we apprehend florists wish to make more than one plant out of a leaf.

CENTURY TREES.—Three fine specimens of this world renowned tree can be seen in a lot on Los Angeles Street, between Third and Fourth Streets. To persons who have never seen a century tree in bloom, it would be worth their while to make these a visit. The trees are almost twenty-five feet high, and partly in bloom.—*Los Angeles Star*.

THE FORESTS are dying out in certain parts of Virginia. The chestnut trees have already submitted to some deleterious agency, and their growth is nearly exhausted; and this year the oak, and in fact all the trees of the forest in certain sections are dying. No explanation of this disastrous visitation has yet been given.

THE "MAJETIN," vs. APPLE BLIGHT.

(Continued from page 5 of last number.)

In England and other comparatively cold climates, the ravages of the American *Aphis* are restricted to a certain extent by the severe frosts which annually occur and which keep them within bounds; but in such a climate as that of Australia, the mildness of the temperature is exceedingly favorable to the development of insect life; and accordingly, in Australia, the Cabbage blight, (*Aphis brassicæ*) has so overrun the country that the turnip as a field crop had to be abandoned, and the cultivation of the cabbage and cauliflower is a matter of considerable difficulty, crops being sometimes destroyed all over the country by this petty depredator. The American blight, too, runs rampant, and the apple trees, soon after it makes its appearance in an orchard, become clothed with blight, and soon decay and perish. Its effect upon the fruit is also most injurious, and this was particularly discernible during this season (1870-71), by the premature ripening of the fruit upon trees much affected, many kinds also exhibiting a hollowness quite unnatural to the variety, whereby their keeping properties became deteriorated, and, as a consequence, their value proportionately less.

The ravages committed upon apple orchards by this pestiferous and unconquerable insect being so great, it is no wonder that cultivators have tried so many schemes as remedies, and have thought much of the desirability of escaping somehow or other from its power. Accordingly, the fruit growers of these colonies have unsuccessfully attempted to use as stocks, the pear stock, the whitethorn, and others still more unsuitable than these. The most recent and undoubtedly the most successful attempt is that which has been made by Messrs Lang and Co., of Melbourne and Ballarat. Their experiments have been conducted during the last eight years at their Nursery, at Warrenheip, and by their courtesy I am enabled to give pretty full informa-

tion of their experiments. I visited the Nursery at Warrenheip, in 1870, and was much impressed with the importance of the attempts there made to cultivate the Majetin apple on a large scale as a blight-proof stock, whereon to graft the apple, and with the success of their attempts.

Messrs Lang and Co. informed me, that their attention was directed to this apple in 1862, and to the descriptions thereof given by Geo. Lindley in his "Guide to the Orchard." Lindley says, that at the time of the publication of his book, forty years ago, it was noticed that an old apple tree growing at Norwich, in England, which had been grafted three feet high in the stem, had been for many years attacked by the "*Aphis lanigera*," or American blight, below the grafted part, but never above it; the limbs and branches continuing perfectly free, although all the other trees in the same garden were infested more or less with this blight. The variety was a Norfolk apple named the "Winter Majetin."

Messrs Lang and Co. concluded, that if this variety was so very free from blight as described it should form a valuable stock for the apple, and they accordingly procured some trees from England, and have been engaged experimenting and increasing their stock during the past seven years.

I found the "Majetin" Stool Grounds, at Mount Warrenheip, containing seven hundred Majetin roots or stools, all perfectly clean and very healthy, side by side with the Crab, Paradise, and other stocks, which, although looking extremely well, were all more or less infected, and even when the roots of the Majetin were growing so closely that they entwined round each other; in each case the Majetins were clean and healthy, and the Crabs were more or less covered with *Aphis lanigera*, and the soil of Mount Warrenheip, is one of the most liable of all to encourage the American blight, so liable indeed, that many varieties declared to be free from blight in other parts of this colony are not so there, including some sorts that have been supposed to resist blight altogether in other situations.

The "*Winter Majetin*" is therefore the only one that has stood the test, and proved itself to be indeed *proof* in the rich chocolate-colored volcanic loam of Mount Warrenheip.

Such being the case, after the lengthy experiments by Messrs Lang and Co., of Ballarat, it has been found necessary to give every attention to the propagation in great quantities of the "*Winter Majetin*," as a stock on which to work all other good varieties of the apple.

Although the *Majetin* has thus proved to be very valuable as a stock, Messrs. Lang and Co. took care in a recent circular of theirs to notice, that it cannot prevent other varieties grafted upon it from being attacked by the blight. Here are their own words:—"To prevent misapprehension as to what is to be expected from this stock, we must remark that all we claim for it is, that the roots of apple trees properly grafted on the *Majetin* stock will always be entirely free from blight, in fact all below the graft will be clean. It is not to be expected, it is not pretended, that apples naturally subject to the blight, such as the Ribston Pippin, will be made clean by being grafted on the *Majetin* stock. But it is a matter of the highest importance to have secured a stock for apples which will defy the blight below ground, for those conversant with the abominable insects know too well, that it is in roots below ground that they multiply during autumn, and harbor during winter, and, if they can be kept from harboring in the ground, it will not be such a difficult matter to keep the stems and branches clean."

THE SAN JOSE *Mercury* says: For the first time in the history of this valley the strawberry business has been overdone. Last season prices touched bottom at three cents a pound—a figure that barely covered the cost of picking and shipping the berries, leaving no margin of profit or of interest upon the investment. The result is that many fields have been neglected and the vines suffered to die out for want of proper irrigation. We should judge that not less than one-third, perhaps one-half, of the vines of this section are thus past recovery.

NOTES ON SOME FRUITS WORTHY OF CULTIVATION IN CALIFORNIA.

The planting season being now just at hand, and many cultivators of fruits wishing to know what, in all respects, will be the most desirable and profitable to choose, and those which will suit our climate and soil and the tastes of the consumers best, I will continue to select and describe those kinds which past experience has proved to be good and remunerating, and also some varieties which are chiefly new to the fruit raisers in general, but which have lately deservedly attracted the attention of skillful and successful fruitists.

The first sort which I will name, is the *Galway Peach*.—The late Isaac Pullen, of New Jersey, whom I well knew to be one of the most prominent and intelligent as well as one of the largest peach orchardists of that State, so renowned for peach culture, imported this valuable addition to his grounds in 1864. Mr. Pullen had raised many fine seedlings himself, *Honest John* being one of them. It seems that the *Galway* was, according to the report of the committee at the late State Fair at Sacramento, introduced into California by E. F. Aiken, of the above city, in 1868. It has fruited for the first time there this year. James Alexander Fulton, in his new work on "*Peach Culture*," describes it as follows: "It is a large peach of great beauty and good quality, nearly round, with suture well defined towards the apex; terminal point distinct. Its distinct virtue, however, is its late ripening—several days after the one which has heretofore been considered our latest free-stone peach. Your committee believe that the description as quoted above is fully sustained in the samples exhibited, and that the time of ripening in this locality is from the 20th of September to the 20th of October. The character of the wood and foliage indicates hardiness and comparative exemption from the curl-leaf. We think it a valuable acquisition to our lists of fruits and worthy the attention of fruit growers."

Upon this reliable decision of a competent committee, and viewing also Mr. Pullen's im-

portant judgment, I recommend cultivators to secure this promising peach, which for its lateness also is no doubt a choice variety.

Bloodgood Pear, or *Early Beurre*.—This has proved itself highly worthy of cultivation in our climate. Its earliness is, of course, one of its great recommendations. Its origin is Flushing, Long Island. It requires a rich, deep, warm soil to produce good-flavored fruit. Most of the California lands are well suited to it, as the results have proved. It is generally admitted to be the highest-flavored of all early pears. The fruit is best ripened in the house. It is of medium size. The tree is a moderate grower and rather short-jointed. Flesh yellowish-white, buttery and melting, with a rich, sugary, highly-aromatic flavor; skin thin.

German Prune, or *Zwetsche*.—There are many varieties cultivated under this name, owing to the prune coming nearly the same from the seed. It is a valuable class of plums, of fair quality for the table; but it is particularly valuable to California, owing to the facility with which it can be dried, so that such of the crop as cannot be marketed fresh can be secured from loss in a dried state. All the sorts are abundant bearers and hang long on the tree. This fruit can be made into a preserve, and used in winter as a substitute for butter in the country by laboring farmers. How fortunate we are in this State not to be subject to the ravages of the Eastern curculio, and thus are able to utilize the whole of our crops of plums!

I need not describe the *Columbia* and *Washington* Plums, as they are well known here as profitable kinds.

Either very early or very late fruits, of nearly all sorts, are the most profitable to cultivate. The reasons are evident. The early fruits command ready sale on account of their novelty and freshness after the non-producing months; and the late ones, because they can be kept longer and have a long season for their disposal.

But we have but few apples here which can be called late winter, or spring fruit.

Most of what we call Winter apples in the East, are Fall fruit in this clime.

The *Bartlett* is about the best-paying of all pears, and if picked early it will stand carriage well for a long time and distance. It is an enormous bearer, and its size is first-rate. It does not rot for some time, and is always full of juice; it is not always so delicate or sweet as the *Belle de Flandres*, but the latter quickly perishes, and must not be permitted to ripen on the tree. Most pears are best house-ripened. When the stem parts easily from the branch, by raising the fruit upwards, it is not too green or unripe to be gathered for the house-ripening.

The *Vicar of Winkfield* is a pear well adapted for baking. It is an enormous bearer, but not choice for the desert, as its tissues are both somewhat coarse and crisp. Its flavor is not rich, although it is a tolerably good keeper.

The *Winter Nelis* is a very rich, full-flavored and sweet pear, and one which comes into use latest, with the exception of the *Easter Beurre*, another delicious, most juicy, tender and thin-skinned fruit. We can retain it in some years as late as April, when put down in sawdust.

Cherries are a good-paying crop, and seem almost to have been the last fruit attended to among the cultivators, consequently they are not so plentiful as most of the other fruits. This dry climate is well adapted for them, as, when they are ripening, much wet will make them rot on the trees—an evil they are greatly subject to in the East. There is also no insect to disfigure them, and make them wormy.

Strawberry-raising has lately been rather overdone in this vicinity, prices having been, in the fall season, this year, low for the produce.

Cranberries would prove always a profitable crop, but they require peculiarly wet, swampy lands.

Almonds would be always a safe production, as there is a world-wide market for them.

E. J. HOOPER.

SAN FRANCISCO, Dec. 13th, 1871.

HIMALAYAN RHODODENDRONS IN IRELAND.

I fear I am rather late in suggesting to your readers to look at a few of the Himalayan Rhododendrons which bloomed last spring with especial beauty at our Botanic gardens, and elsewhere in the neighborhood of Dublin. I may also notice another species from a warmer climate than those, and which has been greatly admired within a few days of the time I write, at our Trinity College Botanical Gardens. In a greenhouse at Mr. Gray's, at Temple Hill, near Blackrock, a bush, which may almost be called a tree, of *R. Nuttali*, produced several fine trusses of its lovely white bloom after spending the autumn and winter plunged in the open ground and unprotected, till it was brought in, when about to flower. Another and a still finer specimen, from the conservatory of Captain Coote, at Farmley, Knockmaroon, near the Phoenix Park, attracted universal attention at the recent exhibition of our Royal Horticultural Society.

In Glasnevin and Trinity College Gardens, *R. Edgeworthii* has this spring formed a prominent feature. In its nature parasitical, its many long branches bear to be twisted and intertwined into a roundish or other form, in which way the flowers show to much advantage; and they have a quality with which I believe few of the family are endowed, that of emitting a delicious perfume. In Dr. Hooker's celebrated work on the Sikkim-Himalaya Rhododendrons, he gives a fine coloring of this tree, and describes it as delighting to grow on the limbs of pine trees.

There is now in bloom at both these gardens, of somewhat different habit, and to my eye still more handsome than the others, if not the most so of the numerous family, *R. Dalhousiae*. This also is loose or straggling in its habit of growth, but its branches are not so pliant as those of *Edgeworthii*. The flowers, which are large and waxy and white, or creamy white, are strongly perfumed, somewhat with the odor of the lemon. In size, color, and general appearance, they re-

semble, as Dr. Hooker describes them, the Bourbon lily, *Lilium Candidum*. *Rhododendron ciliatum* is also another Sikkim-Himalayan species, which has for several years luxuriantly bloomed in the open air and very early in spring, or rather at the close of winter, at the northerly side of the Fern-house at Glasnevin. Whilst those I first named command admiration from every lover of beautiful plants, this latter has to me a peculiar charm. In the autumn of, I believe, the year 1854, which was followed by a very severe winter and spring, two seedlings of this shrub, then new in Scotland, were there given to me by one anxious to test their power of bearing the climate of Malahide, where I then had a garden. He bound me to leave them for a year without protection; and naturally I watched their progress with interest, which was rewarded by very early blossom, almost before the snow had melted from protecting the stems. Again, last autumn, two young plants of this now well known species were sent to me, with two seedlings of *Edgeworthii*, to try how they would live in a frame at the rear of my dwelling here. All so far look well, and one or two have flowered; and though the texture of the foliage be such as does not suit the smoky air of Dublin uncovered, I hope and expect to see them enjoy many a month, and year, in their new abode. Why shall not each of the kinds I name suit for culture under glass in this or another city?

The last species to which I now refer, is that called *R. Javanicum*, from a warmer climate than any of the others, though I know not the particular locality in Java which is its especial home. For weeks one of the finest, if not the finest, specimen in Ireland, has been in flower in the College Gardens here. Orange-red is the color given, and it seems correctly, to the fine trusses of its bloom. Though the conservatory in which this shrub has for years lived be partially heated in severe weather, frost to some degrees often makes its way within it. As is my wont, I merely offer some results of personal observation, inviting others to enjoy what gives

refined pleasure to myself. I try not to ape scientific learning where I have it not, and which perhaps, consistently with my capacity and main pursuits, I ought not to cultivate or possess: I still remember my school-day lesson of Horace—"Let not the cobbler venture beyond his last"—

"Ne sutor ultra crepidam."

But even half-learned ignorance knows that the *Rhododendron* family are generally easy of culture. By grafting and layering and seed, and sometimes, under a skillful hand, by cuttings, an infinite number, if there be such a thing, can be obtained of these most ornamental evergreens.—*Gardener's Record*.

HYACINTH CULTURE IN GLASSES, ETC.

On reading in the last *Gardener's Chronicle* an article on the growth of Hyacinths and other bulbs in glasses, I thought a few words upon another, and I venture to think, an improved mode of growing these spring favorites, would be acceptable. I refer to planting in glass dishes and other vessels (in fact, any bowl, pan, or stand, whether of glass, terra cotta, or China, will answer the purpose) in cocoa-nut refuse. Before the advent of the latter material, I used to grow almost all sorts of spring bulbs very successfully in Sphagnum Moss and water, simply laying a few lumps of charcoal at the bottom of the dish, then filling up with the moss, planting the Hyacinth in it, and watering as required. This plan answered very well, but as the moss was difficult to get, when cocoa-nut refuse made its appearance it was at once substituted and found to answer better in every respect. When planting now I use a composition of two-thirds cocoa-nut refuse, the other third being silver sand and a little charcoal broken rather finely but not powdered. The bulbs are planted so as to leave the crown a little exposed, and the whole is covered with the beautiful flat green moss, which may be obtained at any hedge bank; it then forms a pretty and attractive object at the outset, which is an advantage, whilst the moss cov-

ering prevents it drying too rapidly, and also excludes the light. There should not be any hole for drainage in the vessel used, and if a fern-stand is employed, the drainage hole should be tightly corked up. The cocoa-nut refuse will not easily turn sour, but if by chance too much water is given, the surplus may be run off by simply laying the hand flat over the top of the dish, whilst elevating the dish with the other, so as to pour the water out at one side. My experience goes to show that Hyacinths grown in water in glasses cannot compare with those grown in the way described; the bulbs root strongly and quickly, showing a corresponding increased vigor in leaf and flower, nor are they so liable to checks from sudden changes of temperature.

Three Hyacinths were grown last season, in one vessel, with great success. They were planted exactly as I have recommended, and all through their growth occupied the window of a sitting-room. Every fine day they were allowed to stand out on the window sill, during the middle of the day, and when beginning to show their flower buds, were treated with weak guano-water. I regret that the names of the varieties were not preserved when planted. The colors were as follows:—No. 1, pure white; No. 2, fine deep pink; No. 3, dark blue. This will enable you to form an idea of the beauty of the pan last spring. I commend this method to the notice of all your readers who like to grow bulbs in the parlor or sitting-room, as it combines the cleanliness and prettiness of the Hyacinth glass with a more natural medium for the bulbs to root and grow in; and if any one doubts whether the flowers will be as fine, let him try, and I am sure he will not again resort to Hyacinth glasses.

[Very successful.—ED.]

JAMES TYNAN.

NAPA WINE PRODUCT.—The *Vallejo Chronicle* says it has the best of authority for stating that the wine production of Napa County will this year reach 600,000 gallons.

ORNAMENTAL AND LANDSCAPE GARDENING.

LAWNS.

One of the most expensive items in gardening, is a lawn; difficult to establish, and after it is established, difficult and laborious to keep in good order. We have seen some most beautiful lawns in this city, in Oakland, at Menlo Park, and even in the hot and dry climate of Sacramento, but they are kept up at a tremendous expense, of which the water bill is not the least. It is evident that wealthy people only can have lawns in this country, and only in such localities where water is plentiful.

It is somewhat strange that no experiments have yet been made, in California, to discover grasses which are better adapted to our dry summers, so as to enable those who occupy country residences and have extensive grounds surrounding them, to give to the surface a green and refreshing appearance. As far as the growth of ornamental trees and shrubs is concerned, they will take care of themselves after a few years; but lawns of such grasses as we now have under cultivation, cannot be established without enormous expense.

The impression seems to be rather general, that nothing will do for a lawn but Kentucky Blue Grass, and Red Top or Italian Rye Grass. We are well aware that the Kentucky Blue makes the finest lawn, provided it is sown thickly, kept clear of weeds, cut every ten days at least, manured every year, and receives a plentiful supply of water. But it is evident that the expense necessitates much restriction as to the size of lawns. Next to Kentucky Blue comes the Italian Rye Grass, which is not quite so expensive and presents a very neat appearance. Although a little coarser than the former it requires less seed, less cutting and less water, and is therefore less expensive; nevertheless, it cannot withstand our dry and hot summers for more than thirty days.

It seems to us, that the best grass for extensive grounds, surrounding country resi-

dences, where the supply of water is limited, would be the Bermuda Grass. We do not consider it equal to either of the above named grasses, but we claim for it the following good qualities: It will grow in ordinary soil; it will keep green nine months in the year; it does not require cutting more than once or twice unring the season (it will also do well without cutting); and it will grow without irrigation. We give the following directions for planting it: Plough deeply and thoroughly after the first rains in the autumn; procure the roots of the Bermuda Grass (or rather the sods); cut them up into small pieces and plant them out, or sow broadcast, and roll the ground well after planting. During the first year the sod may not be established thickly enough to give a uniform appearance, but the grass itself will spread rapidly and will soon completely cover the ground.

While we must continue to recommend the other named grasses for lawns of smaller grounds, and particularly city residences, where water is plentiful, we hold that the Bermuda Grass is the only one adapted for extensive country grounds, where water and labor are scarce.

SOME TROPICAL FRUITS WHICH ARE PROBABLY WORTHY OF CULTIVATION IN CALIFORNIA.

THE DATE.

Knowing that the Date Palm has succeeded as far north in this State as Santa Clara, and has sustained no injury from the rather sharp frosts in that latitude, I consider it may not be altogether uninteresting to some of the readers of the HORTICULTURIST to have a short description of that much valued tree in the eastern part of Europe, Asia and Africa. And if it should succeed near Santa Clara, how much more likely is it to prove profitable farther south, as at Santa Barbara and Los Angeles? The botanical name of the Date is *Phoenix dactylifera*. It is of the class *Dicocia*, order *Triandria* of Linnæus. In tropical, or semi-tropical regions, the Date

is ranked in value next to the Cocoa Nut. Its trunk rises to the height of sixty or seventy feet, although these trees are slow in their growth. The stocks are generally full of rugged knots, which are the remains of the fallen leaves; as the trees grow old, so this bark hardens and becomes gradually ligneous or woody. When this Palm has grown to a size for bearing fruit, the leaves are from six to eight feet in length, having narrow, long leaflets (or *pinnæ*) set alternately their whole length.

The Date tree, like other diœcious plants, has male flowers on different trees from those that produce the fruit, and, of course, there is a necessity for some of the male trees growing near the female, to render them fruitful. The branches of fruit are sometimes very large. There are several varieties of the Date. The seeds, when fresh, very easily germinate. They require, when young, a constant supply of water. In transplanting them, care should be used not to injure the roots. One important thing has to be attended to in their cultivation, namely, their fructification. Wild Dates impregnate themselves, but the cultivated ones do not, without the assistance of art. The plan adopted consists in collecting the flowers of the male and climbing to the top of the female with them, and dispersing the pollen on the germs of the Dates. In some few countries, as in parts of Egypt, many families subsist almost entirely on Dates.

As is well known, (we having them in the fruiterers' stores), a conserve is made of the fresh Dates, mixing them with sugar. This, although intensely sweet, has to most persons loving much saccharine matter, an agreeable flavor. Baskets for domestic use are made of the leaves, and a kind of traveling bags; also ropes are made from the fibres. The trunk is sometimes used for the same purposes as wood. In those parts of the world where the Palm flourishes, the large orchards afford considerable revenue to the owners.

These trees may be planted within eight feet of one another, but I question if the

Date for eating, either fresh or conserved, will ever be liked by us in comparison with our best apples, and the other fruits of the temperate region. Still a plantation of them might probably be made somewhat profitable even here—if for nothing else than for their novelty.

When intended to be preserved, they are gathered a little before they are ripe; but when to be eaten fresh, they are allowed to ripen perfectly, in which state they are a refreshing and pleasant fruit. They, however, will not keep long without fermenting, or becoming acid. They may be made into jellies or jams, or, by being pressed, into a nice syrup. They may also be distilled into an ardent spirit.

It has been said that the location of the Date tree is so peculiar, that it cannot, strictly speaking, be classed either with the fruits of the temperate climates, or with those of the tropical. The only test concerning this, is, to try experiments with its growth in all our apparently suitable latitudes.

Although the young plants require moisture, the Date is capable of standing great drouths, its common site being in, or on, the edge of great sandy deserts.

This tree is planted as an ornamental one in Corsica, Sardinia, and in the north of Italy, but it does not ripen in those countries, or only imperfectly. It remains to be seen what it will do in any part of California; at present it may be considered but a doubtful matter, and although this plant is unquestionably growing well in or near Santa Clara, we have as yet no account of its having perfected its fruit. It would be more likely to do this in the more southern counties of the State, and we hope to see a thorough trial both at Santa Clara, Santa Barbara and Los Angeles.

E. J. HOOPER.

SAN FRANCISCO, Dec. 30th, 1871.

In 1866 the products of the California lumber trade were one hundred and ninety millions cubic feet, and in 1867 two hundred millions.

LAWNS.

One of the most pleasing features in those of our modern gardens which are of some extent, is a well kept, thriftily growing lawn. It adds a tranquil beauty to a residence more than the most brilliant flowers. A garden without a lawn, is like a parlor without a carpet. How uncomfortable we should feel in such a room! the most costly ornaments would lose their value,—everything would appear needy and poor. So in a garden wanting such an ornament. The lawn is like the background to a picture: the buildings, trees, flowers, etc., are presented in a more favorable light if surrounded by a grass plot. But to produce a good effect, the grass must always be kept short, close and thrifty, so that in glancing over it, it may appear as even and as smooth as a billiard-table. How to establish such a lawn and to keep it always in good condition, shall be the subject of the following lines.

Soil in the proper condition and water in sufficient quantity, are necessary to insure success. When there is naturally a loose soil, which will not become hard after rain, it is only necessary to give it some well rotted horse manure; if it is too heavy, add sand and dig it about twelve inches deep, and take particular care to pick out all perennial weeds and roots which may be found. If the ground consists of nothing but sand, as is mostly the case around San Francisco, a very good soil can be made of one-third sand, one-third loam, and one-third horse manure. This compost should be one foot deep, deep enough not to bring any sand to the surface in spading it, and will give the best soil for our purpose; in fact, any plants in our gardens will grow luxuriantly in it except some few exotics, as the Camellia, Azalea, Rhododendron, Erica, etc., which require a different soil. The ground should be prepared and dug up at least a few weeks previously to the sowing, that it may settle. If sown immediately after filling up, it will settle unevenly and present a very rugged

surface, which cannot be mowed well, and is very difficult to be kept evenly moist.

A very good grass plot may be formed of the Kentucky Blue Grass, (*Poa pratensis*). This is sometimes mixed with other foreign imported sorts, *Agrotis holium*, etc., or White Clover; but the former alone will give a very good, firm sod, and will be more agreeable to the eye than if mixed with some of the coarser grass or clover, and it will present a finer appearance. In wet, heavy soil, it may be advisable to take a mixture of some of the following sorts: *Festuca pinnata*, *Alopecurus pratensis*, *Poa angustifolia* or *Phleum pratense*. Care should be taken not to sow it too thin, as it will look miserable to have bare spots in the green surface. About one pound of seed to sixteen feet square will be necessary. The best time for sowing is in spring—February and March. In naturally wet localities, it should not be sown too early. In moist ground the snails are likely to destroy the young shoots as soon as they come up. The most effectual remedy against these pests is, to keep the ground moderately dry, as then they will not venture to go on it; however, this cannot always be done. Anybody who knows a practical way of keeping them out of the garden, and will inform us through these columns, will receive our most heartfelt thanks, and will also certainly confer a great obligation on the many readers of this Journal.

On a calm, sunny day, we may finally prepare the ground to receive the seed. It will be necessary to spade or hoe it slightly, and to rake off the stones and coarse lumps of soil, at the same time smoothing the whole surface; then sow the seed evenly, cover it in with the rake, rake it over again, and after this roll it with a light roller. If this is not at hand, or not convenient to use on a small grass plot, the seed may be stepped on foot by foot, raked after this, and the whole may be beaten even with a flat shovel. In about two to four weeks the grass will show itself. Should the ground in the mean time become too dry, it must be moistened, but not too heavily, or the snails will be trouble-

some. When it is four to five inches high, it should be mowed with a sythe on a cloudy day, and if possible, rolled and watered immediately afterwards. It will now sprout and gain more strength, a great many of the annual weeds will be weakened by the first mowing, and soon die out. The perennial and broad-leaved weeds must be pulled out in the course of the next month, and in about eight weeks the ground will present a beautiful, smooth, green surface. During the summer it will have to be watered twice or thrice a week, according to locality. For larger gardens, a hand-mowing machine will be indispensable; it cuts and rolls the grass at the same time, saving a great deal of labor.

In the fall the land should receive a top-dressing of horse manure, evenly distributed over the whole place, raked through several times during the winter, and raked or swept off in the spring, when the grass begins to grow again.

R. MICHELSON.

OSAGE ORANGE—*MACLURA AURANTIACA*.

The Osage Orange, we believe, is a native of the Southern States, and is considered hardy in some parts of New York and Pennsylvania. It has been strongly recommended as a hedge plant, and is well adapted for that purpose. It is said that the fruit, which resembles the Orange, (only rougher in appearance), is edible when ripe, but we have never met with any one who could satisfy us on that point. The foliage is rich in appearance and the fruit very handsome; therefore the Osage Orange may be considered very ornamental.

We are also under the impression that the Osage Orange would develop into a very desirable ornamental tree, if permitted to attain its full growth. It is said to grow, in some parts of Arkansas and Louisiana, to the height of sixty feet, with wide spreading branches, and exhibits much vigor.

We ourselves cannot conceive anything in the ornamental tree line more striking in effect than a well developed Osage Orange

tree—its bright orange-like fruits intermingled and contrasting with its rich foliage; and we feel certain that this shrub or tree will yet become very popular with us both for ornament and also for the feeding of silk worms, for which latter purpose experiments have been made with considerable success by our Agricultural Department at Washington.

Plants are easily raised from seed or from root-cuttings, and are also easily transplanted. They require a deep soil, and the garden should be well trenched for the reception of the seeds, cuttings, and young plants.

HARDY VINES.

Although the above term may not be a popular one, yet we have used it as suiting our purpose of calling attention to the various ornamental vines; which, being frequently purchased for certain purposes, for which they are not well adapted, occasion disappointment from mistaking the nature and habits of the plants. It is our desire to make our readers acquainted with the various habits of vines, so that, knowing what to inquire for, they may more readily obtain their wish. Vines are distinguished by their habits of growth, and may be classed as—

1st. *Climbers*, which ascend and support themselves by tendrils which take hold on trellises, branches and other similar objects; the Grape Vine is an example of this class. But there are also other vines coming under this division, which by their force of growth ascend, and overlie arbors, trees, etc.

2d. *Creepers*.—These throw out roots from their stems which take hold on trees, walls, etc.; these may be represented by the well known Ivy.

3d. *Twining*, which wind around the objects near which they grow, as the Clematis and Honeysuckle.

4th. *Trailing Vines*, which keep close to the surface of the ground, and which are also called creepers; we instance the periwinkle. So much for the different classes of Vines—the exceptions are numerous.

In enumerating the different species and their varieties, we shall not be entirely governed by this classification, fearing to create confusion. We shall begin with the old and favorite

Clematis (Virgin's bower), a native of Europe, America, and other parts of the globe. It is found growing wild in California. The estimable qualities of this vine are many; the foliage is graceful and delicate; the flowers are fragrant and they are followed by a mass of feathery tufts of a pure white color, which contain the seeds; the vine, on this account, is sometimes called, "Old Man's Beard." The varieties of the small flowering *Clematis* are: *Clematis flammula*, *Cl. virginica*, and *Cl. vitalba*. They are all exceedingly well adapted to overhang verandas, bowers and arbors.

Within the last few years some beautiful large-flowered varieties have been imported from China and Japan, and from these, new Hybrids have been raised which equal the very finest floral productions of our days.

Clematis florida is a native of China; the flowers are three inches in diameter, and are of white, purple and blue colors; perfectly hardy with us in California.

Clematis azurea, a native of China; large flowers of a beautiful blue color; also hardy.

But the finest of all the *Clematis* are the newly produced Hybrids, the flowers of which are from three to four inches in diameter and of very rich colors. We mention a few of them:

Princess of Wales; flowers violet purple, with red bars in the center of each petal.

C. atro-purpurea; flowers crimson blue.

C. rubella; flowers rich velvety claret, semi-double.

C. languinosa nivea; large white flowers.

C. fortunii; flowers large and double white; this, however, is a native of Japan and of late importation.

The large flowering *Clematis* are scarce with us in California, and the price is rather high as yet. A few plants have been planted

in the open air and have not done well: this we attribute almost entirely to the fact, that the plants were of recent importation and not strong enough. We are convinced that all the above-named *Clematis* are perfectly hardy, and we hope soon to see them in their full glory.

We shall next speak of the old-fashioned Honeysuckle, which is yet one of the most popular climbing plants. The fragrance of its flowers cannot be well superseded by any other hardy vine. The varieties now under cultivation are numerous, but we shall only enumerate the best:

English Woodbine (*Lonicera periclymenum*); a native of Europe, showy flowers, very fragrant, deciduous.

Coral Honeysuckle (*Lonicera sempervirens*); evergreen, producing its scarlet flowers in greater or less abundance throughout the year in California; not fragrant.

Yellow Flowering Honeysuckle (*Lonicera flava*); very scarce in California; this is a native of the Eastern States; not fragrant.

Golden-leaved Honeysuckle (*Lonicera aurea reticulata*); a native of Japan; this is one of the most beautiful climbers under cultivation; the foliage is veined with gold and very ornamental.

Japan Monthly Honeysuckle (*Lonicera brachypoda*); a splendid evergreen climber, bearing most fragrant flowers all the year round; a robust grower.

Chinese Evergreen Honeysuckle (*Lonicera flexuosa*); foliage dark green above and mostly of a purple tint below; very much inclined to twine; of graceful habit, flowers fragrant, and a very desirable variety.

All these Honeysuckles are perfectly hardy with us; they are particularly well adapted to cover verandas and trellis-work. They should be kept under control with the pruning shear, or else they will lapse into general confusion.

We next call the attention of our readers to the

Virginia Creeper (*Ampelopsis Virginiana*), of which, strange as it may be, we have seen

very little on the Pacific Coast. Like the Ivy, it is well adapted for covering with wonderful rapidity walls, woodwork, and the trunks of trees. Its foliage is luxuriant, and assuming a beautiful crimson color in the autumn, is, therefore, extremely picturesque; its flowers are insignificant. The Virginia Creeper is a very desirable vine, where quick and luxuriant growth of foliage is desired, and is easily propagated by layers.

Bignonia (Tecoma), called also Trumpet-creeper, is an evergreen climber of great beauty, but scarcely cultivated here. The best varieties are—

Bignonia Radicans, (scarlet Trumpet-creeper); delicate foliage, flowers of a fine orange color; it does not flower well with us, but is hardy.

Bignonia grandiflora, (large flowering Trumpet-creeper), native of China; larger flowers than the former, of about the same color.

Bignonia venusta, is probably the best, but we consider it better adapted for the greenhouse than for the open air. Its large clusters of orange-colored blossoms produce a truly magnificent effect.

Bignonia (Tecoma) jasminoides, is probably out of place here, inasmuch as botanists are yet somewhat in the dark about the classification of Bignonias and Tecomas, the flowers differ in shape and form from the former, the color being white with purple center, and the shape of the flower resembling that of the Morning Glory. It is a strong grower, but flowering rarely out of doors, unless well protected from the winds.

The *Bignoiias* and *Tecomas* are rapid growers, and soon lose the lower branches and foliage, presenting a bare appearance near to the surface of the ground, and for that reason are objectionable for any other purpose than to overhang verandas and other structures.

Passion Vine (*Passiflora*), is quite extensively cultivated in our gardens, and gives general satisfaction. Of the different varieties, the blue (*P. Cœrulea*) is the most popular. It is too well known to require any further description from us.

Other conspicuous varieties, but rarely met with, are the—

Red Passion Vine, (*Kermosine*); Scarlet passion Vine, (*princeps*) *edulis*; a remarkable fruit bearing variety, and a very robust grower. The fruit is said to be palatable. The Passion Vines are evergreen, well adapted to cover verandas, walls of all descriptions, and trellises.

Solanum jasminoides, is probably one of the very best climbing plants adapted to the climate of San Francisco. It grows rapidly and develops continually its delicate clusters of white flowers with a small yellow center; the foliage is of a dark shining green; it is one of the most desirable climbers for all purposes.

Wistaria (Glycine). There is hardly a class of plants which has made more sensation than that of the *Wistarias*, notwithstanding that they are not evergreens. But we cannot imagine anything more beautiful and effective than the large racemes of lilac or blue flowers, hanging down in the shape of bunches of grapes from the branches of the *Wistaria sinensis*; a hardy and deciduous vine, best adapted for the sunny side of a house, where any amount of space can be appropriated by it. The *Wistarias* are best propagated from layers. There are but few large flowering plants here, but they are the subject of general admiration during the period of flowering, which takes place during May.

The *Wistaria sinensis alba* is similar to the former, producing white flowers, but in much less quantity.

Wistaria magnifica is a Hybrid, and produces fine flowers of a lilac color.

The want of space compels us to break off here, but we shall continue the enumeration in our next,

CLEARING FOREST LANDS.—One million acres of forest land must be cleared annually in the Eastern States of the Union, to supply the wood for one year's local requirements.

FINE ENGLISH CHESTNUTS have been grown by John Pereira of Tuolumne County.

THE BOTANICAL GARDENS OF MELBOURNE.

Botanic Gardens are institutions to which the people of the United States have no particular fancy, and appropriations of the public money for such purposes meet with much opposition from men who are not qualified themselves to be judges in the matter. No civilized nation upon the earth does less for Botanic Gardens and kindred institutions than the United States of America, and the only reasons we can assign for the general indifference to such matters, are, the all-absorbing mania for political intrigues and the *furor* for money-making schemes of all sorts.

The English Government is well aware of the immense benefits accruing from such Gardens, and with a most liberal spirit it maintains them at home and throughout its colonies, not sordidly looking for immediate returns, but rather the development and future prosperity of its wide-spread dominions.

From the Botanical Gardens of Melbourne, during a period of eight years,—from 1859 to 1867,—not less than 355,000 plants were distributed to public parks, cemeteries, school and church grounds, public roads, etc. In 1868, over 49,000 plants were distributed in the same way. There are continually about 40,000 pot plants under cultivation, of which many are rare and new plants under process of acclimatization.

A laboratory is connected with the Gardens, where experiments are made in regard to the commercial value of plants and trees. The amount of oils, paper material, dyestuffs, tar, acids, etc., contained in plants, is thus obtained.

“A variety of Bamboos and different Sugar-canes were secured, including the hardy Chinese-cane; forty-eight kinds of vines were added on behalf of the Acclimatization Society to the already large collection, which includes the white and black American Scuppernong, the Sultana Raisin Grape, the French Cognac Grape, Follet Blanche, and many other famed kinds, new or rare in Aus-

tralia. The true Oriental Dye Saffron, Colchicum, the oil-yielding Sesamum, the Tussock-grass of the Falkland Islands, the Caper, (quite an ornamental plant), the wide-spreading avenue Acacia of West Australia, (*Acacia saligna*), Ficus Sycamorus (the best of all avenue trees of the Orient), the Clove, Rhamnus utilis (yielding the green satin dye of China) the Sapodilla, the Avocado Pear, the Indian Teak, Cassava, Squill, Turmeric, the medicinal Bhel fruit, the tree Cotton, Mangosteen, edible Vanguiera, Aya-pana, Gelsemium, and many other important plants, are more recent acquisitions to the garden. Although it may as yet be impossible to cultivate remuneratively the Saffron and many other of the plants indicated, it remains evidently the aim of a public institution to establish such plants in the country.

“Turning to the Nursery Department, I can report favorable progress, notwithstanding the precarious supply of water during the great heat. For the first time in Australia masses were raised of plants of Assam Tea (the seed kindly supplied, on the Director's wish, by W. H. Birchall, Esq.); so also large numbers of the White-heart hickory or Mocker-nut (*Carya tomentosa*), of the delicious pecan-nut (*Carya oliviformis*), the Butter-nut (*Juglans cinerea*), the Black Walnut (*Juglans nigra*), the Himalayan oak (*Quercus incana*), the Chestnut Oak (*Q. Castanea*), the American Swamp Oak (*Q. Prinos*), the Bur Oak (*Q. macrocarpa*), the White Oak (*Q. alba*), a most valuable timber tree), the Jersey Pine (*Pinus inops*), the American Pitch Fir (*P. rigida*), the Douglas Pine, the noble Himalayan *Pinus Longifolia*, the Chinese Fir, the Balm of Gilead Fir (*P. balsamea*), the double Canada Balsam Fir (*P. Fraseri*), the West India Pencil Cedar (*Juniperus Bermudianá*), and the American Cherry Birch (*Betula lenta*).”

The Gardener's Chronicle, in referring to this subject, says:

“As decennia roll on, many of the trees, which under great effort are now introduced, will undoubtedly bear prominence in our forest culture, a great subject which more and more presses on legislative attention, since

already so much of the native timber in all the low lands has been consigned to destruction. If, in densely-populated countries like Belgium, one-fifth of the whole of its territory is scrupulously kept under forest culture, it ought to be a final aim, in a far hotter clime, to maintain a still greater proportion of its area covered by woods, if the comforts and multifarious wants of a dense population are to be timely provided for. It is especially in the western and northern parts of Victoria where exertions in this direction have to be made; it is there where extensive shelter and retention of humidity is needed, and there also where artesian borings, on spots indicative as eligible, would vastly promote the raising of forests.

“If a proper Museum were established in the garden, the timbers, resins, gums, dyes, paper-materials, drugs, oils, alkalies, and many chemical educts from plants of Australia could be contrasted with similar products of other countries; the processes of manufacture and their technological and commercial value be demonstrated; while subjects relating to culture of any kind could be elucidated, diseases of plants by objects and drawings illustrated, and many other kindred inquiries drawn into the vitality of practical application. Thus I may instance, that it seems not generally known how our common Eucalyptus leaves under Ramel’s process can be converted into cigars, or how the same leaves serve as a remedy in intermittent fever.

“The Library has lately been further enlarged, but mainly from the Director’s private means. Personal traveling expenses since 1852, and all outlay for scientific and local journals, British and foreign agencies, means of conveyance for attending at the city, office, light, and many other official expenses, as well as the courtesies which are demanded from a public department frequented by very numerous visitors, have also ever solely and readily been defrayed from the administrator’s own resources, who, not for any selfish purposes whatever, ventures to place these facts, after the lapse of many years, on record, but simply in justice to himself, be-

cause the obligations devolving on him in maintaining the efficiency and dignity of the department seem not at all understood.

“When now long past the zenith of ordinary life, he can with fairness assert, that thirty of his best years have been absorbed almost entirely in phytologic and cognate pursuits; that almost seventeen years have been devoted cheerfully and exclusively to the main foundation and on struggling services of his department; and this, he may add, with the sole aim of endeavoring to effect some lasting good to the great country which, twenty-two years since, he adopted as his permanent home.”

COTTON CULTURE IN CALIFORNIA.

We copy the following interesting letter from the daily *Morning Call* of this city:

NEAR ANAHEIM, November 16th, 1871.

Robert Muldron, Esq., Paducah, Kentucky—

Dear Sir: I have the pleasure to acknowledge your favor of the 31st ult. In view of the fact that I am daily receiving similar inquiries from all parts of the South, I have concluded to forward this letter to THE MORNING CALL, of San Francisco, and to the *Courier-Journal*, of Louisville, for publication. Its publication in the above named journals will give a wider publicity to the advantages presented by California as a cotton-producing State, than the time at my disposal will admit of my doing through personal correspondence.

I premise my allusion to these advantages with the statement, that cotton culture here is in its infancy. The plantings of the present year are the tests of localities merely. Those of the coming year will have a wider range, and consequently a more important bearing upon the future of the industry destined, in my judgment, to become the leading industry of the State. I have not seen the publication in the *Memphis Appeal*, to which you refer, hence I cannot say whether the statements of the writer are as full as you should desire.

THE BEST LOCALITIES.

I proceed to answer your interrogatories. First as to the localities adapted to cotton production. I should pronounce any of the valleys east of the coast range of mountains, situated between the isothermal lines of sixty and seventy degrees, adapted to the culture of cotton for profit. Their special advantages are to be developed by practical tests hereafter. They depend mainly upon the facilities they possess for cheap and thorough irrigation, and their accessibility to the only market on this coast, San Francisco. It is true that an average yield of three hundred and seventy five pounds of lint cotton has been produced on the Merced River, in what is known here as a dry year, without irrigation. But with facilities for irrigation the yield would have been doubled. The additional cost of irrigation, compared with the increase of the money value of the crop derived from it, is insignificant. Hence its importance at all times, and especially in exceptional years like the present.

COST OF PRODUCTION.

It costs to produce a pound of cotton here, of the same classification and valuation in the Liverpool market as Orleans middlings, six cents. But there is a marked difference in the classification of a *crop* produced here and in the cotton States. The absence of rain-fall or killing frosts during the harvesting season, gives to the California planter a crop of uniform grade, and that grade the highest. In the cotton States, as you are aware, a very small proportion of the planter's crop reaches the higher grades.

MARKETS FOR THE COTTON.

At present there is demand for all the cotton produced here, at home. The price of Middling Orleans in New York is paid for the crop of this year, the cotton delivered at the mills, but ginned free of expense to the planter. I hope the demand for home consumption will keep pace with production, and I believe it will. The profit derived from the manufacture of cotton here promises to be

greater than in any cotton producing country in the world. Should the planter gin his own cotton, the mills prefer its delivery in wool sacks, they being enabled thus to operate upon an open and unbroken staple, while the planter is saved the expense of baling.

Should production exceed consumption here at any time, the surplus can easily be exported to Liverpool. I have not yet found the same facilities offered by merchants here engaged in the export trade as we can command at our Southern seaports. But cotton is a new crop, as yet unhandled and not understood. When it shall be offered in any quantity, the merchants will be glad to offer abundant facilities for its exportation to Liverpool. If we could do such an injustice to the enterprise of San Francisco merchants as to suppose them indifferent to an industry which promises results of such magnitude to their city and State, the cotton planter will attract hither the cotton commission merchant from the South. I have before me a letter from an old established house of Liverpool and New Orleans, who tell me they are anxious to open for business in San Francisco, whenever the harvest promises to be sufficiently large for a start.

THE COST OF FREIGHT.

Inland freights are relatively cheaper than in the South, and as the railway enterprises now in process of construction approach completion, rates will decrease. Freights to Liverpool are about the same as from New Orleans, the difference always favoring San Francisco.

LABOR.

Labor is abundant. White men can be hired for one dollar per day, with board: Chinamen in any quantity at twenty five dollars per month, they boarding themselves. I regard the latter, after testing it thoroughly, more efficient, notwithstanding the want of experience, than the negro labor of the South. It is only employed when actually needed, and is therefore less expensive. It is controlled with less difficulty, and is universally conceded to be industrious and painstaking.

QUANTITY YIELDED.

With the rain-fall of ordinary seasons, three hundred and seventy five pounds of cotton, lint or ginned, may be regarded as a certain yield from lands of average fertility. That yield is the result of the present year's planting, one of the most unfavorable in consequence of light rain-fall for two successive Winters, ever known in the State. With facilities for irrigation, the planter is independent of rains, and such as have made the true and scientific culture of the land a study, will achieve the grandest results within the cotton planter's experience. With the capital you propose to employ, you can here handle a crop of six hundred acres. By exercising due care in the selection of your locality for planting, you can double your money the first year at fifteen cents per pound for "Orleans Middling Cotton."

OTHER ADVANTAGES OFFERED BY CALIFORNIA.

As you are no doubt aware, California is a large State, and is sparsely populated. To the planter from the Cotton States, accustomed to the social advantages that are enjoyed in densely populated localities, the prospect in this regard is not inviting. But should you and many others who are seeking information of me, conclude to come to California, I invite you to meet me at my home at Dickson, on the Memphis and Charleston Railroads, in January next, and I will cheerfully furnish you with all the facts within my knowledge as to localities, as well as such other general and special information as will be of value to you in connection with this matter. Together we will select a locality for settlement, and thus form, from the date of our residence, a pleasant neighborhood. I shall be provided with maps and descriptions which will have the confirmation of personal inspection, as also the terms of the land owners. In the midst of such a "neighborhood" the church and school house may be erected. The State provides munificently for the education of all children, without cost to the parent, and it is no exaggeration to say, there is as much talent employed in the pub-

lic schools of California as any State in the Union in proportion to population; and whatever the zeal of the press, in the heat of political discussion, may have asserted to the contrary, I am convinced that no partisanship characterizes the administration of the system.

Taxation is not burdensome, being eighty six and a half cents on every \$100 of valuation.

Good cotton and grain lands can be purchased at from \$5 to \$20 per acre. Payments are generally one-third cash, balance one, two and three years, with interest on such as are deferred.

I desire to see good cotton planters and valuable citizens, such as yourself accumulating in California. If they come, I shall see at no distant day, rising in the midst of their cotton fields, factories for the consumption of their productions, in which the planter will be interested, reaping thus the greatest possible reward from his labors and alike contributing to the wealth, prosperity and power of the State.

I am, dear sir, yours very truly,

[Morning Call.]

JNO. W. STRONG.

HOW TO CULTIVATE A VINEYARD.

In my last article I dwelt entirely on "the Manner of Planting a Vineyard." The *Cultivation* of a vineyard is, however, a matter of much moment. It is often said, "Cultivate grapes as you would corn;" but this affords a very imperfect and indefinite idea of what is necessary to be known in order to become a successful vine-grower.

During the first three years the vines should be cultivated entirely with the view of making wood. Hence, as soon as the spring opens and the weeds and grass begin to make their growth, plow your vineyard, but *never plow deep.* It is advisable to plow both ways, and also to harrow in the same manner. Then wait until the spring rains are over, when you should again cultivate or plow both ways, and then hoe and weed your vines. The object in

the *first* place being to keep the surface of the ground mellow, as when this is done the air penetrates the soil, and the pores of the ground being kept open, all the moisture is thus absorbed and retained; and, *secondly*, to kill the weeds. Still later in the season, if the surface becomes crusted over or hardened, it should be harrowed. But great care must be taken not to disturb the cuttings during the year they are planted, for if once disturbed while the roots are starting into growth, the vines are irretrievably destroyed.

The first year after the cuttings are planted, the ground cannot be cultivated too much, for it is then that the vine needs moisture; and cultivation, it is well known, retains the moisture in the ground—"the more cultivation, the less evaporation."

The second year the vines also need a great deal of cultivation, if you wish them to make wood fast, but they do not require as much as during the first year; still, they should be kept free from weeds, and the surface of the ground should be kept loose.

The third year the vines will do well with still less cultivation, but it accords with the experience of the writer, that young vines cannot well be cultivated too much.

During the fourth year the vines are supposed to bear, and now the character of the cultivation should be entirely changed.

First. If the vines are planted on lands that are at all subject to late frosts, then they should not be cultivated at all until *very late*, for this reason—that by not stirring the ground it remains *cold*, and the vines will be *slow* in budding, and thus be a week or ten days later than if cultivated earlier. This I have proved to my own satisfaction, and doubtless others who have given the subject attention have acquired the same experience.

Secondly. The vine is now cultivated for the growth of grapes, and not for a large growth of wood; hence, if the land is rich, it should be but little cultivated—especially if you are raising *wine grapes*. If you are cultivating table grapes exclusively, the size of the grape being a matter of importance, the more moisture and the more cultivation, the better; but

never at any time nor in any vineyard *plow deeply*. Indeed, I would never plow at all, unless the ground became too hard to mellow it by the use of the cultivator.

I am not unaware that this maxim will meet with objections from many vineyardists, but I ask them to take a bearing vineyard and cultivate it thoroughly, but not *plow it even once*, and, my word for it, if even the surface can be made mellow, they will never plow their vineyards again. They do not need it any more than an oak tree needs it. By plowing you cut off a large number of small roots near the surface, which, of course, weakens the vine; and where the plowing does give the vine greater vitality, it goes to *wood and not to grapes*. This is the experience of those who have given the subject due consideration.

To test this matter, plant a vine between two rocks, where the ground never can be stirred, or at the root of a tree; or indeed in any other situation where the surface of the ground is loose and weeds do not choke it, and the vine will grow and produce in wonderful abundance.

Third. But what I have said against plowing vineyards, must not be understood as an argument against *cultivating vineyards*; for the soil should be well and thoroughly cultivated until the young branches begin to spread out so that they are in the way of a horse, *then stop*.

Fourth. Never manure a vineyard, especially if you wish to make wine, or unless the land is too poor to raise vines. If there is any such land, I would advise an early abandonment of the place, for land too poor to raise vines, if it is dry and gravelly, is not worth keeping. M. M. E.

FAVORS RECEIVED

By the Bay District Horticultural Society.

The proprietors of the *Rural Press* have kindly presented, to the above Society, two volumes of the quarterly series of the *Pacific Rural Press*, for which the Secretary of the Society desires to return the thanks of the members.

Editorial Portfolio.

While topics of comparatively minor importance are permitted by our legislators to engross their almost exclusive attention, and at times receive even more than a healthy amount of legislation, it but rarely occurs that our representatives will consent to devote even a small portion of their time to AGRICULTURE and HORTICULTURE—two subjects which to our State are of the highest moment, and therefore worthy of the gravest consideration.

In the last number of the HORTICULTURIST, we sought to draw the attention of our legislators to sundry subjects comprised within the field to which we have devoted ourselves; one of these and of the gravest importance is *The Cultivation of Forest and Timber Trees throughout the State*, a law to encourage which, should be one of the first enactments of the present session,

The experience of past years has proved, that the development of our agricultural resources is entirely dependent on private enterprise, and many important industries have languished through lack of encouragement and capital. It is only within the last two years that men of wealth have realized how essential to the common weal is the prosperity of the farmer, and have in a few cases stepped forward to aid him in some of his adventures. Should these prove successful, others will doubtless be willing to invest their capital.

But there are enterprises wherein, from not being very generally understood, our capitalists will not so readily invest, and notwithstanding their importance, as no immediate return can be expected, (a matter of grave importance with our monied men,) they stand but little chance of material aid. Foremost of these, is the Cultivation of Forest and Timber Trees—a subject which has been so ably advocated by almost every newspaper in California, and which we have used our humble endeavors, from our first issue to the present time, to promote.

A bill has recently been introduced in the Senate of California, in advocacy of this im-

portant step, which from some cause appears to have excited some opposition. We propose to canvass the merits of this bill, and also to review some of the objections raised to it, as a duty devolving on us, and shall endeavor to be impartial, and to speak to the point.

It appears that Senator Betge, who is a member of the Bay District Horticultural Society, and who takes sufficient interest in its proceedings to visit the rooms from time to time, had his attention drawn to the important subjects of Artificial Irrigation, and Forest Tree Culture, as applicable to the needs of California; and having expressed a desire to devote his time and influence to the advocacy of such important measures, provided he was supplied with the necessary statistics, he was furnished with the required information by the Secretary of the Society, and from these data the Senator framed the bill which he has introduced in the Senate.

We view it as a matter of small importance, whether the Legislature passes this or any similar bill. What we desire to see, is, that vigorous measures are taken to bring about the desired object. We are earnestly in favor of Forest and Timber-tree culture in California, and we are confident that the intelligent portion of our farmers are prepared for and in favor of the enterprise.

We cannot say that we approve the title of the bill—that of “State Forester,”—although that is a matter of but minor importance, and the duties might be appended to some other State position, or one of our Agricultural or Horticultural Societies might be authorized to fill the commission; but in any case, it is certain that the duties would require the undivided attention of a competent man.

Again: It is provided that the salary of the individual in question shall be \$3,000 per annum. We believe that a thoroughly efficient man might be found to serve for less.

It is further provided, that, as this official will be required to visit every county in the State, at least once in each year, the sum of \$2,000 shall be allowed for traveling expenses. We do not profess to be competent

judges as to what those expenses should amount, but we think the provision more than ample.

Again: A provision is made for the expenditure of some \$5,000 per annum in the purchase, collection, etc., of seeds. It does not appear to us that such a distribution, deserving to be called general, and consisting of well assorted seeds in good condition, could be made for a less amount—five or six thousand pounds would be but a moderate quantity for such purpose, and we are assured on experienced and competent authority, that such collection could not be made of reliable seeds at a less expense than \$1 per pound; and further, that such collection could readily be sold in Europe and in the Eastern States for from ten to fifteen thousand dollars.

We see, also, that there is a clause in the bill appropriating \$4,000 for Experimental Grounds. This section of the Department, when once established in running order, it is presumed, would be able to supply 50,000 trees per annum gratuitously, for public grounds and roads. We have been informed by experienced men that trees raised in our nurseries cost not less than ten cents per annum each, and doubtless the amount above named was based on this calculation. It would be very desirable to have grounds of this description, but if the state of our finances will not permit it, we must endeavor to dispense with them.

Such a bill will doubtless be returned from the respective Committees much altered in form, and possibly entirely different in character, but it is interesting to observe what some of our leading papers have to say on the project of passing a bill of this kind.

The Sacramento *Union* opposes the bill, because it says that Professor Bolander has asserted that all which Senator Betge's Bill proposes to effect may be obtained at an expense of \$500 per annum (!) by establishing a Botanic Garden within the Grounds of the State University, and by constituting the Watchman of that Establishment the Gardener. But there must be some grave error or serious misunderstanding here. We are

very well acquainted with the Professor, and entertain a great respect for him, and we have a very high opinion of his attainments as a botanist; we also know him to be a sensible man, and further, that he is not, nor does he pretend to be, either a Nurseryman or a Gardener, and therefore would not pretend to impart to an untrained man, in a few months, that amount of knowledge which is necessary for the management of a Botanic Garden, and which, it is well known, it is the work of years of diligent and intelligent application to acquire, and which he does not himself possess. We are aware that the Professor would be pleased to render all the assistance in his power to establish a Botanic Garden within the precincts of the University, and we should rejoice in the success of the enterprise, which we claim to have suggested, in one of the earliest numbers of our Magazine, about a twelvemonth since, and which we consider a most essential adjunct to such establishment. If it should prove a success, there would of course be no necessity for Experimental Grounds elsewhere.

We will here state, for the information of the Sacramento *Union*, that tree seeds (particularly those of our Conifers and the Australian Evergreens) will not germinate with us in the open ground, and that more than \$500 worth of glass would be required for that purpose alone.

To return to the subject of Botanic Gardens, we know that among professional gardeners it is considered that it requires the most skillful, intelligent, and first-class gardener to take charge of such an establishment. We can, therefore, only imagine the surprise of our cultivators at the suggestion of a watchman as the Chief of our State Garden.

In a properly-constituted and conducted Botanic Garden, every plant which may come under observation is brought under culture and classified; and in all the leading establishments of this class, of the present day, throughout the world, it is the practice to introduce, cultivate and distribute, useful as

well as ornamental trees and plants; and such an establishment, to be of any service, must necessarily be very expensive, and must of course be conducted by men who are both scientific and practical. The indispensable qualities of the scientific botanist, and the skillful, practical cultivator, are very rarely combined in the same individual. The principal expenses of a Botanical Garden are—glass, pots, seeds and labor. Seeds are generally obtained by exchanges, but these exchanges involve a great expense, as the collection of many varieties of native seeds in the necessary quantities, frequently occasions an outlay more costly than would purchase those required. We will pass from this portion of our subject, by remarking, that we have no faith in that which is to cost us nothing.

And now for the strictures of the *Alta* on the bill. It dislikes very much the office of State Forester—as we do ourselves; but we do not perceive that the appointment of such an officer would necessarily involve a swindle; for as such we should understand the remark, “that the benefits which the State would be likely to receive in return, would not be visible to the naked eye.” But why should the State Forester be more likely to rob the public of the entire amount of the \$15,000 per annum placed at his disposal, than the scores of other appointees? Or, does the *Alta* mean to imply that all are equally unprincipled, and that honesty is a thing of the past? For ourselves, we have more faith in the discernment of Governor Booth in the selection of his appointees,—and in human nature.

The principal fault that we find with the bill, is, that the executive of this proposed department would have too much discretionary power in the expenditure of money and in the distribution of seeds; but certainly, a due control may easily be kept over his action, and his functions defined so that the State may be saved. The expense items may also be reduced, and doubtless many other suggestions will be offered in modification, so that the public may be satisfied, without sacrificing the proposed measure of Forest and Timber-tree Culture.

The good results of such a law will greatly depend upon a proper appointment by the Governor, who has doubtless ample facilities for obtaining the necessary information.

MANAGEMENT OF CAMELLIAS.

[We make the following extracts from the *Gardener's Chronicle*, believing that they contain valuable experience, although they may not exactly coincide on all points and may also differ from other accepted authorities.—*Ed.*]

The Camellia is undoubtedly one of the most noble and useful ornamental plants that we possess. Nothing can exceed the gorgeous display afforded by well-grown specimens during the winter months, and as a Christmas table flower it has no equal, for, independently of the great variety of form and color in the flowers of the Camellia, its noble growth and rich glossy foliage gives it a character which is excelled by no other plant.

Moreover, there are but few other cultivated plants which require less artificial assistance to grow them to perfection. How far this assertion is borne out may be questioned, for, unfortunately, it is the exception, and not the rule, to meet with collections in good order, and yet it is a plant which does not readily succumb to bad treatment. Nevertheless, I venture to say, that the veracity of the statement can be fully proved by the cultivators of the many highly creditable collections to be met with in British gardens.

In order to verify the above remarks, I will here describe the manner in which I have treated a collection I found at this place three years ago. They were growing in boxes and pots, and in general appearance, seemed for the most part to be in tolerable health, the plants measuring from ten to twelve feet in height, and as much through.

They were first carefully cleaned and well watered, liquid manure being freely used, but notwithstanding every precaution the buds dropped off to an alarming extent. I

was given to understand that this was a yearly occurrence, which led me to examine the soil, the result being that they were turned out, and divested of the peat into which they had been planted. This peat was of a poor, hungry nature, and wholly inadequate to afford the supply of nutriment required for the maturation of the buds. One half of the plants were then planted out into a border, and the other half into boxes, in a compost of fresh turfy loam of a good medium texture, cut one and one-half inches thick, and to which was added a dash of sand and charcoal. They were watered freely overhead twice a day, were kept in a growing temperature, and slightly shaded from the sun. They made a splendid growth, and perfected a good display of flowers without the loss of a single bud. In the spring of last year the plants were freely cut in, so as to regulate the growth, and at the present time they are covered with buds and bloom from base to summit, and are well furnished with wood and foliage of the deepest green color.

It may be asked to what is this rejuvenescence attributable? Mainly, to the substitution of the loam in the place of peat, which was not of a nature adequate to the requirements of the plants; to a perfect drainage being secured; and to their having been carefully yet freely supplied with water, and slightly shaded from bright sun, a free circulation of air being maintained to insure rigidity of growth. These are, in my opinion, the most essential conditions to insure success in their culture, and, if carefully attended to, would in a great measure lessen the chances of failure. The greatest amount of success seems to be obtained with specimens that are planted out, a system which lessens to a great extent the chances of sudden checks, and makes the plant less reliant on the fostering care of the cultivator. When space is admissible, planting out is to be strongly recommended, although I do not recognize in the Camellia a plant impatient of root restriction. Fine specimens may be grown in comparatively small pots. For instance, take the superb specimens to be met with in Belgian gardens,

and which, in point of general excellence, we cannot equal. These plants are grown in a rich black peat, which is peculiarly suited to the requirements of the Camellia. Such peat I have failed to discover in this country, or, indeed, any at all to be compared with loam for promoting the development of this much ill-treated plant. — *George Westland, Willey Court.*

Nothing is more annoying in the culture of the Camellia, and we may add, more frequent, than the tendency the plants have to drop their flower buds. This is generally due to mismanagement in some way or other, and we quite agree with Mr. Pearson, of Chilwell, that no source of disappointment is more common than that arising from injudicious watering. Mr. Pearson's remarks are so much to the point, that we believe we shall be doing a service by giving them *in extenso*, even if in some points they are not in accordance with the opinions of others:—

“Camellias will lose their buds, as fruit trees drop their fruit or vines shank their grapes, when anything renders them incapable of bringing them to perfection. Any cause inducing ill-health will produce this effect. It may be looked upon as an effort of Nature to get rid of work which the plant is unable to perform. In the case of Camellias, the most common cause is bad watering; I have proved to persons who were quite sure that this was not the cause, that their plants never had been properly watered for months. A little water applied frequently—that worst of all known forms of mismanagement—had rendered the soil moist, and in some cases even sour, for half way down the pot, whilst the lower part of the ball was as dry as dust. There is nothing more difficult than to get persons to observe the simple rule,—‘never water till a plant really requires it, and then soak it.’ If the cultivator would turn out one of his plants and examine the ball of soil, he would soon see if the roots had suffered much from this cause. Then, again the soil may be quite unfit for the Camellia. Many persons, knowing that Camellias cannot grow in a strong heavy soil, mix for them

peat and loam. In this case peat acts mechanically for a time in keeping the particles of loam apart, and for a time the Camellia will grow well in this mixture. But as loam contains potash and lime, and peat is full of humic and ulmic acid, they act on each other, and the result is a sour soil, in which Camellias become unhealthy. Sods cut as if for laying a grass plot (not thicker), taken from a sandy loam, particularly if it grows Foxglove, Heath, or Fern, chopped, or better still, pulled to pieces when quite fresh, is the best soil for Camellias, without any admixture. If not sandy enough, white sand may be added. If a suitable loam cannot be obtained, the next best soil is a good fibrous peat unmixed with anything else. I cannot think that peat soil ought ever to be mixed with anything except white sand, if sand be required. Camellias often do well in pure peat, particularly when assisted with a little weak guano-water or soot-water when growing. The former must be very weak; certainly not more than one ounce to a gallon of water, given once or twice a week. This brings us to another cause of Camellia buds dropping, viz: poor exhausted soil. Again, the loss of buds may arise from a weak condition of the plants, resulting from their having been subjected to too much heat. The Camellia is nearly hardy even in this country, and to force it in a strong heat is to make it produce thin, weak shoots, destitute of the vigor natural to a well-grown plant. If planted in a bed of soil, the protection of a glass roof is all it requires; if grown in pots, any heat more than will secure it from frost is unnecessary, and is often injurious. A common cause of Camellia buds falling is the change to which they are subjected by being grown under glass at one time and out-of-doors at another. A plant which has formed its buds under glass, is often turned out-of-doors, where it is liable to be soaked by heavy and continuous rains, and is night after night exposed to heavy dews. Under these circumstances it will often look as healthy as possible, but when brought into a glass-house, subject to a dry

heat perhaps, protected from rain and sun, possibly not getting enough water at its roots for days together, is it surprising the shock produced by so great a change should be injurious? Never turn a Camellia out-of-doors if you have room for it under cover. It will, perhaps, not have occurred to every one to think how great must be the change from a dewy night to the atmosphere of a house deprived of its moisture by condensation. Many a plant suffers from the extreme dryness of the air during frosty weather, and I have often been obliged to tell men to water the paths of my houses during frost, and sometimes have even had the evaporating troughs filled with water in winter."

WORK FOR JANUARY.

Much anxiety existed during the early part of December among all classes of business men as to the probability of abundant and timely rains. It is highly gratifying to notice, that our people are beginning to realize the fact, that the success of our fields is the true basis of future prosperity. As soon as this feeling becomes general, we may expect the coöperation of our more influential and wealthy men. Up to these present times, there were indications that our cultivators would not establish a proper system of husbandry, until many sad lessons had been learned.

The rains of November enabled many of our farmers and gardeners to put their lighter soil under cultivation, and it is said that more land of this description has been prepared this year than during the last; but for the heavy soil of most of our extensive valleys, and also for the adobe land, these early rains were not sufficient; it must be remembered that such soil cracks during the dry season, and that into these cracks much water is absorbed before the surface soil is penetrated with sufficient moisture to admit of plowing. However, at this writing another heavy rain has set in, and will doubtless enable farmers to plow their heavy lands at once. But we must bear in mind that Nature will not al-

ways treat us as kindly as we in our unreasoning are in the habit of expecting; we must do our share by assisting her agents with all the resources and knowledge at our command.

Thousands of acres may be irrigated from adjoining springs and brooks, and these expedients should receive our early attention; ditches for conveying water should now be dug, when they will absorb much less water than if constructed during the latter part of the rainy season. Various crops may be rendered much more profitable and superior in quality, if they are not left to depend entirely on our rainy seasons. For instance, far superior potatoes could be raised by planting them later in the season, and subjecting them to artificial irrigation, instead of our more convenient but careless way of planting them in the fall of the year and digging them in the early spring, before the rays of the sun, in this latitude, have the power of penetrating the soil sufficiently to mature the potatoe into a substantial and wholesome food; and the same may be said in regard to many other products which reach our markets in a crude and inferior condition. It is, therefore, of the utmost importance to prepare for irrigation.

Our orchards and vineyards should receive proper attention. This is the best time for pruning and for destroying insects. All that grown-up fruit trees require is the cutting away of water-shoots, and such limbs as are crowding each other. We have no faith in the mutilation of trees which are in bearing condition. If the trunks of trees present a very rough appearance, it is very important to smoothen the bark with a dull scraper, so as to destroy the hiding-places of the various and numerous insects. The scraping of the outside rough bark of trees and vines cannot be injurious, as it has no connection with the inner organs of the plant, otherwise than to serve as a kind of protection against cold and heat, which are of minor consideration in our climate. By scraping trees we also destroy the parasites (particularly mosses) which are formed in abundance on trees and shrubs of all

ages near the coast-range, and which are injurious to the vigor and health of plants.

Wherever it is contemplated to plant out orchards, no time should be now lost in doing it. The ground should be plowed thoroughly, and holes should be dug for the reception of the trees, at least three feet square and fully as deep; it will be better to expose the excavated soil for a week or two to the atmosphere, for various reasons. In the selection of fruit trees as to variety, more than usual care should be taken; for although it seems reasonable that our nurserymen would only cultivate the very best varieties, yet they do not always consult the best interests of their customers. It would be a very judicious step on the part of our Agricultural and Horticultural Societies to prepare and publish lists of the fruits best adapted for cultivation in the different localities. We are sorry to admit that our pomologists accomplished more in this direction ten years since, than they are willing to do now. Our long winter evenings could not be devoted to a better cause than to the discussion of horticultural and agricultural topics.

Throughout the warmer localities of California, the pruning and planting of vineyards can be performed as well now as at any time, while in the northern parts it should be delayed until February and March, particularly where irrigation is resorted to. The pruning of grape vines requires some practice and knowledge. For ourselves we still believe in the old method of pruning which is altogether practiced in Europe; which prescribes that not more than two or three sound eyes should be left to a shoot of last year's growth; that grape vines of last year's planting should be cut back to within one or two eyes of last year's growth, and that not more than one stock should be left to vines in the vineyard, while two shoots may remain, if cultivated for arbors or trellises; and that all other shoots should be broken off as soon as they make their appearance.

For the planting of Evergreens there is no better time than the present, in this country, particularly where they are expected to do

well without irrigation. The fact that they are Evergreens makes them more exposed to the force of winds, and it is therefore strongly recommended to give them proper support with stakes as soon as they are planted.

In the Gardens much may be done that will prove beneficial to trees, shrubs, and flowers. Lawns and flower beds should receive a good top-dressing of manure, which may remain on the lawn for two or three months, but may be better incorporated with the soil of the flower beds in the Kitchen Garden by thorough and deep spading. Before this is done, however, Roses and flowering shrubs should be properly pruned and staked. The rubbish should be carted away at once, or burned up, in order to destroy the insects which find too much shelter among the old and half-decayed leaves.

The success of planting Seeds at this time of the year depends greatly on the weather. Around the Bay of San Francisco we frequently enjoy the most pleasant weather during January and February, and garden seeds will then germinate freely. If cold weather succeeds the planting of seeds, nothing is gained by planting early; in fact, much of the seed will rot in the ground. It may, however, be considered safe to plant lettuce, radishes, onions, spinach, and peas in the open ground. In frames, under glass, we may continue to plant cabbage, tomatoes, cauliflower, and celery, which will have to be transplanted in the open air later in the season. We may also forward cucumbers in pots under glass, and turn them out, with the balls of earth around their roots, as soon as the frosts are over.

The Greenhouses and Conservatories require particular attention at this season of the year. We are, in this country, in the habit of growing plants of all descriptions in one and the same house. This arises more from economy than from choice, as we know that the requirements of one plant differ so widely from those of another. Some plants require very little moisture, while others need a great deal; some thrive well in a moist atmosphere; others must have a dry one; some delight in a cool and airy situa-

tion, while others do best in a close and confined air. In cultivating, therefore, these different plants in one house, some of them must necessarily suffer, but meanwhile we must subject them to a treatment under which they may all live and do as well as circumstances will permit.

The greatest fault we have met with in the treatment of Greenhouse plants at this time of the year, is *too much watering*. Water, as we have argued frequently, should be either absorbed by the plant itself, by proper drainage, or by evaporation; at this time of the year but little vegetation takes place in our greenhouses (which are mostly without artificial heat), on account of our cold and rainy days, and also but little evaporation, and consequently, the water, not being absorbed, becomes stagnant, makes the soil sour and renders it unfit to supply the roots with the necessary nourishment. Therefore we advise to *give no more water than is necessary to keep the plants alive, unless artificial heat is applied*.

While it is very beneficial to many Greenhouse plants to sprinkle the foliage with water during warm weather, this should not be done at this season, as it will cause the foliage to rot, and may prove very disastrous in case of light frosts.

A very erroneous practice also exists here in keeping Greenhouses and Conservatories too close. *Air should be given frequently, and particularly during the forenoon*, in order that plants may present a healthy appearance. Close confinement will make them so tender that the slightest frost may affect them seriously—four-fifths of the glass structures in this country being without fixtures to supply artificial heat.

As the cold north winds of December have caused a scarcity of flowers, the bouquets furnished by our florists have not the bright and rich appearance which we are accustomed to admire in them. The supply of *Roses* and *Pinks* is but moderate from the open ground; *Camellias* have made their appearance, and form the chief attraction. The bulk of them is supplied by our friend E. L. Reimer, who always succeeds well in producing perfect

flowers. *Violets* are coming in more plentifully, but the supply is not adequate to the demand. In the making of bouquets, the *Stevia* is used very extensively, and seems well adapted to our climate; it thrives well both out of doors and under glass, but, if raised under protection, the flowers are far superior—being of a more graceful appearance and the color being of a purer white; those grown in the open air being of a yellowish color, and give to the bouquets a dull appearance. There is a moderate supply of *Heliotrope*, *Fuschias* and *Pelargoniums* from the open ground, and with *Ageratums*, *Pansies*, *Snap Dragons*, *Stocks*, *Candytuft*, *Iberis*, *Laurustinum*, *Polygala*, *Mignonette*, etc., furnish the bulk of hardy flowers, while *Begonias*, *Orange Blossoms*, *Chinese Primroses*, *Double Jasmynes*, *Cinerarias*, etc., with the *Camellia* as a center, supply the demand for choice bouquets.

NEW AND RARE PLANTS.

Pavia macrostachya (dwarf Horse Chestnut) is described in the *Gardeners' Monthly* as a picturesque shrub producing about midsummer, flowers of much beauty. It is a native of the Southern States, and seems to be very little known. Judging from a colored engraving of this plant in the above periodical, we should accord it all that is claimed for it. It belongs properly to the *Æsculus* family, and bears some resemblance to our California *Buckeye*. It is perfectly hardy and easily propagated by suckers, which the plant produces very readily, or from seed.

New Roses.—We are also indebted to the *Gardeners' Monthly* for a list of new Roses, produced, this year, by Eugene Verdier, of Paris. Of *Tea Roses* he recommends *Bella Maconnaise*, a large double pale rose; *Coquette de Lyon*, a canary yellow; *Freres Soupert et Notting*, a fine full flower, yellow, edged with carmine; *Hortensia*, rosy, with a shade of yellow; *Le Florifere*, well formed flower, white changing to salmon; *Madame Azelie Imbert*, salmon yellow; *Madame Berard*, bright rose, a fine double well formed flower; *Mad. Gail-*

lard, salmon yellow, a grand, full, well formed flower; *Mad. Emilie Dupuy*, yellow changing to salmon; *Victor Pulliot*, white, changing to yellow.

Among the *Hybrid Perpetuals*, *Virgile* is termed a rosy salmon, of a new shade.

Of the *Climbing Hybrid Perpetual Roses*, *Princess Louise Victoria* is spoken of as a good one.

Begonia Roseflora.—This is one of the many beautiful *Begonias* discovered by the late Mr. Pearce in the Andes of Peru. Coming from an elevation of 12,000 feet, it is admirably suited for a cool greenhouse, and is very nearly, if not quite hardy, and may be safely planted in sheltered situations. It is a stemless species, supporting from three to five flowers, of a bright rose color, as large as those of *B. Veitchii*. We may also add that it is a deciduous variety, like *B. Veitchii*.—*Gardeners' Monthly*.

Begonia Sedeni—Garden Hybrid.—One of the finest hybrid flowering *Begonias* ever raised. It is a cross between an unnamed species and *B. Boliviensis*, but with larger leaves. The flowers are of the richest magenta color, and of a large size. The plant continues a long time in bloom.—*Gardeners' Monthly*.

Begonia Veitchii, of which Dr. Hooker says: Of all the species of *Begonia* known, this is, I think, the finest. With the habit of *Saxifraga ciliata*, immense flowers of a vivid vermilion cinnabar red, that no colorist can reproduce, it adds the novel feature of being hardy in some, if not in all parts of England. It was discovered by Mr. Pearce, near Cuzco, in Peru, at an elevation of 12,500 feet, and the plants grown in Mr. Veitch's establishments have already given proof sufficient of hardihood, by withstanding a temperature of twenty five degrees of Fahrenheit with absolute impunity.

Clematis John Gould Veitch—Double blue flowered.—We cannot too strongly recommend this magnificent double blue flowering *Clematis* as a most valuable addition to our hardy climbers. It is a profuse bloomer, producing very double flowers of a large size and

of a beautiful light blue color: It thrives well either when planted out of doors, or as a conservatory climber. It was imported direct from Japan. Veitch exhibited this plant at the International Exhibition at Paris, in 1867, and again at the International Exhibition held at Ghent, in March, 1858, as well as at the Royal Horticultural Society's show held April 21st, 1868, where it was universally admired and adjudged to be one of the best and most striking novelties of recent introduction; it also invariably received the highest possible awards.—*Gardeners' Monthly*.

Retinospora filifera, has a pyramidal and exceedingly graceful habit, its great peculiarity consisting in its numerous drooping shoots, which frequently attain a length of ten to twelve inches without branching, and then becoming tufted or crested, giving the plant an elegant tasseled appearance. It is a native of Japan.

Retinospora filicoides.—A most beautiful and hardy Conifer. The foliage is of a rich bright green, very dense and having an exquisite fern-like character. It is perfectly hardy and is a native of Japan.—*Geitch*.

NEW VEGETABLES.

The Early Shipping Tomato.—This is a new and valuable variety, raised by Mr. Turner, of Norwich, and is a hybrid between "Keye's Prolific" and "Crimson Cluster." It has qualities which will render it extremely valuable for Bermuda or our own southern latitudes, as it is as early as the earliest and enormously productive—having from twenty to thirty medium-sized fruits in a cluster. Above all, its solid, seedless character enables it to endure shipping much better than the larger sorts.—*American Agriculturist*.

We think this Tomato worthy of trial in California, for the good qualities above named.—Ed.

The article in this issue on Hyacinth Culture in Glasses was omitted to be credited to the *Gardeners' Chronicle*.—Ed.

NEW FRENCH PEAR.

A contributor to the *London Journal of Horticulture* thus speaks of a new Pear, called *Beurre de l'Assomption*: "I have to-day (September 25th) eaten one of the finest pears of the month. It is large, and in color much like the *Brockworth Park*. The habit of the tree is robust, much like Williams' *Bon Chretien*, of which I should think it a seedling, and it is marvellously prolific. There is none of the Williams' musk in its flavor, but a rich, pleasant, vinous, sugary taste."

FLOWERING PLANTS IN OUR PUBLIC SQUARES.

We have no doubt that our Public Squares are considered by some to be models of perfection, and probably those who have charge of them also imagine them to be so; but we cannot share their opinion, and would much prefer a little more variety and more pleasing features. Here we boast of the finest climate in the world, but we see very little use made of the advantages afforded by Nature. The people of Siberia can have everything for the same purposes, only more hardy, of course, but similar in habit and quite as effective. We admire a few good specimens of Conifers as well as any of these experts who manage our public grounds, but we object to making Conifers and other Evergreens the only trees for embellishing our public grounds. As our climate permits the growing of Fuchsias, Geraniums, Verbenas and similar plants in the open air, at all seasons of the year, why should we not have them in our public gardens? They would not require any more, and probably less care than Grass, and would constitute most pleasing features. A bed of scarlet Geraniums, one of bright-colored Verbenas, another of mixed Petunias, one of the ever-favorite monthly Rose, still another of graceful and elegant Fuchsias, etc., would marvellously enliven the scene and render the grounds quite favorite resorts during pleasant days, and the effect certainly would be extremely pleasing to the eye.

No one can reasonably offer any objection to our suggestion, based as it is on reasonable grounds. The cost of the necessary plants would certainly amount but to a trifle, and we would not be surprised if the members of our Horticultural Society would readily volunteer to furnish, gratuitously, a number of plants to the city for the experiment. Let us, then, accept those delights which Nature so kindly offers us to enjoy, and let these additional attractions be utilized in the beautifying of our sombre-looking city squares.

REPORT ON THE FRUIT MARKET.

Fruits have been said to be "Gold in the morning, Silver at noon, and Lead at night." This, no doubt, is a good rule for the majority of mankind to adopt in their enjoyment of these delicious and bounteous gifts of Nature. With all their wholesomeness and beneficial effects, fruits, like all other good things, require the exercise of judgment and moderation in their use; and premising these conditions, they have now become a necessity to man, in all climes, whether in his civilized or savage state. They were evidently intended by a beneficent Providence for the physical welfare of man. They are not only nutritious, but they are also medicinal in their properties. They effect certain beneficial changes in the blood (which medical men term "alterative"), producing a modification in the system from an abnormal to a healthy condition; consequently, by the proper use of ripe fruits, many diseases lurking in the human frame are either neutralized or altogether removed. Many fruits have the peculiar medicinal property of "cooling" the blood, as it is termed, or, in other words, rendering it less liable to feverish or inflammatory excitement. One of the advantageous circumstances connected with California, its mild climate and its fertile soil, is its wonderful fruit-producing capabilities, in addition to its bountiful supply of nearly every other of earth's products. There can be no uncertainty concerning the fact, that the very

considerable consumption of fruit, cooperating with its superior climate, confers on the people of this State their healthy appearance and fine condition. Happily, fruits with us are sufficiently plentiful and reasonable in price (although in this latter particular there is still further room for improvement), to supply the wants of all; and to a large extent fruit may be obtained by the poorest of the population of our cities.

Notwithstanding that many of the fruits offered for sale are of first-class character, yet there is still a large opening for further improvement, which would command for the cultivator still higher prices, and would form an all-sufficient premium for his trouble and expense in procuring still choicer varieties of the different kinds.

The *Journal of Health*, among other good advice, thus sets forth the use of fruit: "Be it remembered, that the eating of ripe fruit does not involve the necessity of swallowing the skins and pits or seeds, as many are in the practice of doing. Certain it is—to say nothing of the labor to which the poor stomach is put on the occasion—Nature never intended those parts of the fruit to be eaten: the one is an external covering for the purpose of protecting the nutritious part proper, the other for perpetuating the plant."

The numerous varieties of fruits, cultivated and wild, foreign and domestic, which are received and sold in our markets, demonstrate the necessity, as well as the importance, of their being perfectly cultivated, and of the finest kinds, to withstand the pressure of competition.

But to come to the more matter-of-fact portion of our Report of our Fruit and Vegetable Markets. Although the appearance of Pomona's products becomes less beautiful and attractive as the season advances, yet Apples and Grapes retain somewhat of their handsome coloring. Oranges, as they gradually arrive, enliven the generally declining tone of color of the few fruits now upon the stalls. Watermelons and Canteloupes have almost entirely disappeared. Strawberries are "like Angels' visits—few and far be-

tween," and their price is correspondingly high—about thirty-five or forty cents for less than a quart. Nuts, in nearly all of their varieties, are making a very effective show, and those who are blessed with good and plentiful teeth, and do not mind risking them, may enjoy these to their stomach's content (distress?—Ed). Eastern Chestnuts have not arrived in their usual quantities at present this season, and their price is tending upwards. Now and then, a few late red Plums may be seen. The Winter Nelis Pear is in larger quantities than any of the other pears, but they look dark, spotted and dingy; they, however, retain their rich, fine and full flavor and pleasant juiciness. The time for the noble and delicious Easter Beurré has hardly yet arrived; these sometimes appear in boxes packed in sawdust until April. Tahiti Cocoanuts have arrived in good supply and at moderate prices. Bananas and Australian Lemons have reached us plentifully, in aid of the Christmas festivities. New Oranges from Los Angeles are now on the stands. Tahiti Oranges are nearly always to be found. California Figs of this year's growth and curing are in large quantities.

Of Vegetables.—New Potatoes, planted in August, have been more than a month in market. Salsify, or Oyster Plant, is in plenty. Mushrooms are in profusion, coming in, of course, after the rains, and departing with them. There are also still a few gleanings from the Tomato vines.

Green Peas are in moderate supply, and Cauliflowers, as usual, in very fair abundance. Some of these weigh from eight to ten pounds. Lima Beans are entirely out of market. Asparagus is again coming in. Spinach has appeared, and Brussels Sprouts also assist in well-filling the vacuum made by the retiring of a few of the other culinaries. I may sum up this Report by remarking, that with the exception of Gumbo and Chili Peppers, all the spring and summer vegetables may be had in our markets during all our winter months.

E. J. H.

C. C. PARRY ON FOREST CULTURE.

Dr. C. C. Parry, Botanist of the Agricultural Department of Washington, in his annual report, says:

"The protection of our native forests now constitutes one of the urgent problems in reference to the future of the mountain districts of the far West. The advent of the railroads, the progress of mining operations, as well as the general advance of settlement, call for large amounts of fuel, which will be taken from the most available sources without regard to the future; hence there is great danger that the entire country will be stripped of its protecting belts of timber, leaving the exposed soil a prey to those floods and droughts which in European countries have invariably followed the destruction of forests.

Therefore, not only proper means of protection should be devised and enforced by government authority, but also encouragement should be given to extend the growth of forests, by the introduction of new varieties adapted to the peculiar conditions of soil and climate."

The Department exchanges Seeds with the other Governments through their Botanical Gardens, and many rare and valuable seeds have been received.

647,321 packages have been sent out during the past year, the most of which were sent through the Senators and members of Congress.

The expenses of the Department have been about \$200,000—the amount appropriated by Congress.

DEMAND FOR FRUIT TREES IN UTAH.

According to a correspondent of the *Rural Press*, large quantities of Fruit Trees are in demand for Utah, and the parties desiring them do not know where to obtain them. It is our opinion that our nurserymen might greatly increase their business by making themselves more generally known. We feel confident that our Eastern friends will not be slow in availing themselves of the opportunity.

OUR WINE YIELD.

The report of the Surveyor-General gives the amount of Wine made this year as 3,795,729 gallons.

During the past ten months, about 170,000 gallons of wine have been exported by rail, and about 400,000 gallons by sea—making a total of about 570,000 gallons. These figures leave about 3,000,000 gallons for home consumption and the manufacture of Brandy and Vinegar; a large amount of the former being also exported, it is somewhat difficult to form a correct estimate of the amount of wine consumed in this State or of the amount exported in the condition of spirits. Enough, however, is shown by the above figures to prove that the wine interests of California have already grown to gigantic proportions, and that with the proper facilities for exportation and with our own efforts to produce a superior article, it must become one of the leading industries of the State.

ANNUAL REPORT OF THE COMMISSIONER OF AGRICULTURE.

We have received the above report, and much profit may be derived from its valuable suggestions.

Mr. Watts justly says, that our agricultural Colleges, which are provided for by Congress, should be distinctive in their character, and each should be made to require compulsory labor from every pupil, so as to inure him to the daily occupation of a farmer's life.

Our new Commissioner is not in favor of publishing an annual report for distribution, as heretofore, but thinks it should be superseded by the monthly reports: The expense of publishing these annual reports has been exorbitant, and the monthly reports answer for all practical purposes.—Ed.

The report makes favorable mention of the New Zealand flax, *Phormium tenax*.

The Statistical division of the Department is now engaged in collecting facts illustrating the agricultural status of the Pacific slope.

Experiments have been made in rearing Silk-worms on the leaves of the Osage Orange with good success.

The Library contains now 6,012 volumes.

STATE BOARD OF AGRICULTURE.

This Board met at Sacramento a short time since, and decided to hold the next Annual State Fair in September, 1872, to commence on the 12th of that month, and to close on the 21st.

The Secretary was instructed to confer with the officers of the different District Agricultural Societies in regard to the preparation of a bill to lay before the present Legislature, for an appropriation to each of those Societies as a fund for the purpose of awarding liberal premiums for the best productions.

We highly approve this movement, and are happy to see it coming from the right direction. We have always advocated such a measure as just and proper.

FARMERS' CLUB IN SACRAMENTO.

A recent meeting of farmers residing in the vicinity of Sacramento resulted in the formation of a Farmers' Club. The following officers were elected: For President, S. N. Baker; for Vice Presidents, W. S. Manlove and James Holland; for Secretary, J. N. Hoag; and for Treasurer, A. S. Greenlaw. These officers constitute a Board of Directors to manage the affairs of the Society. The initiation fee for members is one dollar, and the monthly contribution fifty cents: It is proposed to discuss Agricultural as well as Horticultural subjects.

We wish this Society every success; such gatherings must result in good. If all ordinary business transactions are excluded from the regular meetings of this and kindred Societies, the very desirable result will be, a closer attention to matters belonging to Agriculture and Horticulture.

Los Angeles County has 40,000 orange trees.

THE ACCLIMATIZING SOCIETY.

A meeting of the Directors of the Acclimatizing Society was held on Saturday evening. A committee, consisting of M. M. Estee, A. Badlam and Charles Kaeding, was appointed to prepare a new Game Law for the consideration of the Legislature. This law looks to the protection of native and imported game from wholesale destruction by reckless pot-hunters.

The Society has had complete success in its acclimatizing experiments with Trout, and will this winter introduce the Black Bass and several varieties of game birds into the State. Several thousand dollars have been expended in arranging the ponds and hatching-houses at the San Pablo ranch, fifteen miles from this city, and the enterprise never had a more promising outlook than at present. The stock of the Association can be subscribed for, by applicants, upon payment of \$10 per share.

VICK'S FLORAL GUIDE FOR 1872.

JAMES VICK, Rochester, New York.

We have just received a copy of the above book. It is elegantly printed on fine tinted paper, in two colors, and illustrated with Three Hundred Engravings of Flowers and Vegetables, and Two Colored Plates, and is an exceedingly beautiful and instructive Catalogue and Floral Guide—112 pages—giving thorough directions for the Culture of Flowers and Vegetables, Ornamenting Grounds, making Walks, etc. Forwarded by mail to any who apply, enclosing 10 cents.

FLOWERING BULBS.

F. A. Miller has just received a large and splendid assortment of Flowering Bulbs, viz: Hyacinths, Tulips, Narcissus, Gladiolus, Lilies, Paeonies, Tuberoses, Crown Imperials, Iris, Lily of the Valley, Snow Drops, *Dielytra spectabilis* (pink and also white), and others, all of which he will dispose of at reasonable prices. For particulars, call at

622 Clay St., room 9, second floor, between the hours of 2 and 4 in the afternoon.

VEGETABLE SEED,

From the Agricultural Department.

The Secretary of the Bay District Horticultural Society has received a package of Vegetable Seeds through the kindness of Mr. Watts, the Commissioner of Agriculture. He will distribute them among the members of the Society, if they will please call, between the hours of 2 and 4, at the office, No. 622 Clay Street.

Editorial Gleanings.

APPLE CIDER.—Mr. N. P. Woodworth, of Stony Point, has this year made 10,000 gallons of Apple Cider. The mill and press used are of his own construction, and will easily make 300 gallons of cider per day, with the assistance of a man and horse. The cider manufactured by Mr. Woodworth is converted into vinegar and shipped to the San Francisco market.—*Russian River Flag*.

TREE PLANTING.—It is stated that, if Tree Planting continues in Iowa for ten years at this year's rate, 1885 will find the State beautified with great forests.

PEPPERWOOD. — "Woodman, spare that tree," if it is pepperwood. Pepperwood is California Laurel, and is highly prized by the cabiner maker. It is now used in this country, or has been, for ordinary firewood. Close-grained, beautiful and durable timber is too scarce on this Coast to be wasted. The laurel and madrona are already finding their way from our county to San Francisco, a large shipment having lately been made over our railroad. The time is near at hand when the laurel will bring a higher price. The upshot of the whole matter is: Save your Pepperwood.—*Russian River Flag*.

AN ARTESIAN WELL on the grounds of Mr. Kower, near Fruit Vale, Alameda County, has every indication of giving a plentiful supply of water at a depth of 290 feet.

COTTON CROP.—The Snelling *Argus* says, Colonel Strong has finished picking his crop of cotton. The field of cotton consists of 51 acres, from which he gathered 74,450 pounds of seed cotton. The cotton is of excellent quality, being remarkably white and clean, and totally free from stains of any kind. The lint is fine, silky, and is sufficiently lengthy to bring it up to a high grade, ranking, perhaps, as “good middling.”

CULTIVATION OF TEA.—Col. Hollister, of Los Angeles County, is making extensive preparations for the cultivation of Tea.

PLANT TREES.—The Petaluma *Crescent* calls attention to the desirability of shade trees in that city, and points the wealthier inhabitants to the example of the Laurel Hill Association, of Philadelphia, which admits to membership “any person over fourteen years of age who shall plant and protect a tree, under the direction of the Executive Committee.” There were four hundred and twenty-three trees planted during the first year of the Association’s existence. Prizes were also given to persons who made the most improvement in the grounds about their dwellings, who constructed the best sidewalks, planted the best-growing trees, and for similar purposes. Such an association would doubtless effect much improvement in the appearance of many of our cities and towns in California.

WALNUT TREES.—During the first two years of our late civil war, 28,000 Walnut Trees were felled to supply one European factory with the material for gun-stocks!

THE LEADING FRUITS in the Markets of New-York are now *Strawberries, Peaches and Grapes.*

DESTRUCTION OF THE PINE.—Two millions of Pine Trees were cut in the States of Wisconsin and Michigan during one single year, and it is estimated that in thirty years, at that rate of forest destruction, not one tree will remain.

COTTON GROWING will be experimented with in Kern county by an association composed of Californians and Englishmen. Kern County is supposed to be well adapted to Cotton growing and farming in general, and all that that district requires is practical men.

TO DESTROY RED SPIDERS.—The red spider on house plants is best destroyed by laying the plants on their sides in the open air, and using a hand syringe on them as powerfully as they will bear. If a little sulphur be used in the water, and the water is also a little greasy, it is still better.—*Gardeners’ Monthly.*

ROSE CUTTINGS.—One of the best methods of securing the success of these, says a recent writer, is to stick the cutting about an inch deep into clean river sand, with properly-prepared soil about an inch below to receive the roots as soon as they strike. The clean sand prevents the roots from rotting. A correspondent of the *Horticulturist* succeeded with this when every other mode failed—and says he does not lose one in twenty.

A SUBSTITUTE FOR COFFEE.—From chemical analysis it appears that the seeds of the asparagus, when dried, parched and ground, make a full-flavored coffee, but little inferior to Mocha,—they contain in common with tea and coffee the principle called taurine. Dry the asparagus berries well, after being thoroughly ripened; then rub them on a sieve. The seeds can then be readily separated.—*Journal of Health.*

BEST WHITE ROSES IN ENGLAND.—The *Rural World* states, upon good authority, that the following Roses are the best for vigorous habit and free blooming: *Boule de Neige, M’lle Bonnaire, Madame Gustave, Bonnet, and Mad. Noman.*

THE CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

VOL. II.

FEBRUARY, 1872.

No. 3.

AZALEA.

That California is well adapted to the cultivation of all kinds of flowering plants, with the exception of a few which do not grow to perfection, may be laid down as a well established rule. Yet these exceptions comprise some very valuable and desirable classes of plants, amongst which stands foremost the Azalea family.

Although the fact is now generally recognized that Azaleas do not thrive in California, we are not entirely satisfied as to the correctness of this belief, and still hope that this beautiful flowering shrub may yet flourish in our gardens, if we will ascertain the treatment which it requires.

Probably from two to three thousand plants of the *Azalea Indica* have been imported by our nurserymen and florists during the past ten years, and of these there are probably not more than from fifty to one hundred alive, and still less are in healthy condition; although they certainly have received much care, owing to the fact that the prices paid were high, (Azaleas in flower have been sold for from four to ten dollars each plant.)

Almost exclusively the Azaleas have been treated with us as greenhouse plants, (as they are in colder countries); and perhaps this was an error. From the nature of the plants we are justified in the conclusion, that where the Fuchsia will grow luxuriantly, the Azalea may

also be expected to thrive well; and as the Fuchsia succeeds with us admirably well in the open air, why should not the Azalea do so also? We think that our climate is favorable to the successful cultivation of the Azalea in the open air.

But the principal cause of the failure in Azalea culture, seems to be in the soil. Neither our garden loam nor our drift sands are adapted to the successful growth of Azaleas; the best soil is a mixture of equal parts of *leaf-mold*, which is found in our pine forests, *sphagnum*, and *coarse river sand*. It is true that such a mixture is not close at hand, yet we think it might be obtained at a very reasonable expense, and might be made of great service in the cultivation of many other plants. The charges for bringing these soils here by sailing vessel or railroad cannot be very high.

Before we proceed any further in our investigation of the proper mode of treatment of this class of plants, we will state, that Azaleas are divided into two groups, viz: *Azalea pontica* and *Azalea Indica*. The former are natives of North America and are found in many localities in this State. The flowers are fragrant and mostly of a pale yellow color, changing to white; deciduous and perfectly hardy. The *Azalea Indica* is a native of Asia, particularly of China and Japan. It is an evergreen, and produces flowers of large size and of brilliant colors.

The varieties of the *Azalea pontica* are un-

doubtedly best adapted to our natural soils, and we would therefore suggest to begin with the introduction of these into our gardens. One or two trials have been made to procure the varieties growing wild in this State, but these experiments have failed; but these failures have been attributable more to the bad condition of the plants before planting than to any other cause. It would therefore be desirable to take them up in the proper season with care, and to give them another trial. If this method will not work well, then we suggest that our florists obtain the seed, which our native Azaleas yield in abundance, and we are almost certain that good and healthy plants may be thus obtained and acclimatized, which will thrive well in the open air. Having once our native varieties under cultivation, it will be an easy matter to introduce other and more conspicuous varieties by grafting and oculating.

Although this class of Azaleas in their natural state produce mostly yellow flowers, yet many varieties with new and striking colors have been obtained by skillful cultivation; for instance: *A. sanguinea*, dark red; *A. meteor*, orange red; *A. rosetta*, white with red; *A. cristata*, scarlet, etc.

We have every reason to believe that Azaleas may be made as prolific as Fuchsias and Geraniums, and our florists will doubtless find it a profitable business for many years to come, as good prices will be readily paid for handsome plants.

We admit that an extensive cultivation of the *Azalea Indica* will be attended with considerable difficulty, owing to the trouble in obtaining proper soil, etc. Yet we believe the established success of the *A. pontica* will soon be followed by new and successful efforts to introduce and acclimatize the *A. Indica*, and then at least some varieties will be added to our established list of hardy flowering shrubs.

The mode of propagation of the *Azalea Indica* is nearly the same as that of the *Pontica*, but we believe that plants raised from seed make stronger specimens and are better adapted for grafting.

The seed of Azaleas is very fine, and should therefore be sown on the surface and gently pressed in with a smooth piece of wood. Watering, if necessary, must be done very carefully. The box or pot containing the seed should be placed in a well shaded locality, as close as possible under glass. It is very important to transplant the young plants as soon as they have made their second leaves, and the oftener they are transplanted, the better they will thrive. It is hardly necessary to say, that the plants must be well shaded and carefully watered after transplanting. In two years such plants will be strong enough to flower or to be grafted. Often very fine varieties are produced from seed.

The propagation from cuttings is not very difficult, and, while it is very essential to cut the slips of other plants close under the leaf-bud, this rule does not apply to the *Azalea Indica*, which is known to form roots readily on any portion of the stem. Half-ripened wood is considered the best for cuttings. But with us the difficulty in propagating Azaleas from cuttings does not seem to be in inducing them to root, but in their treatment after roots have been formed. Our opinion is, that the young plants should be transplanted frequently, and not be permitted to remain too long in the same soil.

It is a pretty well established fact, although no positive cause has been assigned for it, that the soil we use for pot-culture in California is apt to become sour in a shorter space of time than is usual in other countries. This impresses on us the necessity for changing the soil frequently, until the plants are transferred into the open ground. We think that the entire secret for the more successful growth of Azaleas lies in this. So long as, and whenever Azaleas are treated as greenhouse plants, we would recommend placing them close to the glass, giving them plenty of air.

The best time for transplanting or shifting Azaleas, is undoubtedly after the flowering season; and in replanting, care should be taken to press the soil very firmly around the roots or ball of earth. We should give them

about the same amount of moisture as we give Fuchsias, and in transferring them into the open ground we prefer a shady place for them, such as the protection of some trees which admit a free circulation of air around them.

Copeland, in his "Country Life," recommends the following method for the propagation of Azaleas from cuttings: "Cuttings are prepared by taking the tops of the young shoots when three inches long, cutting off the lower leaves and leaving the upper; many should be put together into a pot three fourths full of peat, one fourth white sand, water gently upon planting and cover with a bell glass; set in a shady place, where the temperature will be from fifty to sixty degrees; after they have made roots, remove the bell glass—during the night at first, and finally dispense with it wholly—to harden them; at last put in two and a half inch pots, and keep them shady and warm till they are well established, then treat like all other hard-wooded plants." But Copeland also adds: "The chief objection to the Azalea is, its liability to die without much apparent cause."

The varieties of the *Azalea Indica* are very numerous, and our space will only permit us to mention a few of them:

Amoena, pink;

Flower of the Day, large white, striped with rose;

Flag of Truce, pure white, fine double;

Laterista, salmon red;

Narcissiflora, double white;

Stella, bright scarlet, stained with deep violet;

Variegata, salmon, margined with pure white;

Rotundifolia, bright red, edged with white;

Refulgens, rich crimson purple;

Lovely, white, striped with lilac;

Empress Eugenie, rich pink;

Duc de Brabant, rosy salmon, semi-double;

Bianca, white;

Coccinea, scarlet;

Alba pleno, double white;

Juliana, orange-scarlet;

Vitata punctata, white, veined and striped with rose and lake.

PRESERVING FLOWERS.

The art of preserving flowers has of late made rapid progress, and has become a very favorite occupation with the ladies in particular. An impression prevails with many of them that the process is extremely difficult, and consequently but few have availed themselves of the many delights to be derived from this art. The New York *Horticulturist* has given to its readers the process for preserving flowers, and we hope to gratify our lady friends by publishing it in our columns. The *Horticulturist* gives two methods, one for preserving flowers so as to present a flat surface, and the other to preserve them in their natural form and fulness.

The following is the process for *preserving flowers to present a flat surface*:

This has been a favorite style of making funeral wreaths and bouquets durable mementoes of bereavement; and, until the last few years, the only method practiced in this country. Dried in this manner, flowers are employed in Europe for many purposes of ornamentation.

The best material to arrange dried flowers on, is card board. It may be covered with silver paper, or delicate black or white lace, according to fancy. To this the flowers are gummed in any design. Green leaves, except those of the laurel family, lose some of their brightness, even with the best management, and, unless resort is made to artificial tinting of their surface, cannot be used with preserved flowers. Hence, lycopodium and moss, that retain their brilliancy so long, are the verdure most frequently introduced, as little as possible being admissible. The design completed should be set in a dark, airy room to dry for a day or two; then lace of the same sort that lies beneath the flowers must be spread over them and gummed at the edges; a neat edging of the same, or a small silk fringe, being affixed in the same manner as a finish.

The requisites for drying flowers to present this uniformly flat surface are a quantity of clean white paper, light and soft, with an un-

dressed face (such as cheap books are made of), two covers of wire cloth (sheets two feet long and one and a half feet wide, their edges bound with a narrow strip of zinc), two stout leather straps with buckles, a paper knife, or a small wooden spatula and a camel's hair pencil.

The flowers must be freshly gathered; buds and half-blown blossoms are best. When wide-open flowers are used, it must be in the first hours of their expansion. A thick bed of smooth layers of the paper must be made, resting upon one of the covers. For small flowers, half an inch deep of the layers is sufficient; for Roses, Japonicas, and other large and double flowers and their buds, an inch will be needed; this is to absorb the moisture. Upon this bed lay the flowers, without crowding, in a natural position, using the paper knife and hair pencil to arrange the petals, the sepals and the stamens and pistils with great care. If possible, none but flowers of similar size and appearance should occupy these drying sheets at once; never admit but one color at a time, else there is a danger of dimness or discoloration. When all are smoothly arranged lay a bed of the same thickness of paper upon them, place the other cover, and make all tight and firm by means of the straps and their buckles. Suspend this in the sun and air—out of doors is best; if in a light breeze the drying, is hastened. The smaller flowers will dry in six or eight hours of summer sunshine. The larger often require two days. They should not be removed from the drying sheets till all moisture has left them. Then take them carefully with the paper knife or spatula to a clean sheet of stiff white paper, and keep from dust and moisture till they can be wrought into the intended design. The outline of the design should be drawn in pencil upon the card-board it is to occupy. Within this, brush lightly gum tragacanth of the consistence of mucilage. Place the flowers thereon, and gently touch them here and there with the tip of a dry camel's hair brush to affix them. Put no gum upon the flowers or the leaves, or other verdure that accompanies them; the

gum must be only applied to the card-board. When glazed and framed these floral designs make handsome cabinet pictures.

In our next we will give the method for preserving flowers with the fulness of their natural forms.

THE "MAJETIN," vs. APPLE BLIGHT.

[Continued from page 36 of last number.]

It was found in the nursery at Warrenheip that some apples were more liable to the attacks of American Blight than others, and that some varieties escaped its ravages almost entirely. Observations conducted for several years have permitted of a classification being made.

The following lists will be valuable to cultivators.

LIST No. 1.

Apples nearly Blight-proof:

Cardinal	Gravenstein
Constantinople	Hawley
Cornish Gilliflower	Irish Peach
Devonshire Quarrenden	London Pippin Maiden's Blush
Duchess of Oldenburg	Northern Spy
Grand Duke Constantine	Triomphe de Luxembourg

LIST No. 2.

Apples very slightly affected by American Blight:

Autumn Passe Pomme Blanche	Red Calville Red Transparent
Bland Rose	Reinette de Canada
Count Orloff	Rinahkowski
Coe's Golden Drop	Summer Passe Pomme Blanche
Maiden's Blush	Blanche
New English Pigeon	Stone Pippin
Nicolayer	Yellow Bellflower
Quarrenden	

LIST No. 3.

Apples liable to the attack of American Blight, but not to a great extent:

American Fall Harvey	Crab, Transparent
Astrachan Red	Dundonald Pippin
Bess Poole	Dutch Mignonne
Barcelona Pearmain	Early Almond
Borsdorffer, Summer	Emperor Alexander
Cambusnethan Pippin	Early Strawberry

Forest Styre	Pomeroiy
Golden Russet	Peck's Pleasant
Golden Reinette	Pippin Silver
Holland Pippin	Peach, Winter
Hubbard's Pearmain	Rosemary Russet
Islay Pippin	Rymer
Juneating	Russet, Pine Apple
Lodgemore Nonpareil	Scarlet Pearmain
Melon	Sonnette
Margil	St. Sauveur
New York Pippin	South Carolina Pippin
Newtown Pippin	Striped Beaufin
Nonesuch	Sturmer
Nonpareil Ross	Stettin Rouge
Norfolk Bearer	Stokes' Tulip
New York Pippin (co-Sam Young	
Old Man	lonial) Syke House Russet
Oslin	Tower of Glammiss

LIST No. 4.

Apples liable to bad attacks of American Blight :

Adams' Pearmain	Garretson's Early
Beauty of Kent	Hawthornden, Red
Cox's Pomona	Hoary Morning
Cardinal	Ireland's
Cornish Aromatic	Kerry Pippin
Court of Wick	Keswick
Cockle Pippin	Lord Suffield
Cleopatra	Large Yellow Bough
Crab, French	Mannington's Pear-
Crab, Hagloe	main
Claygate Pearmain	Norfolk Beaufin
Downton Pippin	Nonpareil, Scarlet
Devon Bitter Sweet	Nonpareil, Old
Early Red Margaret	Omar Pasha
Early Julien	Reinette Van Mons
Early Harvest	Ribston Pippin
Early Nonpareil	Red Normandy
Fearn's Pippin	Summer Pearmain
Fox Whelp	Siberian Harvey
Forge	Stirling Castle
Foxley	Sam Montgomery
Fall Harvest	Snow
Fall Pippin	Siberian Bitter Sweet
Gloria Mundi	Spring Ribston
Garter	Yorkshire Greening
Green's Pippin	Waltham Seedling
Golden Russet	Warner's King

LIST No. 5.

Apples very liable to severe attacks of American Blight :

Brabant Bellefleur	Grand Sultan
Blenheim	Herefordshire Pear-
Bedfordshire Found-	main
ling	Jonathan
Boston Russet	King of Pippins
Baldwin	Lord Nelson
Broadwell	Mere de Menage
Court Pendu Plat	Northern Greening
Cherry Crab	Paradise Pippin
Cluster, Red	Quince Apple
Cromwell Pippin	Reinette d'Espagne
Calville, White	Reinette de Victoria
Dumelow's Seedling	Scarlet Pippin
Esopus Spitzenberg	Vineuse Rouge
Early Joe	Will's Sweet
Grange's Pearmain	Wormsley Pippin
Gooseberry Apple	Wyker Pippin
Golden Pippin	Yellow Siberian Crab
Golden Pippin, Hughes'	

PROOF VARIETIES.—The only proof variety, the "Winter Majetin," and perhaps the "Northern Spy."

I think the results of these lengthened experiments are in every way of a most satisfactory character, and such as will be highly valued by our fruit growers and horticulturists in general. Amongst other varieties of apples that have been subjected to severe tests, to prove if they really withstood the blight, have been the Irish Peach-apple, and the Northern Spy.

The Irish Peach has been, I am well aware, considered by many growers to be free from blight; and on some soils this apple has, up to the present, shown no signs of blight. On the other hand, after the most crucial tests carried on at Mount Warrenheip with plants of this variety obtained from four different sources, and also from Europe, the above-mentioned negative evidence cannot override the fact, that the Irish Peach-apple has been and still is slightly blighty at Warrenheip, and I have also seen blight upon trees of this variety within a few miles of Melbourne.

As regards the Northern Spy, I am inclined to think that this variety will become of great service as a stock, for although it has been subjected to the same severe tests as the Irish Peach, and many other kinds, up to the present time it has not been affected with this great pest, *Aphis lanigera*; and in further proof of this fact, the scientific experiments carried out with this variety show that the wood of the Northern Spy contains most of the component parts visible in the Majetin, although not quite so prominently exhibited as in the Majetin. The Northern Spy is also, as is the Majetin, a free and vigorous grower, with an upright habit. This celebrated apple originated about twenty nine years ago, in the State of New York, on the farm of one Oliver Chapin, of Bloomsfield, near Rochester. It belongs to the Spitzenberg race, and bears resemblance to the Esopus Spitzenberg. It has become such a favorite among American orchardists, that in the year 1847, the fruit of it was sold in New York City at 12½ cents each.

HARDY VINES.

[Continued from page 45 of last number.]

In our enumeration of Hardy Vines, it is impossible for us to give all the different species and varieties which are worthy of cultivation; we shall therefore confine ourselves to such varieties as can be readily obtained on this coast, and as will give general satisfaction under ordinary treatment. All those which we mentioned in our last, and which we will now describe, deserve popularity either for their pleasing habits and ornamental foliage, or for their yielding of elegant and in many varieties magnificent and deliciously perfumed flowers.

A very handsome vine of twining habit is *Dolichos Lignosus* (Australian Pea), but unfortunately it has gone out of fashion with us and is considered too common, because it is seen everywhere; our florists cannot any longer find sale for it, and it has disappeared from our nurseries. Yet it is a very pretty vine, evergreen and continually covered with

small pea-shaped flowers of a pinkish color. It is easily propagated by cuttings, or by seed which ripens freely upon the older vines. The vine grows very fast, and covers a large space with its dense and dark green foliage in a very short time. It is exceedingly well adapted for covering arbors, old stumps, fences or lattice work, and in this capacity becomes truly picturesque. We shall regret to see it entirely discarded as it answers the above mentioned purposes so well.

Kennedyia (*Hardenbergia*) is also a very desirable evergreen vine of twining habit. Formerly the *Hardenbergia*, the *Zichya* and *Kennedyia* were considered one family, but they are now separated, although some still adhere to the former classification. Various varieties of the *Kennedyia* have been cultivated in California for several years, but principally until the past year as greenhouse plants. It is evident that they are perfectly hardy with us, and will flower in the open air more profusely and for a much longer period than under glass. In spite of the chilly and disagreeable weather which we have experienced for the past two months, we know of several specimens which have been and still are literally covered with flowers during November, December and January. The flowers are well adapted for bouquets, and are, therefore, particularly valuable during our winters.

The *Kennedias* are natives of Australia, and thrive under ordinary soil and treatment; they prefer, however, an elevated position, and will probably do best if planted about rockeries.

They are propagated either from cuttings or from seed, which germinates readily, particularly if soaked for twenty-four hours in warm water.

The best varieties, as far as our experience goes, are—

Kennedyia macrophylla alba, flowers white, in grape-like bunches, hanging gracefully from almost every joint; for flower-baskets we do not know anything more appropriate. Although this variety will do well with us in the open air, we also recommend it for the

greenhouse, where it will flower profusely, if trained close under the glass roof; the flowers will be larger there and of a purer color.

Kennedy ovata, flowers smaller, and of a blueish-purple color, quite hardy, and flowering profusely.

We are under the impression that another variety, with white flowers, was cultivated here some years since under the name of *Kennedy ovata*, but we are probably in error.

Kennedy cordata, is also well adapted for out-door culture; the flowers are of a beautiful violet.

Sollya heterophylla, is another of the hardy evergreen twiners which seems to delight in our California climate. Its sky-blue, bell-shaped little flowers are at all times profusely intermingled with its dense dark-green foliage. It may be cultivated to the best advantage as a specimen plant, supported by a stake or frame; its habit is decidedly graceful, and, like some of our evergreen shrubs and vines, it blooms most profusely during our winter season, when the gardens are comparatively bare of flowers; it is also well adapted for covering the base of verandas. The *Sollya heterophylla* may be readily propagated either by cuttings or from seed; the latter is produced abundantly on the older vines.

We cannot omit from our enumeration the old and favorite

Ivy (*Hedera*), which has at all times deservedly enjoyed great popularity. Its uses are manifold, and as a decorative plant it has probably no superior; in masses it carries itself grandly, and in a state of nature is at all times exceedingly picturesque, and when trained either upon artificial work, rustic stands, or around the parlor mirror, it adapts itself with ease to any desired arrangement. The Ivy is a vine of creeping habit, and attaches itself to wood or stone, if not too smooth, and soon completely covers the objects it comes in contact with. The different varieties are all cultivated for their foliage, which is extremely hardy and persistent. While young, the plants do not make great headway, but if once established, it spreads rapidly; there

are a number of varieties, of which the most popular is the

Irish Ivy (*Hedera Hibernica*), a native of Scotland. It is well adapted to cover walls of wood or stone; it has been said that walls, covered with ivy, are continually moist, and therefore unhealthy to the inmates of houses. This is not correct, the contrary being the fact; ivy growing upon walls will extract all the moisture, if there is any present.

For cultivation in the room, a coarse soil should be given, mixed with some pieces of porous stone or crockery.

Of late, some beautiful new varieties have been produced with variegated foliage, which, however, are as yet scarce in our market; some of the best are—

Hedera marmorata, large leaf, and beautifully marbled.

H. aurea maculata, blotched with gold.

H. marginata argentea, silver margined.

H. tri-color, green, white and rose color.

H. folia picta, leaves marbled-yellow.

All the Ivies may be easily propagated from cuttings, or layers, which form roots readily on any portion of the twig, in the ground or in water.

Clianthus puniceus is also a popular and well known climber. It is sometimes called Glory Pea, or Parrot's Bill, which the flower somewhat resembles. It is evergreen, and produces very showy flowers in clusters, of a beautifully vivid scarlet. The *Clianthus* may be grown to advantage on frames or fences, and would also present a very elegant appearance if grouped upon the lawn; and if left to itself for such purpose, the effect will be very picturesque as well as graceful and effective.

Clianthus magnificus and *C. Dampieri*, are varieties which are both worthy of a trial. They are propagated without difficulty from cuttings as well as from seed.

Another popular family of the numerous climbing vines is JASMINE.

Jasminum revolutum is a native of China; it produces yellow flowers, and is of robust growth and deserving extensive cultivation.

Jasminum officinale, a native of the East Indies; flowers small white, very fragrant; growing less robust than the former, but perfectly hardy.

Jasminum Catalonica (Spanish Jasmine), is mostly treated as a greenhouse plant, but will thrive well in the open air, under a reasonable protection from heavy winds; this variety is of rapid growth, but not so easily raised from cuttings as the former, upon which the Spanish Jasmine is extensively grafted. There is a variety of the Spanish Jasmine which is double, and which produces the elegant flowers so highly esteemed for fine bouquets; their fragrance is most delightful.

All the Jasmines are most desirable climbers, the latter being the most valuable and highly prized for the flowers, which are always in demand.

We may add to this list the following desirable vines without further comment:

Cobaea scandens, a fast grower; flowers purple, large bell-shaped; best grown from seed.

Tecoma Australis, a very pretty vine of a twining habit, producing large flowers of a light pink (almost white) and dark purple towards the center; does not bloom very freely in the open air around San Francisco.

OLIVES IN CALIFORNIA.

At Santa Barbara a gallon of oil is made from 8 gallons of olives, and one tree there, when ten years old, produced sixty gallons of olives. Mr. Mayhew, of that place, thinks it safe to count on a net annual yield of two hundred and forty dollars per acre from an olive orchard ten years old, and that the cultivation of the tree would be profitable for fuel, so rapid is its growth. He thus communicates some of his experience to the *Santa Barbara Press*:

"I then obtained five hundred cuttings, from one inch to three inches in diameter, about fifteen inches long. In February, 1868, I put them in the ground so that their ends

were little above the natural level of the ground, and covered them by making a little mound. About one half of them started that spring, and are now from ten to thirteen feet high, and spread about seven feet, the trunk of the main stock being from two to four inches through. Some of the cuttings were dormant through one season, and started about one year from the time they were planted, and a few sprouted even two years from the time of planting, which are doing well."

The cultivation of the olive has been attracting much attention lately in Australia, where the oil of home production finds a ready sale at \$3 per gallon. In California, something that is supposed to be the best quality of olive oil retails at about \$5 per gallon, but the purity of it is subject to doubt. The olive tree is productive in only a few small districts, and its cultivation, when properly managed in those districts, cannot be unprofitable until the oil loses the credit which it now has throughout the world, of being unequaled for table use. Our largest olive orchards in California are not yet in full bearing, and neither oil nor pickled olives of domestic production are, so far as we know, obtainable in our city. The different varieties of the olive have not, we think, been studied in our State. Baron Von Mueller, Superintendent of the Botanical Gardens at Melbourne, recommends the following varieties:

1. *Verdale*.—Available for a good table oil, as well as for green conserve. This, and the next following, are early and abundant bearers.

2. *Blanquet*.—Adapted for dry ground. Oil is of a particularly sweet, delicate taste, and more pale than other kinds, but does not keep so long. This and the *Verdale* produce the fruit on low growing branches, so as to be accessible for hand-picking.

3. *Bouquetier*.—For superior oil.

4. *Redouaou*.—Eligible for colder regions; produces table oil, and is also esteemed for conserves.

Some other kinds are locally available, among them the Olivier de Grasse, the latter yielding an excellent table oil, and oil for perfumery; but the plant is high of growth, and the gathering of the fruit more expensive; it is of a weeping habit.—*Alta*.

HOP CULTURE.

The Hop-vine has for some time been cultivated in various localities of California; however, with but few exceptions, the attempts have been merely experimental. Very few planters have made the Hop-vine a permanent source of revenue, while the majority have been easily discouraged by the fluctuating prices of the article, which at times have been very low:

Hop growing can be made profitable, but there being a limit to the demand, the article necessarily depreciates in price, when the market is overstocked. We may take warning from the experience of the State of Wisconsin, where but a few years since Hop raising raged like an epidemic, one county alone producing four million pounds! But over-production was the result, and the extremely low prices were ruinous.

At the present time prices for Hops have advanced, and planters have made money this past season, but it certainly would be unfortunate if our farmers were to embark in Hop raising *en masse*, encouraged by the present highly remunerative prices, which cannot hold out long, unless the Hop fields of the East suffer extensively from the depredations of insects, which infliction has already produced a decided decline in this enterprise east of the Rocky Mountains.

The Hop-plant (*Humulus lupulus*) is a native of North America, Asia and Europe. Its habit is twining; the flowers are either male or female, and are usually produced on different plants, but are also found, although rarely, on the same vine. The male flowers appear in loose clusters, while the female flowers are produced at the base of scales, arranged in close clusters, which, when ripe,

are called the *Hop* of commerce. Between these scales a powder-like substance, yellow in color, is found, called *Lupulin*, or *Flower of the Hop*, which gives to the Hop its peculiar taste and flavor, and upon the amount of which the value of Hops greatly depend.

HOP CULTURE.

The best soil for the Hop is undoubtedly a deep sandy loam, slightly inclined, so as to drain off all surface water during the rainy season. Hops will also do well on our gravelly, uphill lands, which abound in California. It is desirable that the hop-field should have a free circulation of air, but yet be protected from strong winds by hillsides or belts of timber. The roots of the Hop Vine penetrate the soil to a great depth, and spread extensively, and the soil should therefore be deep.

The ground should be ploughed after the first rains in the fall, and again during the early part of spring, so that rain may be had after the planting. The plants or cuttings should be set in rows of from eight to ten feet apart. The general practice, in this State is, we believe, to drop the sets (or cuttings) from old vines into the trench made by the plough. It is, however, far better to plant with a dibble, which, although it makes a little more work, yet insures a certain growth. The sets or cuttings should have from two to three joints, and from three to four such sets may be inserted in one hill. Care must be taken to plant both male and female sets, at the rate of one of the former to about eight of the latter, making about ten male sets to the acre. Much of the success depends upon the late rains and upon early planting.

During the first year, corn, potatoes or turnips may be grown amongst the young vines, to cover the expense of keeping the ground in a good state of cultivation, frequent hoeing being necessary to keep the weeds down.

In regard to the mode of training Hop Vines on poles, different ways are practiced with success. Some cultivators set no poles the first year, asserting that the crop would

not pay for 'the additional labor ; but when it is taken into consideration that one acre of vines will yield from four to six hundred pounds of hops in California during the first year, and that the extra labor consists only in the picking, drying and packing, poles may as well be set the first year, There are also different opinions as to the proper height of these supports. Some preferring them from fifteen to twenty feet in length, while others rather have them from ten to twelve feet ; and lately it has been the practice with some to train the vines over horizontal frames, supported at eight to nine feet in height. The latter method seems to be the most convenient for picking, but we judge that such a treatment would deprive the plants of the free circulation of the air and of the solar influence, both of which are essential to the production of good hops. We are decidedly in favor of the old practice of using poles from fifteen to twenty feet in length. Two poles should be inserted in each hill, at about eighteen inches apart, as soon as the young plants make their appearance. These poles should be set firmly in the ground, to keep them from swaying back and forth by the force of the wind.

As soon as the young vines are high enough, they should be tied to the poles, and they will very soon take care of themselves. Not more than two vines should be allowed to one pole. All the other suckers should be cut off close to the ground. The vines should be trained to their proper poles, and the ground kept clear from weeds.

The Hops must be gathered just when the seed becomes hardened and of a purple color. To delay picking, when in this state, will materially damage the crop. It is also important to pick them clear of leaves.

The Hops are dried by artificial heat in kilns, built for this purpose ; considerable expense is necessary for this operation, which is completed in from ten to twelve hours.

Immediately after the drying succeeds the work of baling, for which proper machinery is necessary.

In a good season one acre of vines will yield about one ton of hops.

During the past two years hops have been worth from fifteen to twenty cents per pound, California hops commanding the highest prices. This year prices are much higher, ranging from seventy cents to one dollar per pound.

California is now producing about 500 tons, most of which are exported to the East and to Europe.

Our climate is favorable to this enterprise, and a very fair business could be established in the production of the article for home consumption and for exportation, as blight and insects have operated very detrimentally to the hop fields of the Eastern States, and cultivators there, have consequently been much discouraged.

USES OF HOPS.

Hops are used principally in the manufacture of malt liquors, for the purpose of flavoring, and also to preserve them from acetous fermentation.

They are also used as medicine, and have a tonic effect upon the human system.

In Europe, the superfluous young and tender shoots are cut off as soon as they make their appearance above the ground, and are prepared for table the same as the asparagus, while some make a palatable salad of them. They are considered a delicacy.

INSECTS.—Some idea of the injury caused by insects to agricultural products, may be formed from the statement that, from seventy four tons of Spanish wheat stored in a granary, ten hundred weight of beetles were screened out in one instance, and in another, thirty five hundred weight were removed from one hundred and forty five tons of American corn. The offender in both cases was a weevil, known as *Calandra Oriseæ*.

CURRENCY.—At the Salt Lake Theatre a *pumpkin* pays the admission of two persons, and they get two *carrots* in change.

PLANT TREES.

[The following article is copied from the second number of "THE WEST," which is a new monthly publication from the establishment of John H. Carmany & Co. We find the two first numbers replete with interesting and valuable matter, and we wish it every success.]

The value and importance of certain measures are often underrated for want of due consideration. This, we think, is true of the cultivation of trees around our houses on the Pacific Coast. We look from our cramped residences in the city, often without the cheer of trees or flowers, and sometimes without the sunshine, and sigh for those broad, rural homes, with their lawns and flowers, and orchards and groves. But as we look over our country, we find very few of our ideal houses; instead, we see houses standing unprotected by the foliage and shrubbery which give beauty and comfort to those of older countries. The two prominent causes of this neglect to cultivate trees in California, are, the former unsettled title to lands, and the dryness of our soil in the absence of summer rains. The wisdom of so doing is freely acknowledged by all, yet nowhere more neglected, notwithstanding the undeniable fact that in no country can the cultivation of trees be of more importance than in California, both for their commercial and sanitary value, and the comfort they afford.

Except in the mountain and foot-hill districts of our State, there is a great scarcity of timber of every kind. A few scattered oaks constitute the timber of the millions of acres of our plain and bottom lands, and these will be exhausted in a very few years. To adopt measures for the future supply of timber to our State, for fuel and mechanical purposes, would be a wise foresight, and would result in great profit to the benefactor.

It is estimated that twenty acres of our bottom-lands, suitable to their growth, planted with hardwood trees, such as locust and maple, would in ten years be worth \$1,000 per

acre, or \$20,000; and that one man could cultivate these trees and support his family by the raising of crops from other land during the time. If these calculations are correct, it would certainly be a wise investment of capital and energy. Trees may also be cultivated, with great profit, on our dry plains, along our roads, and around our buildings. It has been said by those in the business, that to dig a large hole, say four or five feet wide, and from five to eight feet deep, and then to replace the soil, in which the tree is planted, so breaks the dry hard-pan that the moisture will rise and sustain a newly-planted tree on the driest land during our long, dry summer, with but little artificial supply of water. If this be true, it will pay every man to follow the plan. To have our homes and yards for stock, in the interior of the State, sheltered from the hot sun uninterruptedly blazing in the sky during the long eight or nine months, without rain or dew, would be a great profit, not to mention comfort. And who does not love to ride through the Alameda from San Jose to Santa Clara, and feel that he is in another world, or in a very shady part of the present one? Who does not feel that his farm is doubled in value when the trees begin to lock their branches over the roads surrounding it, and the house looks out from gracious shades, and his stock is protected from the burning heat?

Another great object to be attained by the cultivation of trees, is the tendency they would have to extend the bounds of our rainy season, and to increase the amount of rain-fall. It is a generally conceded fact, that growing vegetation, and especially trees, produce a condensed condition of atmosphere which often culminates in rain. This last motive, however, though a valid one, will doubtless be the last to cause the planting of trees.

The most valuable lands of Oregon are also quite destitute of timber. The summer months are too warm for comfort, and the timber on the hills and mountains, in many cases, is miles away. The future of the country is also great, and she has many motives in common with California for the cultivation

of trees, and can do so with greater ease and far less cost. The interior portions of all the coast have dry and warm summers, and have, therefore, the same reasons as our own State to engage in the cultivation of timber.

But the great result in comfort and pleasure to be derived from these cultivated shades, none but the half-civilized will be unmindful of. To see a hovel for a barn and a shanty for a house, whose windows are pasted over with paper or stuffed with rags; the gate off its hinges; the pigs in the yard; the cattle in the orchard; no trees or flowers; the children dirty, ragged and ashamed, is to look upon a sad picture. Were sickness and extreme poverty the cause for such a condition, they would have the sympathy and aid of all. But in too many cases negligence, laziness, and low views of life are the cause. Such people deface society, curse their offspring, and might better never have been born. We are happy to know, however, that we have not more than our proportion of this class of people on our coast; yet there are too many homes in the rural districts without those comforts and blessings which every man should gather around his family. Making home beautiful, cheerful, and comfortable, is a duty resting upon all who are rearing a family of children.

It is said that we are, in this world, what circumstances make us. If this be not absolutely true, it is in a great measure so, and the children will travel through life in nearly the same paths in which they are started by their parents. The child whose hands, face, and dress are always dirty, and whose ears are accustomed to harsh words from parents, becomes strong for the enduring of such things, and grows up with blunted sensibilities, perverted inclinations, and is ripe to become a member of the class which fills our prisons.

Make home beautiful and attractive; let it be a place associated with all that is pleasant and enduring; fill the inside with love, and surround the outside by beauty—it will be a fortification against evil influences from without, and will strengthen the love within.

Make it the most delightful spot on earth for the children, and a place of rest and enjoyment for ourselves. Plant trees.

TROUT FISHING, & ITS GENIAL INFLUENCES.

It would be a ridiculous and contemptible exhibition of insincerity for an enthusiastic lover of angling to pretend to offer a public apology for descanting on his much-loved pastime; how much more praiseworthy, even if he is mistaken in his views, for him, enjoying the sport and its concomitant exhilarations, to wish and seek to share them with his fellow-man, and, if in error, how consoling to him to know that his is a weakness of which some of the greatest and best of nature's noble men have not been ashamed! for have not many of the brightest of statesmen, philosophers, and heroes excelled in throwing the fly? and have not some of them actually valued themselves more on this expertness than on sundry world-wide achievements, and dwelt with more self-gratulation on their fly-rod triumph over some splendid trout or lordly salmon than over mental and physical successes which the world views with admiration? How many of these giant minds have sought and found, from time to time, recuperation in the pursuit of this sport from the exhausting influences of their respective professions? and then, laying aside the rod, have returned with renewed energy and accumulated vigor to their several duties and occupations in the forum, the council chamber, the bar, the laboratory, etc.

California affords a fine field for the pursuit of this most fascinating sport, in her grand lakes, her noble rivers, and teeming rivulets, profusely prolific of those superlatively game fish, the genus *SALMO* in its many varieties; while the grandeur of her scenery, the salubrity, the evenness, and the indescribable inspiration of her genial climate lend an additional zest to all out-door amusements.

Every angler knows with what alacrity and right good will he steps out when turning his back on the pent-up city—a chaos of crowded buildings, reeking with the unsavory fumes

of sordid humanity); with rod in hand, and full of hope and high expectation, he directs his course on some fine April morning towards one of our prolific lakes or teeming rivers, or even, mayhap, only to some favorite brooklet, far away and up amongst the hills;—joyous in spirit, inhaling in deep draughts the purer and more elastic atmosphere, his eye appreciative of and filled with the gorgeous landscape, and sensible of the rich odors from thriving vegetation—(for every angler is more or less a lover and student of Nature). Supremely happy, he proclaims a truce between himself and care, and publishes a universal amnesty to every created being (not excepting even rival anglers—? Ed.), and feels at peace with himself, mankind, and the world in general. Everything he views seems to wear a sunny aspect, reflecting his own bright spirit. I would that in all our daily avocations some small portion of this genial influence could be infused: how would it lighten our ordinary burdens! But I have been chattering discursively, and unmindful of the more practical portion of my subject, have been descanting prefatorily, laudatorily and sentimentally regarding my favorite pastime.

I will merely add, by way of still further recommending to my friends the pursuit of this most attractive art, what a recent writer on this matter says in addressing the careworn denizens of cities. He exclaims: "To you, ever surrounded by the cares of life, and perpetually bored, often to desperation, by that demon, whose imps are dollars and cents, in an everlasting, ceaseless contest, those glorious works of the Creator's hands—green hills and sunny fields—are scarcely known; to you a mouthful of fresh air and a glimpse of rural scenes must be a treat indeed! Rise, then, gird on your mantle, and follow me, at least in imagination, and I will initiate you into some of the mysteries of the "gentle art," giving you such a taste of rural entertainment as shall render the country ever dear to your recollection; and the squalid haunts of vice, pestilence, and immorality forever hideous and detestable."

And now for a few words practically, and

conneted somewhat with natural history (a science co-relative with Horticulture, and doubtless of equal interest in a horticultural journal,—in which, indeed, a few columns devoted to it would be quite appropriate.) With regard to trout: they are found to differ considerably in proportion, color, and size, in different rivers and lakes, and even in different parts of the same river, according to the quality of the water, and the nature and abundance of their food. The average size of trout in most streams may be said to vary from eight or nine to sixteen inches in length, and from half a pound to two pounds in weight. A well-proportioned trout of a pound, or three quarters of a pound is a *good fish*; and there are many more below that weight than above it. An industrious angler in any of the rivers or brooks of our Pacific Slope may consider it quite an uncommon event, if he is fortunate enough to bag a common river or brook-trout of our species of *salmo fario*, of three or four pounds in weight. The largest trout, perhaps, on record, was one captured in England at Drayton manor, weighing 22½ lbs. It is now preserved in Professor Owens' collection.

[We would like to know where this man fishes, as from personal experience, and from not a few inspections of other takes, we are led to believe that six inches is nearer the average of trout taken on this Coast, the records and journals of the San Francisco Anglers' Club, notwithstanding.—Ed.]

The condition of a trout may be judged by the thickness of the shoulders; the depth of the belly, the general firmness of the flesh, the brilliance of his coloring (our brook-trout are not so rich in silver and gold colors and spots as the English or Eastern species of *salmo fario* or *fontalanis*, and are of a much more sober complexion), the vigor and determination with which he resists his capture, and the comparative smallness of his head to the bulk of the body.

The favorite haunts of large trout during the summer, are such places as an eddy behind a stone, or where two currents meet; the pool below a ledge of rock or gravel;

behind or underneath a large stone or log of wood; the hollow under a bank, especially if the current sets against it; beneath lumps of turf in the middle of the stream; roots of trees, under the shade of overhanging bushes, and in pools into which sharp streams and rapids fall. In small rivers they frequently ensconce themselves under sedges and weeds, especially in the beginning of the season, before they have fully recovered their strength, after spawning in November and December, and also during the heat of the day in summer or fall, when the waters are low.

But when in full vigor and on the feed, they will be mostly found in the swift streams, and often in the upper part of mill-races. In the glare and heat of the sun in summer the largest trouts lurk beneath hollow banks, roots, and bushes; scarcely ever coming out to feed until the shades of evening summon them to chase the small fish in the shallows, or gulp down any luckless moth that may inadvertently alight on the treacherous water. It is then that the ardent angler, adroitly manœvering his artificial bait in the rapids and shallows under the gathering mantle of night, may succeed in hooking his one, two, and three pounders, in places which in the day time would seem scarcely fit to float a small shiner; or the enthusiastic fly-fisher may ever and anon hear a sudden splash, and feel a sudden and determined pluck at his portly moth-flies, very unlike the tiny tug of the little skipjacks he is in the habit of pitching over his head during the day. At this time of the evening, or in the early morning, if he is not a disciple of the highest grade of the art, he may pitch a worm or a grass-hopper into the stream opposite, with as long a line as a powerful rod can guide: tug goes the line; birl goes the reel; and after a short but fierce struggle, a magnificent two-pounder [more frequently a lighter fish—Ed.] lies gasping on the rock or sand; but more of this anon. E. J. H.

SAN FRANCISCO, Dec. 31st, 1871.

Boston sends \$2,000,000 worth of Flowers to New York every year.

IRRIGATION.

[We copy the following excellent article from the *Alta* of the 23d of January. We believe the subject of Irrigation to be of equal importance with Forest Tree Culture.—Ed.]

The question of Irrigation is taking a great hold upon the public mind, if we may judge from the great interest which our remarks upon the enterprises now being prosecuted have awakened, and the numerous inquiries which have been addressed to us upon the subject, and many of which we reply to in this article. There is certainly no subject which has greater importance to the whole people of this coast than that of storing water for mining, water power, irrigation and transportation. Water is the essential element, without which mining and agriculture come to an end; and when, as in the past year, miners are thrown out of work and farmers ruined, causing a general stagnation of business and a fall in the value of property, a system which, by the application of capital, would guarantee a continual supply at small cost, is a desideratum so great, as to appeal at once to the practical understanding of every business man. The system now undertaken in this State is not an experiment. It is one which has been brought to perfection on the largest scale in India and in the hands of the same individuals who find here the natural advantages far greater than in India. We have a basin of 16,000 square miles or 10,400,000 acres, surrounded by an amphitheatre of mountains from whose sides descend innumerable streams, that supply an abundance of water if man will but take the trouble to store and distribute it. The storing is done by artificial lakes on the streams. These are no more a novelty than a mill-dam or road. In Southern India there are tens of thousands of them, constructed by dams of $\frac{1}{2}$ a mile to $1\frac{1}{2}$ miles in length. They are 20 feet deep and a width of 70 feet at the bottom. In that country, where the rainfall is light and evaporation rapid, 10,000 cubic yards of water must be stored to irrigate

25,600 superficial yards of wheat. The maximum quantity of water required for wheat, barley, corn, cotton and teas, is 1,500 cubic yards per acre; that is, 11½ inches of water distributed by three irrigations of 3¾ inches. But with a fair rainfall but 7,000 cubic feet per acre each watering, or a total for the crop of 21,000 cubic feet. The effect of the water has been established by experiment to be, that a field of wheat yielding 800 with one watering after sowing, will yield 1,300 with a second watering in thirty days after sowing, and will give 1,700 with a third watering when the seed is in the flower. The heavy adobe soil of California will need a watering before cultivation. These waterings on the foot-hills take place directly from the artificial lakes, which also supply miners and water power. The channels from the lakes should have a vent of 8.3 square feet to supply each 640 square acres of soil with water running at the rate of one mile per hour on each stream. These successive lakes connected by channels, supply water to the canals in the valleys. The leading canals so supplied in India, are as follows:

	Miles.	Dis. cub. ft. persec.	Cost.	Per Mile.
Ganges,	900	6,750	\$13,500,000	\$15,000
Baree Deab,.....	470	3,000	7,050,000	15,500
Eastern Gumna,..	134	1,250	871,000	6,500
Western Gumna, 450		2,500	1,350,000	3,000
Sutleg,.....	550	3,500	8,250,000	15,000
Loan,	826	3,124	7,434,000	9,000

The cost of the first and last of these includes the distributing canals, of which there are three miles to one of main canal. The average width 90 feet, depth 8@10 feet, grade 18 inches to 1½ inches per mile. The effects of these artificial lakes and canals are very important. Thus, the Ganges was partly completed in 1867, and the crops irrigated by it, where before there were none, was in that year \$7,500,000, of which wheat \$2,500,000, cotton sugar and indigo, \$3,000,000. These were entirely due to its influence. It produced, in the first year, a capital equal to half its cost. Who that has had experience in the last two or three years, in the San

Joaquin region, would not recognize the vast blessing of such a work in the region where the capabilities of the soil are vastly superior to those of India? The charges in India for the use of water are \$1½ per acre per annum; for watering cattle, \$3 per 100 head per annum; sheep and goats, \$1, per 100 head. Those farmers whose sheep have died by the thousand from drought may estimate this advantage. For filling reservoirs, \$1 per 8,000 cubic feet, in bulk, is charged. The greatest benefit the Government derives from the works is, however, their indirect influence upon the value of land, the activity of trade and the consequent appreciation of all properties, which therefore return more taxes at the same rate of levy. The annual cost of the canals is \$90 per cubic foot of discharge per second, which suffices for 220 acres of wheat; on this outlay the return is 1½ per cent per month. Another effect of the irrigation has been found to be, that in the alkaline plains, where no drinkable water was to be had, irrigation has corrected the character of the local water and made it drinkable.

This system, as we have said, is now being applied in the San Joaquin region. Forty miles of canal have been built, and Tulare Lake, which is 200 feet above the sea, and having a surface of 900 square miles, will receive an embankment of fifteen feet around its circumference, at a cost of \$2,000,000, which will reclaim 100,000 acres of first-class lands. The water of three feet of its surface will suffice for 1,500,000 acres. That land which produces nothing, without the water, produces two first-class crops of grain in the year, with water at \$1 25 per acre. It will give six or eight tons of alfalfa to the acre, with irrigation. If a man plants 1,000 acres with wheat and loses his labor and seed for want of rain, but can have 35,000 bushels certain, worth \$35,000, by paying \$1,250 for the water, there certainly seems to be a great advantage in the operation.

Fayal oranges sell in Boston now for half what apples of equal weight will bring.

OUR WINE-YIELD FOR 1871,
And Future Prospects.

It is not possible to form a correct idea of the total Wine-yield of California for the year 1871; it will probably be between five and six million gallons, all told.

The official statements for 1869 give a total of about two and a half million gallons.

Statistics, as far as ascertained for 1870, make the entire yield of that year from three and a half to four millions of gallons.

The principal wine-producing counties are Sonoma and Los Angeles, of which two, the former furnishes the finest wines, having paid more attention to the cultivation of better varieties of foreign grapes.

The work of planting vineyards is steadily progressing, and the yield must necessarily increase from year to year, unless the crops are injured by severe droughts, insects or sickness.

The demand for California wines is on the increase, and will mainly depend in the future on the quality of wine which we send away. We have not yet opened up all the natural channels for export, and if we can at this time dispose of five million gallons in the process of home consumption and export, it may reasonably be expected that in ten years from now, we will dispose of double that quantity to good advantage. It cannot, therefore, be advanced that the wine business is being overdone, but we maintain that the making of *poor wine* is overdone.

Viniculturists should be more particular in locating their vineyards; soil and aspect are two important desiderata for the grape vine, and more so where the making of wine is the principal object.

We should also satisfy ourselves as to the best varieties of wine, table or raisin grapes adapted to the location; the foreign varieties being now very generally substituted for the old Mission grape; but we as yet lack much information regarding the best varieties.

Land well adapted for grape culture can be bought at various prices, from three to twenty-five dollars per acre, and at the rates

which are at present paid for grapes, the yield per acre in the third year should not fall short of one hundred dollars; ten acres of grapes would, therefore, give a very respectable living to a family, one man being able to do the entire work with comfort.

The cost of bringing a vineyard under cultivation here is not as expensive as in the East or in Europe, as our climate and soil favor the cultivation. The plowing and planting per acre will not exceed fifteen dollars; one thousand grape vines of one year's growth will plant an acre, and may be purchased for twenty to twenty-five dollars. This would make the total expense for one acre from thirty five to forty dollars; however, ten acres may be planted for comparatively much less. Three hundred dollars, judiciously invested in a vineyard of ten acres, will, after the lapse of three years, make the owner independent, and the value of his land will increase from year to year. We hope to see the time when hundreds of industrious men will avail themselves of our favorable climate and soil, to establish for themselves small vineyards and farms, and thus constitute the most prosperous portion of our community.

NOTICE OF A FOSSIL FOREST

In the Tertiary of California.

Professor O. C. Marsh, of Yale College, examined a locality about five miles southwest of the Calistoga Hot Springs, in October, 1870, where a number of fossil trunks were found, showing that this Tertiary deposit contained the remains of an extensive forest, of very large trees, which had apparently been overthrown and entombed by some volcanic irruption. Several of the trunks found, had portions of their roots still attached.

The trees when closely examined appear to be all conifers, and resemble the modern redwoods. A microscopic examination of some of the best preserved specimens has demonstrated a great similarity to the *Sequoia sempervirens* (our ordinary redwood.)—ED.

Editorial Portfolio.

Very much has been said of late in relation to "Our Park that is to be," and some of our city papers have portrayed the affair so vividly, that many are under the impression, that the great Park of San Francisco, with its manifold attractions, will very shortly become the *Grand Center of Fashion* of this coast.

Some of our leading newspapers have seen fit to give the Park Commissioners much credit for marvellous deeds, which have, say they, been accomplished with so little money. We have no doubt that they believe all that they assert, but how far they have succeeded in convincing the general public, that the interests of our city have been properly subserved, we leave others to judge.

Unfortunately, a piece of land has been forced upon the good people of San Francisco as a park reservation, which nature had reserved undoubtedly for other purposes; the masses have not been consulted, and our authorities exhibit no particular desire to obtain a popular expression on this and similar projects. If the people had been permitted to exercise their prerogative, there would certainly be no park in the locality which is now known as the Park reservation under the ostentatious title of "Golden Gate Park."

It is evident somebody wanted a Park there, and the City owning the land, authority was obtained to expend a certain sum of money in the improvement of this desert.

Meanwhile some other one wanted a Park near the Presidio. The Supervisors requested our Representatives in Washington to use their influence to induce the Government authorities to donate a portion of the Presidio reservation to the City of San Francisco for park purposes; and this latter application will, most probably, be considered during the present session of Congress.

In the meantime some one else is anxious to have the Park located in the southern portion of the city, although no steps of any

magnitude have at present been taken to carry out this latter scheme.

Each of these three schemes is entitled to due consideration, and the best, most convenient and most practicable site should be selected for the Park. Of the three localities, the present one is certainly the most ineligible in every particular. Nature has positively contributed nothing that can be made available towards utilizing this God-forsaken country designated "The Golden Gate Park." Either the Presidio or South San Francisco are far better adapted for such an improvement, than the Ocean site.

Sundry important considerations should be kept in view in selecting a site for a park, as—the convenience of visitors, good soil, and attractive natural features, which should be rendered still more effective by the application of skill and taste.

In the matter of convenience, it will be at once admitted, that the present reservation has none to offer. The nearest road is by way of Hayes Valley proper, and crosses the unsightly mountains at the back of the valley; this will be but little frequented for the next twenty years. The fact is, this Park location is out of the way, and not within range of those rapid improvements which are manifesting themselves in every other direction. It will be many years hence ere street railroads will be established in that line. Nevertheless, the City owns the land, and should make the most she can of it.

Our Park Commissioners have sold \$75,000 worth of bonds: of this about \$40,000 have been expended for salaries, surveying, grading and other preliminary work; while the insignificant amount of \$2,000 has been devoted to the raising of trees. This action, on the part of the Commissioners was, to say the least of it, impolitic, unreasonable and thoughtless—inasmuch as no Park can be anywhere established without a sufficient growth of trees being first secured. What we require for a Park are, trees, shelter, and some kind of vegetation to cover a barren and unsightly surface. It is sheer nonsense to tell us that drives have been constructed which will soon

be thrown open to the public, because to the pleasure-seeking public the approach is so inconvenient that it may be said to be virtually inaccessible—and if reached, it possesses no attractions, nothing to induce a second visit, and a drive in that direction must result in disappointment and disgust to any one seeking Park scenery. And we stoutly maintain, that no Park can ever be inaugurated on that site that will be worth seeing or having, without establishing in the first place a good and sufficient growth of trees and shrubs. There was really no necessity for grading, and the entire money should have been expended in covering the reservation with vegetation and such trees and shrubs as are adapted to the locality.

The Commissioners tell us, that if they are placed in the position to sell another \$150,000 worth of bonds, they will make an effort to reclaim the sandhills, which they think can be done. We wish to know why they did not experiment with the reclamation in the first place, to test whether it was practicable, and before some \$40,000 were expended in such work, as will prove to be a total loss, if the reservation is found to be impracticable for a Park? The Park Commissioners ought, and must have known that efforts were being made to secure another site, and they should have exercised more prudence in their expenditures.

The days are approaching when strong efforts will be made to reclaim all of the lower sandhills surrounding San Francisco, and to establish belts of timber-trees for the better protection of the city. We fully expected that our Park Commissioners would have made many and persevering experiments in this direction, in order to test its practicability; and had they proved successful, others would have followed, and not only the Park reservation would have been reclaimed in the course of a few years, but also the owners of adjoining lands would have been encouraged to commence the work of reclaiming and embellishing their now useless grounds.

Had the money been expended thus, the

benefits which would have accrued in a few years would have fully compensated for the outlay; and if the people of San Francisco saw fit to have their Park elsewhere, the growth of trees and shrubs would have so enhanced the value of the land that the investment would have been considered a fortunate one.

We advise the Park Commissioners to stop grading, and secure in the first place a growth of trees and shrubs, which are the only proper basis for a Park, and without which the avenues so far laid out are only a fruitless expense, and nothing else.

The approach avenue has been graded at considerable outlay, in order, we suppose, to reach the intended main entrance to the Park; but there was no necessity, nor even excuse, for this. This approach is an unnatural one, and the old Ocean House road would have answered all purposes for years to come, and would have been a more popular way by which to reach the Park grounds.

Arrest the drifting of sands, by covering the surface with some kind of vegetation; plant trees and seeds by the million, endeavor to keep them alive for five years to come; and then prepare to lay out drives and walks for the use of visitors.

Who ever would think of planting and beautifying an approach avenue, while the grounds proper remain a barren and unsightly desert, destitute of every attraction?

FOREST-TREE CULTURE.

We have for the last year and a quarter been earnestly and continually urging on our readers and the public in general the grave importance of *forest tree culture*. We append sundry slips from various periodicals, attesting that ours is not a solitary, idle mania, but a note of warning, which is now echoing and re-echoing from widely-distant points, and will soon be reverberating in thunder notes throughout the length and breadth of the land, awaking many a dull, sordid, idle and dishonest Legislature to a sense of its duty,

and compelling many an unworthy Representative to stop thieving, and attend to the interests of his constituents.

Frank Leslie on Forest Culture :

In California the people are asking for an officer who is much needed, but whose very name will probably sound strangely to most of our readers, to wit., *Forester*—in other words, his office would not only be to protect existing forests, but to see to their growth in districts that cannot be profitably devoted to grazing or agricultural purposes. We commend the proposition. The destruction of our forests is rapidly converting vast areas of territory into deserts, and preparing the way for destructive freshets at one time and devastating fires at another, drying up our mill-power and destroying our "finny tribes," from which of yore we gained great pleasure and some profit. "Woodman, spare that tree!" should be the inscription on the Forester's badge. We have preached to that text for years, and shall not faint from iteration. To spare is good, but to create is better, and we cannot too strongly recommend to the prairie States and those of the plains, as a guide for legislation, the following Act of the Kansas Legislature :

"An Act to Encourage the Growth of Forest-Trees :

SEC. 3. Every person planting one acre or more of prairie land, within ten years after the passage of this act, with any kind of forest-trees, and successfully growing and cultivating the same for three years, or one half mile or more of forest-trees, along any public highway, said trees to be so planted as to stand at the end of said three years not more than one yard apart, shall be entitled to receive for twenty one years, commencing three years after said grove or line of trees has been planted, an annual bounty of two dollars per acre for each acre so planted, to be paid out of the treasury of the county in which said grove or line of trees may be situated. The bounty to be paid so long as said grove or line of trees are cultivated and kept alive, and kept in growing condition.

That the County Assessor shall not assess lands planted and encumbered with forest-trees any higher than the lands adjoining, on account of the said lands being so encumbered."

The California Farmer on Tree-planting :

"TREES PRODUCE MOISTURE.—Of this truth, well established, there can be no doubt, and in a country like ours, one so long exposed to a dry and hot atmosphere, this subject should excite a general discussion of the subject so as to produce and bring about a system of forest-tree planting that would soon prove that trees produce moisture. Our own observation and experience has long since convinced us that the leveling and burning away our forests and clearing up land has ever tended to the dryness of the surrounding climate, and any careful observer can satisfy himself of this by traveling on a hot day through a district where there are good orchards and vineyards and noting the atmosphere that surrounds them, and then pass into an open and barren plain next to them and note the difference—this will convince any one of the value of trees. We are truly glad to know that our Senator, Hon. R. Betge, has introduced a bill to encourage Forest Culture, and bring it under the patronage of the State. With such patronage and fostering care, great good can be accomplished for our State and Coast. It may take years to perfect this plan, but devotion to this subject for simply *five years* would change the whole current of feeling and action, and work a revolution over the entire Coast."

The Northern Illinois *Horticultural Society*, on the subject of Forest-Tree Culture, says :

"We further recommend, pursuant to and in accordance with our former acts, and with other horticultural bodies, we again ask both National and State patronage to enable us to carry forward this enterprise by enlisting the whole country in the work (of forest-tree planting), and by such other means as the wisdom of this honorable body may deem expedient.

Your committee unite with all the friends of Horticulture, and especially those who are

interested in forest planting, in hearty congratulations for the deep and increasing interest manifestly felt on this subject, not only by horticultural bodies, but throughout the country."

TREES AND CLIMATE.

In a recent lecture before the Wisconsin State Horticultural Society, Mr. Richardson concludes his very interesting remarks by saying :

"This uncovering the face of the earth renders rain less frequent, and when it does come, it is in the shape of a deluge, and produces, alternately, the opposite extremes of burning droughts and destructive inundations. The evidences of changing climate are becoming more apparent as the destruction of the forests proceed. In the Old World, the latter results have followed the disappearance of the trees; regions that previously were of the most fertile character, have become entirely divested of herbage, and are now barren deserts. A similar fate in the United States can only be avoided by restoring, in a measure, to the destitute parts of the country a portion of its forests, which are equalizers of our climate; trees we must have."

NUT TREES.

Nut-bearing trees are profitable. The price of edible Nuts is steadily increasing. In the East, native chestnuts are worth from \$10 to \$12 a bushel; hickory nuts, \$4; and Spanish chestnuts, \$15 to \$18. The lumber from these trees is worth from 10 to 20 cents a foot, board measure. We can grow nut trees faster here in California than they can in the East. The cultivation of nut-bearing trees should receive immediate attention.

The Sacramento Farmers' Club is in favor of tree-planting. At a late meeting of this Club, composed of intelligent and wide-awake farmers, a committee of five was elected by ballot to draw up a bill for the encouragement of forest culture, and to present the same to the Legislature, urging its early passage.

TREE PLANTING IN IOWA.

In Iowa the planting of trees is encouraged by law. Every acre of forest trees planted

releases taxation for ten years on one hundred dollars' valuation, and for each acre of fruit trees planted, the tax is remitted on fifty dollars' valuation for five years; and the same for shade trees and hedges along the highways. There are now maple forests in several counties from which sugar is made, where fifteen years since there was nothing but prairie grass and hazel shrubs.—*Ruralist*.

WORK FOR FEBRUARY.

Much of the work which should have been effected during January, has been delayed in consequence of the unfavorable weather which continued up to the middle of the month. The storms during the latter part of December and the earlier part of January, were heavier than we usually experience, and the damage inflicted on our farms and gardens was considerable, particularly on low lands; however, the plentiful rains more than compensate for the injuries and losses sustained. Some labor has been required to repair these damages, but the regular work of plowing, sowing and planting was speedily resumed, and every one, stimulated by brighter prospects, seems to be busy in our fields and gardens, taking advantage of this favorable season. The demand for labor has increased, and there are very few who cannot find work at fair wages.

The pruning of fruit trees and grape vines should no longer be delayed, except in the extreme northern portions of the State.

The season for planting is rapidly drawing to a close, and no effort should be spared to hurry up the work.

Our nurserymen have been complaining of dull times; orders for young trees, etc., are coming in slowly. This could not be expected to be otherwise, on account of the inclemency of the weather. We have every reason to speak encouragingly of their prospects; many important private as well as public improvements are contemplated, which will take up a great deal of the stock on hand.

Seeds which have been planted in the vegetable garden have suffered severely during the heavy storms, and we advise replanting immediately. Lettuce, radishes, peas, spinach, carrots, turnips, beets, parsley and onions are likely to do well, if sown now. Tomatoes, cucumbers, cabbage, and cauliflower will be better if raised in frames under glass cover, until they are large enough to transplant. Such of the latter as have been planted during last month, should receive frequent airing in order to harden them for the open air. Frames, during pleasant weather, should be aired at least six hours per day, when we are satisfied that our nights are not cold enough to injure them. By neglecting to open the frames frequently, the young plants become weak and cannot bear the change to the open air.

Celery is a hardy vegetable, but the young plants should be grown under glass, as the seed is fine and easily lost in the open ground; it is also of much importance to force the young plants so as to advance their growth before planting in the open air.

Onions may be sown now in light soil.

In the ornamental grounds many trees, particularly evergreens, have been lost during the heavy storms; this exemplifies the necessity of staking all trees after planting and of balancing them well by proper pruning, so often pointed out. Other causes for this destruction of old and established trees by our heavy gales, are the habit of shallow planting, and the neglect to cultivate and to prepare the soils deeply enough. The consequence is, that the roots cannot penetrate to any great depth, and cannot properly anchor the tree against the force of heavy winds.

In regard to a proper soil for vegetable and flower gardens, we would recommend one third clay, one third sand, and one third manure. In many localities these proportions of sand and clay forming a good loam are original; such soils will, with the addition of a little manure, produce all kinds of vegetables and flowers. But there are heavy clay soils which must be made lighter by adding

sand, or else the soil becomes hard and unmanageable; and there are sandy soils to which clay must be added in order to give it the body necessary for a healthy growth and development of fruits and flowers.

The same varieties of vegetables should not be grown on the same ground in consecutive seasons; rotation of crops has been proved to be indispensable.

In the selection of seeds, the best should always be obtained as far as we are qualified to judge, and we should not be influenced by cheapness.

It is rather early to plant annuals, yet if the weather continues fair, such as pansies, mignonette, sweet alyssum, candytuft, larkspur, sweet peas, etc., may be sown with good success.

Hardy flowering bulbs, such as tulips, hyacinths, crocus, narcissus, paeonies, gladiolus, anemones, ranunculus, etc., should be planted at once.

In the greenhouse and conservatory much care is yet necessary in the operation of watering, which should be performed sparingly. Plants must of course be kept alive, but that is about all; the time will soon come when the increased temperature of the Spring season will develop a new growth and an abundance of flowers. Wherever artificial heat is applied, the treatment of plants must necessarily differ, but even in the latter case we must be cautious in watering.

We have found from experience, that plants keep much better during wet and cold winters in small pots, than in larger ones; and particularly is this the case with Begonias, and other soft-wooded plants. This in a great measure is due to the fact, that plants in small pots, after having exhausted the soil, will remain in a somewhat dormant condition — they rest, in fact, hibernate — and plants in such condition are hardier than those which are kept in a growing state by giving additional soil; we must also take into consideration that small pots hold less moisture and are, as a matter of course, better drained, and the soil in them is therefore kept in better condition. Some plants must be shifted into

larger pots one month before they are expected to go into market, while others should be shifted at least two months before, in order to produce fresh foliage and an abundance of new flowers.

REPORT ON THE FRUIT MARKET.

It frequently occurs to people who are curious, or who wish to obtain information, about the names of particular fruits, when they query a retail dealer and taking up a Jargonelle for instance, they ask him whether that is the name of the fruit, that they receive as answer, "No, it is 5 cents." This to an intending purchaser is in one point of view rather an unsatisfactory answer, yet it is not to be expected, it is true, that all fruit hucksters, especially foreigners who know but little of our language, should be learned in Pomology. But if they could be made to perceive that it would be a benefit to them to learn the exact name of every fruit they sell, I think they would very readily get posted sufficiently to make an accurate distinction between one kind of fruit and another, and it would be profitable to them to do so, did consumers but know more of the relative qualities of the fruits which are offered them in the markets, and were they able to associate desirable qualities with these names.

It would really be a good thing if it were to become the custom for producers to label the fruits they dispose of by their right names, and for the retail dealers to sell each by its proper name.

I have often heard cultivators of fruit declare that the majority of persons do not know the difference between one variety of fruit and another of the same family, and that they do not buy a fruit on account of its quality, but are governed in their choice more by its size and color. It is often asserted, even by members of Horticultural Societies, that our cities preferred beauty and size to quality. I can hardly believe that the tastes, even of the masses of our people, can be so crude, though it is possible that, if the investigation

could be made, these assertions might prove to be correct.

I was walking one day along the street of a certain city with a friend, and observed some Seckel Pears on one of the stands. I said, "Here are about the highest flavored Pears in the whole list, let us have some." "Oh, you would not surely buy those little rusty things; stop till we can find some large, handsome, luscious looking Pears that are worth eating," said my companion. I, however, persisted in purchasing, and insisted that my friend should taste the "little rusty things;" and having once tested their delicious flavor, he required no second invitation to taste. The little Seckel made its way to a high place in his estimation, the moment it had the chance of tickling his palate. He has often told me since, that he seldom passes a Seckel without purchasing, when he is in the humor for fruit, and now never sees one without knowing it immediately.

I have also observed that "king of all Plums," for richness, exquisite flavor, sweetness and juiciness—"The genuine Green Gage,"—passed over by purchasers, and some larger and finer complexioned and more showy plum chosen in its stead. The small highly flavored Golden Russet, too, is often slighted in the same way, as are also some other delicious but unpretending pomological productions.

If producers would only educate the public by having their fruits labeled, (at present this is practiced by only a very few), and if the hucksters would carefully follow the same plan, they would in a little time secure a market for the choicest fruits at prices which would render their culture profitable, even though they may be grown with greater difficulty than the more showy varieties, though I do not know that such is the case in our favorable climate and soil. A little effort on the part of producers, and co-operation on the part of dealers, would materially elevate the standard of taste in regard to fruit as well as establish the character and quality of the fruits cultivated. This effort should be made. Nothing will so quickly secure this result as

the proper labeling of fruits exposed for sale, and let the price correspond to the quality of the fruit. In the case of grapes for the table, we find that this matter of price is far more consistent with the respective merits of the varieties.

People like to know what they are eating, especially if it gratifies the palate, and more especially when they may hereafter have an opportunity of cultivating it for themselves. They remember the delightful sensation it yields, and always associate it with the name, and they like to deal with those men who educate their tastes and enable them to make a judicious selection and choice.

I urge, therefore, that the producer should plainly label the fruit he sends to market, and that the dealer should sell it by its legitimate name, so that the consumer may be able to distinguish one 5 cent pear from another, and judge of its desirability by some other characteristics than its mere size, color and price. Even Germans, Italians and others who are imperfectly acquainted with the English tongue, might easily copy the names.

At this season there is little of additional interest in our fruit and vegetable markets, and not much variety from last month. The exhibition on the stalls is being more and more restricted in varieties, some of them being entirely withdrawn, especially among the fruits. The latest supplies of oranges from Los Angeles are much better in quality if not in size, than the first. The greatest show is with the Apples and Nuts; as the season advances Apples become less juicy and inviting to the taste, though they have the market pretty much to themselves. Pears are getting scarce. The fine Winter Nelis still maintains its superiority. The good Easter Buerré is beginning to come in.

Mushrooms are plentiful, with Brussels sprouts and Oyster plants. New Potatoes are from 8 to 10 cents per lb. California dried fruits were never better nor more reasonable in price.

E. J. H.

Put not off till to morrow that which should be done to day—plough deep.

FOREST AND TIMBER TREE CULTURE,

ONCE MORE.

We have devoted a great deal of space in the *Horticulturist* of late to the subject of Forest and Timber-tree Culture, with the hope of having the matter thoroughly discussed, thereby enabling the members of our present Legislature to take the matter in hand properly, by collecting and condensing data and arguments on this most important subject, so that they may frame some law which will meet all the requirements.

The merits of forest and timber trees have been discussed fairly and sensibly by our agricultural papers. The *California Farmer*, of the 18th of January, has argued the matter ably; and the *Rural Press* has made many valuable suggestions in one of its late numbers, which we to a great extent endorse.

We do not propose to say anything now in relation to the evils attendant on forest destruction, nor upon the favorable influences of trees; these facts are pretty well impressed on the minds of our intelligent farmers. But we wish to devote some little space to the practicability of the proposed or a similar measure to that which now lies before our Legislature for consideration.

As we hoped and expected, there is every prospect that the bill proposed by Senator Betge will undergo some very important changes, and we understand that it is proposed to form a Forest Board, similar to the plan suggested by the *Rural Press* and the Delegation of the Horticultural Society. As suitable Commissioners for such a Board, the *Rural Press* suggests the Governor of the State, the President of the State Agricultural Society, John Bidwell, of Butte County, and E. D. Lewelling, of Alameda County—all capital men; but if permitted, we would propose one or two more: Professor Bolander, President of the Horticultural Society, who is thoroughly posted on the nature and usefulness of our California trees, and who would do all in his power to promote the object, being much in favor of tree culture; and we would also add Leland Sanford, who, as we

understand, is very much in favor of tree culture, and may do much good in facilitating the transportation of trees from one place to another, understanding and fully appreciating the desirability and the benefits to be derived from forest and timber-tree culture.

Now, if the Legislature will give us a Forest Commission composed of these men, or any desirable number of them, we entertain no doubt that the people will feel assured, as far as the expenditure of money is concerned in connection with this measure.

We understand that the amount of money proposed to be appropriated in the original bill, will be considerably reduced; and we are in favor of this action, as the enterprise will have to be considered as an experiment, until we have seen some of its practical results. But we think the State can well afford to devote the sum of \$7,000 or \$8,000 per annum to this experiment, as it must necessarily result in some good.

Should the proposed bill become law, much of the success of tree culture will depend upon the judicious appointment of the man who will be entrusted with the carrying out of the provisions of it. Our personal acquaintance with many horticultural men, enables us to state, that there are men among us who are well qualified for the position, and we have the utmost confidence that such men as we have named above, will select the very best man for the office.

The aforesaid bill proposes that the seeds of different trees should be distributed, accompanied by circulars instructing in the proper mode of treatment, etc. If, however, this was left to the discretion of the Forest Board, a large number of young seedlings, of from three to six inches, could be obtained within one year for general distribution; but we would urge the raising of these seedlings from seeds collected or otherwise obtained, and we object very much to the gathering young trees from the forests, which would require much more care, and more especially as we know from experience, that from one half to three fourths of them would perish. There are some which may be readily trans-

planted from the forests, such as the *Libocedrus decurrens*, but most of the Coniferae tribes do better if transplanted in nursery rows, for reasons which we cannot explain here. As to the cost of furnishing such young seedlings, we beg to differ from the statements of Mr. Williamson and of Mr. Aiken, as reported by the *Rural Press*. According to these statements, Mr. Williamson will contract to furnish young Sugar Pines and Redwoods at \$2 per 1,000, and Mr. Aiken says that the evergreens of the different valuable kinds grown in the East may be had at the same price of nurserymen there, by mail and postage paid. Now, as for the Sugar Pines, there are no trees one year old, because the old trees did not produce any seed last year, and very few the year before, it is a very difficult matter to obtain Sugar Pine seedlings now. We have a customer for Mr. Williamson who will take all the Sugar Pines of one, two and three years old he can furnish, at the price named by him, and we will guarantee him one hundred per cent. in addition. As for the statement of Mr. Aiken, we will say, that we are in receipt of the wholesale Price Lists of the most, if not of all, responsible nurserymen in the East, and we have never met with anything in the shape of Evergreen seedlings which could be bought for less than the following:

Norway Spruce.....	\$ 6 per 1,000
Scotch Pine.....	10 " "
Austrian Pine.....	10 " "

However, we venture to say, that a competent man may, with an appropriation of \$8,000 from the State, be able to furnish one million of seedlings within one year for general distribution, and the collection would probably contain fifteen to twenty varieties of trees.

We advocate distributing seedling trees, as well as the seed itself, and we like the idea of establishing an experimental ground for that purpose; but it must be left to the discretion of the Forest Board. The objection raised to distributing seeds, upon the ground that very few understand the management

of them, is not a valid one. The process is easy, and the proper instructions may be given without difficulty. Many varieties of trees do much better if they are allowed to remain where the seeds were planted, and, with the aid of a little mulching, they will soon establish themselves.

We are of opinion, that if the work of forest and timber-tree culture is encouraged by the State, through some such act as the one proposed, we may, in the course of a few years, have on this Coast an establishment similar to that of the Botanical Gardens at Melbourne, which furnish annually thousands of trees of all descriptions, and thousands of pounds of seeds—an institution of which we might well be proud. All that we require is proper and good management.

WOODWARD'S GARDENS.

Considerable alterations and improvements have been made in the arrangements at these Gardens since our last visit; a Pool and Rockery have been constructed for the exhibition of Seals, of which there are several interesting specimens; a house for the protection of gallinaceous birds is in progress, to which one of the latest and most successful incubating inventions will be added; Considerable additions are also being made to the Greenhouse, which will be fitted up with rock-work and a Fernery, and will also afford accommodation and shelter to sundry smaller tropical animals.

We noted considerable additions to the collection of Orchidaceous plants, also the Coral plant, from the Sandwich Islands.

A fine specimen of *Strelitzia Regina*, familiarly known as the Bird plant or Queen plant, is about to bloom. Many varieties of Tropical Seeds have been received, which are in course of cultivation.

We understand that the public-spirited proprietor of these Gardens, Mr. Woodward, (under the superintendence of Mr. Schuman, who, we are pleased to say, has returned from Europe, and has furnished himself with all

needful data), is about constructing one of those highly instructive and exceedingly interesting adaptations of the present day—"a Marine Aquarium," after the latest and most approved style adopted in various European capitals. Only those who have had the opportunity of contemplating the curiosities of one of these superb collections, can form any idea of the pleasing novelty and fascinating wonders of such a scene. Everything is new and strange, and the beholder can scarcely divest himself of the idea, that he is in a rocky cave at the bottom of the ocean, looking out through crevices in the rocks upon deep-sea scenery, teeming with strange life. Fish, to him previously unknown, disporting among coral rocks, adorned with marine plants of curious growth. Algæ, Rhodospereæ, Fuci, etc., Polyps, Zoophytes, of curious forms; Actiniæ, Asteroids, Echini, Annelidæ; innumerable varieties of strange insect life; Molluscs, of various kinds, traversing the sandy and rocky bottom, Crustacea, etc., etc. The Sea Anemones are particularly interesting as specimens of animal flowers. We shall watch the progress of this work with intense interest.

SAN FRANCISCO'S PARK.

We have given our views somewhat in detail, on this Park matter, in another column of this number. We have expressed our disapprobation of the course which has been pursued by our Park Commissioners, and we shall now call the attention of the public, and those who have something to say and pay in the matter, to the fact, that the work, which in our estimation should never have been undertaken, has at least been done unsatisfactorily. We refer particularly to the Avenue, which is certainly graded imperfectly, some portions being too low; and we understand that this error is admitted by some of the Commissioners themselves, yet kept from the public. We do not wish this statement to be taken as incontrovertible evidence, but we desire very much that this matter should

be inquired into without any delay. We object very much, and we believe that the entire community of San Francisco will agree with us in this, that large sums of money should be expended for that grading which is not necessary; and we object still more to it, as we shall undoubtedly be compelled to do it over again. Improper and injudicious grading has cost San Francisco so much already, that the very word is disgusting: this City, we are persuaded, will not permit that these same errors shall be committed in a Park where the effect of a spoiled job will be so palpable and so seriously felt.

A committee of competent men should be at once appointed to investigate the matter, and if our assertions are found to be based on positive facts, the work should be stopped until more competent men can be appointed to take charge of our Park grounds.

We do not know who is at fault in this blundering, and what is more we don't care; but some one is responsible, or at least ought to be.

We are convinced that men may be found in this community of acknowledged taste and good judgment, who would be willing to serve as Park Commissioners, although no provision is made for paying them. We do not doubt the sincerity, integrity and good will of our Park Commissioners, but we have surely reason to doubt their peculiar qualification, so essential for the establishing a Park under the existing local difficulties and subject to a restricted appropriation.

MEETING OF THE AGRICULTURAL BOARD OF DIRECTORS.

SACRAMENTO, Jan. 24th, 1872.

The Board met at the call of the President.

Present: Directors Lewis, Hamilton, Mills, Carey, Covey, Younger, Wheeler & Coleman.

On motion, Col. Younger and Secretaries Hoag and Beck were appointed to meet the delegates from the other Agricultural Societies at the Pavilion, at 7 o'clock this evening.

On motion, President Reed, Col. Lewis and Carey were appointed a committee to secure

the necessary appropriation from the Legislature.

Col. Younger was voted \$150 toward defraying his traveling expenses in furthering the interests of the Society.

Ben. E. Harris and his horse Regulator were suspended [by the neck?—ED.] for non-payment of entry money.

The President appointed, as a committee to revise the Premium List, Col. Younger and Carey, to which was added the President.

President Reed, Covey, Mills and Hamilton, were appointed a committee on the Speed Programme.

On motion, a vote of thanks was passed to President Reed for his very efficient services during the past year.

The Secretary was instructed to deliver the Gold Medal in the Second Department, as awarded by the Committee.

On motion, the Board proceeded to the election of Treasurer, and R. T. Brown was unanimously elected.

Robert Beck was elected Secretary unanimously.

I. N. Hoag was elected Corresponding Secretary unanimously.

Senator C. Cole and A. A. Sargent were elected Delegates to represent the State Society in the National Convention.

The following preamble and resolution were then offered, and adopted:

WHEREAS, the rapid strides being made by the Empire of Japan in civilization arrests our attention and challenges the admiration of the world; and, whereas, there are representatives of that Empire now in our State engaged in studying Agriculture and Stock-raising; therefore, be it

Resolved, That the State Agricultural Society of the State of California, appreciating as well the advantages to grow out of more intimate commercial relations with the Japanese Empire as the duty we, as Americans, owe to a great and progressive people, struggling with a will and emulation never before known for a high civilization, offer our services to them in every way that will be conducive to their interests.

MEETING OF DELEGATES

Of the State and District Agricultural and Horticultural Societies of California.

The Delegates of the Agricultural and Horticultural Societies of California met in Sacramento, on the 24th day of January, for the purpose of a more thorough organization throughout the State.

The Bay District Society was represented by H. R. Covey; the Bay District Horticultural Society by F. A. Miller; the Santa Clara Valley Agricultural Society by J. P. Sargent, F. C. Frank, W. C. Wilson and Senator Maclay; Sonoma and Marin District Society by L. Ellsworth, F. W. Lougee, H. L. Weston and E. N. Hinchman; San Joaquin Valley Agricultural Society by J. K. Doak, George West, T. K. Hook and Senator Evans; the Upper Sacramento Agricultural Society by Senator Perkins, E. Hallett and Assemblyman W. N. De Haven; the State Society by C. Younger, Robert Beck and I. N. Hoag.

J. K. Doak was elected Chairman and I. N. Hoag Secretary.

The general subject of the advantages of organizing Agricultural Societies in all the different localities in the State was discussed.

The conclusion of such discussion was an agreement to work in conjunction to secure a proper appropriation to the State Society and to each Society now organized in the State, and the following gentlemen were appointed a committee to draft a bill for that purpose: State Society, C. F. Reed and E. Mills; from the District Societies, John Boggs, F. A. Miller, W. C. Wilson, F. W. Lougee, J. K. Doak, E. Hallett, T. B. Mott and C. Kent.

The committee appointed met at the room of the State Society, at 9 o'clock on the following day, and agreed upon a bill calling for an appropriation by the State to each of the Societies organized and represented, which will be submitted to the Legislature in proper form.

There was a general desire for a more thorough organization, but no steps were taken to inaugurate it, as it was deemed best

to call a convention at some future time for that purpose.

The Committee submitted their Report to a meeting of the delegates, held at noon of the same day. The Report was unanimously accepted, and the Committee then adjourned.

 GOV. HAIGHT ON AGRICULTURAL TOPICS.

I have heretofore recommended legislation to prevent the snaring and killing of small birds and singing birds, as a measure of great importance to agriculture. In other countries these birds, which are so useful to the farmer in the destruction of insects, are propagated at great expense, while here we permit their indiscriminate slaughter.

The repeal of the system of "lawful fences," and the enactment of laws making owners of stock responsible for trespass by it, will doubtless engage your attention. It is manifestly unjust to compel each farmer who purchases or takes up a quarter section to expend more than the price of his land to protect himself against his neighbor's cattle. Every man ought, in justice, to be required to take care of his own stock, or suffer the consequences. The present fence system has been an incubus upon agriculture, which is becoming every year more intolerable. Upon agriculture, which is the basis of our prosperity, is placed the burden not merely of the cost of fences at first, but of their renewal and repair from year to year. Public sentiment demands a reform of this injustice, and I doubt not its demand will be heeded by your Honorable bodies.

 NEW AND RARE FRUITS.

St. Crispin Pear.—This is a variety of Pear recently introduced, of size like unto the Bartlett, of better quality, and ripening just after the Bartlett and continuing a month or more, thus filling a want of the people for a continuance of the Bartlett. He who plants of it, will win pecuniarily.—*Exchange.*

Lanier Apple.—This new seedling apple was exhibited at the Cotton States Fair, in

1870, and again in 1871, and attracted much attention. Its principal merits are, large size, fine appearance and good bearing qualities, as we were assured by the originator, Mr. Thomas B. Shaw, of Edgefield, S. C. The tree is some fifteen years old; very vigorous grower and of good habit; fruit large to very large, oblate and always regular; skin yellow, thickly streaked with carmine and with a purplish carmine cheek, a few green blotches near the base; calyx small, open, in a shallow and regular basin; stalk short, slender, set in a deep cavity; flesh crisp, brittle, sugary, rather coarse-grained; quality, good; maturity, end of October to end of November.—*Farmer and Gardener.*

The *Narragansett Raspberry*.—A seedling from the Brinckle's Orange, and is six years old from the seed, having been in bearing four years. It bears luxuriantly, the berries averaging much larger than any other variety. The fruit is cone-shaped, of excellent flavor, the color bright crimson, bearing carriage better than any of the favorite market sorts. It belongs to the ever-bearing family, producing fruit on the new canes which come up in the spring, thus carrying the crop along until the last of October, or until the frost kills the foliage and green fruit. This variety first appeared in the garden of Mr. John F. Jolls, of Providence.

New England Homestead.

OUR EXCHANGE TABLE.

If one tenth of the interest was taken in reading Horticultural and Agricultural papers and magazines, that is taken in the perusal of political newspapers and romances, the country would be in a more thriving condition. The information gained from the reading of a few Horticultural and Agricultural papers, would undoubtedly repay the small cost of subscription.

We call the attention of our readers, and the public in general, to the following periodicals, which are worthy of extensive patronage:

The *California Farmer*, now in its seventeenth year of existence; is published by

Warren & Co., San Francisco. Subscription \$4 per annum.

The *Pacific Rural Press*, in its second year of general usefulness; published by Dewey & Co., San Francisco. Price \$4 per annum.

The *California Agriculturist*, monthly; published by Holloway & Herring, San José, Cal. Price \$1 per annum.

The *Gardeners' Monthly*, devoted to Horticulture and Floriculture in particular, now in its fourteenth year; edited by Thomas Meehan and published by Brinkloe & Marot, Philadelphia, Pa. Price \$2 per annum.

The *Horticulturist*, a journal of Rural Life, Literature, Art and Taste, established in 1846; published monthly by Henry T. Williams, New York. Price \$2.50 per annum.

Tilton's Journal of Horticulture and Floral Magazine; published monthly, by J. E. Tilton & Co., Boston, Mass., is in its ninth year. Price \$1.50 per annum.

Moore's Rural New Yorker, a weekly, finely illustrated; published by D. D. J. Moore. New York City. Price \$2.50 per annum.

American Agriculturist, a monthly, handsomely illustrated; published by Orange Judd & Co., New York. Price only \$1.50 per year.

The *Rural Carolinian*, a monthly, of 56 pp. of reading matter; published by Walker, Evans & Cogswell, Charleston, S. C. Price \$2 per annum.

The *Western Pomologist and Gardener*, devoted to Pomology, Horticulture, etc.; published by Mark Miller, Des Moines, Iowa. Price \$1.50 per year.

Journal of the Farm, a Rural and Family monthly; published by Baugh & Sons, Philadelphia, Pa. Illustrated. Price \$1 per annum.

The *Willamette Farmer*, a weekly of general interest; published by A. L. Stinson, Salem, Oregon. Price \$2.50 per annum.

The *Ruralist and Ohio Valley Cultivator*, monthly, published at Cincinnati Ohio. Price \$1 per year.

The *Journal of the Agricultural Society*, of New South Wales, is furnished free to all the members of the Society.

If any of our readers or their friends wish to subscribe for any of the above publications, it can be done through the office of the CALIFORNIA HORTICULTURIST.

LITERARY NOTICES.

Publications just received.

Forest Trees, for Shelter, Ornament and Profit; a Practical Manual for their Culture and Propagation. By Arthur Bryant. *Henry T. Williams*, Publisher, New York City.

This is one of the most useful little volumes of practical information on the subject of Forest Tree Culture which we have seen. The author very appropriately descants on the evils attending the destruction of our forests, the favorable influences of trees upon moisture, rainfall and climate, and also on the practicability and value of timber plantations.

Over 200 varieties of trees are described, and the proper mode of propagation and cultivation given in a very intelligible style.

We recommend this publication to all interested in tree culture. Price \$1.50. The book may be obtained through our office.

The West.—We have received the first number of this monthly, which is devoted to the general interests of this Coast. It is replete with valuable and interesting information and we wish it every success. The price is \$1 per year. Published by the Dial Publishing Co., San Francisco.

The *Monthly Report* of the Department of Agriculture, for November and December, is on hand as interesting as ever. Thanks to Hon. Fred. Watts.

The *Ladies Floral Cabinet*, is a new monthly, published by H. F. Williams, of New York. It is certainly beautifully illustrated, full of practical information and pleasant reading matter. Price only 75 cents per year. Everybody should read it. It may be obtained at our office.

For Everybody.—A new and finely illustrated Family Paper, published monthly, by Henry A. Sage, Buffalo, N. Y. Price only \$1.50 per year.

The *Farmers' Club*, devoted to the interest of the Farmer and the entertainment of the Home Circle; published monthly, by F. P. Lefevre, Oxford, Chester County, Pa. Price \$1 per annum.

The *Evergreen and Forest Tree Grower*; by Pinney & Co., Sturgeon Bay, Missouri.

The *Atlanta Journal*, devoted to the interests of Commerce, Railways, Mining, Manufactures, Immigration, Statistics, etc. Published weekly by W. F. Clark, Atlanta, Ga. Price \$2.50 per annum.

The *Little Corporal*, for January, makes his salute in a handsome new uniform, having laid aside his military dress and donned the garb of peace. We are pleased to note this new departure, and deem it timely and proper. This number contains the first chapter of the "Prize Story," which opens out in a very interesting manner. The illustrations are fine, and not excelled by any other similar periodical in the land. While parents and children are looking for something nice for the New Year, let us suggest a trial of "The Little Corporal." Terms \$1.50 a year. John E. Miller, Publisher, Chicago, Ill.

Our Fireside Friend.—This is the name of a new eight-page original and illustrated story and family weekly, published by Messrs. Waters, Eberts & Co., Chicago. The paper presents a neat and pleasing appearance, and exhibits much taste in its make-up. Its contents are varied and rich in interest and full of instruction. It contains well written continued stories of great interest, beautifully illustrated, and entertaining short stories, sketches, poems, etc., with departments especially devoted to the Farmer, the Housewife and Children. One of the principal features of this number is Will. M. Carleton's great Poem, "The Burning of Chicago," which the publishers have beautifully illustrated. "Our Fireside Friend" will find a welcome in every family circle. The Publishers will send a specimen copy free to any address.

CATALOGUES RECEIVED.

S. W. Moore, San Francisco, Catalogue of Seeds, Fruit and Ornamental Trees.

J. M. Thorburn & Co's Descriptive Catalogue of Vegetable and Agricultural Seeds; No. 15 John Street, New York.

Wm. Appleby, San Francisco, Descriptive Catalogue of Roses.

Wholesale Price List of Bryant's Nursery, for 1872; A. Bryant, Proprietor, Princeton, Illinois.

Wholesale Price List of Seeds for sale by E. H. Janes & Bro., Fond du Lac, Wisconsin.

Wholesale and Retail Price List of Apple Trees; by W. Jayne, Wilton Nursery, Wilton Junction, Iowa.

Wholesale Trade List of Seedlings, Fruit and Evergreen Trees; J. H. Plattmann, Penn Yan, Yates Co., N. Y.

Wholesale Price List of the Keystone Grape Nurseries; S. J. Allis, Proprietor, North East, Pa.

Special Trade List of Seeds, Stocks, Scions and Supplies, for sale by Wood & Hall, Geneva, N. Y.

Wholesale Trade List of the Painesville Nurseries, for Dealers and Nurserymen only. Storrs, Harrison & Co., Proprietors, Painesville, Ohio.

Storrs, Harrison & Co's Chestnut Circular, for the Fall of 1871 and Spring of 1872; Painesville, Lake County, Ohio.

Wm. Merton & Sons' Trade List of Evergreens; Portland, Me.

ORANGE TREES IN SACRAMENTO.

During our late stay in the city of Sacramento, we visited the grounds of E. B. Crocker, Esq., who has shown much taste and perseverance in establishing one of the most pleasing features of Sacramento.

We were particularly pleased with the Orange trees in the open ground, loaded down with ripe fruit, producing a striking and most decided effect; and establishing the fact, that this fruit may be successfully grown in Sacramento City as well as throughout the Valley, the necessary conditions being about the same.

We were also much pleased with the fact, that one of the trees, now about thirteen

years old, is a seedling, and has the past year produced a fine crop of most delicious Oranges. The gardener, our friend Mr. Ebel, informed us that this same tree had been budded, but that branches produced by the original stock being also permitted to grow, had developed with more vigor, as is generally the case, and now form almost entirely this well developed tree, the budded branch being still alive but having made very little progress. This budded branch made fruit earlier, but the branches of the original stock produced a much finer and more delicious fruit than the former, showing conclusively that good fruit may be produced from seedlings, without any further improvement by budding or grafting.

The only objection is, that such seedlings will come into bearing later than budded trees. But the fact that a seedling will produce a better growth and is better adapted to the open ground, than a budded tree, will more than compensate for the delay of an abundant crop for two or three years.

Unless we desire to produce fruit superior to those which our markets now offer, seedlings undoubtedly will answer the purpose better than budded or grafted stock.

We also noticed upon the same grounds a good sized *Mespilus Japonica* (Loquat) in full bloom, and the gardener informed us that the same tree, last year, produced a good crop of fine and delicious fruit. This, we believe, is the only tree which has produced fruit to any extent in this State.

GUNPOWDER vs. RAIN.

We understand that the price of gunpowder has materially advanced since the Sacramento *Union* has suggested the propriety of exploding a few cargoes during the ensuing dry season in the valley of San Joaquin River, for the purpose of "fetching the rain." By the way—is it the smoke of the gunpowder, the noise of the explosion, the concussion of the air, or the extra GAS evolved which is to produce the coveted moisture? What next?

LIBOCEDRUS DECURRENS,
(*Thuja Lobbii.*)

A correspondent of the *Gardeners' Chronicle* thus speaks of this native of California :

"Next to the Wellingtonia I would regard this as the most important addition made to our pine-trees during the last quarter of a century, as it promises to be something more than a mere shrub; in fact, it bids fair to eclipse the mammoth tree of the Far West in rapidity of growth, upwards especially. It forms a nice clean stem or bole, tapering like a fishing-rod, and its slender, graceful growth is still further enhanced by the bright green fern-like spray with which it is clothed, not standing vertically, like so many of the *arbor vitæ* class, but horizontally, curving over towards the beholder in the loveliest manner, so that I imagine the tree must be a general favorite. It is also very hardy, as our severest winters do not seem to have taken any effect on it, and, as before observed, it grows very fast; our largest specimen is thirty one feet high, its yearly growth averaging three feet, and in two consecutive years its leader was lengthened seven feet eight inches; it has certainly a sheltered position, but other trees fully exposed grow equally as fast. I would recommend it as one in a collection limited to six species.

WINTERING COLEUSES.

These plants are almost as difficult to winter as Verbenas. If kept too cool, or in a close atmosphere, they are quite likely either to damp off, or the leaves will die. To keep them safely, the temperature should not be allowed to go below 45 or 50° at night, and just sufficient water should be given to keep them from wilting. If the object is merely to keep the plants through winter, without propagating from them, a rather dry atmosphere is better than a moist one, and very little water should be given to the roots. Several of our lady readers complain of losing their Coleuses in winter, and the cause is, probably, the not attending to the conditions mentioned above. They are not plants

well suited for home-culture in winter, and those who have no conservatory or greenhouse must be content with merely keeping their plants alive, even if they do not make much growth. Young cuttings, struck in autumn, are usually kept through winter with less trouble than old plants.—*Moore's Rural New Yorker.*

NEW AND RARE PLANTS.

Epimedium Alpinum rubrum, is a native of Japan, and described thus in the *Rural New Yorker* :

The plants grow in dense clumps, somewhat like our common *Spiræa Japonica*, throwing up numerous flower-stems twelve to eighteen inches high. The outside of the flowers is bright red, the edges of the petals folding over, so that the color is seen when looking at the inside of the open flower. Inside, the petals are white, with a light stripe of red running down the center of each.

The long panicles of flowers possess a delicate grace, which is scarcely exceeded by any other plant of this class.

NEW DOUBLE GERANIUMS.

G. Glijm, bright scarlet, flowers of good form, and in habit the dwarfest of the scarlet section—the best sent out last year.

Sapeur Pompier, brilliant orange-scarlet; trusses large and of good shape, leaves of a bright green, with a distinct zone.

Madame Racouchot, light rose; individual flowers large in size, and produced in very large trusses; free flowering.

Tom Pouce, cerise; flowers also very fine in size.

Merveille de Lorraine, rose, tipped with white; first rate.

Madame M. Buchner, bright salmon-rose, shaded with carmine: the trusses large, and the habit dwarf and vigorous.

Gardeners' Chronicle.

THAT EVERGREEN TAMARACK.

The Editor of the *Evergreen and Forest Tree Grower* has received from a friend residing in California the seed of what he took to be a variety of the Tamarack (*Larix Ameri-*

cana), and wishes to be enlightend on this subject. For the information of the *Evergreen Grower*, we would state, that the tree he refers to is the *Pinus contorta*, which grows upon moist flats and river banks of the Sierra Nevadas. This pine has much resemblance in form and habit with the *Larix Americana*, and is therefore often confounded with it. There is no Tamarack indigenous to California.

WASH FOR PLANTS.

The following preparation is strongly recommended for mildew, scale, red spider, etc., upon greenhouse plants, as well as out-of-doors shrubs and trees :

Flour of sulphur, two ounces, worked to a paste with a little water ; sal soda, two ounces ; cut tobacco, half ounce ; quicklime, the size of a duck's egg ; water, one gallon. Boil these together, stir them for fifteen minutes, and let them cool and settle, when this preparation should be diluted according to the character of the plants, which should be syringed with water after the application.

Correspondence.

SAN FRANCISCO, Jan. 10th, 1872.

Editors California Horticulturist :

GENTLEMEN :—In a recent trip from Oakland to San Lorenzo, my attention was particularly drawn to the horticultural progress in Alameda County.

It is evident that there is not a city in the State which can boast more justly of its Horticultural improvements than Oakland. As far as ornamental trees and shrubs are concerned, I think that city is far ahead, and deserves much credit.

We passed through Brooklyn, and kept the county road toward Haywards. This beautiful tract of country, located between Oakland and Haywards, appears as though it had been more or less inhabited and in a state of cultivation for the last twenty years, yet, to a new-comer or stranger it would seem almost barren, exhibiting little improvement to indicate any pride or ambition of its old inhabitants. One would imagine that the people lived only for their own personal sub-

sistence, with no desire to leave any memorial for their children or future generations, save the good and fertile soil. It is, however, consoling that the time has come when the great mass of the people seem to realize the utility of Horticulture. The many trees and shrubs that may be seen from Oakland to San Lorenzo, is an excellent proof of this.

San Lorenzo is a flourishing little town, almost as old as Oakland, but far behind the times in regard to Horticulture, seemingly through the sheer negligence of its people. In its Courtyard may be seen a very good variety of conifers, acacias, eucalypti, and many other fine shrubs, too numerous to mention here, all growing to perfection, with little or no care. In no part of the country where I have traveled did I see trees thrive better than there. The country from San Leandro to San Lorenzo is rather thinly inhabited, yet wherever there is a house you are sure to see it surrounded with trees and shrubs. We finally arrived at San Lorenzo, a wealthy little town that may well boast of her perseverance and acquisitions in Horticulture, of which I intend to speak at some future time.

I will now conclude by urging all who are blessed with a few acres of land, to lose no time in planting out a few fruit trees and shrubs around their houses ; no matter how humble the home, a few trees and flowering plants will give it a neat and cheerful appearance, and I hope the time will come when I shall see the roadside from Oakland to San Lorenzo lined with ornamental trees, and the valley and hillsides dotted with deciduous and evergreen trees and shrubs.

Yours as ever,
P. J. FORD.

USE OF LOCUST TIMBER—We understand that the gold medal for the best " farm wagons and wagon materials made from California grown wood " was awarded by the State Board of Agriculture to Mr. Soule of Sacramento. We are glad to see home industry encouraged and to see the fact demonstrated that we can grow timber here for this purpose. The timber of the Locust was used by Mr. Soule in the manufacturing of the articles on exhibition during the late State Fair.

T H E

CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

Vol. II.

MARCH, 1872.

No. 4.

FLOWERING BULBS.

Under this head we have given our readers our experience on the Hyacinth, Tulip, Paeony and Gladiolus; and as bulbous rooted plants seem to grow in estimation with us in California, at the present time, we shall continue to give the proper treatment of other favorites.

One of our principal objects has been to cultivate a taste for flowers, and during the past year we have used every effort at our disposal to encourage the cultivation of bulbs, and we are satisfied that in this, our endeavors have not been a failure, taking into consideration that more bulbs have been sold in our market this year, than in any two preceding ones, notwithstanding a general effort to economize; and we predict that within a very few years the cultivation of Flowering Bulbs will become both general and extensive. In all countries the development of taste for flowers has taken the same course, and after the cultivation of bulbs has become general, we shall then find our people inclined to cultivate annuals more extensively. It requires Flowering Bulbs, as well as annuals, to give to the flower garden a proper finish, and to make the borders effective and pleasing at all times of the year, and particularly so on this coast where we may see both annuals and bulbs in flower in the open air during our winter season: or have them still

more perfectly developed in our parlor windows and greenhouses.

Next in the list of popular and favorite Flowering Bulbs comes the

Narcissus, this is a class of plants which does well under ordinary treatment; the flowers are produced in early spring, and are now, (Feb. 10,) in the height of their glory with us. The flowers are showy and effective and very fragrant; the bulbs are cheap and propagate rapidly, so that every two or three years the set of roots may be taken up and divided. The *Narcissus* family is subdivided into various groups as follows:

1. *Polyanthus Narcissus*, (*Tazetta*) produces from half a dozen to a dozen flowers on a single stem, colors from a pure white to a deep orange, very fragrant; they produce a very good effect if planted in clusters, or masses, and are the most popular of the *Narcissus*. Some of the best varieties are

Grand Monarque, large, white with orange cup.

Glorioso, large flowers, white, with orange cup.

Grand Primo, fine flower, white with citron cup.

States General, lemon yellow, with orange cup.

Queen Victoria, white.

Bazelman Major, very fine flower, white, yellow cup.

Grand Soliel d'Or very fine, yellow, with orange cup.

Luna, pure white.

2. *Double Narcissus*, (*Queltia*) producing one large double flower to each stem. The oldest variety is *N. incomparabilis*, flower sulphur yellow, and fragrant, several varieties have been produced; *Orange Phoenix*, of orange and straw color; *Alba Pleno Odorato*, (incomparable flore pleno) white and fragrant; *Sulphur Phoenix*, of a sulphur yellow; the double *Narcissus* is a native of Spain and Portugal.

3. *Single Narcissus*, (*Narcissus poeticus*) of which there are several very good varieties; the best are: *Poeticus*, flowers pure white, edge of the cup red, very pretty; *alba simplex*, pure white.

4. *Jonquils* (*N. Jonquilla*) natives of the Southern parts of Europe. The flower stems of this group produce a number of fragrant flowers, double, semi-double and single, but smaller than the double *Narcissus*.

The best varieties are the *Large double*, yellow color; and *Single sweet scented*.

In connection with the *Narcissus* we often hear the name of "*Daffodil*," which is however given to some of the varieties of the *double Narcissus*, and does not form a group by itself.

There are no bulbs which are easier cultivated than the varieties of the *Narcissus*, and in the days of their flowering we have nothing so pleasing and effective.

We next call the attention of our readers to a class of plants called

Crown Imperials (*Fritillaria imperialis*), the botanical name hardly ever being used. The original stock is a native of Persia and has been under cultivation for many years; but much improved varieties have been added, both single and double, so that the group is now quite interesting.

The flower stem of the *Crown Imperial* grows from three to four feet high, forming at that height a large bunch of bell-shaped flowers, hanging down, above which the stem culminates in a bunch of leaves, giving the

plant a most peculiar and attractive form which is generally admired. The bulbs are round and thick, and produce a disagreeable odor.

The most important item in the cultivation of the *Crown Imperial* is to let the root remain in the ground undisturbed for several years, in order to produce thrifty flower stocks.

The roots of the *Crown imperial* may be bought at from fifty cents to two dollars each according to variety, they will bloom generally in the second year. Plant about four to five inches deep, in ordinary soil which should be well manured.

The leading varieties are: double yellow, double red, single yellow, single red, and those with variegated foliage, which are particularly pleasing.

From our list we cannot very well omit the *Crocus*, these are mostly natives of Europe and produce their flowers very early. It may be argued against the cultivation of the *crocus*, that its flowers fall too quickly, which is true, yet if planted as a border or in masses, and if allowed to remain in the ground for a number of years, the flowers are produced so numerously that the effect is most pleasing. However if planted in groups, not less than from ten to fifteen bulbs should be set in one place, and about four inches apart. In many cases where cultivators have been disappointed, we found that the little bulbs were planted too late and also too shallow. They should be set in the fall of the year and from five to six inches deep.

If cultivated under glass or at the window, they should receive plenty of air and be kept as cool as possible in order to produce a thrifty growth and well developed flowers. The colors of the different varieties are blue, white, purple, yellow and striped. Sandy soil well manured is the best for this class of bulbs.

Crocus sativus is a variety flowering in Autumn (about October) from which the saffron of commerce is produced.

PRESERVING FLOWERS.

(Continued from page 68 of last number.)

Flowers dried in the fullness and symmetry of natural form, with their colors as brilliant as when living, are available for all sorts of ornamentation; for the most experienced eye can scarcely detect the least difference between them and freshly gathered blossoms.

The articles needed for drying flowers in rotundity of form, are: river, lake or sea sand (this is called white sand—it is sometimes of a bluish-grey tint), a wire sieve with a wooden cover to fit its base, a paper-knife, and a camel's-hair pencil. The flowers for this method of preservation, as for flat drying, must be freshly plucked, and without dew or any other dampness. Everything about this work must be thoroughly clean. The sand must be rubbed and rinsed in clean water till the water flowing through it is as clear as that from a well. Then put it in crockery dishes to dry. It must be perfectly dry and just blood-warm when the flowers occupy it.

When the sand is of the right temperature, close the cover over the base of the sieve, and pour it in till it fills the whole space beneath the wire cloth. Place the flowers in an upright or natural position by inserting their stems in the apertures of the wire-cloth till they rest firmly in this sand below. Do not crowd them, nor, if sprays or panicles are dried, let the flowers overlap each other to injure their form. Fold a sheet of stiff white paper to make a cone-shaped funnel, and pour the warm sand through this around and under and within the flowers. The cone should be folded to give the smallest possible stream of sand, and it must be poured with great care and gentleness, especially within and among the heliotrope florets, and the heaths and other small flowers. It is a slow and careful operation. Within the bells of mahernia, among the spireas, deutzias, acacias, verbenas, lantanas, bouvardias, and the like, special attention must be given to cause the sand in falling to fill all vacancies and to support every portion of the flower

correctly. The sepals and corolla of fuchsias require nice management, or, rather, patience enough to allow time to pour the sand properly. Roses and japonicas also must have particular pains given to preserving the curves of their petals; sometimes the edge of the paper-knife or the tip of the hair-pencil is needed to hold or raise them while the sand is poured under and upon them to effect this. After filling in and under and around the flowers, sand must be sifted over them, warm, to the depth of half an inch. Then set the sieve where it will keep the temperature of 70 degrees steadily, until the flowers are dry. The smallest flowers will dry in six hours; but the large, full sorts, with thick petals, require ten, twelve or more hours to dry thoroughly. For this reason, those of about the same texture and size should occupy the sieve at one time. When it is reasonable to suppose that the flowers are dry, take the cover from the base of the sieve, and the sand will fall through the wires, their colors as fair and bright as when placed in the sieve, yet dry and rigid. Leaves should be dried entirely by themselves, the thin and delicate sorts alone, because they are soon siccated; and the thicker ones also require to be treated separate from others. The foliage of the myrtles and laurels give the best satisfaction; the more flexible and succulent species lose some color, and often need to be superseded by moss or lycodium.

When both flowers and leaves are dry, they may be clustered and tied like fresh ones in garlands, crosses, bouquets, or any other device; and as they need no moisture to keep them in fair and life-like appearance, are very desirable as grave decorations.

Baskets of flowers dried in this manner are very effective hanging in an arched doorway or window; and nothing more beautiful can be designed for the dinner-table than an epergne filled with an assortment of these flowers tastefully arranged; while as wall-decorations, bouquets or wreaths composed of a handsome variety, well contrasted, gummed to card-board and then glazed and

framed, lend a summer-like aspect to any apartment, and are a perpetual delight.

Preserved flowers, properly speaking, are these dried flowers coated with wax, stearine, or paraffine. They closely resemble wax-work, but are less expensive. Of course the talent that is required for success in making wax-flowers is not needed for this work; only a certain tact and skill, gained almost wholly by experience, in manipulating the flowers, and in using the coating material.

When flowers are to be *preserved*, they must first be dried in warm sand as directed above. Then melt white wax, stearine, or paraffine—paraffine is preferable—to a fluid state, in a clean bowl, which rests in boiling water. Keep the water hot over a spirit-lamp, gas jet, or the stove, and then the fluid will be in right condition. Have the flowers conveniently near, in a flat dish, on which they can lie while the calyx and under part of their corolla is coated; apply the melted paraffine with a camel's-hair pencil, with light, careful touches and strokes. When these portions are nicely covered—just as little as possible of the coating must be used, yet all must be covered—take the flower by its stem in your left hand, and with the pencil drop the liquid paraffine in and about the various divisions, letting it flow as it will, but not enough to obliterate the finer parts; and then with quick, gentle touches finish the remainder of the flower. Proceed in the same way with the buds and the leaves. When the color of the leaves is unsatisfactory, some persons color a little paraffine with Paris green, and coat them with that. There is danger of making the flowers and leaves too clumsy if the paraffine is not in a fluid state. Be sure to guard against this; and take care not to dim or hide the colors by too liberal applications of the fluid; there is less danger of this with the paraffine, than with wax, because it is of a more transparent nature.

Harps, crosses; wreaths or bouquets, composed of these preserved flowers, are very beautiful, but they need shielding or screening from the dust as much as wax flowers do.

It is best to enclose them within a frame with glass front. Even with blossoms eternalized in this way, lycopodium and moss must be used to fill vacancies between and among the flowers and buds.

Although when nicely done, these *preserved* flowers are elegant, and can withstand the influence of moisture, drought, cold, and a good degree of heat, yet those who prefer Nature in her simplicity, will choose only the process of drying. (the second method) for eternalizing their floral treasures; which, if not perpetuating their charms for a lifetime, as the last method does, yet renders them permanent for several years, and with careful shielding from changes of the atmosphere, by enclosure in an air-tight frame under glass, they may display their beauty for a still longer period; so that mother's bridal wreath may challenge comparison with Mary's, and Tom's button-hole bouquet may be stolen from his grand-mother's May-day garland.

THE "MAJETIN," vs. APPLE BLIGHT.

[Continued from page 70 of last number.]

Having been frequently asked what kind of apple the Majetin itself is as regards its fruit, I append the following description, at the same time remarking, that it has this season (1871) been well fruited at Ballarat, also near Melbourne, and at South Brighton.

Winter Majetin.—Fruit middle-sized, having five regularly-formed equi-distant ribs, which are acutely marked near the crown: eye small, rather deeply sunk; stalk of the medium length, slender; skin dull green on the shaded side, slightly tinged with brown on that next the sun; flesh resembling the Easter Pippin in texture and flavor. It is of Norfolk origin, and not surpassed by any other in productiveness and hardiness, and it sets at defiance the *Aphis lanigera*.—Described in Hort. Trans., Vol. IV, page 68; Hort. Soc. Cat., No. 1170; Ency. of Gard., page 982; and George Lindley's Guide, No. 111. In England the fruit is in use from November until March, and in Victoria during the months of April, May, June, and July.

From the above it will be seen that this most valuable variety has other important recommendations besides its incalculable qualities as an *Aphis lanigera* resister; it is, in fact, one of the most useful apples we possess.

With regard to the propagation of the Majetin as a stock in this colony, and relative to this important subject, many questions have been asked, and also various opinions given, so that I shall, as regards this, merely lay before my readers the various methods adopted by the experimentalists, and also the plan considered the best and most effectual, after careful consideration and practical trials, carried out with large numbers. The Majetin, like most of the free and vigorous kinds of apples, will grow, and may be propagated from cuttings, but they do not strike freely under these circumstances; and although every variety of apple may be grown from cuttings, still it is well known to cultivators that some root with greater facility than others. For instance, all those of the Burknott and Codling tribes grow as well this way as by any other, and some growers allege that the trees so raised are not liable to canker (*vide Hort. Trans.*, Volume I, page 120,) which is supposed to be owing to their putting out no taproot, but spreading their numerous fibers from the knot or burr horizontally. Even the Golden Pippin may be continued this way, and trees have remained many years in perfect health, when grafts, taken not only from the same tree but from the branch, part of which was divided into cuttings, cankered in two or three years. (*Vide Hort. Trans.*, Vol. I, page 65.)

The Majetin can also be propagated by grafting on pear stocks, and by grafting upon the thorn; but from the fact of such stocks not being thoroughly lasting and enduring, I cannot advise this mode. Also by grafting upon crab roots; but from the great danger of the roots of the one being mistaken for the roots of the other, or from the possibility of the Crab roots becoming the dominant roots, it is not by any means a de-

sirable process, nor one to be recommended. The only really safe and reliable process is to graft Majetin wood on Majetin roots, and then work the stock high. This, together with the propagation by layers, and by stools, from which the suckers may be taken off, and planted out for stocks to work upon, are the only facile methods recommended by the experimentalists, and finally adopted by them in propagating the Majetin in quantities for a stock.

It is well known to most cultivators that the selection of proper stocks upon which to work the various fruit trees, has for many years engrossed much attention. The late Professor Thouin observes, that the historians and poets of antiquity have written, and the more modern have repeated on the faith of others, that every scion will take on any sort of stock, provided there be any resemblance in their barks. Thus Pliny, Varro, and others speak of apples and vines grafted on elms and poplars; and Evelyn mentions that he saw a rose grafted on an orange tree in Holland. Such absurdities are even to this day believed in by some, although the ancients acknowledge that such grafts were but of short duration. "The result of numerous experiments," observes the professor, "proves that if any of these grafts seem at first to succeed, they all perish more or less promptly." (*Vide "Encyclopædia of Gardening"*, p. 650.) The effect produced upon the scion by the stock was noticed by Lord Bacon, and by most pomological writers since his day. Miller says, decidedly, that the fruit is, to a certain extent, influenced by the nature of the stock; and Mr. George Lindley, in reference to the increased fertility that may arise from the use of certain stocks, observes: "In proportion as the scion and the stock approach each other closely in constitution, the less effect is produced by the latter; and, on the contrary, in proportion to the constitutional difference between the stock and the scion is the effect of the former important. Thus, where pears are worked on the wild species, apples upon crabs, plums upon plums, etc.,

the scion is, in regard to fertility, exactly in the same state as if it had not been grafted at all; while, on the other hand, a great increase of fertility is the result of grafting pears upon quinces, peaches upon plums, apples upon whitethorn, and the like. In these latter cases, the food absorbed from the earth by the root of the stock is communicated slowly and unwillingly to the scion: under no circumstances is the communication between the one and the other as free and perfect as if their natures had been nearly the same; the sap is impeded in its ascent, and the proper juices are impeded in their descent, whence arises that accumulation of secretion which is sure to be attended by increased fertility. No other influence than this can be exercised by the scion upon the stock. Those who fancy that the contrary takes place, that the quince, for instance, communicates some portion of its austerities to the pear, can scarcely have considered the question physiologically, or they would have seen that the whole of the food communicated from the alburnum of the quince to that of the pear is in nearly the same state as when it entered the roots of the former. Whatever elaboration it undergoes must necessarily take place in the foliage of the pear; where, far from the influence of the quince, secretions natural to the variety go on with no more interruption than if the quince formed no part of the system of the individual." It is a well understood fact that some varieties of the same kind of fruit trees will take more readily, and be of longer duration, when wrought upon some kinds of stocks than on others. The whole of many kinds of apples already worked upon the Majetin appear in every way vigorous, strong, and evidently well at home.

TENDER VINES.

Although many vines which florists of the East and Europe cultivate under glass, with us are perfectly hardy, and develope to perfection in the open air on this coast; yet there

are very many which live and grow here in this exposure, but will not produce flowers under this treatment, and even if they do, they are certainly but poor specimens. All such vines we call "*Tender*" here, and their proper place is in the greenhouse or conservatory.

In our list of Hardy Vines, we mentioned a few varieties which do well in the open air, yet give more satisfaction if grown under glass; such for instance, as the Spanish Jasmine, which we will also include in the list of Tender Vines.

One of the very best of Tender Vines is the *Stephanotis Floribunda* (*Ceropegia Stephanotis*) a native of Madagascar. The stem of the *Stephanotis* is twining, the leaves are thick, leather-like and smooth. The flowers are of a pure waxy white, and very fragrant; they are used for fine bouquets, and florists find ready sale for them at a good price. The *Stephanotis* flowers with us during the Summer months, when choice flowers for fine bouquets are rather scarce. The finest blossoms we have seen were produced by plants confined to a close atmosphere, and partially shaded. The best soil seems to be a coarse peat, and where this cannot be obtained, a gravelly soil will do well.

The propagation of the *Stephanotis* seems to be attended with some little difficulties here; cuttings remaining in the propagating soil for months without forming roots. This difficulty, may however, be overcome by giving bottom heat, and by making the cuttings a month or two before the flowering season commences. As soon as the growing plants have fairly established themselves, they will make a rapid growth, and sometimes produce flowers in the third year. The *Stephanotis* is an excellent vine to cultivate in the parlor window, provided that gas can be excluded. If cultivated in greenhouses or conservatories, they will do much better if planted in the ground.

We shall next call attention to another most valuable vine for the florists, called *Hoya* (Waxplant), and which is with us strictly a greenhouse plant. The flowers of

the Wax plant are very delicate and wax-like in appearance, and of a flesh, purple or white color, growing in bunches from the different joints of the stem. The Hoyas are natives of the East Indies, where they grow upon the trunks of trees in moist forests. Their treatment is not correctly understood where the plants are kept in a constantly growing condition; Hoyas require rest and should be very sparingly watered after the flowering season, while a great deal of water may be given during the time of flowering. Our sandy soil is not well adapted for the Wax plant; the best soil is a coarse peat mixed with leafmould.

The propagation of the Hoyas requires little care. The branches will form roots readily and at almost any time. They may also be propagated by planting the leaves, but we find this method requires too much time for the formation of plants.

The most popular variety is the *Hoya Carnosa* (*Asclepias Carnosa*), which has been under cultivation for about 75 years. The flowers are flesh colored and fragrant. *Hoya Bella* is also much admired for its delicate white flowers; this, however, is not a vine, but sends out branches like a shrub. *Hoya imperialis* is very little known, although its purplish flowers are a most beautiful ornament in a floral point of view.

Maurandia is another very pretty vine, exceedingly graceful and ornamental, and flowers almost all the year round.

The *Maurandias* are natives of Mexico, and are well adapted to our climate, yet they must be protected from the wind and from the least frost, and must therefore be exclusively treated as greenhouse plants. They are raised from seed or from cuttings, which grow readily. It is better to raise young plants every year, which flower finer and are much more vigorous than old plants. Care should be taken not to water the foliage too profusely, as that, together with the stems, will rot very easily. We cultivate on this coast exclusively the *Maurandia Barclayana* of which three varieties are known, namely: the blue, the pink and the white.

This vine should be cultivated much more extensively, as there are very few vines indeed, which give more general satisfaction. They are also exceedingly well adapted for hanging-baskets, rustic stands, etc.

Allamanda is a vine which is at present rarely cultivated; in fact we do not just now know of any specimens. Mr. Walker some years since attempted to grow them, and why they have been neglected is a mystery to us. The *Allamandas* are natives of Brazil and require a warm temperature; however, not more so than many greenhouse plants which thrive well with us under ordinary treatment. They have always been considered most desirable acquisitions. The flowers are mostly yellow, but strikingly beautiful.

Cissus discolor (*Cissus marmorea*) is a most beautifully colored decorative vine now extensively introduced into our more prominent establishments. It was brought from Java in 1851, and created quite a sensation. Several fine specimens were exhibited at our late horticultural exhibition. Although a tropical plant, it seems to do well under ordinary treatment; all the protection it seems to require is a glass cover. Cuttings strike root readily, and for proper soil we would recommend a light loam mixed with well decomposed leafmould.

To be continued.

LILY OF THE VALLEY.

It is only of late years that our florists have attempted to force hardy plants into bloom during winter. There are, however, many species, that produce flowers very abundantly when thus treated, and we do not know any more beautiful plant than the common Lily of the Valley, (*Convallaria majalis*). The flowers are of the purest white, and their delicate fragrance and form always command admiration and a good price, especially during the holidays.—A few days since, while passing up Broadway, we saw a small bunch of these flowers in the window of a well known dealer in flowers and the price marked on them, only \$10.00, was, as near as we

could judge, a little more than their weight in gold.

How to force the Lily of the Valley: "In Autumn take up the desired number of good strong roots, such as have plump buds or crowns, pack them closely together, either in pots or in broad shallow boxes, covering the crown about an inch deep with fine rich soil.

Give sufficient water to settle the earth firmly about the roots, then place them in a position to grow and bloom.

If wanted for the holidays, they should be kept in a warm situation about the 1st of November. If it is not desirable to have them all bloom at one time, a portion can be kept in a cellar and brought out as required. If one has no conservatory in which to force them, they can be placed near a stove, or in any warm position until the leaves appear, then set in a window, where they will receive the light. It is not necessary, however, that they shall receive the direct rays of the sun the entire day, as a partial shade seems to suit them best."—*Rural New Yorker*.

WINE MAKING IN CALIFORNIA.

Processes and Varieties.

Wine making in California is becoming a subject of so much importance to the community, that we cannot well give too much attention to it: there are so many questions to discuss, so many conflicting theories connected with the manufacture, that all our watchfulness is needed to steer clear of costly error, and avail ourselves of the experience of others:—believing the following article calculated to throw some useful light on the subject, we extract it from the *Overland Monthly*.—

"That the making of wine may be done in a proper, as well as profitable manner, every available portion of the grape should be made use of. All the juice that can be easily pressed out should be made into wine, and the remnants of the grapes after the pressing should be used to produce brandy. Unfortunately for the wine-makers of the State, the laws and regulations made by Congress for governing distillers generally, are entirely

impracticable as applied to the distillation of the product of grapes. These regulations have proved in practice to be so onerous and burdensome to this class of distillers, that not one-quarter of the brandy is manufactured even from the refuse of the press that should be made. Wastefulness is never considered profitable, but if these Federal regulations are carried out (as they are), it is almost an advantage to the wine-maker to throw away the leavings of the press. And this is just what has been done ever since the unwise legislation of Congress has been enforced. The wine-makers everywhere, with hardly any exceptions, simply press out the juice as much as is practicable, and then throw away the balance, thereby losing, for themselves and the community, the value of ten proof gallons of brandy to every original ton of grapes. Instead of there being, as there should be, a small still attached to every vineyard, no matter what its size, there can hardly be found one to every hundred vineyards, under the present regulations. This is all wrong; and a strenuous, as well as united effort, should be made to bring Congress to a just understanding of the damage that its inapplicable rules are causing. As a single illustration of the absurdity of the law, we will mention the capacity regulation. This consists in making a survey of the still, and fixing thereby its capacity for distilling per diem. Now, some of our wines will yield sixteen per cent. absolute alcohol, while the remnants from the pressings, in many instances, do not yield five per cent. The difference is eleven per cent. when half and half are distilled, and much greater when more of the weaker wine is distilled; in fact, it is impossible to reach the Government survey without anything but a right strong wine, and hence but little other is distilled with profit. There is another part of these regulations, which is a very heavy burden to wine-makers; it is that which compels them to pay the Internal Revenue tax upon their brandy so soon after distillation. This tax amounts to two-fifths of the salable value of the brandy, and its tendency is to make the producer dispose of it at the earli-

est possible opportunity. He can not keep it to acquire the proper quality by age, when, besides its original cost to him, he has to add one hundred per cent. more in the shape of a cash outlay; so, instead, it is hurried upon the market long before it has attained any of the necessary qualities. The Government should build, or cause to be built, bonded warehouses, at convenient distances in the wine districts, where these brandies might be bonded and be left to attain age, and only exact the taxes thereon when removed, or after a reasonable number of years, say from two to four. The distillers of grapes throughout the State would immediately avail themselves of this privilege, and in a few years we would seldom meet any raw California brandy. It is even more important that brandy should have age than wine, for when new it is uninviting, and even unpalatable. There is still one thing more which should be allowed to grape distillers: that of exemption of taxes upon all brandies exported without the limits of the United States. If this were done, there would hardly be a limit to the trade that would be carried on when the business of exportation had once properly begun. Our brandies would then be within the reach of the whole world—France not excepted. Pure and entire grape brandy could be sold, if exempt from taxation, at eighty cents per gallon—less, even, than it is sold for in France. It would, from its very cheapness, immediately become an article of export to all the countries bordering upon the Pacific Ocean. All our poor wines and grapes would be distilled into brandy; the refuse would no longer be thrown away; hundreds of thousands of dollars would be saved to the community, and as many more returned as a result of our export. Wines themselves would bring fairer prices, not being in competition with those only fit for the still, and a new era of prosperity would begin. It is to be hoped that proper representations will be made to Congress with regard to this great interest of our State.

As to the progress we have made in the improvement of the qualities of our brandies,

it has been equal to that made in our wines. We have no brandies of any considerable age; but still, limited quantities are procurable which are from three to four years old, and which, though not presenting the exact taste of any particular brand of Cognac, nevertheless are just as pleasant and drinkable as most of them of the same age, and of less than one-quarter the price. It is not essential that our brandies resemble exactly any one kind of French Cognac, for no two brands from France are counterparts. Each house dealing in Cognac has adopted a certain flavoring, and they all differ. Our distillers have not got so far yet as to make a general use of flavoring in their brandies; and we must say, that when these are properly distilled and refined, aided by reasonable age, they require no artificial flavoring, and become rich, mellow and inviting.

There have been various methods and processes suggested and tried, to give the qualities of age to brandies and wines. One process consists of heating the wines or brandies; and another of freezing them. One consists of pumping air into the wine; while another pumps it out. Each and all claim perfection for their processes; but those who have tried them thoroughly have condemned all these expedients, as entirely inefficient in producing the benefits promised. The only change effected was a vapid softness, that in no manner resembled the qualities acquired by age. Age develops the flavor, through a long, slow and gradual change of the natural ingredients of the wine; and when this flavor has become fully and agreeably developed, it is called bouquet. There is no artificial process yet invented which can produce this result. It is much to be regretted that many of our wine-makers are so enterprising, because they have been, and still will be, victimized by every sanguine process-inventor who comes along. Thousands of gallons of good wine have thus been spoiled annually, by people who wish their wines to acquire all the qualities that age alone can communicate. But we learn as we grow older; and the good days of these would-be inventors have passed.

We are fast coming to the conclusion, that Nature's laboratory, managed by Time, is the most perfect of all; and man can follow closely, but not excel, nor even equal Nature's silent work.

GRAPES, WINES AND RAISINS.

Mr. Lockwood of Napa, reviews the proceedings of the grape-grower's association, which held its meeting in Sacramento a short time since, in the following letter to the *Rural Press*:

REGARDING VARIETIES.

It was conceded on all sides, that in the present state of viniculture in California, that the variety must be one of heavy product. If too heavy bearing qualities, we can find a grape whose fermented juice has aroma and bouquet; such a grape is best fitted for vineyards with soil and condition suitable for its cultivation. Of the light colored grapes, the Rieslings have a preference for flavor, and would be recommended for the first place in selecting cuttings for planting, but for the want of evidence as to their productiveness. It was not denied that if trained and pruned as we train and prune the Mission grape, the yield is not satisfactory. Dr. Crane's experience has convinced him that trained high the Riesling is a good bearer. Others hold the same opinion, but there is still wanting the test on a sufficiently large scale, to answer the full purpose of exactness.

BEARING QUALITIES.

There are two kinds of white grapes that have of late increased much in favor, and merit attention for their good bearing qualities, viz.: the Golden Chasselas and Berger. The Chasselas variety, are as a rule, good bearers, but the Golden Chasselas, so called, is the largest and has the advantage of possessing a vigorous stock. The Berger is still more productive. There is much tartness in its juice, while the Golden Chasselas abounds in sugar; thus furnishing different requisites in making wine.

HIGH FLAVOR.

When musk grapes are wanted for their peculiar flavor, preference was given to the

Muscatel, otherwise called Rhenish Muscat and Frontignan. Its yield is not so large as some other Musk grapes, (as the Muscat of Alexandria on rich soils) but its flavor is superior.

QUALITY AND QUANTITY.

Of black grapes experience enough has been gathered to justify the selection of two kinds to satisfy the demand of quality and quantity, viz: the Black Malvoisie and Zinfandel. The first named is a larger bearer than the Mission, and is believed to be more certain. It makes a good white wine when rapidly pressed, and as a red wine, one of better color and better taste than the Mission. The Zinfandel is entitled to all these encomiums, and much more, for it is a still larger bearer than the Black Malvoisie and communicates to its vinous product, a peculiar raspberry flavor and an agreeable tartness.

VARIETIES FOR WINES.

This gives us two white and two dark grapes for ordinary white and red wine—one grape for musk wine or to mix with others to communicate flavor. For this end, the Catawba some would be disposed to add. Many excellent varieties are excluded by their objection of being shy bearers, but in planting a vineyard for wine, it is safer to confine the selection to a limited number, trusting to the plan of grafting to make changes, if by experience it is found that others would prove more profitable or better suited to any particular soil.

TABLE GRAPES

In regard to market grapes, it is manifest that no grape can permanently command the highest price, and hence it is not safe to select for the purpose of selling for table use, that grape which for the time is quoted highest. It happens, however, that in most instances, our best market grapes are valuable for other uses. The Malvoisie, Chasselas and Hamburg, are all good bearers, and well suited for wine, The Muscat of Alexandria, in many soils very prolific, is good, but not perhaps the best for a musk wine, and is likely to be largely used for raisins.

RAISIN GRAPES.

As regards raisin grapes, attention is chiefly directed to three varieties: Muscat of Alexandria, Fahir Zagos, and white Malaga, or as sometimes named in California, White Tokay. Among these the Fahir Zagos possesses the recommendation of being most easily dried, of having a thin, delicate skin, and but few seeds. Both the Muscat and Malaga are larger, and would be preferred where size is desired. The Fahir Zagos raisin is better adapted to culinary purposes, the other for table display.

BRANDY FROM MANZANITA BERRIES.

The experiments recently made by Messrs. Rolfe & Rogers, of Nevada City, in the manufacture of Brandy from Manzanita berries, seems to attract some attention, and certain of our leading newspapers anticipate a new industry arising from this new method of producing Brandy. We do not question the statements made by the above gentlemen, that Manzanita berries will produce a superior article of Brandy, but we doubt very much that the thing is practicable. From what we have seen of Nevada County, we do not believe that fifteen hundred pounds of Manzanita berries can be easily gathered during the season, and if it can be done, the expense of gathering will far exceed the value of the obtained spirit. It certainly will not pay to make Brandy from Manzanita berries. However, we shall not be surprised to see the experiments of the above named gentlemen resulting in the fact, that an extract is made out of Manzanita berries for flavoring liquors, or that it is discovered to be possessed of some medicinal virtues. The leaves of the Manzanita are known to contain estimable qualities, which, however, are not as yet clearly defined; undoubtedly the berries will be of some service, whenever the science of chemistry shall have demonstrated their peculiar qualities.

—Guarana, the seed of a Brazilian fruit, is a new rival to coffee.

TROUT FISHING.

THE MORE PRACTICAL PORTION OF THE SUBJECT.

In continuation of what was more generally advanced in the last number of the Horticulturist, on the healthful exercise, and superiority of recreation in the artistic capture of the *Salmo genus*; it may be further added that the trout has been justly styled the "Monarch of the Brook," as the salmon has been termed the "Emperor of the River," not only for the pre-eminence of their meat over that of other fish, but for the greater diversion in fishing for them, and the superior skill necessary for their capture.

But now to the more practical portion of this matter; we will address ourselves particularly to those who, with a view to their health or amusement, or as a relaxation from close business pursuits, or for all these combined, may choose to indulge in this fascinating pastime.

And first to tyros who may be desirous of some information as to the *modus operandi* in this sport, and to the habits of the fish of which they are in search.

The trout mostly delight in sharp shallow streams; at times in the small eddies caused by rocks, stumps, or banks of sand or gravel, under over-hanging banks or rocks, or among the tangled roots of sheltering trees where the water is also deeper, and where the current passes; they are closely watching their prey which they seize as it is swept past them; at other times swimming and seemingly striving against the stream: they are also found plentifully in streams, the water of which is so cold that other species of fish cannot live in it; they are likewise found in clear, sandy or gravelly bottomed springy ponds, which have a stream passing through or from them, but they neither breed nor thrive so well in them as in rivers and brooks. When spawning, they seek the head waters to deposit their spawn in the shallows, in sand or gravelly banks, after which, they retire during our cooler season to the deep still holes and under the shelving banks to recu-

perate, having lost to a considerable degree the brilliancy of their coloring and some flesh; but when the days lengthen, and the sun attains sufficient power to make his influence felt in their retreats, they seem to take a new lease of life, and leaving their hiding places return to their old feeding grounds, where among the sand and gravel of the sharp runs, they speedily rub off sundry pedicular attaches acquired in their hours of indolence, and at the same time divesting themselves of their old and worn out coats of mail, appear in an enlarged edition of their former proportions and colors.

The trout are rapid and sharp feeders, they are not very particular as to the material; being omnivorous, and being also very voracious, the majority of those taken generally fall victims to those who are usually styled bottom-fishers. Earth-worms, grasshoppers, various kinds of grubs and maggots are the usual baits, some anglers also recommend hog's liver.

The bottom fisher usually partaking of some of the attributes of the trout, being likewise omnivorous and generally not over particular, has these advantages over the fly-fisher, that as there are many other varieties of fish in our streams, who although they will not rise to the fly, will greedily take a bottom bait; he has the chance of sport when the trout will not feed, and both in fresh and salt water has many more days, and even months in the year in California, when he can take his prey; when the fly-fisher must lay his rod aside during rainy, cold and wintry weather, there being also restrictive laws which forbid his amusement during the spawning season.

To be successful in fishing for trout, the sportsman should be as wary as a cat in pursuit of a mouse, for the fish are shy and suspicious of anything unusual in the water or on the banks, and in accordance with the laws of refraction, can see the angler before they are seen themselves, and if they do not immediately make themselves scarce, remain on the watch and will not feed. The water should always be approached cautiously, as

even when the fish cannot see the fisherman, a heavy footstep or incautious movement will make them aware of his presence; we will not pretend to say whether they can hear or not, (they possess the organs,) but quietness costs nothing, and we generally find that noisy people are also usually clumsy.

And now for a few simple directions for their capture. It will suffice for the bait-fisher to supply himself with a short rod or pole, and a line without any reel; this will be sufficient for the narrow streams, and will be more manageable among the trees and thick bushes which usually encumber the banks; his hook should be of moderate size mounted on silk-worm gut; it is also advisable to affix a medium sized split shot about a foot above the hook to keep the bait well under the surface; a few spare hooks are advisable in case of accidents; it is better also to be provided with a basket or creel, as it is called, slung over the shoulder by a strap to put the fish into as they are caught, interposing a spray or two of fern, or a little grass to prevent their bruising; they will thus retain much of their handsome appearance; while carrying them in a bag subjects them to too much friction, and they become very unsightly, especially in warm weather. A well filled bait bag or box is also necessary, this should always be provided before starting; to trust to finding bait on the fishing ground is absurd and almost certain to result in loss of time and disappointment.

The best season of the year for taking trout is about the middle of April, they are then in the best condition; and the best time of the day is early morning or late in the evening; the best condition of weather is with a light westerly wind and an overcast sky, bright sunshine is not desirable as it enervates both fish and fisherman, and exposes the tackle; it is advisable in almost all cases to fish down stream, especially in rapid waters, there is less noise and disturbance, less chance of being seen, the line is kept taut, and what is also very essential, the bait is kept in motion, and looks more natural.

The bait which should be of medium size, should be placed neatly on the hook, and be very lightly handled so as not to bruise it, and if ends are left hanging, they should be very short.

Thus equipped, the fisherman should start in from as far up stream as convenient, and work downwards, noting what we have previously observed about displaying himself, or causing any unnecessary disturbance; he should not go and look first to see if there are any fish there, but attend to what we have said of their haunts; never allowing any slack line, it will sell him, as if the fish feels the point of the hook or the line, or is at all suspicious, he will eject the bait instantly. It is not necessary to fish long in any one place; if the trout has not been alarmed and the bait is decent, and he feels inclined to feed he will take it immediately with a snap as quick as lightning, turning down stream in the action, and a turn of the wrist will secure him; there is no necessity to sling him over your head into the bushes, it is generally sufficient to lift him out.

Fly-fishing is far superior to bottom-fishing in many points; it is less toilsome, as from the mode of operation it is necessary to select that portion of the stream which passes through the more open country, the valleys and plains, where the fisherman will not be incommoded by overhanging trees and bushes; where the stream is broader and more easily approachable, and consequently the traveling pleasanter; and where from these circumstances combined, if he has any taste that way, (which is almost invariably the case) he can luxuriate in the delights which magnificent landscape affords, combined with opportunities for botanical and entomological research; it is, in fact, a more refined and gentlemanly pleasure; it requires, however, considerably more skill, and far more caution is necessary than in bait-fishing, as he has less to screen him from the ever watchful fish; his prey averages larger and is more experienced, and it is no easy feat to cast a fly in a scientific style and sometimes against the wind, beneath an over-hanging bush or bank,

or into any little eddy below rocks or stumps where his well practiced-eye induces him to suspect a trout; there is a great deal of knowledge and appreciation of the surroundings necessary to select the spot for a cast, and a large amount of self-gratulation when the fly lightly, and truly curving to the spot, the sudden break in the water, and the smart pluck indicate that a fish is hooked.

The fly-fisherman has but little to carry with him; the nature of his sport will not allow him to remain idly in one place, but as he roves along the banks of a stream, with a light rod in hand, his creel at his side, and fly-book in his pocket, he may travel for miles without soiling his fingers, save to disengage a fish from his hook. The really scientific fisherman very rarely uses any but the artificial fly; he may occasionally try the spinning tackle where he suspects a fish of superior dimensions, who however, declines the fly; but the natural insect more properly belongs to a hybrid between the bait and the fly-fisher.

The requisites for fly-fishing are a light pliant rod, a long fine line of plaited silk and hair, wound upon a reel which is attached to the butt of the rod, a book to contain artificial flies of which it is well to have a selection, and a creel or basket to contain the fish, all these are obtainable for a small outlay at the tackle stores.—The rod when put together should have all the small rings on it in line, the line should be passed through them and a trace, leader, or gut length of about three yards, should be looped to it, to the end of this the stretcher, or end fly, (which should be the smallest) should be attached; a larger fly, which when thus used is called a dropper, may be attached to the line about three feet from the stretcher; when thus prepared the fisherman may approach the water cautiously but remain at some distance from it, to avoid being seen, heard or felt, remembering that even his shadow or that of his rod is sufficient to alarm the fish, it is not well therefore to fish with the back to the sun if it is a clear day, it should be remembered that a frightened trout will not rise to the fly; how-

ever when not alarmed he is a rapid and sharp biter and not in general very particular as to the kind of fly. Small flies are best and the color should be suited to the condition of the water and weather, in clear water use a fly with clear wings, in muddy water the fly may be larger, a few properly selected will be sufficient, (possibly we are more fastidious than the fish, but we pride ourselves on the variety in selection which our fly-book affords,—Ed.) as we have said with regard to bait fishing, fish down stream, always selecting the spot to which you desire to throw, either because you believe from appearances that it shelters a trout, or because one has just risen below it, keep your line taut, and with a series of short, interrupted and curved motions draw your flies to you across the stream and repeat your cast,—but very rarely to the same place.—A proficient in the art will cast a fly so lightly that the line will frequently not touch the water until a fish has taken the bait. When you have a rise strike instantly, or the fish will reject the hook. If you have a light wind to your back it will materially assist in the casting (but if the wind is strong it is better to remain near some sheltered and deep place), continue walking down stream and keep your flies in continual motion; early morning and evening are the best parts of the day.

Successful results in fly-fishing do not depend so much on the kind of flies used, as on the skill in casting, and a poor fly lightly cast into the right spot will do more execution than the best fly clumsily cast into an ill selected place.

Although the trout in California is not as beautiful as his cousin in the East or in Europe, yet he is one of the handsomest of all our fishes; although not as large nor so powerful as the Salmon, and very prolific, abounding in all our brooks and rivulets, and indeed living at our very doors; he is as lovely as a sunset and as brave as bravery itself—to use the words of a friend of ours “How he flashes upon the sight as he grasps the spurious insect, and turns down with a quick little slap of the tail! How he darts

and rushes hither and thither when he finds he is hooked! How persistently he struggles and fights till landed, or enveloped in the landing net! and then with what piteous gasps and quivers he breathes away his fast ebbing life! Who does not admire the lovely trout? with what a feeling of sadness we look upon a beautiful fish as he lies upon the mossy bank, the sunlight sparkling from his colors fading in death! with how deep regret we see his strength fainting away, his breath growing shorter, his struggles feeble, and when he has grown stiff in death, how proudly sad we feel over our triumph. (We generally tap him smartly on the occiput to allay his nervous irritability, and to preserve the flavor; and with a passing and self-gratulatory estimate of his weight and proportions, consign him to our creel, and go on fishing—Ed.)

Perhaps this is going a little too far and savoring rather of hypocrisy, seeing that the captor afterwards gladly claps his victim into his basket, and exultantly carries him home to be complacently devoured by himself and family—but at any rate the man who kills merely for the sake of killing, who is not satisfied with reasonable sport, who slays unfairly and out of season, who wantonly adds one unnecessary pang, that man deserves the contempt of all good sportsmen, (and the punishment assigned by Byron—“A hook in his gullet, and a little trout to pull it.”—Ed.) Of such, I trust there are but few. E. J. H.

San Francisco, Feb. 28, 1872.

FOREST-TREE CULTURE.

We have ascertained that certain parties are urging upon members of the Legislature the passage of a bill, which proposes to encourage forest-tree culture by awarding certain premiums for each tree kept alive for four, five or six years; but why this bill is not submitted to public criticism, we cannot understand, and we infer that these said parties are aware that the bill in question will not bear discussion, which is our own opinion from what we have heard of it.

If forest-tree culture is carried on with any degree of success, a law which provides the payment of a certain sum of money out of the State Treasury for every tree which is kept in growing condition for a certain number of years, would become a most formidable burden to the State, and would doubtless amount to millions of dollars; on the other hand, if forest-tree culture is impracticable in California, then we had better at once cease to advocate the undertaking. We have had a fair example of the working of such a law in the act passed a few years since for the encouragement of mulberry tree planting, and which was much abused, and had not the desired effect. A few large land owners and rich people could, and probably would avail themselves of the benefits of the proposed law, would draw large sums of money from the State; while the small farmer and poorer land-owner could not afford to purchase the seeds or young trees and cultivate them for a number of years, ere they could realize first cost; and even if they did make the necessary purchases, they would still be without the requisite knowledge for cultivating them.

Our opinion is, that if anything is to be done by the State for forest-culture, the seeds and plants should be given away, accompanied by proper instructions how to cultivate. Farmers should be informed which trees may do well in their respective localities, and after a forest commission has been in active operation a short time, if composed of intelligent and observant men, they will be able to form some tolerably accurate idea as to the best and most useful varieties of trees for forest culture in the various localities of the State.

The Bill now proposed by Senator Betge has been before the public for some time, and its merits are fully understood. The outlay for which the bill provides, has been reduced to a mere bagatelle compared with the importance of the undertaking.

The only argument against the passage of such a bill has been, that it would give to

some one an opportunity of swindling the State out of so much money; but we maintain that the same objection might be raised as justly against every bill and every public officer—that evil is radical and underlies our whole executive system, and is mainly attributable to the low moral status of our professional politicians—it is only fair to give our arboriculturists a show, they are at least as honest as other office seekers. In this case a swindling scheme could not be carried on very extensively, as the provisions of the bill are very explicit, and the very limited funds placed at the disposal of the forest commissioners, could not possibly offer any temptation to corruption, even were the commissioners so disposed; and further, the commissioners at present named in connection with this forest culture, possess the confidence of the people to such an eminent degree, that a doubt about their integrity cannot be entertained by any reasonable man.

We have heard it asserted by two or three persons that forest culture is impracticable in California, and that trees will not grow without irrigation. We do not think it necessary to enter into any argument with these individuals, as we can bring positive proof that thousands of trees one and two years of age have been taken from the nurseries, planted out on dry land, (which however was ploughed deeply) and have made a fine growth without a drop of water during the past two summers, which everyone knows were of unusual dryness. Deep ploughing, early planting and good mulching are sufficient to insure the growth of many varieties of most desirable timber trees. We admit that every tree will not grow in the different localities, and it would be one of the most important functions of the forest commission, as proposed in Betge's bill, to ascertain and codify a set of instructions on this subject. The State can well afford to expend a few thousand dollars for this experiment, which, we are confident will accomplish much good and attain the desired result, if the right men can be induced to take action in the matter.

CULTURE OF FOREST TREES.

The bill before our Legislature to promote Forest Tree Culture by Senator Betge, is one of very great importance to our State, and should not be passed upon in a hurry, nor until the Bill shall have been well discussed both in the Senate, where it originated, and in the Assembly.

The promotion of Forest Tree growth is particularly important to our State on account of its liability to long dry seasons, and as we increase our forest trees and all tree growth, we increase the moisture of the seasons, and to a certain extent, the healthfulness of our climate,

It is of the most vital moment for the success of such an enterprise that the provisions of such a bill, as the one now named, should have wise and liberal appropriations, in order to make it a success, and then it should only be committed into the hands of men who have no selfish or private ends to attain, but whose sole aim should indeed be to benefit and beautify the State.

We notice the remarks and suggestions made by several journals, but we must say that we are totally opposed to any system of *Premiums* for such an enterprise; it would result as did the bounty on Mulberry trees, and Silk, and Silk Worms, the Law about which was but recently repealed. It was a scheme of a few to grab all, while the truly industrious received nothing. Some of the remarks made, relative to this bill by parties, would induce the belief that they had some special interest in the matter.

Should a bill of this kind pass and of a liberal character, and without the temptation of the premium, but left to a Committee three in number, men who are above any personal motive, great good could be done our State, but otherwise, it were better not done at all. We are not behind the scenes, therefore know not how the work proceeds.

We would indeed be glad to see a good bill pass, and if such men as John Bidwell, of Chico, Gov. Stanford, and Prof. Bolander

were the Commissioners, then our State would see a work of this kind go on and prosper.—*California Farmer.*

FORESTS AND RAIN.

Does the Destruction of Trees Diminish the Rainfall?

We extract the following paragraphs from the letter of "W." to the *Morning Call* of 3d of February ult., as relating to the important subject of Forest Tree Culture :

"Boussingault, in his 'Rural Economy,' gives as his opinion, 'that the felling of forests over a large extent of country has always the effect of lessening the mean annual rainfall.'

Baron Humboldt stated, in his 'Asiatic Travels,' that 'in crossing the steppe of Baraba, on his way from Tobolsk to Baroul, he perceived everywhere that the drying up of waters increases rapidly under the influence of the cultivation of the soil.'

The same experienced traveller, in his description of Lake Valentia, in the Valley d'Aragua, in Venezuela, a sheet of water on the high table lands, and without any outlet, ascribed the diminution of the waters to 'the extensive clearings which had been effected in the course of half a century in the Arragua Valley,' and concludes by stating that 'men in all climates seem to be bringing upon future generations two calamities at once—a want of fuel and a scarcity of water.'

Early travelers on the Colorado Desert, in this State, will remember the cluster of about thirty palm trees at the so-called Palm Springs, on the west side of the cañon, between Vallecitos Springs and Carissa Creek, and about twelve miles south of the former. These palms were planted by the padres of the old San Diego Mission. From the traditions of the old Mission, we learn that the padres found a small flow of water at irregular intervals at this particular place in the desert. They planted palms there for the same reasons which induce the Arabs to plant date palms at the springs in their

deserts, viz: shade and water. From the circumstances of the case, the conclusion is a fair one, that these Vallecitos Cañon palms were propagated from the dried dates of the Mediterranean, shipped among the supplies to the Mission. These palms increased the supply of water from the springs, and made it perpetual. The same vandal gold-hunting element that used the well-buckets and curbs on the Colorado Desert for fuel, cut down these few palm trees, and the spring shortly after disappeared. What renders this vandalism without excuse, is the fact, that the palm trees were unfit for fuel.

A similar phenomenon is recorded by M. Desbassyns de Richmond as having occurred in the island of Ascension. Upon planting the trees anew, however, the spring in a few years reappeared. No doubt our palm springs would reappear if we replanted the palms; and we respectfully submit these facts to the attention of the proper Legislative Committee, suggesting that a few hundred dollars be appropriated for this purpose.

Forests retard evaporation; agriculture increases it. Forests hold back the water that has fallen, and thereby diminish the chances of floods. Every leaf, every stick, and the beds of moss and mould are miniature reservoirs."

CALIFORNIA ACADEMY OF NATURAL SCIENCES.

A PLEA FOR OUR FOREST TREES.

Dr. Stout presented to the Library two works in German, by Dr. Robert Von Schlaginweit, a German savan, both on California, being an embodiment for German readers of the author's observations in California. They are entitled: *The Land and People of California*, and *The Railroads of North America*. Dr. Stout said that the author laid great stress on the comparison of the flora of the mountains of California with the flora of the mountains of Asia. One point that was particularly

worthy of attention at this time was that the author deprecates the wholesale destruction of the magnificent forest trees of the mountains of California, which is going on by fire and otherwise. Dr. Stout thought the trees ought to be taken under the protection of the State laws, and he was glad to be able to state that a bill was already before the Legislature to create a State Forester to protect the trees of the State. He said the length and earnestness with which Dr. Schlaginweit dwells upon this subject, might profitably be considered by those who were interesting themselves in the passage of the bill.

WANT OF TREES IN CALIFORNIA.

There is no State in the Union suffering so much in various ways from the want of a proper proportion between the timbered and untimbered lands as California. What, but a want of this proportion, what but a want of growing timber or forests to shield the surface of the earth from the immediate rays of the summer sun, throughout our large open valleys, causes the withering drouths and the life-destroying northers to which those valleys are so frequently subjected! To what, but this lack of timber to collect the humidity of the atmosphere and to break the rain-bearing clouds can be attributed the great disparity between the amount of rainfall, for the past two or three seasons on the open and untimbered valleys of the State, and the adjoining timber-covered foothills and mountains! The very nakedness of the earth's surface in these valleys, becomes the cause which reproduces this same nakedness from year to year. Nature in this case has not the power to correct itself or change its tendencies. It must be done if done at all by artificial means, and Nature itself indicates what those means must be—the planting of trees—the cultivation of artificial forests. Every consideration of private and public policy is in favor of this system.

We would say then, as we said at the beginning—*Plant Trees.*—*Rural Press.*

SPOILED AND RUINED TREES.

Every lover of beautiful trees must feel pained as they pass the many gardens in our city, and more especially Portsmouth Square, and see the *ruinous butchery* that has despoiled the beautiful evergreens that would be an ornament were they not ruined by poor, and unskilled *tree cutters*—we will not say gardeners, for they are not worthy of such a name.

Portsmouth Square, and other squares, now in charge of paid workmen, look more like "Grave yards," than Public Squares. The most of the trees are ruined by an ignorant system of cutting, and at present many of the trees are held up with wires and cords—a shame and a disgrace to our city. Does any one want a proof of the folly of such a system let him go where these trees grow naturally, and see if nature uses wire and rope to hold up what *she* grows. Our Plaza in its present is a disgrace.

The only consolation a lover of handsome trees or correct landscape gardening can have as he looks upon such a place as Portsmouth Square, is that a few years and the *death of the trees* will give our authorities a chance to start *de novo* and plant again.

THE POST OFFICE YARD.

Here is another evidence of miserable work. The readers of the *FARMER* will remember that some four or five years since, we spoke of the miserable and uncouth manner in which the trees were planted, and predicted that they would all be uprooted. Our prediction was true; the soil was not proper; the trees were not of the right kind, nor was the work well done, and the results are that thousands of dollars, kindly given by generous contributors, have been worse than wasted, and this will always be the case where men undertake to do tree planting and ornamental gardening, who are as ignorant of this science as our little children are of the Japanese language.

California Farmer.

AMERICAN FORESTS.

One fortunate result of the great fires which have swept over the wooded region of the Northwest will be to call attention to the waste which has been going on in the last few years, and to the necessity for protecting what is left. We have as yet a good supply of forest timber, and it may be many years before it will begin to be exhausted. But in the life of a nation, the contingency which these disastrous fires bring to mind is too serious to be overlooked. In the older portions of the country the necessities of a rapidly increasing population have already swept away the greater part of the primeval forests, and it is useless to expect that they will ever be restored. It is only here and there that trees may be successfully cultivated without interfering with the conveniences of our native and growing communities. But wherever they can be cultivated it is one of the first duties to see that the necessary means are employed, and that wanton waste is made a crime.

Some time ago, English economists were discussing the probable exhaustion of the English coal-fields, and it was decided that at the present rate of consumption the end would be reached about the year 2971, and there was considerable trepidation in consequence. But the predictions made by our foresters as to the probable exhaustion of our valuable forests are much more alarming. The *Scientific American*, discussing this subject, urges the enactment of stringent forest laws, analogous to the mining laws, with a view to the preservation of the timber supply in the vast tracts of country where scarcely anything except timber can be properly cultivated. Precedents for such legislation are furnished by nearly all civilized countries. In Europe, where the importance of a liberal supply of timber has been long felt, active measures have been taken on the part of various Governments to protect existing forests and encourage the cultivation of timber. It is estimated that there yet remain in France 2,700,000 acres of State Forest, the revenue

of which, previous to the recent war, was \$8,700,000. Bavaria has about 2,000,000 acres of forest; Prussia, as it existed before the war, had upwards of 5,000,000 acres. In each of these countries, schools of forestry, under State control, are supported, in which men are trained in the scientific and economical management of the State timber lands.

For protection against fire, the same authority makes the sensible suggestion that, wherever it is practicable, artificial breaks in the continuity of forests should be made, and that as far as possible, the cleared spaces should be brought under cultivation. This would serve as an aid in stopping the progress of great conflagrations, and would doubtless be effective except in cases of extraordinary severity.—*The Calais Times, Me.*

Editorial Portfolio.

OUR PUBLIC GROUNDS.

The public grounds of the State of California as well as those belonging to the City of San Francisco, have, we regret to say, been hitherto managed with considerable recklessness; yet although this fact is generally known, we see no effort made to provide for amended action in the future.

We hoped that a Board of Public works would have been established by our present legislature, composed of men who possessed the proper qualifications for inaugurating a thorough reform in the system of management of our public grounds and their maintenance; but it now seems that our expectations will not be, for the present, realized, and that self interest will continue to be the order of the day.

While nature has done so much for California in relation to climate and soil she has evidently neglected to develop for us public men to whom we might look for a change for the better.

We have frequently referred to the injudicious management of our public squares; a matter which is entirely under the control of

the Board of Supervisors; but they are evidently unwilling to listen to any expostulation, there never has been a thoroughly professional gardener employed, nor has there ever been an effort made to obtain one. Unworthy considerations of a selfish nature have been instrumental in bringing about the present state of affairs, and a change for the better can never come, so long as political considerations are permitted to preponderate.

When the Board of Regents of the University was constituted, we had every reason to believe, that the University grounds would be laid out in an artistic manner, and with reference to the future requirements of the Institution, (and we knew that there were men among them of enlarged views and refined taste as their own grounds testify); we had faith in the superior judgment of many of the Regents, but the arrangement and planting of the grounds were deputed to men better qualified for monopolizing and controlling markets etc., than for the display of executive ability in the liberal and enlightened management of Public Institutions.

Again, when the Board of Commissioners was appointed for the Golden Gate Park, we were almost certain that a new era had commenced, as only by the combination of sound judgment, superior skill and indomitable perseverance could success be achieved. But unfortunately, personal interests have predominated, and the system of park development adopted, and the condition of things in general have blighted our last hopes.

When we notice with pleasure the steps, which the Park Commissioners of New York and of St. Louis, have lately taken in the appointment of good professional Landscape Gardeners as superintendents of their parks; we are at a loss to comprehend the action of our own park commissioners, in appointing so young an engineer, to the important position of Park Superintendent; he may be very excellent at figures and mathematical lines, but he has neither the reputation, nor has he so far shown such qualifications as should entitle him to such preference.

It is only by the intelligent application of

the science of Landscape gardening combined with a thorough practical knowledge of our existing local advantages and disadvantages, and the exercise of untiring perseverance, that the city of San Francisco can ever expect to possess and maintain a park worthy of her.

At the present time there are only two commissioners remaining of the Board, and we understand that there is no concert of action between them. These commissioners cannot act if difference of opinion exists, and the law seems to be very defective in not making provision for such emergency as the present, which cannot be met by the remaining two commissioners.

We are also assured that all the appointments hitherto made, have been by exercise of personal influence and total ignoring of the matter of qualification.

However, something may yet turn up during the present session of our legislature, which may possibly effect a change for the better; and we shall wait patiently for a time, before we say anything more on the subject.

CITY PARKS OF ST. LOUIS.

As considerable complaints have been made in reference to the management of our park affairs, it may be well to notice the action of the park commissioners of other cities.

At a recent meeting of the Park Commissioners of St. Louis, Mr. M. G. Kern, a professional Landscape Gardener, was nominated for the position of Superintendent of the Park.

Mr. Kern was called for, and stated, that he was not seeking the position, but would accept it, if he were allowed to manage the park improvements in accordance with his own ideas.

The nomination was unanimously confirmed. The parks, it is believed, will now have a competent Superintendent.

The Rural World, hopes that he and the Commissioners, will work harmoniously together.

THE CENTRAL PARK OF NEW YORK.

According to the Horticulturist, a complete change has been made in the management of this the most celebrated and admired of American parks. All the Ring Commissioners, officers and employees, have been dismissed; and a new Board has been elected in the interest of true and judicious reform, of this, Henry J. Stebbins is President, and Messrs. Olmstead, Vant & Co., have been reappointed, Consulting and Supervising Landscape Gardeners.

Robert Denecke, formerly of the King's Gardens at Berlin, Prussia, has been appointed Superintendent of Landscape Gardening and conservatories.

The Horticulturist, very properly suggests, that more space should be devoted to the display of flowering and ornamental foliage plants, and the establishment of a "Sub-tropical Garden."

WORK FOR MARCH.

It would be exceedingly pleasant if we could have everything our own way, but nature asserts her undoubted right and is evidently unwilling to consent to any short-sighted amendments which we, in our conceited blindness, see fit to suggest to her dominant laws, and on the contrary compels us to stand ever ready and prepared for emergencies. The prevailing opinion is now that, we have had rain enough for all good purposes, and some farmers are necessitated to delay the preparation of their ground on account of super-abundance of moisture. At the time of this writing, however, there is a fair prospect of sunshine, and we sincerely hope that the croakers will let us rest for a while, although they may have some plea for indulging in their infirmity, on account of this most formidable snow-blockade, which keeps us from the receipt of our usual supply of mail matter, remittances, and merchandize from the other side.

This unfavorable weather for out of door work has necessarily delayed operations, and probably two-thirds of our orchards and

vineyards have not yet felt the pruning knife. What we said in our last issue, applies with equal force to the month of March. Where trees and vines exhibit the vigor of new vegetation, severe pruning may prove injurious; this has particular reference to fruit bearing trees and vines.

Evergreens may be trimmed at almost any time, although we consider the months of March and April particularly favorable to this operation.

Gooseberry and currant bushes should have been pruned two months since, but care should be taken to destroy all young shoots making their appearance from the roots; these take away a great deal of nourishment from the plants, and also form too good a protection for all sorts of insects, cutworms, etc.

In the cultivation of raspberries, growers must bear in mind that it is the last year's growth which will produce the fruit of the coming season; it is therefore, most important that not more than from three to five young shoots should be allowed to develop themselves; more than that number will weaken the plant and prevent the obtaining of thrifty stocks for the next year.

Blackberries should be cut back severely to secure superior fruit.

The planting of additional vegetable seed should be delayed until the weather has become more settled; clayey soils in particular are unfit at present for the reception of any kind of seeds. The weather has been very favorable however, for the transplanting of cabbage, cauliflower, etc.

The planting out of ornamental and shade trees has increased considerably during the last month, but we are sorry to say, that they consist chiefly of *Eucalyptus* and *Cypress*. We are of opinion that very little judgment is used in the selection of trees for ornament. While we have advocated the planting of *Eucalyptus* as a useful timber tree, and where rapid growth is required, we insist upon the superiority of many other species for ornamental purposes. Recently we have seen some very fine specimens of *Grevillias*

which were for sale at a very reasonable price, but notwithstanding the many excellent qualities of this tree, both for ornament and usefulness, purchasers prefer a *eucalyptus* or *cypress*. We must confess that we have never met with a class of people less willing to listen to proper information regarding the value and adaptability of trees and shrubs, than the present generation of Californians. We do not expect that they should study botany, but we would like to see that persons who are desirous of planting trees and shrubs, would take a little interest in the selection of many good varieties which our nurserymen are in vain endeavoring to introduce. We see a large number of small front gardens where a few roses and *fuchsias* might appropriately find room; but the entire space is occupied by one or two pines or *cypress*. Is it not time that better taste and judgment should be displayed?

In the shape of evergreen flowering shrubs our nurserymen have of late placed a very good stock of *Ericas* in the market; they are exceedingly handsome shrubs for the flower-garden, but very little sale has been made of them. We heartily recommend them to all persons desirous of exhibiting good taste. We could name many other fine plants which meet with the same fate, and we regret very much to see that the laudable efforts of our nurserymen and florists to introduce superior plants are discouraged by a want of due appreciation of that which is really good.

There is a great scarcity of good bulbs and flower seeds in our market at the present time on account of delays on the Overland Railroad; but as the unusually wet weather has not been favorable to their planting, we hope that a good stock will arrive in time for spring planting.

Our greenhouses and conservatories do not look as cheerful and bright as we are accustomed to see them at this season of the year; this is also due to the unfavorable weather. Many tender plants, such as *coleus*, *begonias*, etc., have been lost under the usual treatment; flowering plants have made slow progress in developing their new growth of flow-

er beds; in short, everything seems to be behindhand. We must continue to treat greenhouse plants with care, giving frequent airing, and watering sparingly; the time for forcing has not yet arrived, except by artificial heat.

Our graperies are also in a dormant condition as yet, no signs of vegetation are visible. Here, however, we must place all blame on the management. Graperies are maintained only by rich people who can well afford the extra labor and cost of a proper artificial heating apparatus. A graperie which will not yield grapes *early* and *out of season*, is not worthy the name of a graperie and is not worth having.

We place entirely too much reliance upon the favorable climate of California; we might accomplish much more than we really do, if we, on our part used proper exertions and intelligently availed ourselves of our superior advantages.

PUBLIC IMPROVEMENTS.

We have from time to time called the attention of the public to the many errors committed in the management of our public grounds, and we have endeavored to show that the arrangement of these grounds requires the employment of our best men, who have made the art of landscape and ornamental gardening, their study and occupation. This view is supported by all those who have given the matter serious consideration. But unfortunately for the good people of California, and particularly those of San Francisco, men have worked themselves into position to control our affairs, who are either totally unqualified to exercise their judgment, have none to exercise, or who have no other interest at heart but their own. When we began to advocate the work of reform, we stood isolated and did not receive much encouragement; lately we have been backed by the members of our Horticultural Society, which, although in its infancy, numbers on its roll a goodly array of practical and intelligent workers for the good cause of progress, and

we feel confident that before long our course will be endorsed by all true and intelligent citizens, and that the people will demand a more judicious expenditure of their money.

The people of California are always ready to assert the unequalled productiveness of the soil, and to boast of a climate which admits the successful cultivation of a majority of the trees, shrubs, and flowers indigenous to tropical, subtropical, and temperate climates; yet our public grounds are not worthy of a visit.

THE UNIVERSITY GROUNDS AT BERKLEY.

An excellent opportunity offered for making these grounds a school of learning and of taste, and we were in hope that steps would be taken for thus utilizing these grounds. There existed no necessity for expending one dollar more than has already been expended in the laying out of these grounds, and the planting of trees; yet the results might have been more creditable. We do not know how many trees have been planted there, but we venture to assert that, if for every ten Eucalyptus, Cypress or Pine, only one of some other and more desirable variety had been selected, and if the arrangement of planting had been assigned to a skilful hand, we should now have an excellent foundation for an establishment of instruction and usefulness.

Lately the newspapers of California informed us, that a proposition was on foot to remedy the evil, and to establish a Botanical Garden within the University grounds; the suggestion was made by a person, whose popularity, scientific knowledge and practical good sense should have carried much weight with the proposition, but some of the less practical regents were of opinion that "no more trees were wanted there!" This, we can assure our readers, lets the Botanical Garden out, for the present at least, (perhaps for a longer period than we may be permitted to live.) The Eucalyptus forest will stand as evidence of the success of the originators in their attempt to create an Australian scene.

THE GOLDEN GATE PARK.

It has been usual with the people of larger cities desirous of having a park, to select the most picturesque and otherwise well adapted locality within their boundaries for the purpose. The Supervisors of San Francisco had undoubtedly this object in view, but they have undoubtedly succeeded in selecting a site which is, and will be, an eyesore to San Francisco. To this evil already in existence, another has been added, that of creating a Board of Park Commissioners who are unwilling to acknowledge the situation, and who do not understand how to go to work to make the best of it. We do not attach all the blame to the remaining two Commissioners, one of whom has only very recently entered upon his official career; the responsibility of ill-management rests upon every one who has caused the inauguration and the continuance of the work so far progressed.

The Horticultural Society at one of its recent meetings, appointed a committee to examine the so called improvements at the park grounds. This Committee, consisting of practical men, visited the park reservation, and the result of their observations is about as follows:

1st. The eastern end of the main avenue in the Approach Ground has been graded too low, and was macademized before the mistake was discovered; much extra expense is necessary to remedy this evil.

2d. The grading seems to have been overdone; hills covered with vegetation and partially with live oaks, around which drives could have been established, with a very easy sweep, have been most injudiciously cut down to make room for the road projects of the engineer, who manages to remove every obstacle in the way of the lines he has marked out on his plan. The Committee are of opinion that the same hills so injudiciously destroyed were necessary wind-breaks, and would have been, when properly laid out, most desirable objects for park grounds, obviating the appearance of sameness, which

the present engineer has unfortunately established.

3d. In two instances, within the park grounds proper, the drive has been cut through the very centre of elliptical shaped hills, establishing thereby high and unmanageable sand banks, which evil cannot be efficiently remedied but by a total removal of the entire remaining portions of the hills; an artistic sweep could have been formed around said hills at a much less expense than the cutting through.

4th. Drives and walks cross each other too frequently, and persons on foot will be constantly in danger of being run over by vehicles.

5th. The force at work is entirely too much scattered, and practical supervision is impossible.

6th. The system of trenching ground is not understood, and is done in a most unworkmanlike manner.

7th. The nursery stock on hand is very limited, and the trees in consequence, could have been bought for less than they have cost in raising. The greenhouse, constructed for rearing trees, is a very impracticable structure, much better adapted for a show house than anything else. The nursery ground was located in a swamp, and many of the trees have died in consequence of the roots being submerged in water. Not until the damage had occurred were orders given to drain the ground, which should have been done in autumn.

8th. Much of the grading, making of walks and other work, having been altered several times, the expense of such work has been double what it should have been.

9th. The Commissioners are purchasing trees in San Jose, which could have been had for the same price in this city, and the Committee of the Horticultural Society is of opinion that the Commissioners should have made out a list of such trees and shrubs as were needed, and advertised for proposals, thereby deriving benefit from the consequent competition, and if prices were the same, preference should have been given to San

San Francisco nurserymen, who pay their share of the taxes.

10. A stock of Elms, Maples and Poplars, have been purchased which cannot be expected to do well under the present unprotected condition of the park. Elms and Poplars in particular, cannot be grown in the park grounds at present.

The above points are well taken, and being an opinion expressed by practical men, the Commissioners should not fail to change their mode of operations. They ought to be willing to profit by the experience of others, and should bear in mind that every error committed, only increases the existing strong and well founded prejudice against the present site for the park. The Commissioners should give their almost exclusive attention to the reclaiming of the barren sand hills, for not until the possibility and practicability, of such reclamation is established, will the people of San Francisco place any confidence in the Golden Gate Park.

In our next, we shall endeavor to point out the proper course to pursue for the reclaiming of the sand hills.

REPORT ON THE FRUIT MARKET.

I was pleased to find the intelligent and well posted writer of the *Alta*, in his usual weekly editorial article on the Industrial Condition of the State, approve and endorse my suggestions in my last Report of the Fruit Market, relating to the great necessity for all fruit raisers and venders labelling the fruits on their stands, so that purchasers may acquire some knowledge of pomological nomenclature, and when they find any varieties that suit their taste, they may be able to ask for them by name; for many fruits are mean, small, and shabby in appearance, while their flavor is first-rate, for instance, the Seckel, Green Gage, etc.

Those persons who are ignorant of the names of most of the fruits, which at nearly every season of the year in this State, are placed before them in the markets, may be said to live under a ban of deprivation of all

the fair and goodly productions of the orchard and garden. For they only can be said to fully enjoy Pomona's gifts, who can discriminate between the most delicious, and the more indifferent and poor of them. In the matter of fruit, as in many other things in life, it will not do to trust merely to appearances.

This subject really deserves a few words. "Fine fruit is the flower of commodities," as has been rightly said. It is the most perfect union of the useful and the beautiful that earth knows. Fruit, rich, bloom-dusted, melting and luscious—such are the treasures of the orchard and the garden, temptingly offered to every citizen in this sunny, mild, delightful and healthful climate. And is it not worth while for everybody to acquire some knowledge of the names of the finest and most prominent fruits? The dwellers in a city cannot certainly be expected to be as learned in the nomenclature of fruits as the fruit cultivator who makes a business of it, for, from the great accumulation of names, even to these last, Pomology has become an embarrassing study; but let the cultivators and venders help the city purchasers, and have a card or paper appended to each variety of fruit, for the information and edification of all concerned in this interesting subject.

We have now a Horticultural Society among us—"The Bay District." Let any cultivator, salesman or purchaser of fruits, when ignorant, or in doubt of any particular specimen, bring or send it to the rooms of the Society, 622 Clay Street, and some of the members, nurserymen or cultivators of fruit there, or a Fruit Committee, to whom such matters are generally referred, will name it, if it is within their knowledge, having their own experience and the best pomological writers and authorities in their library as their guides.

We hope the influential writer above referred to in the *Alta*, will keep this subject before the public until we shall see on every stall or stand in the markets, or on the streets, clearly written cards, giving the names of every variety of fruit offered for sale.

We award great credit to cultivators and salesmen in this city and State generally, for the neat and handsome manner in which their fruits are displayed; and we admire the system and regularity with which the fruit is uniformly packed in boxes; we have seldom observed it done so well in the Eastern cities, and we only need the labels to perfect the work in a goodly manner.

Large shipments of Los Angeles oranges are now being made for this port, and many have already arrived. They do not, at present, seem so sweet as they have been in some former seasons, owing, it is said by some, to the trees having exhausted themselves, and having had too great a drain upon their strength, but more probably merely because those which first come are usually rather sour. From Honolulu the consignments of oranges, as well as of bananas, have been light; but those of coconuts, have been considerable. Oregon has been sending to us a pretty good supply of apples, which bring fair prices, as well as some of the late pears, of which there are yet a few on the stands, chiefly Easter Buerres. We have the announcement, from those well informed, that strawberries may be expected in two weeks. There is still an abundance of nearly all kinds of vegetables. Celery is remarkably fine this year. Green peas, rather unusual at this particular time of the year, are yet in small quantities. The late cold weather has operated unfavorably for them, as well as for tomatoes. Cauliflower-heads, which would bring one dollar apiece in Cincinnati, and five dollars in New Orleans, are here now in plenty, and reasonably low in price. They are of grand dimensions, and are beautifully white, firm, close, and of billowy form and roundness—perfect pictures in the vegetable line.

E. J. H.

SAN FRANCISCO, Feb. 26th, 1872.

The Exhibition of the Bay District Horticultural Society, has been postponed to Thursday, May 16th.

REGULAR MEETING OF THE
BAY DISTRICT HORTICULTURAL SOCIETY,
Saturday, January 27th, 1872.

The Committee on Exhibition reported that a suitable building may be constructed for about three thousand dollars, including gas and water-pipes, the material of which may be resold for about twelve hundred dollars.

The Committee estimated that the premium list and the fitting up of the grounds may amount to about fifteen hundred dollars.

Whereupon, the Board of Trustees was authorized to take the necessary steps regarding the Spring Exhibition.

The following resolution was introduced:

Whereas, a bill having been framed by the Delegates of the different Agricultural and Horticultural Societies of California, assembled in Sacramento on January 24th last, and having been submitted to our present Legislature providing for State aid to the different Societies—

Resolved, That the San Francisco Delegates in the Senate and Assembly be hereby requested to use their influence in procuring the early passage of said bill, as an important and necessary measure for the encouragement of Agriculture and other industries.

The resolution was unanimously adopted, and the Secretary instructed to forward the same to our Delegates in Sacramento.

A Committee of three was appointed to frame a Premium List for the next Exhibition; the members of said Committee being E. L. Reimer, F. A. Miller, and F. Luedemann.

The following resolution was introduced:

Whereas, it being represented that serious blunders have been made by the San Francisco Park Commissioners in grading the Avenue of the Golden Gate Park—

Resolved, That a Committee of five be appointed to investigate this matter, and to call the attention of the proper authorities to the subject.

Adopted unanimously.

The following members were appointed on said Committee :

Wm. Meyer, F. A. Miller, E. L. Reimer, C. Schumann, and R. Michelsen.

The following resolution was introduced :

Resolved, That the Secretary be hereby instructed to confer with the War Department at Washington on the proper course necessary to be taken for the establishing of Meteorological observations upon this coast.

Carried.

Some twenty volumes of valuable books were presented to the Society by Mr. C. Stephens.

Mr. C. Schumann having recently returned from a tour through the East and Europe, promised to communicate to the members of the Society his observations in a horticultural point of view, and appointed Saturday evening, February 3d, at the Society's room, as the most convenient time.

THE EIGHTEENTH REGULAR MEETING

of this Society took place on Saturday February 24th.

The principal business transacted was the final adoption of the premium list for the Spring Exhibition.

James Lick was elected an Honorary Member. Two new members were also elected, viz: Richard Linke of San Francisco and J. M. Asher of San Diego.

The Rules and Regulations governing the Spring Exhibition were revised and finally adopted.

We are authorized to state that informal meetings of this Society will be held every Saturday evening for Horticultural discussions, while the Regular Monthly Meetings take place on the last Saturday of every month.

THE SPRING EXHIBITION

of the Bay District Horticultural Society of California.

As was announced some time since, the Horticultural Society will hold a Spring Exhibition of trees, plants, flowers, fruits and vegetables, which will open May 16th and continue nine days.

Within a few days active preparation will be commenced, and it is anticipated that the flower show will be far superior to that of last year.

The premium list foots up over one thousand dollars in cash and the inducements for general co-operation and competition are considerable.

Various objectionable features in the regulations have been discarded.

One provision reduces the time required, for having the plants to be exhibited under cultivation, to six weeks; the time formerly stipulated was three months.

Exhibitors who are not members of the Society are required to pay ten per cent on the premium for which they compete.

The appointment of Judges to award premiums, is left entirely to the exhibitors, who will be requested to meet on the evening of the opening of the exhibition, for the purpose of arranging that matter among themselves. This, we hope, will obviate all ill feeling in the future.

We hope the enterprise will be a grand success, and we see nothing to prevent the Society from achieving a great triumph in their first attempt to hold an independent exhibition. We feel confident the affair will eclipse the Horticultural display of last year.

CATALOGUES RECEIVED.

Brigg's Illustrated Catalogue of flowers and vegetable seeds, bulbs and plants for 1872, came to hand. It is a magnificent work and should be in the hands of every lover of flowers.

Post Office address, Briggs & Bros. Rochester, N. Y. See notice elsewhere.

C. L. Allen & Co's illustrated Catalogue of seeds, bulbs and plants for 1872. This firm is one of the largest bulb dealers on this Continent. Post Office address, Brooklyn, N. Y.

Dreer's Garden Calendar, for 1872 contains much useful information, a descriptive catalogue of all kinds of seeds, plants and bulbs,

rustic work, horticultural implement etc., address Henry A. Dreer, Philadelphia, Pa. See advertisement in another column.

Descriptive Catalogue of Ornamental trees, shrubs, roses, flowering plants etc., for sale by Ellwanger & Barry, Mount Hope Nurseries, Rochester, N. Y. The stock which these gentlemen have supplied to California has always given satisfaction and we recommend them as reliable. See advertisement.

Also wholesale catalogue of the same firm.

Also *Descriptive Catalogue* of fruits for sale by Ellwanger & Barry of Rochester, N. Y., comprising a very large and superior assortment of trees, vines and bushes.

Wholesale price list of the Bloomington Nursery, Bloomington, McLean County, Illinois. F. K. Phoenix, proprietor.

Wando Almanac, published in the interest of the "Wando," fertilizer by Wm. Dukes & Co., general agents, Charleston, S. C.

Trade List of Strawberry Plants for sale by D. S. Myer, Bridgeville, Delaware,

Wholesale Catalogue of the Waukegan Nursery of evergreen and ornamental tree seedlings, for sale by Robert Douglass and Sons, Waukegan, Lake Co., Illinois.

Olm Brothers annual plant catalogue of new and desirable plants; also descriptive catalogue *Floricultural Gardens*, Springfield Mass.

Wholesale Price List of the Germantown Nurseries, Philadelphia: Thomas Meehan, proprietor; also Thomas Meehan's price list of tree seeds.

Wm. J. Hesser's illustrated Spring Catalogue of select, new, rare and beautiful plants. for sale at Plattsmouth, Nebraska.

Semiannual trade list of *Hoopes Brother and Thomas*, Cherry Hill Nurseries, Westchester, Pa.

Semiannual trade list of Heikes Nurseries; *W. F. Heikes* proprietor, Dayton Ohio.

Phoenix's Floral Guide, garden directory, and descriptive catalogue of greenhouse, garden and bedding plants etc.; by F. K. Phoenix, Bloomington, Illinois.

Henry A. Dreer's directions for growing pansies.

Annual Spring catalogue of vegetable and flower seeds, bedding plants, bulbs etc., for 1872 by *W. B. Dimon, Jr. & Co.*, Seedsman and Florists, Brooklyn, N. Y.

Gould Bros. Wholesale Catalogue or Trade List of fruit and ornamental trees, shrubs, roses, etc., for Spring of 1872, Rochester, New York.

Descriptive Catalogue of plants, arranged in classes, with illustrations, by Ellwanger & Barry, Rochester, N. Y.

Descriptive Catalogue of ornamental trees, shrubs, roses, etc., beautifully illustrated, by Ellwanger & Barry, Rochester, N. Y.

Descriptive Catalogue of fruit, by the same publishers.

NEW AND RARE PLANTS.

Mazel's Hybrid Begonia.—This is a Hybrid Begonia obtained by M. Marzel a French nurseryman, from Begonia Pearcei, fertilized by the pollen of *B. Boliviensis* and presents some of the characteristics of both species, with some features, proper to itself. The plant is a more free flowerer than either of its parents, the flowers are usually of a vermillion color tinted with carmine and with a dash of yellow. Full description in No. 4, of the *Gardener's Chronicle* of this year.

New Coleus.—During the late year a new form of Coleus was produced and exhibited under the name of Tryoni, one half of the leaves being of a rich glowing crimson, and the other half of a bright golden yellow; this character is established as we learn from the "*Gardener's Chronicle*" and will be perpetuated by the ordinary methods of propagation.

NEW FRUITS.

Brier's Sweet Crab.—is said to be not only a very ornamental tree in fruit, but the fruit is luscious to eat from the hand, nearly equaling the pear.

Preserved it equals the peach both in richness and fine flavor, and wherever the peach and cultivated plum cannot be grown with

success, it will prove a good substitute and of very great value.

The President of the Wisconsin State Horticultural Society says of it: the samples of Brier's Sweet crab that I have at several different times seen and tasted, and also preserves of the same, were certainly very excellent. For a delicate and delicious preserving apple nothing nicer could be desired. Also what knowledge I have of the habit of growth and hardiness of the tree is all in its favor.—*Gardener's Monthly*.

New seedling pears by Messrs. Clapps of Massachusetts.

Clapp's No. 73 Pear is of full medium size, in general shape and form resembling the Bartlett; greenish yellow, with many rough dots and patches of russet, and a common cheek when exposed to the sun; stem stout, set angular; calyx in a compressed furrowed, shallow basin; flesh fine whitish, half buttery moderately juicy, and as a late variety, of great promise.

Clapps No. 72 Pear, size medium to large; form oblong, obtuse pyriform; skin rough, surface uneven; color deep rich yellow, with many small minute grey or russet dots: stem short, stocky, set with a fleshy, abrupt depression; calyx with short irregular segments in a deep abrupt basin, slightly furrowed; flesh whitish, coarse, granular, half melting, juicy, half vinous, sweet and pleasant.

Moore's Rural New Yorker.

FAVORS RECEIVED.—We have received from Henry A. Dreer, Seedsman and florist, Philadelphia a fine collection of choice vegetable and flower seeds. The varieties are all very desirable. Thanks to Mr. Dreer.

Eighteenth Annual Report of the Young Men's Christian Association of San Francisco.

Address to the Agricultural Organizations in the United States, prepared by a Committee, in obedience to a resolution by the National Agricultural Society, together with Constitution and proceedings.

A GRAND WORK.

We have before us Briggs & Brother's catalogue of flowers and vegetable seeds, for 1872. The outside appearance of the work, with its highly embellished cover and tinted leaves would seem to indicate that the book comes before us for notice from some extensive lithographic printing establishment, or illustrated monthly printing house. Neither guess would be correct. The publishers are seedsmen, said to be the most extensive in world; who raise and sell flowers and vegetable seeds, sending them in large or small quantities to all parts of the country. They own no end of gardens and farms, both in and out of New York State—having a 260 acre farm at Clinton, Iowa, devoted expressly to seed, and their establishment at Rochester, has upwards of 60,000 feet of flooring, devoted exclusively to packing and shipping seeds.

But to revert to the catalogue before us, we must say, that it is more than was promised in the advertizements of the firm. Its typography is perfect. Its illustrated plates are models of pictorial beauty. Its contents embrace useful hints upon the growth and raising of flowers and vegetables, and are the results of years of practical experience. The purchaser of a catalogue (an order to Briggs & Brother for one dollar's worth of seeds, secures it free,) also receives an insight into what he may obtain on certain conditions, in the way of one or two chromo lithographs of flower bouquets, representing bouquets of choice natural flowers, raised by Briggs & Brother. These chromos are fully equal to the highest priced chromos sold, and are a fit ornament for parlor or sitting room. The catalogue also contains two representative engravings of the chromos, and parties ordering only one, which, without an order for seeds, requires an enclosure of seventy-five cents, can select which they prefer.

There is no person interested in flowers, house or garden plants, or engaged in the raising of vegetables or market cereals, who cannot be benefitted by the possession of

this valuable and beautiful illustrated catalogue. An enclosure of twenty-five cents, secures it prepaid, and the amount in seeds is returned; if an order follows the purchase of a catalogue.

Editorial Cleanings.

From the *Monthly Report* of the Department of Agriculture we clip the following items:—

DEPTH TO PLANT SEEDS.—The proper depth to plant seeds, is a question of considerable importance, and one which, like many other similar questions relating to plant growth, cannot receive a definite answer that would be of general or universal application. In dry, sandy soils, situated in dry climates, a deeper covering will be required than would be judicious where both soil and climate indicate the reverse of these conditions. For instance, it has been shown that peas continue longer in bearing condition, on sandy soils, when sown at a depth of six inches, than they do when placed nearer the surface; and it is said that the Indians upon the tablelands of the Colorado plant corn ten to twelve inches below the surface with the best results; but if planted with only one or two inches of covering, the crop fails. Seeds also vary in their ability to penetrate depths of soil in germinating. Leguminous seeds, and some of the largest seeding gramineæ, can be planted deeper than those of a lighter character. It has been given as a general rule that all seeds germinate most speedily when covered with a depth of soil equal to their own thickness, and where the constant presence of sufficient moisture for germination can be maintained; this rule, is, perhaps, as nearly correct as any that can be given.

A BERLIN PROJECT.—A “dendro-pomological garden” is about to be established at Berlin. This garden is to be planted with a collection of fruit-trees, and to comprise an arboretum, where all hardy ligneous plants will be systematically arranged. Hedges of various plants, capable of being used for the

purpose of live fences, will be introduced. The idea, and the botanical arrangement, emanates from Professor Karl Koch; the plan for laying out the garden being perfected by Mr. Meyer, landscape gardener of Sans Souci.

Several years ago, a similar project was proposed by Mr. William Saunders, of this Department, who prepared plans for the botanical arrangement, and for the laying out of the grounds. The work was not commenced until the spring of 1868; since that time operations have been gradually progressing; the ground-plans are nearly completed, and the collections yearly increasing in value and interest. The plan of the Department embraces various important details not included in the published plan of the Berlin project.

ASPHALT WALKS.—An economical asphaltting of walks is suggested in England, as, and upon trial, is said to have cost only 3*d.* per yard. The materials used, were merely tar and burned turf ashes. The ashes were burned in large heaps in the course of converting old pastures into arable lands. The cost of burning twenty cubic yards, was rather under 2*d.* per yard after the ground was plowed; the tar cost 1*d.* per gallon. The ashes were procured from the middle of a heap of a bright red color. About four hundred and fifty square yards of walk were asphalted with three hundred and thirty-six gallons of tar, rather less than one gallon per yard. The walks were quite firm with fine gravel before being operated upon with tar and ashes: only ten cubic yards of ashes were required. The work was done by various systems. A strong stand, about a foot high, was placed against the ashes, shot down in cart-loads, and the barrels rolled upon the stand as wanted; a common pail was used to pour the tar upon the ashes; about a barrowful of ashes was mixed with the tar until saturated, so that, when patted with the back of a shovel, the mixture did not adhere to it; the mixture was then wheeled to the spot where required, laid upon the walk about an

inch thick, patted down smooth, and sprinkled with dry ashes. The work was done in June and July, so that the surface generally became dry enough to roll, in about half a day. The rolling cannot be overdone, and may be continued day after day for a week. The other methods were merely to hoe the walks, pour tar on them, and then to throw the ashes over the tar, rolling as in the former process; or, by picking up the surface about two inches, smoothing down, applying the tar to soak the gravel, then adding dry ashes on the surface and rolling. The hoeing or picking of the walks is a much quicker process than by mixing the tar and ashes together first, but the latter makes the most finished job. A man may asphalt about forty square yards per day.

THE SUNFLOWER.—The cultivation of the sunflower is likely to become popular in India. An Indian authority says:

“The oil extracted from the seed is said to be superior to both almond and olive oil for table use, and to be employed in manufacturing woolen goods, soap, and candles, as well as for lighting purposes. The leaves have been manufactured into cigars, having pectoral qualities, and might perhaps be found more efficacious than stramonium. The blossoms furnish a bright yellow dye, which stands well. Each acre will contain from 15,000 to 20,000 plants, and the average quantity of seed will be fifty bushels, each of which will give a gallon of oil. The quantity of seed is much increased by dwarfing the plants, the best manure for which is said to be old mortar broken up. The plants should be kept clean and free from weeds, and the quantity of seed required, is about six pounds per acre. They should have sufficient interval between them for exposure to the sun, as under such circumstances, they become larger and more fully stored with seed.”

TOBACCO GROWING IN CALIFORNIA.—“The adaptation of this valley to the growth of a superior article of tobacco has often been tested

with satisfactory results, and there is no doubt the situation is precisely what the plant requires. Being an annual plant, it will grow wherever the summers are moderately warm. It is grown in nearly all our Northern States, and nearly every country in Europe, but the crop is not found to be profitable, as the tobacco does not have the strength and superior flavor of that grown in warm and dry countries. The favorite and high-priced varieties of commerce are grown where the summers are long and warm, and the air is free and dry. These conditions of climate are found in this section in an eminent degree, and would seem to indicate its adaptation to the growth of those superior qualities which never fail of a remunerative market. Whenever any locality is found to manifest this peculiar adaptation, it is found to be the most valuable crop that can be grown. It is one of those articles which meet with the most universal consumption, and may be looked upon as one of the great leading agricultural staples. That mankind would be better off without it admits of no question. To discourage or put down its use has equally baffled legislators and moralists; and, in the words of Pope, on a higher subject, it may be said to be partaken of “by saint, by savage, and by sage.” Such being the case, we submit to the inevitable, and are gratified to see the favorable opening now offered for its cultivation in this locality, as we believe it to be one in which it will meet with complete success. Mr. Jewett thinks that, for the purpose to which he intends to apply it, a ready and remunerative market for at least fifty thousand pounds, at the present time, will be afforded. Land, supplied with water for irrigation, will be furnished to persons desirous of engaging in the business, free of rent, within a mile of Bakersfield.”—*Kern County Courier*.

LOS ANGELES WALNUTS.—The first English walnuts were planted in Los Angeles county in 1857. They commenced bearing in three years, the crop increasing every year. In the year 1863 the crop amounted to 9,200

pounds. Previous to 1860, the walnuts used in California were all imported from China, to the amount of nearly 30,000 pounds annually.

The flavor of the walnuts raised in Los Angeles is finer than that of the imported nuts. Near San Gabriel, or the Gabriel Mission, the walnut tree is found of larger size and bearing the best of nuts. These trees were set out by the missionaries. Los Angeles county supplies a large demand for walnuts, and as Southern California becomes more settled, walnut trees will be grown more extensively, adding an increased resource of wealth to this delightful portion of our State.—*Rural Press*.

LA MARQUE ROSE.—We saw on the 30th day of January, on Turk Street, in the City of San Francisco, a La Marque Rose in the open ground, about six feet high, having ninety-one flowers, one-half of them half open, and the other half in full bloom, making a beautiful sight at this season of the year. The flowers of that rosebush would, we believe, have easily brought twenty dollars in New York.

GROWTH OF "ABIES DOUGLASSII."—This well known California Spruce was introduced into England in 1827. The *Gardener's Chronicle* says, that out of the first seeds sown in the winter of 1827, three had grown about one inch high in the March following. In October, 1871, one of these trees measured one hundred feet, six inches in height, and the girth, three feet from the ground, nine feet, seven inches. Its growth since 1844, was sixty feet, six inches. It is pronounced, according to the *Chronicle*, a rapid grower, and therefore important as a timber tree. Cuttings and layers have shot up five feet in one year. It is perfectly hardy in England, and is considered a most desirable tree for ornament as well as timber. The specimen at the International Exhibition, the *Chronicle* states, measured, when cut down, three hundred and nine feet.

THE JARRAH JARRAH, or Western Australian Mahogany, is becoming famous, and its value has been greatly enhanced by recent Government tests, showing that the durability of the wood is dependant not so much on its density as on a certain astringent vegetable acid, which appears to be so peculiarly disagreeable and even poisonous to insects, that they avoid the timber.—*News Letter*.

THE OLIVE TREE.—The planting of this tree is recommended, not alone for its fruit, but on account of the excellent shade it affords. The popular idea has been that it took the tree from eight to nine years to produce fruit. This, the *San Diego Union* shows to be an error, by citing two cases—one in that city, and the other at Santa Barbara—in which trees bore fruit from cuttings in three years. The knowledge of this fact should serve greatly to popularize the tree.

A PECULIAR TREE.—Upon the ranch of Mr. Robert Finley, five miles south of town, there is a tree, or a collection of trees, remarkable in several respects. An old Bay tree, (the same as the California Laurel or the Pepper wood,) many years ago, sent forth from its stump no less than ten shoots. These shoots have "flourished like the green bay tree," and have become great in size. Their height is at least eighty feet, while their diameters range from eighteen to thirty-six inches; the diameter of the main trunk is four feet. The ten trees separate a few feet above the ground, and at the place of separation, form a natural couch, large enough to contain a man of ordinary size. It would afford an excellent retreat for the solitary hunter, on a wet night. Taken altogether, this is the most remarkable Laurel tree we have ever seen.

Russian River Flag.

THE AQUARIUM OF THE LONDON CRYSTAL PALACE.—The Aquarium of the Crystal Palace, London, is one of the best attractions which have been provided of late years. You descend a stair to a handsome corridor, one side of which is bordered by sea-water tanks

with plate-glass fronts, that rival shop fronts in dimensions. Here you can lounge and watch the movements and habits of creatures that live at the bottom of the sea, and acquaint yourself with much that could not be seen in any other way. The domestic life of flounders, whiting, cod and many other kinds of fish may be studied with amusement as well as instruction; and the behavior of lobsters, crayfish, crabs, prawns, and cuttlefish, will perhaps astonish most beholders. And in witnessing all this, so ample is the space and supply of water, that the idea of the creatures being captives, scarcely enters your mind, and you come away with the conviction that a great deal of very interesting natural history may be learned in the new aquarium.

KEEPING APPLES.—M. J. N. Hoag, of Yolo County, stated at a recent meeting of the Farmers' Club, in Sacramento, that "many persons in this State pack their winter apples in clear sand and allow the boxes to stand open so that the rain runs through them, and take them from the sand as they want to use them. This mode of keeping, he said, was found very successful, the fruit retaining a fresh juicy condition and natural pleasant flavor.

CABBAGE LOUSE—The American Agriculturist pronounces as the best remedy, Lime, slaked dry with water, in which carbolic acid has been dissolved, one part and dry air-slaked lime three parts; mix together and sprinkle on the leaves, while wet with dew. Where they are very numerous on a leaf, it is better to remove it and destroy the insects by burning.

A CALIFORNIA WINETANK.—At B. N. Bugbey's vineyard, on Tuesday last, a dance took place in one of his mammoth wine tanks. A party of ladies and gentlemen, invited to the dedicatory ceremony of dancing in one of the largest vats in the United States, were in attendance, and participated in the hospitality of one of the most enterprising vintners in California. The monster tank was lit up;

the musicians announced "take your partners for a quadrille," and dancing commenced after the old Bavarian style—while one set danced, there was plenty of room for 20 spectators and the musicians. The vats are able to contain 50,000 gallons of wine—*Folsom Telegraph.*

THE SUPPLY OF QUININE.—Cinchona has for many years been cultivated on Government plantations in Sikkim, a province on the northeast of British India, in the hope of being able to obtain a large and cheap supply of quinine. The success of the enterprise, it is stated, has been sufficiently encouraging to justify a continuance of the effort. Over twelve thousand pounds of dry bark were produced last year on the Rungbee plantation; of this quantity seven thousand pounds were boiled down on the plantation, and five thousand pounds were sent to London for sale. "*Cinchona Officinalis.*" is declared to be a failure in India, and the most successful variety is the "*chinchona succarrubra.*" Energetic efforts are making to grow the "*calisaya*" variety. The Government of British India, in reply to a memorial protesting against its interference with private companies engaged in raising cinchona, states that it cannot leave solely to individual enterprise the further prosecution of measures necessary to secure to the people abundant and cheap supplies of quinine, which is the only efficient specific for the most deadly of all maladies in India. In 1869 it appears that out of 1,855, 634 deaths in British India, nearly half or 824,256 were due to billious fever.

PARTRIDGES VS. CHINCH BUGS.—Illinois farmers find that the partridge is a great destroyer of the chinch bug, which is so injurious to wheat fields, and are beginning to protect them from the fowler. One farmer says he has hundreds of tame partridges about his place, and his wheat crops are unusually abundant, while in places not far away the chinch bug commits great ravages. He feeds the birds in winter.

CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

VOL. II.

APRIL, 1872.

No. 5.

DEUTZIA.

There are several varieties of *Deutzias* under cultivation in California, but they are not as popular as their merits warrant, and we do not know any hardy deciduous flowering shrubs more deserving of extensive nurture than the *Deutzias*. There are, doubtless, other flowering shrubs which are clothed with more elegant foliage, and others again which bear more brilliant flowers; but when we see a *Deutzia gracilis* or *Deutzia scabra*, covered with its thousands of little bells of pure white, in early spring, we always find words of admiration and praise. These flowers adorn the little bushes for some time and are particularly well adapted for bouquets and cut-flowers, for which purpose florists cultivate them extensively in the East and in Europe.

We can also recommend the *Deutzias* highly as house-plants, their management being very easy. They prefer a light, sandy soil, and may, after flowering, be kept anywhere out in the open air until December or January, when they should be removed to the greenhouse or parlor window for forcing. During their time of rest only enough water should be given to keep them in healthy condition, but immediately before and during their time of flowering, they should be watered regularly every two days, and aired whenever the weather will permit it.

The object of cultivating them in pots and under the cover of glass, is to bring them earlier into bloom, when other flowers are scarce.

The most popular varieties are natives of China and Japan, but within the last two or three years other new and superior ones have been produced by the art of floriculture. Of the old and well known varieties, the following are the best:

Deutzia gracilis (slender branched), native of China and Japan; flowers freely, and is exceedingly well adapted for pot culture.

Deutzia scabra, native of Japan, is of a more robust growth and spreading habit than the former, growing from four to six feet high; its flowers are similar to those of the *Philadelphus*, but smaller, and it comes into bloom later. For forcing, we cannot recommend this variety so well as the former, but for open air cultivation it is more showy.

Deutzia crenata, is in habit similar to the *D. gracilis*, only more robust.

The art of floriculture, however, has of late added two remarkable varieties; these we have not yet seen under cultivation here, but they are highly spoken of by our Eastern friends, and, we have no doubt, will soon find their way into our nurseries and floral establishments. They are—

Deutzia crenata flore pleno (double flowering *Deutzia*). It is described as similar in habit

to the *D. crenata*, but the flowers are a double white, tinged with rose, and are said to be of large size.

Deutzia gracilis variegata, is a new variety of the *D. gracilis*, with variegated foliage, of which we know but little as to its floral value, and take for granted that, as far as its variegated foliage is concerned, it will fail to become popular.

As for the treatment of Deutzias in the open ground, we advise great care in pruning, their habit requiring that the knife should not be used except for cutting away superfluous wood and suckers; to give the plant shape, it is better to pinch off the young shoots, while in a growing state.

They may be propagated without difficulty by cuttings, layers or division of the root.

Certain florists of Germany have been very successful in grafting the Deutzias (particularly *D. gracilis*) upon the Philadelphus, by which method they have produced fine specimens of tree-like appearance, the effect of which is very striking and remarkable.

In forcing Deutzias or treating them as house plants, the temperature should not be any higher than that required for roses, and a moist atmosphere is not very acceptable; we mention this fact as a good reason why its cultivation as a house plant is so easy.

PRESERVING GRASSES.

BY ANNA G. HALE.

“Grass-flowers should be plucked—the longer the stems the better—before their spikelets are fully spread. Care must be taken in gathering, and afterward, that the finer blossoms do not get entangled with the coarser. Dry them like everlastings.

The seeds of the cultivated grasses—a large number of species and varieties—are for sale at the flower stores. The wild grasses here mentioned, and many others which the limits of this article forbid noticing, can be found almost anywhere.

No matter if unacquainted with its botanical name, wherever a tuft of grass lifts a stalk of inflorescence accept its offering of beauty. June, July and August are grass months.

If grasses are green in color when gathered, or purple, or red—as some are—they soon fade to a pale buff. But even then they are agreeable to many eyes; especially if the rich browns of the sedges add their contrasts, and the orange and scarlet seed vessels of *Celastrus scandens*—the climbing bitter-sweet, the coral-like berries of *Ilex verticillata*—the black alder, the dark blue berries of *Ampelopsis quinquefolia*—the woodbine or Virginia creeper, or even the shining black ink-berries and the red hips of the wild roses are mingled tastefully with them, while bright autumn leaves—sumach, maple, oak, elm, beech—lending their presence, make up a gorgeous assemblage.

Yet some persons prefer to dye them, and they are often seen of all the colors of the rainbow. They will absorb any liquid dye, the dye being heated to scalding. If large quantities of any one shade are desired, the family dyes now obtainable at drug stores are most suitable. In using these for grasses, proceed as if dyeing cotton goods, following the directions for so doing which accompany the dyes; except that in dyeing grasses the stalks should be suspended head downward within a deep jar or pitcher, and the dye poured over them. Tied to cords which are stretched across the brim, they will be in good position to receive the dye without injury to their form. When the right shade has been attained—easily seen, if the vessel be of glass—the cords, still bearing the newly dyed grasses, must be hung across a dark closed room, till the blossoms are all dry; then they are ready to be arranged in vases, or bouquets, or to be used in decorating the hair.

When a few grasses only are to be dyed, sufficient coloring may frequently be made of some familiar substance to stain them handsomely. Thus, good blues are made by

the use of the azurine or liquid blue,—(all dyes for grasses are needed hot)—which is green by the addition of a few drops of the muriate of iron-tincture; the iron alone giving to the scalding water different shades of yellow, which are permanent; and soda added to this making it orange, or brown, according to the quantity used. A very little—a few drachms—of cochineal, tied in a bit of muslin, and steeped in water a few minutes, gives different shades of rose and red according to the amount of water used, which are quickly changed to purple, if desired, by dipping in the blue. Thus one may have a gaily-colored assortment with little trouble.

Dried grasses, especially those of waving or drooping habit, can be very handsomely disposed in baskets; in hanging baskets particularly, with dried eternal flowers and crystallized grasses, we have a decoration dazzlingly beautiful,—either in sun or gas-light,—for an arched doorway or an alcoved window. Crystallization enhances the beauty of dried grasses as well as that of the natural-hued; but dyed grasses should be used alone for decorations, or with only a few of the undyed. It is poor taste to mix eternal flowers, bright winter berries, or autumn leaves with dyed grasses, as is sometimes done. Baskets of light wickerwork, lined with silver paper, and filled with dry sand, are suitable for crystallized grasses. A hanging basket covered with a network of white glass beads or bugles, and suspended by slender chains of the same, is very elegant for this purpose; or the basket itself may be crystallized as well as the grasses.

The lighter and feathery species of grass are the prettiest crystallized. When the grass is to be used for ornamenting the hair, or for arranging with eternal flowers, the spikelets should be crystallized singly. A bouquet of grasses entirely is best made up before crystallization, as the crystals are liable to be shaken off if the grass is handled much. The crystallizing liquid is a

solution of alum. One pound of alum will make sufficient liquid for a large bouquet.

When you wish to crystallize grasses begin the work in the morning, because it will take two days and a night, at least, to complete it. Use a perfectly clean porcelain-lined kettle or pan, and put in this the alum, that has been pounded fine as dust. Add to it a quart of cold water—rain or spring water is best. Set it on the back of the stove or range, and keep it there till it is scalding hot, stirring it till the alum is dissolved. When it is hot pour it through a clean muslin stretched over a bowl, in order to strain out all impurities;—the beauty of the crystals depends upon their clearness, hence all this care to have the solution perfectly clean. Let it cool till you can hold your finger in it comfortably. Then, get a deep jar or pitcher—glass is best; you can then see that the grasses are not bent nor crowded—which would mar their beauty. Within this suspend the bouquet, by tying it to a stick laid across the jar's brim, and from a small-nosed pitcher pour the solution over it, slowly, till the liquid rises to the stems of the bouquet. Let it remain thus, submerged, till the next morning, in a cool room. Take it out carefully then, and hang it half an hour, head downward in an empty jar (by means of the stick across the top of the jar) to drip. It is then ready to place in the vase which it is to occupy. Set it in the sun and air—*not in the wind*—till night, and at that time remove the vase to its niche in the parlor.

When grasses are crystallized singly, suspend the larger panaced stalks as you would a bouquet, and manage them in the same manner. The lighter kinds, and the feathery sorts, may be placed head downward within the edge of a deep bowl, spreading as thinly as possible, and a few can be suspended in the center, by means of a short string and the stick across. When they have been in the solution (it was poured over them, of course, as for a bouquet) a day and a night, stretch the string in front of a window, and

lay the others on a dish to dry. If, after drying, the crystals are not large enough, heat the solution and go through the process again. The solution may be colored, by adding a few drops of dye, when it is cool enough to pour over the grasses. What remains after crystallizing the grasses may be again heated, half a pound more of alum added, and a crystal basket made.

To make a crystal basket, procure slender canes or whalebones, such as are used in the manufacture of shirred bonnets. Form, from these two rings, by tying securely together the ends of a strip fifteen inches long and of one thirty three inches long. Then tie seven strips, twenty inches long, at equal distances, to the small ring; then, also, at the height of six inches, to the larger ring, at equal distances; and, bending them, to form a scallop two inches high, tie them again to the rim; and, latticing the strips, between the rim and the base, tie the other end to the base. Wind all the fastenings strongly, and cross four strips within the base-ring to fill the vacancy, and the basket is formed. Strips of coarse cotton cloth, two thirds of an inch wide, must then be ravelled on both their edges till only threads enough remain in the center to prevent falling apart at handling. Wind these strips over the canes that compose the basket-frame, covering all parts carefully, till the whole seems hung with a fringe. Set it in a deep dish, pour the warm—not hot—solution of alum over it; cover the dish, and let it remain thus twenty four hours. Then take the basket out carefully; place it in an empty dish to dry in an airy, sunny room. Do not move it till the next day. This, too, should be covered again with the solution, if not thickly hung with crystals. If properly managed, the threads of the fringed cloth will be bristling in every direction and tipped with resplendent jewels. A white silk cord should be attached to hang it by, or handles made of canes covered with the fringed cotton and then crystallized like the basket. It will need a lining of silvered

paper, and should be filled with dry sand to receive the stems of the grasses and eternal flowers; some of them being first made into small bunches for the centre of the group.

A very elegant pyramid bouquet may be arranged for a vase by making up a number of small bunches of crystallized grasses with everlasting and other dried flowers as centers of each; these groups of flowers should then be adjusted around a stick by means of a slender cord, to the required form, binding in with them a sufficiency of moss to separate the different colored blossoms from each other. The crystals have a very fine effect among the green moss and bright flowers. But a China vase is less suitable to hold such a bouquet than a rustic one would be. One made to resemble an old forked branch of a tree may be easily fabricated from birch bark—lichens and grey-beard moss gummed upon it at intervals, and also the red-cup moss. If this last cannot be procured, touch the lichens here and there with hot sealing-wax. The grasses and eternal flowers should be arranged in spreading form; the drooping grasses are very beautiful for this. Suspend the branch from the ceiling, in the corner of a room. A vase made in the form of a cornucopia and covered entirely with lichens and mosses and filled with grasses, is a very handsome ornament for the mantel or a corner bracket. A very large cornucopia filled with pampas-grass, crystallized, would be a magnificent figure for a niche in a hall or a reception room.

The dried flowers of the garden and the conservatory are often grouped with dried everlastings and some of the smaller grasses, the crystals of the grasses gleaming like dew-drops among them. A basket of dark-colored wicker-work brings out their colors in strong relief.

A very pretty basket, in imitation of coral, may be made by fabricating a frame of this form from canes and tying upon it with stout thread in a careless lattice-work, the stems of

bunch raisins—probably grape stems would answer. Two ounces of white wax should be melted and half its measure, when liquid, added of olive oil or lard. Simmer these together, then stir in an ounce of vermilion, bought at the paint shop; and when the mixture has cooled to the consistence of mucilage, drop it with a camel's hair pencil upon and over the stems till all is a brilliant scarlet. Care must be taken not to break the small stems (from which the raisins have been plucked), as these, when tastefully covered with the vermilioned wax, have the appearance of thickly branching coral. This is a beautiful basket for displaying crystallized grasses of natural hue.—*N. Y. Horticulturist.*

THE "MAJETIN," vs. APPLE BLIGHT.

(Continued from page 102 of last number.)

The following is the Analytical Chemist's "Report on the Wood of the Majetin and the Crab":—

"GOVERNMENT ANALYTICAL LABORATORY, }
MELBOURNE, 29th May, 1871. }

Dear Sir: I have made an examination of the young apple trees sent by yourself; the one being a Crab apple, and much infested with a species of white woolly blight; the second one, the Majetin, being quite free from blight. Both were digested in water, and the infusion concentrated by evaporation. The total amount of extractive matter was as follows:—From 2½ oz. weight of dried plants each—No. 1, Crab, 86·7 grains; No. 2, Majetin, 108· grains. The Majetin was more astringent to the palate than the Crab, but was otherwise very similar. The residues left, after exhaustion with water, were then ignited in order to ascertain the nature of the ash left. Weight of ash—Crab, 33·3 grains; Majetin, 33· grains. The total amount of ash was, therefore, nearly the same. Upon being analyzed, the following results were obtained:—

	Crab	Majetin
Carbonate of lime,	7·5	16·3
Alumina and iron, soluble in weak hydrochloric acid,	6·1	4·0
Siliceous and clayey matters insoluble in acid,	16·6	9·6
Other earthy matters and loss,	3·1	3·1
	<u>33·3</u>	<u>33·0</u>

These results show that the Majetin apple tree, which is free from blight, is a much larger consumer of LIME, and it is most probably to the presence of this substance that such immunity from blight is due. The Crab, on the contrary, seems to have absorbed a much greater quantity of clayey matters, which have not been able to protect it from the attack of these insects. The total amount of ashes in each was remarkably close.

WM. JOHNSON, *Gov't Analyst.*

To W. H. TREEN, *F. R. H. S.*, Brighton."

From the above analysis it will be seen, that the ash of the Majetin contains very nearly 50 per cent. of lime in its constituent parts, while the Crab exhibits not quite 23 per cent. of lime, the difference being very great in two plants otherwise so similar. The scientific analysis of the wood of both the Crab and the Majetin, finally and satisfactorily places the value of the Majetin beyond all doubt. In fact, this proves it to be of national value as a stock upon which the apple should in future be worked. But as a consequence concerning this matter, there have been a few (although, I am happy to say, very few) envious detractors with regard to the Majetin being really an "*Aphis lanigera* resister." It was wisely remarked by a writer in the *Australasian* of May 27th, 1871, in speaking of Prof. Halford's beneficent discovery and the disingenuous attempts which had been made to rob him, as follows: "One of the evil consequences of that spirit of provincialism which afflicts colonial communities is perceptible in the jealous disparagement of remarkable merit or ability which occasionally exhibits itself amongst us." So that notwithstanding the few would-be de-

tractors relative to this Majetin matter, it is very satisfactory to find that the majority of horticulturists, cultivators, market gardeners and others, had, even previous to the conclusive proof of the analysis, been open to conviction concerning the great value of this discovery; and although the pleasure I experience is not mixed with any particular profit as far as I myself am concerned, yet in one sense I gain a prize in the high gratification I reap daily on meeting with any of the genuine and progressive horticulturists of Victoria, by having the satisfaction of knowing that I am coöperating with them, though in a small degree, in the widening and improving by these means cultivation in this colony.

With regard to the best quality of soil, and one least likely to encourage blight, in which to plant the various varieties of the apple, a great difference of opinion has always prevailed. Some prefer a very poor, and others a very rich soil. In a rich loam, or one that has been highly manured, the growth of young apple trees in this colony is exceedingly rapid, and their appearance during the first few years generally indicates the utmost health and vigor. These are not, however, always good signs as to their future well-being, as an inspection of their roots frequently proves. On the other hand, plants in very poor soil often become stunted, and then quickly become subject to blight, and do not readily acquire a vigorous and fruitful habit. Where it can be obtained in this colony, choose for the cultivation and perfecting of the apple a site without too much shelter nor yet too much exposure, and a loam of only moderate strength, of a limy nature, with considerable depth, in preference to all other soils.

The result of the analysis clearly shows the great importance of a "limey soil" for the thorough cultivation of the apple; and when such a soil cannot be obtained, it is more than ever evident that the addition of lime to all those soils containing very little should receive the cultivator's immediate and energetic attention.

TENDER VINES.

[Continued from page 102 of last number.]

We shall now speak of the well-known Jasmine, which furnishes most delicious flowers for bouquets, and well deserves most extensive cultivation. We will remark here, that the name of *Jasmine* is applied to plants which we cannot consider under the head of this article; some of our European friends even apply it to the varieties of *Philadelphus* (Bastard Jasmine), which is a hardy shrub, extensively cultivated in Europe. However, we shall soon give our readers an article on all plants which, whether properly or improperly, are called Jasmynes, while at this time we must confine ourselves to those varieties which are cultivated as greenhouse plants and have a climbing habit.

Jasminum grandiflorum (Spanish Jasmine), sometimes called *Jasminum Catalonica*. (We should say here, that we fail to see any difference between *J. grandiflorum* and *J. Catalonica*, notwithstanding the opinion of some that there is a difference, and we think that the name of *J. Catalonica* might be dropped entirely.) The *J. grandiflorum* has become the most popular of the family, which is due principally to the fact that it is a very abundant bloomer and vigorous grower. It is well adapted for window-culture and comparatively easily managed.

Plants as yet command a high price, and this again is due to the difficulty of propagating them. Although we have frequently met with success in rooting cuttings, this operation seems not very satisfactory to our nurserymen, who now graft upon the stock of the *Jasminum officinale* and produce within six months very good and strong plants. The operation is not difficult, but there is generally a scarcity of stocks of the latter, suitable for grafting. We do not advise to abandon the method of propagation by cuttings, and think that in a well-shaded place, close under glass and with moderate bottom heat, cuttings of well ripened wood will strike roots readily. We should also judge,

that it would be advantageous to water the cuttings well after planting, so that early and frequent watering may be dispensed with as much as possible.

The flowers of the *Jasminum grandiflorum* are white with a purple tint on the outside, and a fine bouquet is hardly complete without some of its flowers, which find always a good market.

Jasmines require a nourishing soil, and a mixture of equal parts of leaf mould and peat or some other porous soil, suits them best.

There are a few specimens on this coast growing well in the open air, and we have had frequently occasion to admire one on Sutter Street, in the garden of Mr. Caduc, which thrives well and produces an abundance of flowers throughout the entire year. However, they flower more abundantly under glass, and the flowers have a purer and more delicate appearance.

Jasminum Sambac (Arabian Jasmine), like the former, a native of the East Indies, has been, we believe, under cultivation longer than *grandiflorum*, but has been less popular, until some double flowering varieties have been produced; one of the best is *Duchesse d'Orleans*, producing most beautiful and large double flowers, and which should be in every greenhouse or conservatory. Propagation the same as the previous variety.

Jasminum revolutum (Yellow Jasmine), is a native of China, and is treated sometimes as a greenhouse plant, but it is perfectly hardy with us, and should be treated as such. It propagates easily from cuttings; the flowers are of a beautiful delicate yellow and slightly fragrant. As an evergreen climber, it has few superiors.

There are other varieties under cultivation, but they are rarely met with, such as *J. gracile*, *J. odoratissimum*, *J. Lindleyana*, etc.

It is said that Jasmines are difficult to transplant—we do not think so; all that is necessary is, to cut back well, remove some of the old roots, and do not plant too deep. It must be borne in mind that the roots of

the Jasmine do not run deep, but draw their nourishment from the surface soil. The best time for transplanting is early spring.

Thunbergia is the name given to a greenhouse vine, which, we suppose, is not very familiar to our readers; but we should like to see the most prominent varieties more extensively cultivated. It is true that they require a warm and moist atmosphere, which is not easily obtained in California, yet they may be expected to do very well in the atmosphere which we give Camellias or flowering Begonias. We saw a very good little specimen the other day in Woodward's Gardens, flowering spontaneously. The flowers are of a somewhat delicate structure and very distinct—properties which should encourage the amateur.

Thunbergia alata is one of the oldest and best; flowers golden yellow, shaded with dark brown towards the center.

A new variety of this was produced in Germany some time since—the *Alata fl. albo*, with pure white flowers, dark violet shade towards the center.

Thunbergia grandiflora is a beautiful species, native of the East Indies; flowers large and of a pale blue color.

The Thunbergias are readily propagated from cuttings, if planted close under glass in a close, warm and moist atmosphere. They may also be raised from seed. A light, porous soil is best suited for their cultivation.

Bignonias (or Tecomas) are treated here and there as greenhouse plants on this coast, but they seem to grow entirely too rank under glass. The plants thrive well in the open air and may be cultivated there, but should be protected from heavy winds, otherwise they will not flower very freely.

The Bignonia is not a florist's flower, that is to say, the flowers wither very quickly after being cut off; however, they are very ornamental, and their light colors form an effective contrast with the dark green foliage of the plant. At present they are not cultivated to any extent, as the demand for them seems to be very limited.

ON THE PROPAGATION OF AUSTRALIAN EVERGREEN TREES AND SHRUBS.

[Continued from page 26, No. 1, Vol. II.]

Editors California Horticulturist:

GENTLEMEN—In the first number of the present volume of your highly-appreciated Journal, I addressed you on the mode and advantages of propagating Australian evergreen trees and shrubs by cuttings. With your permission, I will again take up the subject.

I will now state why I prefer cuttings to seedlings. It is well known to every practical gardener that cuttings taken from flowering evergreen trees and plants, and rooted, will produce flowers the first year, provided that those plants have been flowering or have shown signs of being about to flower; whereas, it will take seedlings of these classes of plants from two to eight years, and even more, before they will bear flowers. *Calistemon*, for instance, raised from seeds, will take many years before they will bloom, as also *Melaleucas*, *Corynocarpus*, very many of the best varieties of *Acacias*, *Banksias*, *Podalyrius*, *Ericas*, and a great many others indigenous to Australia. The *Hakeas* are a beautiful class of plants, but the seedlings will not produce flowers before they are from four to eight years old, whereas cuttings will bloom the first year. It is difficult to grow this tribe by this process, but by perseverance and marked attention I have succeeded in striking the *Hakea* from cuttings.

Acacia linearis, which is one of the best, will strike freely, if properly attended to. This *Acacia* is of graceful habit, and bears beautiful racemes of bright, yellow flowers; it should be cultivated and planted far more extensively in California; when grown from cuttings it will bloom the first year, but seedlings will sport more or less, and will not flower before five or six years old.

Acacia rubra, another beautiful variety, having reddish wood and narrow, leathery, dark-green foliage; is hardy even in locali-

ties where severe frosts prevail, is of dense growth, good habitus, and well adapted for lawns and grass plots, and will stand our severe winds well; will also grow from cuttings freely.

Acacia armata, will make a beautiful tree, if grown properly, and will be an ornament to any garden; the only method to keep this *Acacia* true is to raise it from cuttings. I have seen it in some of our nurseries grown from seeds, where it lost its original character and peculiar beauty.

Acacia conspicua, is a very old but favorite variety. I have seen some very beautiful specimens grown to perfection in our gardens. It is a fine variety, will recommend itself, and should have a place in every garden; it should be grown from cuttings, as when raised from seed it will not keep its original habit.

Acacia pulchella spinosa, is a beautiful evergreen, of dwarfish habit; it is easily raised from cuttings; with proper attention it will produce a most striking effect. This *Acacia*, when planted out in the ground, will, by very little training, form into umbrella shape; the flowers are of a clear, golden yellow, and with these it is literally covered throughout the spring.

Acacia verticillata, is also an old but favorite variety; it is of graceful habit, and will grow from fifteen to twenty feet in height; it is a very desirable variety, and will strike freely from cuttings.

Acacia grandis, is a fine variety for pot-culture, naturally forming a beautiful pyramid; it is of rapid growth, and very delicate foliage.

Acacia imbricata, is of dwarfish habit, the foliage resembling *Taxus baccata*, but more delicate and smaller.

**Acacia melanoxyton*, is one of our best trees of this class in cultivation; it is perfectly hardy, and will attain a very large size; it is of good habit, and will make a very respectable shade-tree.

Acacia decipiens is a beautiful variety, and should not fail in any collection.

Acacia floribunda, is a fine tree, resembling in habit *A. linearis*, but the foliage is larger. There are very few of this kind to be found in our nurseries; it seems to have degenerated by being raised from seeds; to keep it true it should be grown from cuttings, by which means all the above-named Acacias may be grown freely; but seed being so easily obtained here, very few will take the trouble to propagate by any other means. I, for my part, think the little extra labor well repaid by the advantage of seeing the little plants so raised, in bloom the first year; this alone is worthy of consideration. There are very many other Acacias, which I have not mentioned, which are as easy of propagation by cuttings as the above, but I will leave them, as I wish to furnish a few hints on the growth of *Heaths* or *Ericas*.

Erica, Order, *Octandria*, *Monogynia*. The *Ericas* also can be successfully grown from cuttings, but require to be kept close under bell-glasses until they have rooted. If bell-glasses are not to be had, a flower-pot or box may be taken and filled with sand, which must be pressed firmly and smoothed down, leaving room enough in the pot or box for the cuttings, so that they may be covered with a pane of glass. The cuttings should never be taken any longer than an inch, and half-ripe wood is preferable. Cut the leaves from the part you put into the sand with a sharp knife, then plant them with a small, pointed stick, watering them with a very fine rose or sprinkler, so that they may not be washed out of the sand. Keep them closely covered with glass, which, however, should be wiped every morning; in about three months the little plants will be sufficiently rooted to be planted into two-inch pots. They require leaf-mould, and no animal matter should be mixed through it. Keep the little plants in a close frame, under glass, and well shaded until they begin to grow, then air them daily; by following this rule it will be easy, in a short time, to raise a large stock of *Ericas*.

In the next number I will give a few hints on the further treatment of this very interesting tribe of plants. E. L. REIMER.

WINE MAKING IN CALIFORNIA.

Processes and Varieties.

(Continued from page 106 of last number.)

During the first few years of grape culture in California, considerable quantities of wine were made and put upon the market; and, as it did not find an immediate sale, the producers became almost disheartened. They had serious cause for fear, as the California wines had not yet been extensively introduced, and the consumption was still very limited. The wine merchants would gladly have purchased, but the limited means they possessed were already invested, the banks refused them credit, and capitalists were unwilling to invest their money in what they considered a hazardous business. Little did either the bankers or capitalists imagine to what an extent this enterprise would be carried in a few short years. Neither did they know that wine was one of the best and safest securities upon which money could be loaned; for, instead of decreasing in value, it improves, becoming more and more valuable as it grows older, and in greater proportion than the cost of care, storage and interest. But bankers and capitalists begin to understand the real value of such security, and but little difficulty is now experienced by wine-merchants in obtaining all needed accommodation.

The dealers of San Francisco, after receiving and storing the wines until they attain the age they desire them to acquire, clarify them, and then offer them to the trade. This is done either in bottles, in demijohns, or in small barrels, according to the respective classes of trade they are engaged in. Very large quantities of wine are shipped to the Eastern States, *via* Cape Horn and the Isthmus of Panama. A great deal is also sent overland, by railroad, to the Territories, and the States in the Mississippi Valley. The business with these latter has increased in the most encour-

aging manner, ever since the railroad began to carry freight.

The reputation of California wines in the Eastern States is at this moment undergoing one of the severest trials that can be put upon the product of any country: that of palming off upon the confiding public, spurious, inferior, and barefaced imitations of the same, which never saw the soil of our State, nor resemble our wines in any particular. This unscrupulous traffic is carried on openly throughout the Eastern States, and millions of gallons of these compounds over and above the actual product of this State are probably sold. It is of the greatest importance to our wine-makers to ascertain by what means this evil can be stopped, or at least mitigated, else it will soon become difficult to retain the fair reputation we have already gained. This imposition can only be practiced upon those who are not accustomed to our wines; and it is so unskilfully manufactured that it is a matter of surprise how any wine-drinker can be deceived by it. The basis is generally cider, while the other ingredients are alum, cream-tartar, sulphuric acid, catechu, sugar, water, alcohol and logwood, and the resulting liquid is flavored and called wine. It is labeled German Hock, Château-Yquem, or California White Wine, according to that which is most in vogue at the time of manufacture.

Another circumstance, much to be regretted, is the universal custom of Eastern houses who deal in California wines, to purchase the cheapest, not the best of our wines; and these are, of course, offered to their customers as having been selected by themselves from the finest products of our State. It seems as if these houses aim more at the extent of their immediate sales than the foundation of a future reputation—striving to outdo each other in the decreased prices, and not in the superiority of the wines offered; every year sending out their agents, who purchase the lowest-priced wine that can be found. It will be necessary for some of our own houses of known reputation, in pure self-defense, to

establish depots of their own in the principal cities of the East. This is constantly urged by Eastern men of influence, who are all loud in their praise of the wines they find here, but equally loud in their denunciations of those which are sold as California wines throughout the Atlantic States.

It was once thought that New York would be the future central distributing point of all our wines, but the potent influence of the railroad has already made itself felt, and it now becomes more and more evident that San Francisco is destined to occupy that important position. The orders which formerly were filled in New York, are now being filled in San Francisco; and this extends not only to the States of the Mississippi Valley, but even to those bordering on the Atlantic. These direct orders would be more frequent and to a larger extent, if our rates of interest were lower and a more extended credit were given, as is customary with Eastern Houses. The difference in currency also acts as a drawback. But even in the face of these inequalities, the change is being rapidly effected.

The value of our wine from any particular district, or from the whole State, has not yet been definitely determined, and we are therefore without a positive wine market. The preferences of the consumers can alone establish true values, and these will be ascertained by time and experience. The vineyards which rank as the very best, one year, may have to recede from that position the next season, and give the palm to a new vineyard, which is bearing for the first time, or whose superiority remains unknown till the comparison has been made.

Our wines are generally considered cheap, as some of them should be, and not as high-priced as a few will surely become. It is of the greatest importance that we have wines that can be used instead of tea or coffee, and at a reduced price they can take the places of both these articles. That wine is healthier and contains more nourishment than either, is a fact upheld by the most reliable chemists

and physicians. Growers should not receive less than their present profits; and hence we suggest the necessity of planting varieties which, at the same cost in cultivation, will produce more to the acre; that they secure casks at a less cost, money at lower rates of interest, cheaper labor, and more perfect machinery. The wine-merchant must also practice economy—secure low interest and increase the amount of his sales, so that his profits on each gallon shall be less, but in the aggregate more. It is by such united efforts that wine can be sold cheaper to the consumer; and when this has been accomplished, this industry will attain that firm and important position that it is destined to occupy in our commerce. The higher prices for certain wines will be established by known preferences, and limited by the ability to supply the demand. Heretofore our wines have reached the consumer under the too general and too sweeping denomination of "California Wine." This, however, is now fast being done away with, and each district is being recognized as producing certain characteristics of its own, and receiving such reputation as its merit entitles it to. Thus, we have Sonoma, Anaheim, Los Angeles, Napa, and El Dorado Wines, each bearing its peculiar characteristics, and purchased on that account. Gradually the classification will advance, and the distinction made be greater among the vineyards in each district. Even now this distinction is made by several of the prominent wine-houses in San Francisco, who are willing to pay an increased percentage for wines from certain vineyards in the same district.

We are now enabled to point out with great precision the character of wine which our best-known districts are capable of producing, and there are probably but few wines made in any part of the globe whose general characteristics cannot be reproduced very closely, in some portion of our State. For instance, Sonoma is best adapted to produce white wines, resembling those of Germany; the upper part of Napa Valley and certain

portions of Santa Clara County will make excellent clarets; the Sacramento Valley, near the foot of the inclosing hills, is destined to produce our future sweet muscats: El Dorado County is best adapted to the production of a wine resembling the far-famed Burgundy; Solano County produces a wine which is a natural port; San Joaquin and Stanislaus Counties give wines which closely resemble, both in flavor and taste, the best Madeira, but they have to attain an age of from five to six years before this taste is sufficiently developed; Anaheim and certain portions of Los Angeles County produce light white wines, which very closely resemble those of Chablis, in France, and they, too, must be some four years old before this peculiarity shows itself distinctly, and the last two years should be in bottle. Many other districts will, in time, manifest their characteristics and be classified.

HOUSE PLANTS.

We have heard many complaints of unsuccessful attempts to cultivate plants in the house, but in almost every case this could be traced to causes which might easily have been removed with a very little attention on the part of the amateurs. Taste for Window Gardening is steadily on the increase, and to the lovers of flowers, who have not the space for gardens, the successful growth of flowering and foliage plants in the window must certainly be both gratifying and acceptable.

The most essential requisites for flowering plants are light, air, and warmth, and to these agents we must add moisture, drainage, and cleanliness. Light, plants *must* have, yet there are some, such as ferns, which thrive best under partial shade. Light from above is to be preferred, but when this cannot be had, from the front or the sides must suffice. When plants receive their light from the side or front, they will naturally grow in that direction, and it will become necessary to turn them from time to time, in order to

keep them in a good and symmetrical shape. Plants must also necessarily have fresh air, which should be given whenever the weather is warm and pleasant. The atmosphere pervading the rooms of our residences is known to be dry; and some plants thrive well in such atmosphere, while others must have a moist one; it is, therefore, necessary to select plants for house culture which are known to be satisfied with a dry medium. The most dangerous things for plants are the gases evolved by the combustion of gas and coal, and wherever these articles of light and fuel are used, it is impossible to have plants growing in a healthy condition. Where this cannot be avoided, we should advise to partition off the window by a glass frame, and then provide, in some way, for ventilation. In an enclosure of this kind many varieties of the most desirable flowering and foliage plants may be very successfully grown in the house.

But there are other points which must be attended to. The plants should be kept clean from dust and insects; frequent syringing and occasional sponging of the foliage will have the desired effect. If, nevertheless, the common plant lice are encroaching, we would recommend tobacco smoke, which will stupefy the insects so that they drop on the ground, where they may be scraped together and burned (the safest way to destroy them).

The watering of plants should also be done with some care. In the first place, the water should not be very cold, in fact warm water is highly beneficial; and it should not be given, unless there is a necessity for it; whenever you water, do it thoroughly; frequent watering does not work well. During winter, water should be used sparingly; in summer and while plants are developing their new growth and their flowers, the supply should be liberal, yet you should never keep your plants wet. In regard to the time of watering, we would say, give it when the plant requires it, but as a general rule we would suggest the earlier part of the forenoon.

If you can give your plants the morning sun, it is desirable to do so; and if it shines

very warm the plants may be slightly shaded by a very thin curtain or blind, or the glass may be slightly frosted or painted, so as to break the direct rays of the sun.

As for proper soil, it is difficult to obtain exactly what is wanted, but a mixture of sandy loam, with one third old rotten cow manure will do very well for most house plants. As it is necessary to add strength to the soil, and, at the same time, preserve neatness, this may be effected by the occasional application of manure in a liquid form. Of this we will speak some other time.

We will now give a list of such plants as are well adapted for house culture with us. There may be others which can be grown satisfactorily, but for general use we consider the following the best:

Zonale Geraniums (both single and double), Cactus, Camellia Japonica, Ferns, Heliotrope, Ivy, Hoya (Waxplant), Saxifraga, Azalea, Auricula, Begonia, Cuphea, Diosma, Lobelia, Lantana, Myrtle, Oleander, Chinese Primrose, (*Primula sinensis*), Aphelandra, Bouvardia, Caladiums, Hibiscus, Salvia, Poinsettia, Orange, Gesneria, Gloxinia, Euphorbia, Daphne, Cyclamen, Cinerarias, Calceolaria, Clerodendron, Chorizema, *Stephanotis* (climber), *Myssiphillum* (climbing or trailing), Coleus, Palms, etc.

At some other time we shall name the best varieties of each of the above-named plants, as regards an abundance of flowers and desirable foliage.

A CORRESPONDENT inquires if there is any mode to cure hens of the habit of eating their eggs? Yes. Remove the eggs as soon as possible after the hen has laid them. If the habit is of old standing, catch the hen, and fasten her up without food for some hours. Then boil an egg hard, remove a portion of the shell, and offer it to her. The result will be a burned throat and a future repugnance to eggs. If fowls are supplied with plenty of bone dust and old mortar to peck at, they will not eat their eggs.

TROUT FISHING.

Of all the pleasant pastimes that exist, not one, I think, is more conducive to enjoyment, not one more engrossing, and certainly not one more harmless than trout fishing. Then again, in no sport is one so entirely independent, nor less burdened with incumbrances. How truly enjoyable is the feeling experienced when starting out on some spring morning, with a gentle southwest breeze blowing, and the sun peeping out, now and again, from a cloudy sky; with no other incumbrance than a light, single-handed rod, cased up with the handle of the landing-net, fly-book, net, and creel. How confidently, how energetically does *Piscator* trudge along over many a mile, if need be, to reach the field of his enterprise—the gentle, rippling stream, or the rushing torrent, among whose rocks lurk his prey, and where his hopes are centered! But the purpose of this article is not to go minutely into every detail of the *modus operandi*, as this has already been treated of in the last two numbers of this Magazine. My purpose is rather to make a few general remarks on the subject, descriptive of certain incidents, which, in my fly-fishing experience, have occurred. My adventures, then, among these beautiful fish have been in the west and southwest parts of the “Emerald Isle,” and latterly in Sonoma and Lake counties of California. First, with regard to Ireland: The country around the west and southwest is, as is well known, mountainous throughout, and abounds in lakes, rivers, and streams, well stocked with trout, as though Nature, in her wisdom, had formed them expressly for the angler’s use. In June, 1869, in company with my brother, I proceeded on a fishing expedition from England to Ireland, commencing our operations first in County Kerry, in the neighborhood of the far-famed Lakes of Killarney. This beautiful group of lakes, from its notoriety, attracts great numbers of tourists, in consequence of which the waters are too

much fished to afford much sport. About thirty miles to the north of these lakes lie several smaller ones and streams, amongst which we enjoyed excellent sport. Trout can be caught in considerable numbers by fishing from the shore, but the better plan is, if possible, to procure a boat. In our case, our host of the solitary inn where we lodged, possessed a boat, which we sent before us to whichever lake we determined upon. In this way, with quick-witted Patrick to paddle us about, we were repaid for the trouble by good sport. Our total capture in seven days amounted to 559 trout, averaging from six to seven inches in length. The first day procured 192; second day, 108; third day, 57; fourth day, 67; fifth day, from some unaccountable cause, but 5; sixth day, 106; seventh day, 24: Total—559. Further north, in a lake in County Donegal, we succeeded in taking some larger trout, many weighing from three-fourths of a pound to one pound. During this expedition, we almost invariably used three flies on our casting-lines, often taking two, and, more than once, three fish at a cast. We killed many in a manner which will by many be termed unsportsman-like. When rowing rapidly from one point to another, we trailed the flies from the stern of the boat, and by this means killed many. Strange to say, during a dead calm, without a ripple on the water, or a cloud in the sky, we often enjoyed good sport. We would row into deep water, then remain stationary till we saw the smooth surface of the water disturbed by a ring, so familiar and so welcome to all fly-fishermen. Then a judicious cast over the spot where he rose; another ring, a gentle strike, and we were “in him”! While fishing one of these lakes, a singular incident occurred, which goes far to prove that even in large and deep bodies of water fish remain long in the same small space. In the morning, my brother hooked a trout, which broke away with his fly. In the evening of the same day we crossed precisely the same spot where he had hooked, and this time he landed the very fish he lost in the morn-

ing, recovering, at the same time, his lost fly. This I saw with my own eyes.

Of course, this lake fishing is a very simple operation when compared with trout fishing in the creeks of California. To this more difficult art let us now, for a few moments, turn our attention. Deeply wooded, as are almost all the creeks in this State, the difficulties in casting the fly are numerous. I have not unfrequently walked two hundred yards without finding an available opening. Many, with a very short rod and line (without a reel) are in the habit of creeping in among the densest bushes, and "dibbing," as it is termed. In such places, I maintain, if a good-sized fish is hooked, he almost invariably escapes. The branches preclude the rod from being raised, and from insufficiency of line the fish either becomes unhooked or breaks away. I follow the gentle craft exclusively for the sport it affords, preferring quality to quantity.

I have enjoyed very fair sport in Sonoma and Lake counties amongst these creeks. Certainly, no better test of a fly-fisherman's skill can be exercised than in these California streams. To insure success, not only must a man possess the ability to throw a fly with precision, but he must, in addition to the experienced wrist, possess a spirit of indomitable perseverance and the best of tempers, prepared to meet with calm resignation, the most disheartening occurrences and the most irritating disappointments. I do not pride myself on being the possessor of a model temper: often has it given way at the same time as my line, which, irretrievably fixed up in the lofty branches of an inaccessible tree, has become, amid its leaves, a heap of inextricable confusion! In most of these creeks I have met with the best success towards the cool of the day. The trout run small, averaging, perhaps, six inches in length. In a creek near Healdsburg, in Sonoma county, however, I killed some fine trout, several of which weighed half a pound each, and two of eleven ounces each. This was late in the season, when the water was very

low, leaving the fish, in many instances, confined to pools, from which they were unable to make their escape till the rainy season. In consequence, I found that in places the fish were often ravenous. In one pool or puddle, no more than four feet square, I killed three trout in quick succession, and so hungry were they that fear was apparently forgotten. While playing my largest fish in a long and narrow pool, another (evidently the companion fish) followed him to the surface, and, strange to say, sympathetically imitated his motions of distress in a most singular manner, thereby carrying out to the letter her marriage-vow, of following her better-half "in sickness and in health; for better and for worse." I landed my fish, and the very next cast hooked his wife, though I must confess the lady was too much for me, and effected her escape.

Here, if I may be allowed, I would, in conclusion, remark, that there are one or two points in your last number on "Trout Fishing" which I do not hold as conclusive. The writer maintains that the prey averages larger which rises to the fly than that which is taken in bottom fishing. In my opinion, no line can be drawn. Trout, large and small, feed alike on the surface and at the bottom. The writer further contends that, in fishing down stream "there is less noise and disturbance" and "less chance of being seen." Of the first, I will simply remark, that the risk appears the same when fishing up or down stream. From the latter I beg leave to differ. I maintain, that as fish swim against stream, or remain stationary in that position, there is, on the contrary, less chance of being seen in fishing up stream. For my part, I have but little preference, either one way or the other.

P. F. H.

SAN FRANCISCO, March, 1872.

In our experience we have noted (and for years we kept most religiously a tabulated diary of all noteworthy fish, with date, locality, weight, girth, and bait,) that our largest fish were taken with spinning tackle; while, with some exceptions, the average fish took the

fly. Bottom-fishing is a vile, grab-all process, and the artful, cat-like fisher can clean a pool from the "monarch" to the yearling fry; the only reason why in this country—where the word "unsportsman-like" is laughed at—the trout are not exterminated, is, that the really inaccessible portions of the streams serve as preserves, and that the fish-hunters exhibit themselves without stint, use very coarse tackle, and disgust many fish with the bait. With regard to fishing up or down stream, the question is one open to argument. We take either course, according to circumstances, but, other matters favoring, prefer fishing down, as it is generally easier traveling, leaving us more at liberty to attend to and enjoy our sport, and allowing us, from our superior elevation, a juster estimate of depth of water and probable haunts of fish; of course, availing ourselves of every possible screen from the vision of the fish, which we believe, from the position of the eye, more lateral than directly forward. Another advantage is, that the line, if at all slack, is immediately straightened by the current, and the fish sees only the fly; whereas, in fishing upstream, the trout are continually scared by the line, which we must unavoidably throw over them. We have, on many occasions, when "fishing up" come to some tempting-looking pool, on which we have exhausted our fancied skill in selecting and casting, and not getting even a "rise," have passed it, and looking down on it from above have discovered, to our disgust, that it was scarcely deep enough to float a minnow.—Ed.

EXTENSIVE POPPY CULTURE.—The cultivation of the Poppy in France is steadily increasing, and it now occupies about fifty thousand acres, of the value of 4,500,000 francs, yielding opium to the value of 2,000,000 francs per year. Different samples of opium raised in various parts of Europe yielded from 8 to 13 per cent. of morphine.

Two hundred years ago tea was first introduced into the British Isles.

CALIFORNIA VINE GROWERS

And Wine and Brandy Manufacturers' Association.

In answer to a call made by the Committee of the Assembly on the Wine Interests of California, many prominent viniculturists assembled in Sacramento on the first day of February last, and organized an Association in the above interest.

A constitution was adopted, which requires that each member shall pay as an initiation fee the sum of \$2 50, and an annual contribution of \$1.

The following officers were elected: B. D. Wilson, of Los Angeles, President; B. N. Bugbee, of Sacramento, and A. Schell, of Stanislaus, Vice-Presidents; J. N. Hoag, of Yolo, Secretary; and John H. Carroll, of Sacramento, Treasurer.

Various Standing Committees were appointed on the Best Varieties of Grape Vines; on the Cultivation of the Grape; on Wine and Brandy Making, etc.; and these committees were to report at future meetings.

At the meeting on the 21st day of February last, several reports were read and discussed; some of which contain much valuable information, and we hope that the interest taken in these reports will steadily increase. We have the reports upon our table, and shall make good use of them; they form a much-needed basis for future discussion.

The first report was made by Mr. J. N. Hoag, of Yolo, on the *Cultivation of the Grape and Pruning*, as under:

"LOCATION AS TO CLIMATE.

"The vine does so well in all portions of the State, when on proper soil, that your committee feel called upon to say but little on the subject of climate. From the northern to the southern extremity of the State, and from the sea coast counties almost to the summit of the Sierras, the vine is at home and flourishes well, bearing an abundance of luscious fruit. The rule of success is general, and the exceptions are local. The damp and foggy atmosphere of the immediate sea coast is to be avoided as not congenial to the grape,

and any locality where the cold winds direct from the ocean prevail to a considerable extent, must be set down as unfavorable to the success of the vineyard. With this single exception your committee can recommend the climate of California as universally favorable to the cultivation of the grape for all the purposes for which that delicious fruit is used, and would only recommend different locations for different varieties and for different uses. For instance: late-ripening grapes and rapid wood-producing vines should be planted on a southern exposure, while those that ripen early and produce but a small growth of wood, would do better when less exposed to the direct rays of the sun."

[We cannot accept the last proposition as entirely correct, although the rule may hold good with many varieties. We are of opinion that early grapes should be cultivated on this coast more for the fruit than for wine, and that the greatest importance should be attached to the earliness of the fruit, in order to command a better price in the market; by planting them in a northern exposure, this object will not be attained, as the grapes will certainly ripen later than if cultivated under a southern aspect; and, again, it is desirable that early grapes should mature their wood early, and this object would be missed, if they were placed in a northern situation. As to planting grapes of slow growth in a northern aspect, we fail to see the point. For instance, the Risling is a very slow grower, and it would never amount to much in a northern exposure. Slow-growing varieties will always retain that nature, and we do not see how they can be improved in that respect by planting them in a northern exposure.—ED.]

“SOIL.

“In selecting soil for the vineyard, California presents an abundance of varieties, so that there is no necessity of planting the vine in soil not adapted to its growth and perfection of fruit. Avoid the stiff, impervious clay, and the loams too rich in vegetable matter, as unsuitable to give healthy vines, or

fruit of a high degree of delicate flavor and the proper quantities of saccharine matter. The earthy taste, so perceptible in some of our California wines, has its origin to a great extent, if not entirely, in the too great predominance of decayed vegetable matter in the soil on which the vine is grown. No vineyard should be planted on the rich, alluvial soil of our river bottoms, with the expectation of producing good wine, nor are the small valleys in the foothills as favorable for this purpose as the less fertile soil of the surrounding elevations. A subsoil of broken, decomposed lime or sandstone, slate or granite, with evidences of volcanic debris, is undoubtedly the best. The vast quantities of red lands of the second elevation from our river bottoms, and extending back to the foothills in all portions of the State, are well adapted to the growth of the grape for the table, for raisins and for wines and brandies, but for the light table wines a more elevated location is deemed preferable.

“PREPARATION OF THE SOIL.

“Having selected the location, the next step is to prepare the soil to receive the vine. Whether the land has been previously cultivated or not, it should be thoroughly cleaned of all roots, trees or stumps, and well plowed and subsoiled to a depth of from fourteen to eighteen inches the Spring previous to planting. Before planting, let it be well plowed again, and harrowed and cultivated until thoroughly pulverized, and then when rolled it is ready for marking off for the rows of vines. This process is done by different cultivators of experience by entirely different modes, and the great question in marking off the land and preparing the proper holes for the vines and planting them in straight rows for convenience in after-cultivation is, after all, one of economy—the performance of a mechanical operation rather than one of principle, as affecting the future growth and production of the vine. Especially so since all argue as to the necessity of care and thoroughness in the performance of every part of

the work. All agree that the vines should be planted about six to eight feet apart each way. All agree that the holes should be dug from eighteen to twenty inches deep, and should be at least that number of inches in diameter. All agree that they should be filled with well-pulverized surface soil, and that the soil taken from the bottom of the hole in digging should not be returned to the hole for the young vines to start in. All agree that but one bud of the vine or cutting planted should be left above the surface, while some maintain that in case cuttings are planted instead of rooted vines, it is better to cover the top end of the cutting slightly with soil, so as to protect it from the drying winds and hot rays of the sun, while making its first efforts at separate and independent life.

“DIFFERENT MODES OF PLANTING.

“Of the several members of your Committee, Snyder, of Sonoma, Strentzel, of Contra Costa, Bugbey, of Sacramento, and Chalmers, of El Dorado, lay off the land by any convenient methods as a small plow in squares of eight feet each way, and dig the holes at the intersections of these lines to receive the vines or cuttings. Swezy, of Yuba, and Nickerson, of Placer, on the other hand, make trenches eight feet apart, across the field one way, by running the plow back and forth, say three times, turning the furrow out, thus making the team do the greater part of the labor of digging the holes. This being done, they use a long, light pole, marked off at intervals of eight feet each, to locate the hills in the other direction, and complete the work of making the hole with the shovel. Having planted the vine and leveled up the land immediately around the same, they, with one horse and small plow, turn the dirt back and fill the trench.

“CUTTINGS AND ROOTED VINES.

“There seems to be a considerable difference of opinion and practice between the different members of your Committee as to

whether it is the better plan to plant cuttings in the vineyard where they will not again be disturbed by transplanting, or to plant them in beds, for rooting, to be lifted carefully at one year of age, and transplanted permanently in the vineyard.

“Messrs. Snyder, Bugbey and Swezy practice the former course, with some exceptions, while Messrs. Chalmers and Nickerson practice the latter and urge strong reasons for it. Bugbey takes the precaution to plant two cuttings in each hole to insure a growing vine, placing the bottoms in opposite sides of the hole, so as not to interfere with the roots of the one while lifting the other the following Spring, in case both grow.

“Dr. Strentzel, speaking of this particular branch of the subject, says: ‘If the growth of a cutting could always be secured, it would be preferred, as the first roots strike out regularly, the root end of the cutting heals over smoothly, and it makes a healthier and thriftier vine. But some soils are naturally too dry; some years the rainfall is scanty, in others the ground cannot be put in condition until late in the season, and under such circumstances one-year rooted cuttings carefully lifted and set, insure a better stand.’

“On the same subject Nickerson says: ‘Plant good-rooted vines by all means. Upon this depends all your future prospects. For if you plant cuttings to remain in the vineyard the results will be unfavorable, and you will always regret it. Plant cuttings and they will strike out root at the bottom that will go down to the water, if possible, and never throw out any surface feeders, which is necessary to get heat, light and air, that will produce good feed for the fruit. The natural tendency of a cutting thus planted and rooted is to make abundance of wood, but not fruit. What fruit it does produce will be inferior in bunch and berry, and destitute of saccharine matter that is necessary to make good wine. I think the reason why we have so much poor, acid wine in California, is attributable to planting cuttings instead of rooted vines. Nor is there any economy in

planting cuttings. The percentage in loss and the trouble and time in resetting, and loss of time in securing a bearing vineyard, makes this method of starting a vineyard cost more than to plant good-rooted vines at first. This distinction is entitled to more consideration than is generally conceded to it. To insure good, well-developed grapes of good quality, and a plenty of them, we want to encourage side and surface roots, and planting rooted vines one year old, is the best way to make success certain."

[We certainly are in favor of planting one-year-old, rooted vines, for the same reasons so well advanced by Mr. Strentzel and Mr. Nickerson.—Ed.]

(To be continued.)

INSECTS.

The study of Entomology is a most important aid to the pomologist and viniculturist, and although California is at present, compared with most of the other States, but little troubled with these pests, yet it is more than probable that the time will arrive when this will not be the case, as many of the injurious insects of other countries as well as of the Eastern States, will be imported in grain, seeds, and on plants etc. We have already some of them, and more than we want, especially connected with the grape vine. We should study their habits, and thus learn how best we may obviate their injuries or ravages, and then carry on against them a continual war of extermination. Books on this subject are much needed. There are some published in the East, and also one or two periodicals on this department of natural history. These might assist us here to some extent, but what we chiefly require are reports emanating from our own agriculturists and horticulturists, as the insects which trouble us most are generally those which are peculiar to our own fruits, soil, climate etc.; such reports, if suitably prepared, and in a popular style, divested as much as possible of the perplexing language of the science, would undoubtedly be of great service to the agricultural community. E. J. H.

SAN FRANCISCO, March, 1872.

Editorial Portfolio.

We have, during the past four months, devoted much space in the HORTICULTURIST to the subject of Forest Tree Culture. We hope, however, that there are not many of our readers who have become impatient over this protracted treatment of this much needed measure; although some may think, perhaps, that other and more important matters in the field of Horticulture and particularly of Floriculture, have been crowded out on that account. But we conscientiously believe forest tree culture to be a horticultural subject, and one which should form a sound and healthy basis for, as well as a stimulant to, the better development of our horticultural and floricultural resources. We were seriously impressed with the conviction, that the importance and practicability of tree culture should be extensively argued in order to induce the members of our Legislature to view favorably the enactment of a law, which should inaugurate a proper system of tree culture in California, where the absence of timber trees is beginning to be severely felt; and we are confident that those of our readers who do not feel a direct interest in the cultivation of forest trees, will approve the course we have taken, when they learn that our efforts to advance the interests of Horticulture and Agriculture have met with considerable success.

Our Legislature has passed a law which has for its object the encouragement of forest and timber tree culture (a synopsis of which law we append to this article;) and we sincerely hope, and believe, that it will meet with the approval of our Governor, who is an earnest friend of progress and internal improvements.

The appropriations made to carry out the provisions of this law are small in amount, but enough can be done with them to demonstrate the practicability of forest culture, and fairly to inaugurate this comparatively new industry.

It is the duty and should be the object of the State Forester, in the first place, to impress upon the farmers and settlers the importance and necessity of tree culture as effecting climatic changes; protecting crops; furnishing fuel and timber for building, furnishing and manufacturing purposes; forming shelter for stock; adding comfort and embellishment to rural homes, and providing for the wants and prosperity of future generations. This, properly demonstrated, will induce our people to lay aside their existing indifference in regard to tree planting.

His next work should be, to demonstrate that tree planting is practicable, and that it can be done successfully and without much expense or labor. We have no doubt in our mind that there is scarcely a locality within the State of California, where some species of trees could not be grown, but the same variety of trees will certainly not be appropriate for every tract. The State of California should be divided into districts as far as climate and soil are concerned. Trees which do well in the Coast-range and particularly those growing near the Ocean, will certainly not be appropriate to cultivate in the dry and hot valleys of the interior; and again trees indigenous to the Sierra Nevadas, say four thousand feet above the level of the sea, are not likely to thrive well in the Sacramento or San Joaquin Valleys, with the exception, perhaps, of five or six varieties, as, for instance, the *Libocedrus decurrens*, which will flourish in any portion of the State.

If the State Forester does his duty, which we hope he will, whoever he may be, we may derive from him most valuable information regarding the varieties of trees advisable to plant in the different localities. If he gathers, stores, and carefully digests all the information which will be at his command during his term of office, and intelligently compiles therefrom an annual report, it will throw more light upon the subject of Tree Planting, than we have ever before had at our disposal.

Having once succeeded in impressing our

farmers and settlers with the importance and the practicability of tree planting, and being at the same time prepared to furnish them with the necessary seeds and young trees, they will undoubtedly avail themselves of the benefits of such provision and will plant willingly and cheerfully under proper instructions, which he must also furnish them.

The benefits which will be derived, if the measure is carried out satisfactorily, cannot be over-estimated. By it we will do more to promote immigration than can be effected otherwise; by it we will certainly create a taste for beautifying the homes of the settlers and cultivators throughout the land, and it will at the same time inaugurate a system of permanent improvements.

We sincerely hope to see this measure heartily and energetically prosecuted to a successful issue.

SYNOPSIS OF AN ACT

Passed by the Legislature of California, to create the office and define the duties of the State Board of Forest Commissioners, and to encourage the culture of forest and timber trees.

SECTION 1 provides that the Governor shall appoint three Forest Commissioners, who are to appoint a State Forester, at a salary of \$175 per month.

SECTION 2 requires of the State Forester to gather, exchange, grow and import seeds and seedlings of timber and forest trees, which he shall distribute free of charge, provided that not more than one thousand seedlings shall be furnished to any one individual during one year. He is authorized to expend the sum of \$3,000 per annum for that purpose.

SECTION 3 provides that the Supervisors of every county shall form a Forest Board to assist in a proper distribution of seeds and plants.

SECTION 4 provides for the printing and distribution of proper circulars in the interest of tree culture at an expense not exceeding \$500 per annum.

SECTION 5 provides for the establishment of a nursery or nurseries for the rearing of trees and the acclimatization of foreign plants and trees, and stipulates that grown-up trees shall be furnished for the planting of public grounds, and roads belonging to the State, Counties, and Cities. The Forester is authorized to expend upon such grounds the sum of \$3000 for the first year, and \$2,000 for every subsequent year.

SECTION 6 makes it the duty of the State Forester to gather and obtain all the information and facts pertaining to Forest Tree Culture.

SECTION 7 provides that every Agricultural and Horticultural Society which receives aid in money from the State, shall be required to award special premiums amounting to 10 per cent. of the money appropriated, for the largest and best plantations of forest or timber trees planted and grown in five years after the passage of this Act.

SECTIONS 8, 9, 10 and 11 have reference to routine only.

WORK FOR APRIL.

The month of April is, as a general rule, considered the last of the rainy season on our Northern Pacific Coast, although we may expect light showers, even during the first two weeks of May. It is, we believe, well understood that newly-planted *trees and vines* should have the benefit of these late and warm rains; first, in order to settle the soil more closely around their roots, and, secondly, to supply the necessary moisture in the soil and the atmosphere, wherefrom these newly-planted trees or vines may draw their subsistence, until newly-formed roots will have established their future growth. Nevertheless, planting is delayed very frequently, not for good and sufficient reason, but from sheer neglect. It is true that the winter of 1871 to 1872 has been unusually wet, and planting has had to be delayed until fair weather prevailed, but we have observed this same error

exist when no such excuse could be reasonably advanced. Some may say that their grounds are too wet to plant during the winter season, but we hold that wherever such condition exists, the locality is not adapted for fruit-bearing trees or grape vines.

That trees and vines may be planted with good success during the month of April, we have no doubt, but we maintain that more care in planting and more effectual means of irrigating or mulching must be resorted to than is requisite where planting has been done in good season.

In planting trees and vines during the month of April the roots should be carefully examined, and all dead or damaged portions of them removed with a sharp knife. The branches and leader should be cut back well to good, strong leaf-buds. The ground should be well prepared, and if manure is used about the roots, it should be old and well-decayed, and thoroughly mixed with the soil; after planting, a good watering should be given, so as to settle the soil well around the roots, inasmuch as Nature cannot be relied upon to provide for this at this season of the year. It will also prove highly beneficial to stake the trees properly and protect them against strong winds; but this is to be recommended more particularly for the grape vines, the growing and tender shoots are very apt to be broken off by the wind; and it is also desirable to obtain an upright growth of the vine, which needs support until the stock is strong enough to support the weight of fruit and young growth. Having complied with all these requirements, nothing will conduce more to success than mulching the surface around the newly-planted trees or vines. This will retain the moisture for some time, keep the ground in a more porous condition, and at the same time will protect the roots from extreme heat during summer, and from the chilly atmosphere during Spring and Autumn.

In the *Kitchen or Vegetable Garden* the work is fast accumulating. Hardy vegetables, which have been planted in February and March, need a good hoeing and weeding, the

severe and heavy rains, succeeded by the dry winds during March having formed a hard crust upon the surface, which necessarily retards the growth of the vegetables. Peas should be provided with proper supports of stakes, wire, or bush; later varieties may now be sown, to succeed in bearing, after the first planting is exhausted; the same may be said with regard to radishes and lettuce.

All kinds of vegetables which could not be properly sown during the winter months, may now be planted at once, as—beans, cucumbers, corn, melons, peppers, etc. These are all very desirable for the kitchen, and are easily cultivated. Cabbage, cauliflower, and tomatoes may be transplanted from the frame into the open ground, when a cloudy day can be selected for that operation; if such does not occur, it will be necessary to shade the tomato plants at least, from the hot sun, and to water them well after planting. The best time for transplanting is from three o'clock in the afternoon until sundown.

The Flower Garden begins to look more cheerful; while hyacinths, tulips, and other bulbous-rooted plants have formed the principal attractions in the month of March; roses, verbenas, and pinks, with a host of others, now give brilliancy to the border, which the ever-welcome Spring only has the power to bring forth.

It is now good time to plant half-hardy and tender bulbs, such as *Dahlias*, *Tuberoses*, *Gladiolus*, *Amaryllis*, etc. Plant dahlias so as to cover the crown or top of the root, from four to six inches beneath the soil, and place stakes alongside of them while planting. The best soil for dahlias is a deep, light, sandy loam. Our common drift sands, well manured and mulched with litter or straw of some kind, produce very good flowers, as Mr. Upton has shown in his exhibition of dahlias during the Horticultural Exhibition of 1871. *Gladiolus* and *tuberoses* may be covered with soil to the depth of two to three inches, while the bulb of the *amaryllis* may be permitted to show its crown or head through the surface of the soil after planting.

Hyacinths and narcissus, in pots, which have been in bloom already, should now be placed in a partially-shady, but airy locality, where the bulbs may perfect their growth and the foliage be permitted to decay, after which they should be stored away in a cool, dry place for the next planting.

The seeds of desirable annuals and herbaceous perennials may now be safely planted in the open ground. The culture of annuals is as yet very limited on this Coast, and ought to be encouraged. Many of the varieties at present under cultivation in the East and in Europe are not known here at all, but we hope that a better taste for them will grow up from year to year. Many of the annuals flower with us from Midsummer until Christmas; in fact, we have had *Phlox Drummondii* sown in June last, in constant bloom ever since, up to this present time. The beautifully-illustrated and instructive Seed Catalogues published by some of our most eminent florists of the East and Europe deserve much credit for the manner in which they have initiated a desire for cultivating annuals. To them is more particularly due our partial success in creating a taste for these plants. We have no space to recommend and enumerate even the most desirable varieties of annuals, but the following have been cultivated here with perfect success:

Phlox Drummondii, *Delphinium* (Larkspur), *Asters*, *Nemophila*, *Cacalia*, *Centaurea*, *Candytuft*, *Sweet Peas*, *Tropæolum*, *Zinnia*, *Viscaria*, *Stocks*, *Portulacca*, *Petunia*, *Mimulus*, *Mignonette*, *Lobelia*, *Linum*, *Sweet Alyssum*, etc.

We have heard many complaints that the seed sown never came up, and this has discouraged many. But this failure must be attributed more to careless planting and ill-treatment than to any other cause. Much of the seed is planted too deep; no seed of annuals should be planted over half an inch deep, and all the finer seeds not more than one eighth of an inch below the surface; during dry weather it becomes necessary to sprinkle the seed beds slightly, but not with such force

as to entirely wash the seeds out, which is frequently done; Asters are better raised in a frame or pot, and should be transplanted when the young plants have made three or four strong leaves. The same may be said in regard to Petunias.

Greenhouse plants have had a hard time of it during our unusually wet winter; however, the pleasant weather in March has pushed things forward, and many of the delicate varieties of house plants are fast recovering from their doubtful condition.

All rooted cuttings should be potted at once into two or three-inch pots and all pot-bound plants must be shifted into larger pots. Where shoots grow tall and slender, pinch off the ends so as to procure a more compact and uniform growth. A good-shaped, or well-grown plant has always a more pleasing effect, and readily finds an admirer, and if grown for sale, will bring a better price and quicker sale. To this cultivating of plants our amateurs and florists should pay much more attention than they have heretofore done.

This is the best time to plant the seeds of greenhouse plants, evergreen trees, and flowering shrubs, which must be started under glass. The seeds of choice, greenhouse plants ought to be covered with an additional pane of glass, which will keep the temperature more equal, the atmosphere moist, and will dispense with frequent watering, which is injurious to the delicate seedlings when they begin to make their appearance.

As greenhouse plants show a more active growth, it will be necessary to give more water. Frequent airing should be continued, in order to keep the plants in healthy condition.

FLORIDA ORANGES have lost, according to the *Rural Carolinian*, the high character they held a few years since. The cause is, that they are rusty, small, and liable to decay. This deterioration is due, as the editor of the *Rural* thinks, to the unsuitable soil and to improper cultivation.

GOLDEN GATE PARK.

At the time of writing this, it is impossible to foresee what provisions will be made by the Legislature for the continuance of the work in the Golden Gate Park. That something should be done to improve the grounds, is the desire of the people of San Francisco, but there ought to be some guarantee that the money should be expended to the best advantage. This has not been the case up to the present time, for reasons not generally understood, and somewhat difficult to comprehend. The great detriment to the Park affairs has been, from the beginning, the unparalleled indifference of the people of San Francisco in permitting the Board of Supervisors to select a site which has no merits for park purposes, and in submitting unconditionally to the expenditure of the money by the Board of Park Commissioners, just as they saw fit. A few public meetings on the subject, and a proper discussion through the Press might have had a beneficial effect.

Good-natured people may feel disposed, after reading the last report of the Park Commissioners, to credit them with good deeds, and place confidence in their promises of future action, but practical and scientific men must necessarily look upon the present system of improving the Park as a failure.

It is, however, gratifying that the Board of Commissioners, as now constituted, may be looked upon with more confidence than the old Board. Mr. Sullivan has seen the world, and may be regarded as a gentleman of taste and judgment; and Mr. Alexander, who, as we understand, has been elected lately, has the reputation of being a skillful engineer.

The greatest difficulty in making a Park here is the absence of vegetation, of trees, and of shrubs; and it should have been the principal work from the beginning to have reclaimed the drift sands, and to have established the growth of trees. Our practical landscape gardeners and nurserymen should have been invited to give their opinions

as to the best course to pursue in accomplishing this object. What possible good could it do to lay out drives and walks through wastes of sand? It is impossible to keep the sand from drifting into them; and even if the drives could be kept clear, it was a piece of folly for the Park Commissioners to entertain the idea that the people would avail themselves of drives and walks over barren sand hills. A sod had been formed of decayed vegetable matter over a good portion of the Park grounds, but, unfortunately, this has been to a great extent destroyed by injudicious grading, which makes the work of reclamation still more difficult and expensive.

Furthermore, we are led to believe that of the trees planted out during this winter, hardly fifty out of one hundred will survive, and many of the varieties are not adapted to the locality. We advise the Commissioners to employ a practical landscape gardener who thoroughly understands his business; and let it be his principal duty to reclaim the sand wastes and to establish a growth of suitable trees and shrubs, without which San Francisco can have no park. If the Commissioners would offer a small premium for essays on reclaiming the drift sands and on establishing a suitable growth of trees and shrubs, they would come into possession of practical information which may assist them in their undertakings.

San Francisco ought to have a park, and the people are willing to pay for it; but it is unquestionably necessary that practical men should be consulted in the matter.

WOODWARD'S GARDENS.

These highly-popular Gardens are attracting as usual, and most deservedly, a large concourse of visitors. Various improvements and additions are in progress; many new specimens in Zoology add to the interest, while the conservatories are keeping pace with the rapid progress of the external arrangements. The promised Aquarium is seriously in hand, and will be an exceedingly attractive and instructive feature.

A NATIONAL PARK.

The bill to set apart the region of wonders in Montana as a National Park, has passed both branches of Congress. It is claimed that no region in the world contains an equal wealth of natural curiosities. The Helena (Montana) *Herald* says, that the idea of a park was first conceived by a party from that place, who visited the wonder-land in 1868, and gave to the world the first reliable reports concerning it. Descriptive letters were published by members of this party, and were widely circulated by the Press of the country. These excited not merely a passing curiosity, but created a living, general interest that has since received strength and larger proportions by the publication of Lieut. Doane's official report to the War Department of the same expedition; followed, as it was, by the expedition of Professor Hayden, during the last Summer, under the patronage of the Smithsonian Institute, with its fully appointed corps of scientific gentlemen and distinguished artists, whose reports have more than confirmed all descriptions of former parties. Such, in brief, has been the origin and progress of this project, now about to receive definite and permanent shape in the establishment of a National Park. It will be a park worthy of the great Republic. It will embrace about 2,500 square miles, and include the canyon, the falls and lake of the Yellowstone, with a score of other magnificent lakes, the great Geyser basin of the Madison and thousands of the mineral and boiling springs. Should the whole surface of the earth be gleaned, another spot of equal dimensions could not be found that contains on such a magnificent scale one-half of the attractions here grouped together. Without a doubt the Northern Pacific Railroad will have a branch track penetrating this Plutonian region, and few seasons will pass before excursion trains will daily be sweeping into this great park thousands of the curious from all parts of the world. A steamboat will be plying upon the crystal waters of the

Yellowstone Lake, and excited sportsmen will be decoying the speckled beauties from its depths, or aiming for the swans, geese, ducks or gulls that heretofore have floated undisturbed upon its surface. The *Herald* advises those who would look upon this scene in its wild, primitive beauty, before art has practiced any of its tricks upon nature, to go soon.—*Willamette Farmer*.

REPORT ON THE FRUIT MARKET.

Although within a few years many persons have entered, some moderately, some largely, into the cultivation of fruit, and in consequence the price has been considerably lessened to what it formerly was, and more particularly at its commencement, about 1844-5; yet, owing to the increase of cities and towns, and their requirements, there is still fair encouragement for the cultivation of all the various kinds of Pomona's precious gifts and largesses to man and beast. All the common kinds of fruits, as well as the finest, meet with a ready sale in our markets at some price, generally remunerating both to the wholesale and the retail vendor. It is now a pretty-well accepted truth that fruit well-ripened and fresh, as well as the best and most wholesome vegetables, if used in moderation, are very conducive to general good health, and are advantageous in warding off dysenteries, and all the diseases arising from constipation, and even epidemics. And the considerably-reformed spirit of the age is now favoring the use of fruits, vegetables, and farinaceous diet, in preference to so much flesh of animals—which is, after all, only a second-hand medium (often a diseased one, and always an inflamer of the animal passions), through which we derive vegetable nourishment.

The day is not far distant, I trust, when California, with her many and good public and private facilities for irrigation (which must be considered an absolute necessity to her generally dry climate and soil, to ensure complete success in fruit and forest-tree cul-

ture), will be fully one fourth covered with fruit, timber, and shade trees, and that fruit will constitute at least one fourth of the diet of her citizens; it will undoubtedly be a great change for the better. The clothing of the surface with trees will tend also, as has been satisfactorily proven in other countries, to promote rain and general moisture, and thus in a measure remedy by natural means the prevailing and most calamitous droughts. For these and many other good reasons, I hope that the forest-tree bill will meet with success before our legislative bodies. Another measure which will greatly conduce to the culture of all kinds of trees will be that system of land sales which shall bring about the division of large farms into small ones of about forty or fifty acres each—which is a size of course the most likely to prove advantageous to the proprietors, if convenient to flourishing towns and railroads.

I am happy to observe that agricultural and vinicultural societies are beginning to pay closer attention to the selection of those fruits which have by experience been found best adapted to certain soils and localities, and that some gentlemen have presented at their meetings reports giving the names of those varieties. This is one of the most difficult points to determine. At the last meeting of the wine growers in council at Sacramento, Mr. George West, of Stockton, presented a paper to this effect regarding grapes, both for table use and for wine—also for raisins. It is hoped these Societies will embody the recommendations in their proceedings, and publish them in a pamphlet form.

In the last fruit and vegetable market report, allusion was made to the noble and plentiful display of that most wholesome, delicate, and delicious vegetable, the Cauliflower. Since then we observed at the Pacific Fruit Market a magnificent specimen raised at the Six-Mile House, on the San Bruno road, which weighed twenty-five pounds.

Asparagus, which of late has been rather scarce, is now coming in greater plenty, and,

possibly, more than it generally does when it first appears, a greater length of green—a very desirable quality, as it is not often allowed to make a good growth from the surface before it is cut.

Green Peas are in moderate supply, but owing to the late cold weather they are rather less succulent, have less flavor, and are less tender than they usually are when the early Spring is milder and warmer. Indeed, the whole vegetable kingdom has been more or less affected injuriously by the rather sharp frosts and the rawness in the atmosphere.

Strawberries have made their appearance—and that is nearly all that can be said—but if we have a milder spell of weather soon, they will be plentiful enough to gratify the expectants of that fruit, of which Sydney Smith said: “Doubtless God could have made a more delicious fruit, but it did not please Him to do so, and who can be dissatisfied?”

Oregon Apples—good recruits at this season—have been frequent in their arrivals of late. Our foothills, though in many places rivaling the Oregon apple regions, have not yet been extensively enough planted with this popular fruit to furnish sufficient for our markets in Winter and in early Spring.

Los Angeles Oranges still keep up a generous supply, but their sweetness is not as perfect as could be wished, even now.

Bananas and Pine Apples come in as usual, by spasmodic arrivals, and it would be well if the former most healthy and nutritious fruit could be furnished so plentifully as to suit the pockets of the multitude, but at present they have to be brought from a long distance. It is to be hoped that their cultivation will be more attended to in the southern portions of our State.

26th March.—Since writing the above notice of the fruit market, I may add that strawberries are now coming in daily at one dollar per lb., and the prospects are that they will soon be plentiful. Los Angeles Oranges—the choicest and sweetest of the season—are fast arriving. There are plenty of apples

and some pears in market. Green peas are now appearing in quantity, also the pie-plant or rhubarb, with tomatoes from Los Angeles. Plenty of new potatoes can now be had, but cucumbers have but just made their appearance. The rains and frosts have retarded nearly everything, particularly strawberries, but there is no danger from present appearances but that the crop will be as large an one as last year's.

E. J. H.

SAN FRANCISCO, March, 1872.

FAVORS RECEIVED.

A Circular on the “Practical Use of Meteorological Reports,” accompanied by Weather Maps, has been received from the Department of Washington. The Report is very interesting, and we have no doubt that much good will be produced from the persevering efforts of the Chief Signal Officer.

We received an “Address to the Agricultural Organizations in the United States;” prepared by a committee, in obedience to a resolution of the National Agricultural Association.

Whittacker's Milwaukee Monthly Magazine, for March, is to hand. It is well illustrated, and contains a great deal of very interesting reading matter. Published by T. J. Gilmore, Milwaukee, Wis. Price \$1 per annum.

The Prospects of Vallejo; or, Evidence that Vallejo will become a great city.

A Pamphlet, entitled “Reasons for Abandoning the Theory of Free Trade and Adopting the Principle of Protection to American Industry;” by William D. Kelley, M. C.

Bulletin of the “California Vine Growers and Wine and Brandy Manufacturers' Association,” containing a number of valuable reports from Standing Committees.

The Industrial Motor is a new monthly, issued from the Iowa Patent Office, Des Moines, Iowa. Subscription price, fifty cents per year.

Monthly Report of the Department of Agriculture for February.

Official Organ of the Order of the "Patrons of Husbandry," a secret organization devoted to the interests of Agriculturists.

Biennial Report of the Colorado Agricultural Society. We are glad to notice that the above Society is in a very prosperous condition.

CATALOGUES RECEIVED.

Descriptive Catalogue of the Reading Nursery; J. W. Manning, Proprietor.

Wholesale Price List of Nursery Stock for sale by Herendeen & Van Dusen, of Geneva, N. Y.

W. C. Hampton's Catalogue of Trees, Shrubs, Evergreens, and Greenhouse Plants, Mount Victory, Ohio.

Spring Catalogue of New Plants, Pelargoniums, Roses, Verbenas, Fuchsias, Dahlias, etc., grown and for sale by Bennett & Davidson, in Flatbush, Long Island, Brooklyn, N. Y.

Descriptive Catalogue of Live Stock, Imported and Home-bred, for sale by A. B. Allen & Co., New York.

O. Burra's Catalogue of Garden and Field Seed's and Seed Potatoes; Norwalk, Ohio.

Descriptive Catalogue of new, rare, and beautiful Plants, Dahlias, Chrysanthemums, Geraniums, etc., cultivated and for sale by John Saul, Washington, D. C.

BEAUTIFUL CHROMO.

We have received from Briggs & Brothers, Seedsmen, of Rochester, N. Y., a beautiful Chromo of a collection of Lilies, comprising the most popular and desirable varieties. It is quite an ornament, and should be obtained by all lovers of flowers. Price only 75 cents each.

NEW AND RARE PLANTS.

Adiantum Farleyeuse.—An outline sketch of this fern appears in the *Gardener's Monthly*, which says in regard to it: "This, perhaps most beautiful of all the *Maiden Hair* ferns, attracted much attention at the Horticultural Society, when exhibited by Mr. Buist last fall."

Hydrangea paniculata.—The large flowered *Hydrangea paniculata* is particularly worthy of notice, and is the finest flowering shrub of recent introduction, growing from eight to ten feet high, and bearing large pyramidal panicles from twelve to eighteen inches long. Its flowers are white, and it continues a long time in bloom. It is still scarce and very little known.—*Gardeners' Monthly*.

Celosia Huttoni, sp. n. This very beautiful plant was introduced by Mr. Hutton, from Java, through the mediation of the Messrs. Veitch, who gave it the name of *Amaranthus Huttoni*. As, however, its floral structure is precisely that of *Celosia*, we publish it under its proper generic name. For garden purposes, its bushy, well-furnished, pyramidal habit, and crimson or claret-colored leaves, will render it very attractive. In any case its rich color, something resembling that of *Iresine Herbstii*, when well colored, will insure it a welcome.—*Gardeners' Chronicle*.

PEARS SENT EAST.

The Honorable Marshall P. Wilder writes, January 14th, of this year, to E. J. Hooper, of San Francisco, "that California pears are constantly in their markets at Boston." Mr. Reed, of Sacramento, had been there, and made arrangements which work well. Six car loads of Eastern Beurré Pears had been sent, some of which Mr. Wilder had had for his table, and there were only two damaged pears in a bushel. Many thousand bushels of pears had been sent over the railroad to Boston during the past season, generally in fine weather.

HOW THE SOUTH AMERICANS MAKE FRUIT TREES.

Darwin, in his "Naturalist's Voyage" (1871), says: "In Chiloe, the inhabitants possess a marvellously short method of making an orchard. At the lower part of almost every branch, small, conical, brown, wrinkled points project; these are always ready to change into roots, as may sometimes be seen, where any mud has been accidentally splashed against a tree. A branch as thick as a man's thigh is chosen in the early Spring, and is cut off just beneath a group of these points; all the smaller branches are lopped off, and it is then placed about two feet deep in the ground. During the ensuing Summer the stump throws out long shoots, and sometimes even bears fruit. I was shown one which had produced as many as twenty-three apples, but which was thought very unusual. In the third season the stump is changed (as I have myself seen, into a well-wooded tree, loaded with fruit.—*Rural New Yorker*.

HOW TO KEEP CANARY BIRDS.

Many persons have difficulty in keeping their canary birds in good health. One who is experienced in their care, says: "Place the cage so that no draft of air can strike the bird; give nothing to healthy birds but canary and rape seed, mixed with water, cuttlefish bone, and gravel on the floor of the cage; also, occasionally, a little water for bathing; the room should not be overheated; when moulting (shedding feathers), avoid drafts of air, give plenty of rape seed, slightly moistened; a little hard-boiled egg and cracker grated fine, is excellent. By observing these simple directions, birds may be kept in fine condition for years. Bad seed kills most of the birds that die; to which might have been added, that canary birds are not only very fond of, but benefited by having often a leaf of cabbage, pieces of apples, or other green food, which serves to keep down the tendency to fever and prevents constipa-

tion. Our birds usually bathe each day, as regularly as any one washes the face, and with apparent benefit, too. When birds are sick, and inclined not to eat well, remove all the food for a day, and then give only soaked bread, from which most of the moisture has been squeezed.—*Journal of the Farm*.

Editorial Cleanings.

SEA-WEED.—*The Vast Meadows of the Ocean—A Beautiful Picture.*—Among the most remarkable homes of the marine flora, sailors have noticed some, the importance of which is out of all proportion with what is seen in other seas. These banks of fucæ spread over the surface of the water like meadows, on the greensward of which the foot might seem safely to tread, so thick and solidly-bound together are they. Every sailor knows the one which is situated between the Azores, the Canary Islands, and Cape de Verd. Had Columbus listened to the murmurs of his crews when sailing in this strange sea which hindered his advance, he would have turned back to Spain, and the New World would not then have been discovered, so alarmed were they at so strange a phenomenon. Another mass nearly as considerable—that is, about six times the size of France—extends itself in the Pacific Ocean, not far from the Californian coast. The sea-weeds come from all parts. Torn from the shores of many lands, and carried by marine currents or the action of the waves, they form enormous vegetable banks, which float upon the surface of the waters, carrying from one hemisphere to the other myriads of every kind of insects, and when settled down in calm waters, become centers of life and reproduction, unsurpassed by the immense forests of the tropics. Nor is it only on the surface of the waters that sea-weeds are found in every latitude. The submarine flora has many representatives of this rich family, which, from the little ectocarpus which carpets the ground, to the gigantic fucus, many hundreds of yards in

length, live in marshes, rivers, lakes, and oceans. There is scarcely any shore where these are not to be found; but it is more particularly on the coasts of the Pacific Ocean that the diver can contemplate this undergrowth in all its magnificence, equalling in richness the landscapes of the tropical zones. Their forms, colors, and undulations are without parallel. Myriads of the little confervæ are pressed together in immense prairies, like a velvet-pile carpet, shaded with every imaginable green, set off here and there by the ample leaves of the sea lettuce, or dyed with scarlet light thrown by the floating iridiæ. Then come the great thalassiphytes, with their fans of red, green, or yellow leaves; above are the supple ribbons of the laminariæ, and the tall stem of another, which is garnished by a collar of fringe, and ends in one immense leaf, fifteen yards in length. Last of all, rises, from the midst of smaller growth, like the palm tree in the forest, the nereocystus, whose immense stem swells gradually into a club, and is crowned by a tuft of ribbon leaves, exciting admiration by their soft and graceful undulations. It is not difficult to imagine the effect which the least agitation of the waves must produce on these long and supple plants, but almost impossible to describe the fugitive tints which adorn this moving picture, when the rays of the sun, breaking through the waves, vivify the different colors which mingle and harmonize in the deep waters. Then all the living creatures must be depicted which animate those submarine landscapes; a thousand crabs traveling amidst the green ulva; shoals of sea-dogs, or columns of silver herring gliding through the madrepores; the brilliant sea anemone flourishing on the reefs, or the blue bell of some medusa drawing his tentacles among the long ribbons of the laminariæ. In the economy of Nature sea-weeds play no unimportant part. If we look back to the distant period of the world's history, when the scarcely-cold crust of the earth was covered with water, we find the remains of the primordial protococcus in the

lukewarm waters, the simple globules of which were preparing to cover the whole of the world. As the higher summits emerged into the light of day, they were covered with the first layer of earth or mud, arising from decomposed sea-weeds. To the present time, they continue to lay the foundation, at the bottom of oceans, lakes, and rivers, of that fruitful detritus which successive generations of vegetable matter utilize so successfully. Independently of this, they have also an immediate and practical use. No poisonous sea-weeds are known; there are many kinds which furnish abundant alimentary resources, and others which are used on a vast scale in manufactures.

AN IMPORTANT DISCOVERY IN TANNING.—It appears, from investigation, that Western Texas has, in inexhaustible quantity, two of the best tanning materials known to the world. The wood, as well as the bark of the mesquite, a species of timber that abounds in great quantity, is found to be rich in tannic acid, but live oak is even better, yielding by chemical demonstration fifty per cent. of tan, while mesquite yields but thirty per cent. A remarkable and important quality of the tan of the mesquite, however, is, that instead of beginning on the surface, it strikes through and through, incising into the hide, revealing the fact that the process of tanning goes on in the center equal with the surface. The experiments made by practical gentlemen are said to have been demonstrated that the wood of the mesquite is fully equal to black-jack, which stands among the richest barks we use, while the live oak is much richer than either. A letter from Texas on the subject says the discovery will have a very important effect in the supply of our country and the world with the necessary article of leather, the demand for which is constantly on the increase. The interest in this discovery and its value increases from the fact of the rapid exhaustion of the materials for tanning in our country, and in many other parts of the world.

FINENESS OF INDIA COTTONS.—Of the cotton fabrics produced in India, an English writer says, that the marvellous delicacy of touch possessed by the Indian women counterbalances the inferiority of Indian cotton in weaving the fine and delicate muslins, to which the names of “Webs of Woven Air,” “Dew of Night,” “Running Waters,” etc., are given by the natives. They now use the spinning wheel generally for the ordinary fabrics, but the spindle still holds its place in the hands of the Hindoo women, when employed in spinning thread for the finer muslins. For these the Hindoo woman first cards her cotton with the jawbone of the *boalee* fish; she then separates the seeds by means of a small iron roller, worked backwards and forwards upon a flat board. An equally small bow is used for bringing it to the state of a downy fleece, which is made up into small rolls, to hold in the hand during the process of spinning. The apparatus required for this consists of a delicate iron spindle, having a small ball of clay attached to it, in order to give it sufficient weight in turning; and imbedded in a little clay there is a piece of hard shell, on which the spindle turns with the least degree of friction. Very great attention is paid to the temperature of the air during the process of spinning, and the spinners in the dry climate of the northwest of India actually work under ground to secure a moist and uniform atmosphere. The cheapness of English manufactured goods seems to have greatly depressed the cotton fabrics of India, but the fine muslins of the latter country yet maintain undisputed celebrity, and are valued as highly as ever. The *Dacca* muslins are the very finest of all. One of the best pieces which found its way to England was ten yards long by one yard wide, weighed only three ounces two penny weights, and could be passed through a very small ring.

WHEN TEA was first introduced into England it was a costly article, being sold at the modest sum of \$15 per pound.

CUT FLOWERS.—The first thing to be considered in arranging cut flowers, is the vase. If it is scarlet, blue, or many-colored, it must necessarily conflict with some hue in your bouquet. Choose rather pure white, green, or transparent glass, which allows the delicate stems to be seen. Brown Swiss-wood, silver, bronze or yellow straw conflict with nothing. The vase must be subordinate to what it holds. A bowl for roses. Tall-spreading vases for gladiolus, fern, white lilies, and the like. Cups for violets and tiny wood flowers. Baskets for vines and gay garden blossoms. A flower-lover will in time collect shapes and sizes to suit each group. Colors should be blended together with neutral tints, of which there are abundance—whites, grays, purples, tender greens—and which harmonize the pink, crimsons, and brilliant red into soft unison. The water should be warm for a winter vase—cool, but not iced, for a summer one. A little salt or a bit of charcoal should be added in hot weather, to obviate vegetable decay, and the vase filled anew each morning. With these precautions your flowers, if set beside an open window at night, will keep their freshness for many hours even in July, and reward by their beautiful presence the kind hand which arranged and tended them.

Scribner's Monthly.

BORERS IN FRUIT TREES.—Mr. M. Gillett writes to us from Lebanon, Oregon, as follows: “Excuse me if interest in the welfare of the agricultural and horticultural department of Oregon may lead a stranger to err in addressing a few lines to you. Having traversed the length and breadth of your incomparable State, I find on every hand, and in every place, orchards in ruins, and a general feeling prevails that they cannot be sustained. On inquiring as to the cause or source of their destruction, some say the disease is in the root, which the numerous and thrifty sprouts surrounding most of the old trunks deny. Let any person take a long knife, go into an orchard, choose one of those

black trunks, not dead, but decaying, and cut into the bark flat-wise, and see what you will see—worms, borers, little white fellows; but don't be scared nor discouraged; try another, and go from tree to tree, until you are satisfied that those little fellows are ruining the fruit interest of the best State of the Pacific."—*Willamette (Or.) Farmer.*

THE USE OF CAMPHOR.—When the mucous membrane of the nose, frontal sinuses, etc., is affected by catarrh, a strong solution of camphor frequently and for some hours snuffed up the nose, and five or six drops taken internally on a lump of sugar, at first for every ten minutes, then every hour, will usually put a stop to the affection. Ordinary cold and even influenza, if treated in this manner at the *very beginning* of the attack, are generally controlled by the same treatment. Attacks of incessant sneezing and profuse running at the eyes and nose, will generally yield to a strong solution of camphor diligently sniffed up the nose. In summer diarrhoea no remedy is so efficacious as camphor, if applied at the very commencement of the disease; later it is without effect. Its influence over cholera is very remarkable. Dose: six drops of a strong alcoholic solution of camphor, given at first every ten minutes; afterward, as the symptoms abate, less frequently.

USE FOR FIGS.—On most of the older farms of the State, and in the yards and gardens of many private residences, fig trees are found, where the climatic conditions are favorable. The fruit is rarely preserved, but is suffered to fall to the ground and go to waste. A gentleman in one of the Southern counties has discovered that it is excellent food for fattening swine, and is about to set out a large fig-tree orchard and devote the fruit especially to this object. A hint may be taken from his experience.

THE CULTIVATION OF ALFALFA, on the sage lands of Nevada, is reported a success.

GLADIOLUS SEEDLINGS.—How do you raise Gladiolus from seeds? Answer: Seed gathered last Fall should be sown next Spring in frames or in the open ground, covering them not more than a half inch deep. If the seeds are soaked for a few hours in warm water before sowing, they will germinate in less time than if this operation is omitted. To obtain a good strong growth, the first season, requires considerable care and attention. The soil in which the seeds are sown should be light and friable, because, if it is a clay, there is danger of its becoming so hard that the young seedlings will fail to break through. The surface of the bed should also be kept constantly moist, in order to assist germination, besides keeping up a continual growth in the young seedlings. The two principal reasons why so many persons fail in growing such plants from seed are: They either cover the seed too deeply, or, if shallow, they allow the soil above them to become so dry that the seed or plants cannot grow. As a rule, cover the seeds very lightly, then give plenty of water. If these conditions were always secured, we should have less complaining about poor seed and failures. It requires two or three years under ordinary circumstances to produce blooming bulbs of gladioli from seed; and although it is a tedious process, much pleasure may be derived from their culture. New varieties are certain to be produced; but whether they will be improvements upon old and well-known sorts, in a matter of chance.

THE VALUE OF SOOT.—Although, almost ever since agriculture has been practiced, soot has been known to be a valuable manure, in the nineteenth century there are hundreds of farmers who cannot be persuaded to believe it. It is really as valuable as guano. Take a hogshead of water, and dissolve in it twelve quarts of soot, and you will have a splendid liquid manure for plants. Apply it to the roots, of course, and then watch the result.—*Journal of the Farm.*

A NEW USE FOR LEAVES.—We clip the following from an Eastern exchange. It would do no harm to try the experiment here, though the item gives no intimation as to whether the leaves are green or dry. We presume oak leaves are the ones used, though we believe other forest leaves contain a large amount of tannin. As it will not cost much and take but little time, we would like to have some of our tanners try it, and forward the result to us: "A Vermonter has recently tanned several sides of leather, with lye leached from forest leaves. He has been experimenting with leaves for two months, with satisfactory results. One ton of leaves, it is asserted, will tan as much leather as five cords of bark, and will complete the process in half the time. When leaves and bark are mixed in equal proportions, one fourth of the time is saved. The leather tanned by this process, it is claimed, is more flexible and smoother than that tanned by bark, while the strength of the raw hide is retained in a greater degree."

SHADE TREES.—The Trustees of the town of Healdsburg have undertaken the removal of native shade trees from the public streets. Clearing the streets and placing them in a good condition for travel, is a praiseworthy object. Would not the same law allowing them to destroy shade trees also permit them to plant them? For every shade tree destroyed the Trustees should authorize the planting of one hundred, if necessary, in such places as would not interfere with travel. Now is the time to plant shade trees, and no time should be lost in doing so. Would not the Trustees be supported by the people in passing an ordinance that each real estate owner in the town should plant in front of his property suitable shade trees, which should be set, say six feet into the street, and at appropriate distances apart? Every owner of real estate, except where it is located in the business portion of town, should take enough pride in the beauty of the place to plant trees; and when they fail

to do so, the Trustees should have the trees planted and have the cost taxed to the lot in front of which the work is done.

Russian River Flag.

REMARKABLE PLANT.—At a late meeting of the Academy of Sciences in this city, a specimen of *Septosyne Maritima* was presented by Mr. Hartford. This was found growing on San Miguel Island, off the Southern Coast, and is very peculiar on account of its large size and robust habit, when compared with the same species growing in Santa Barbara County. The one found growing in the latter locality bears a flower of a fine golden yellow color and about three inches in diameter, while that found upon the San Miguel Island is much larger and otherwise so peculiar that the identity existing between them can hardly be recognized. Dr. Kellogg considers this circumstance a marked and peculiar example of the fact that plants will adapt themselves to the surrounding conditions of Nature. The section of the body of this plant was from three to five inches in diameter, with concentric rings of annual growth. This plant was generally considered as one of more than ordinary interest. Dr. Hewston asked if Dr. Kellogg thought this plant gained additional strength by reason of its growing in an exposed position where it was subjected to heavy winds. He called attention to the fact that, as a rule, the heaviest vegetation grows on the sheltered sides of hills. Dr. Kellogg thought that observation did not apply to all vegetation, but that this species and several others which he named, were not affected unfavorably by hard winds. He thought that, as a rule, the vegetable as well as the animal kingdom adapted itself to climate and other circumstances.

WOOD ASHES FOR WHEAT.—A subscriber sends us the following as his experience in using wood ashes, viz: that in quantities of only eight bushels per acre, they have a

marked effect: that they push the wheat forward several days, thus getting it ahead of that critical period when it is so apt to be attacked by rust, that they strengthen the stem and increase its solidity. All of which and much more, we can readily indorse. In fact, ashes are an excellent application for an orchard.—*American Agriculturist*.

GRASSHOPPERS.—The plague of grasshoppers has somewhat abated at Echuca, but, according to the local journal, incalculable mischief has been done to the standing crops in the districts by these pests. "It may be useful to agriculturists to learn that the larkspur is exceedingly fatal to these insects. They may be seen lying dead in heaps in gardens where this plant is cultivated."—*Melbourne Herald*.

TREATMENT OF HOUSE PLANTS.—Ladies who cultivate flowers in the house will find great benefit to the plants by spreading moss over the earth in flower-pots. This keeps the water from evaporating and the temperature more uniform. Tea-grounds are often used for the same purpose. Where a flower-pot sets in a saucer, with a hole in the bottom of the pot, put a little sand in the saucer, and cover it with moss, and you have a simple and admirable arrangement.

WEIGHT OF A BUSHEL OF OATS.—A correspondent at Tomales says: "There is a bet pending on the question of what the legal standard weight of a bushel of oats is, and wants us to answer.

It varies in different States from 30 to 36 lbs., but in California the legal weight is 32 lbs. As a matter of reference we will give the legal weights of grain in California: Wheat, 60 lbs.; Rye, 54 lbs.; Shelled Corn, 52 lbs.; Buckwheat, 40 lbs., and Barley, 50 lbs."

THE TULIP mania is again to be revived in Holland.

PROFIT OF NUT-BEARING TREES.—The price of edible nuts is steadily improving. In the East native chestnuts are worth from \$10 to \$12 per bushel, hickory nuts \$4, and Spanish chestnuts from \$15 to \$18. The lumber from these trees is worth from 10 to 20 cts. a foot board measure. We can grow such trees faster here in California than they can in the East. The cultivation of nut-bearing trees should receive our immediate attention.

GLADIOLUS AT A STAND-STILL.—A contributor to the *Gardeners' Chronicle* says: "The past year seems, on the whole, not to have advanced the *Gladiolus* a single stage in any respect. New varieties we find barely holding their own with the best sorts of the three or four previous years; and as regards constitution, I greatly fear that we are losing ground.

MANURING TREES.—It is a mistaken notion that many have of applying all the manure and water close around the foot of their trees. The roots run off a distance in search of nourishment; and moreover, the roots near the body of the tree have much less facility for taking nourishment than those at a considerable distance.

MASSACHUSETTS HORTICULTURAL SOCIETY.—The total receipts of this Society for the past year have been \$24,597, the total expense \$24,335. The Society numbers 534 life members and 502 annual members. The valuation of real estate and personal property amounts to \$268,285, on which the Society owes \$82,500.

THERE ARE sixty millions of acres of wheat lands in California, of which only two millions six hundred thousand are under cultivation.

A FARM with shade and fruit trees set around the house, will sell for two hundred to one thousand dollars more than if there were none.

THE

CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

VOL. II.

MAY, 1872.

No. 6.

ANNUALS.

The cultivation of annual flowering plants is in its infancy in California, but we sincerely hope that our amateur gardeners will award, in the future, a better and more extensive trial to this interesting class. There are many varieties of annuals which produce abundance of exquisite flowers; throughout the summer season these enliven and enrich the borders of the flower garden in a most acceptable manner; their blossoms are of every imaginable form and color, and give a brilliancy to the garden which cannot be obtained without them. It is true, they require a little more care than hardy, perennial-flowering shrubs, on account of our long, dry seasons, but such care should be considered a pleasant occupation by every one who loves flowers. Some object to cultivate annuals, because the seeds must be preserved or procured, and planted every year; those who raise this objection cannot be true lovers of flowers; in all probability they merely cultivate them because it is fashionable to have them around the house; others have probably met with disappointment, the seed having failed to grow; this may have been due to poor quality of seed, or to injudicious treatment; while others again have, unfortunately, selected such varieties as are not well adapted to their localities. We will endeavor to give some information on these

points, and hope that our readers will avail themselves of our experience, and devote some space and attention to the more popular varieties of annuals, which cannot fail to give them satisfaction.

Spring is the proper season for planting annuals, but it seems rather difficult now-a-days to determine when Spring makes its appearance on this coast. With some of us Spring commences in February, while with others it does not arrive until May. San Francisco is rather uncertain on this point; we have experienced some very genial weather in January and February, and again Spring time has not come until May; in fact we think we are nearly correct in saying that Spring may come to us at almost any period of the year. However, even in San Francisco at the present season, Nature seems to exhibit more activity and life, although we cannot perceive any material climatic changes or differences from other seasons of the year, excepting in a few rare cases. Notwithstanding all this, April, May and June are the most favorable months for planting the seeds of annuals in the open ground.

The soil should be enriched with old, rotten manure, which should be thoroughly incorporated with the soil by trenching it spade deep; after which the beds should be raked smooth, and put into the desired shape. The annuals should then be sown either broadcast, in drills, or in patches;

but the seed should neither be covered too deep nor left too shallow. If planted too deep, the seeds are apt to rot; if too shallow, it will be difficult to keep them sufficiently moist during dry weather, and if artificial irrigation is resorted to, the seeds will suffer from direct contact with the water, or from the force employed. It is difficult to give a general rule as to how deep they should be planted, but we advise to plant fine seeds from one eighth to one quarter inch deep, and coarser seeds from one fourth to three fourth inch deep; if sown in groups or in patches, the best and most convenient way is to sift light soil over them, the coarser seeds may be planted in trenches or drills.

The more delicate varieties should be sown in boxes and covered with glass; they should be afterwards transplanted. After the seeds have come up, it is important to keep the ground loose and clear of weeds.

We shall now enumerate some of the most popular varieties of annuals which have proved hardy in this neighborhood:

The well-known *Asters* are old favorites, and the varieties are too numerous to mention; the German, the Pyramid, the Truffauts, the Bouquet, the Needle or Hedgehog and the *Chrysanthemum* flowered, are among the best. The seed can be sown in the open ground in April or May, or in pots or boxes, covered with glass, from which they must be transplanted; they should not be allowed to grow nearer than from ten to twelve inches of each other, and when they are about to form their flower buds, they should have proper stakes for support.

Balsam is also a very popular and favorite annual, but not so well adapted to San Francisco on account of our heavy and cold winds.

Petunia is a very desirable plant, which holds out here for several years, but flowers also during the first season. The seed may be sown in the open ground, but we prefer to plant in boxes under glass, and transplant into small pots, from which we again transplant into the border. The finest of the

single varieties are *Petunia hybrida grandiflora*, blotched and striped and fringed. The double *Petunias* are generally raised from cuttings; although some seed may be obtained which will give a fair percentage of double-flowering plants.

The *Zinnia* is a very remarkable and showy annual, producing flowers of various shades and colors, single and double. They should be planted where they are expected to develop themselves. The flowers will remain for a month or two in good condition.

Phlox Drummondii is worthy of very extensive cultivation, producing an abundance of brilliant flowers. We planted some in June last, and they have flowered well with us from September to February. *Phlox* should be planted in groups, patches or rows, during the month of May. The seed comes in mixed colors generally. *Phloxes* are also well adapted for pot-culture.

Stock (*Mathiola*) is a well-known annual or biennial. The so-called Ten-week Stocks produce their fragrant spikes of white, rose, crimson, lilac, purple and violet flowers, both single and double, during the latter part of Summer and remain in bloom until Winter. The double varieties are much more desirable than the single ones; they are very hardy with us, and the seed may be planted in the open ground or under glass to be transplanted.

In addition to these, we can also highly recommend the following, but for want of space cannot give any description at this time:

Candytuft; white, lilac and purple.

Celosia; (Cockscomb) not well adapted for San Francisco, but thrives well in the interior.

Delphinium (Larkspur); very desirable.

Lobelia; beautiful for borders.

Linum (Flax).

Marigold (*Tagetes*).

Mignonette (*Reseda*); a good acquisition is the Parson's New White, of good habit, and of a lighter color than the old *Mignonette*.

Marvel of Peru (*Mirabilis Jalapa*), by some called also "Four O'Clock."

Nemophila; beautiful blue flowers, native of California, exceedingly well adapted for this vicinity.

Portulacca is very good for a border, but better adapted for the interior than for this vicinity.

Tropæolum (*Nasturtium*); grows admirably well with us here, but we cannot consider it an annual, as it has continued to flourish, to our knowledge, for three consecutive years, improving in every respect from year to year.

The *Sweet Pea* is well known, and has the same habit with us as the *Nasturtium*, and therefore very desirable. Of late some very beautiful and much-improved varieties are under cultivation.

The *Morning Glory*, we must not omit, it being the best and most popular of annual climbers.

There are many other varieties which we have grown here with very good success, but for a comparatively new country, as we must consider California, the above list will answer our purpose for the present.

THE CHRYSANTHEMUM.

[From the Melbourne Times.]

Some very handsome new varieties of this charming autumn flower have already been received into this colony. The Chrysanthemum is a herbaceous evergreen, growing to four feet in height. Its leaves are bluish-green, deeply and sharply serrated, and its flowers in general consist of large, matty, circular adjustments of ligulate florets, these in the numerous varieties being of almost every color, with the exception of blue, and frequently containing in one variety a showy and imposing admixture of colors. The attention of many florists has been of late years devoted to this plant, and at the present time it occupies no mean place in all good collections of flowering plants; blooming as it does

in the dull months of the year, when bright flowers are often scarce, it is doubtless more valued than it would otherwise be. At the same time, it has the additional claim upon our support from the fact, that it is emphatically the citizen's flower, growing well in large towns, and in the small back gardens of city residences, and even in such situations flowering freely, and attaining the highest state of perfection when surrounded by a smoky and dusty atmosphere. Many of the kinds now under cultivation, and of late imported into this colony, are of great merit. The plants being of free habit and blooming abundantly, they quickly make handsome specimens for garden decoration. The blooms are also well adapted for display as cut flowers, being many of them incurved and well filled up, with their outer florets frequently of one color, whilst their inner face and central florets are of distinct, varied and pleasing tints. Some sorts have the petals more or less naturally incurved. These attain the spherical and symmetrical form, recognized as the model of perfection, and chiefly cultivated for the purpose of furnishing fine cut flowers. Other kinds have a graceful habit and persistent green foliage, and bear a profusion of flowers—some with florets incurved, and others relaxed. These can easily be grown to a large size, and when covered with numbers of blooms are elegant and striking objects. Their flowers are also extremely useful for bouquets.

The best soil in which to grow the Chrysanthemum is a mixture of turfy loam and peat, or ordinary loam and thoroughly decomposed manure. When they have advanced in growth considerably, and become lanky before they show bloom, the top three joints should be taken off. These tops readily strike as cuttings in any cool, shady border, and it induces the plant to become more compact and bushy, and they also then push numerous side shoots. When cultivated in pots, the pots should be plunged in ashes on a good solid bottom, to prevent worms from getting into the pots, and there left to grow

themselves up to blooming point, receiving copious waterings as they require it. They will then generally be found very dwarf, and as they fill the pots with roots they may be shifted from their first to second pots to perfect their flowers. After blooming, the plants may be cut down completely, when they will shoot from the bottom, and can then be parted, if wished.

To ensure success in growing fine blooms, the nature of the variety should be understood. Some Chrysanthemums produce the best flowers from the crown or centre buds, while others require that these should be removed. As a general rule, all the varieties which have very double flowers made up of coarse or confused florets should have the centre bud taken away, and the second or side bud allowed to remain. On the contrary, those which are of more delicate growth should have the buds from the side removed, and the centre buds alone should be allowed to develop. By this means it will be found that many kinds generally considered poor may be made to produce fine, well-formed blooms.

Amongst new ones of great beauty are *Globosa* and *Beauty of Stoke*. These were raised by Mr. J. Salter, of London, the veteran grower, who has introduced and raised so many valuable varieties. Of the Chinese section there are now ten handsome additions, as follows :

Duke of Edinburgh. — A large incurved flower, rosy lilac, with white centre.

Marginata. — Large anemone flower, lilac blush, edged with rose, and rose centre.

Miss Hope. — Delicate lilac, shading off to white in the centre; finely incurved.

Mrs. Wreford Major. — Dark rose, very close and compact; fine flower.

Meyerbeer. — Rose purple, and light back; finely incurved.

Norma. — Ivory white, short, stiff petal; very dwarf habit.

Ondine. — Cream-tipped, rosy lilac; fine incurved flower.

Princess Louise. — Anemone flowered, delicate, rosy blush, fine high centre, and those previously mentioned, viz., *Globosa*, a fine flower, Indian red, dwarf in habit, of peculiarly globular form, somewhat the shape of that well-known variety, Little Harry; this is, indeed, a great acquisition.

Beauty of Stoke is a large orange yellow flower, finely incurved and well up in the centre; very noble.

Opinions are still very much divided as to the value of the Japanese Chrysanthemums. "How can you possibly see anything to admire in such loose, ragged flowers?" is frequently the question asked, while on the other hand there are many who appreciate them for their showy character, and also for their coming into bloom sooner, and continuing later than the ordinary kinds. Having had an opportunity of seeing some of the best of these, we are enabled to decide as to their character, and the following are undoubtedly among the best :

Dr. Masters. — A most distinct and showy flower; it changes considerably from the period of its opening, the centre being then yellow, but afterwards becoming red, and the petals, which are at first red, being then tipped with yellow.

James Salter. — A flower of immense size, of a clear lilac or mauve color, the petals being twisted about in a most extraordinary manner. As a decorative plant this has no equal.

Hero of Magdala. — A very remarkable flower, the petals red, and orange buff on the reverse, and from the manner in which the petals twist about, the flowers have the appearance of being two-colored.

Sol is a bright golden yellow, with tolerably broad petals, which have an upward tendency.

Sultan is a curiously twisted flower, of a light lilac color, the reverse of petals being darker, and thus giving a shading to the flower.

Amongst other kinds particularly worthy of cultivation are Alfred Salter, Antoinette,

Boule Rose, Caractacus, Canary Bird, Cassandra, Emperor of India, Jardin des Plantes, Lady Hardinge, Othello, Novelty, Rifleman, Queen of Lilacs, Prince Alfred, Empress, Favorite, Golden Autumn, Annie Salter, Madame Vatry, and Madame Guerin.

There are few flowers blooming at the particular season that can urge more powerful claims upon our attention, or that will more amply repay cultivators for the care bestowed than this gay autumnal beauty; the extensive variety of color and form, the long period it remains in bloom, its adaptability either for the shrubbery, flower beds, town or cottage garden, make it alike desirable to every class of our floricultural public.

THE "MAJETIN," vs. APPLE BLIGHT.

(Concluded from page 134 of last number.)

One of the most particular points requiring attention by large growers, is the keeping of apples. This has, I am aware, already provoked much attention, caused the exercise of some ingenuity, and educed a certain amount of invention; but still it continues to be far from well or properly understood. The last few years, with the annual increase of American blight, it has been found by many large growers of apples to be a matter of necessity to force large quantities of apples upon the market in a given space of time. This blight, as it becomes more and more confirmed upon the trees, in both roots and branches, causes numerous varieties to prematurely ripen, so large a quantity of nourishment being devoured by the *Aphis lanigera*; hence the necessity of turning the fruit quickly into whatever it will fetch, or otherwise losing it altogether. There can be no doubt that as the cultivation of the apple upon the Majetin becomes more general, and also greater care used in selecting those kinds only that exhibit the least inclination to become blighty, it will be far easier for the cultivator to fence against this admitted great difficulty.

Many varieties of apples usually grow together in one garden or orchard. These

varieties generally differ very widely from one another in their dates of complete ripeness; even apples of one variety growing upon the same tree are not all ripe at one period; and, therefore, the apples of an orchard ought to be gathered in a series of harvestings corresponding to their successive periods of ripening. Some kinds are quite ready for gathering very early in the autumn; other kinds are usually not ready till the end of autumn, and the varieties which yield the great bulk of crop for preservation through the winter months, extend their periods of ripening through a range of several weeks. When the fruit begins to drop freely, but not a day earlier, the harvesting of an apple garden ought to commence. None but the ripest fruits of each tree, or those which, when raised to the level of the foot-stalk, part freely from the tree, should be taken. Only a process like this is wise, economical, and finally profitable, and it ought to be repeated every third or fourth day till the whole crop of the apple garden or the orchard is gathered.

The practice, so generally prevalent, of making what is called a "clean sweep" of an orchard or an apple garden is monstrously unphilosophical, and constitutes the first origin of probably three fourths of all the tendencies of a crop to premature decay. Judgment is exercised in other harvestings, and why not in this? Excepting the simple and easy conditions of keeping them dry, clean, and inaccessible to damp, all the really effective art of protecting apples from early decay, in these colonies, consist in a careful and judicious gathering of them at the period of their being ripe.

By these means the apple can be made not only a most useful, but also a much more profitable crop than heretofore in these colonies.

Having now shown the effects of the eight years' practical trials and crucial tests carried out with the Majetin by Messrs. T. Lang & Co., at Mount Warrenheip, also how the theoretical notes and remarks have been brought to proof, and, finally, the great success of

the elaborate analysis of the wood of both the Majetin and the Crab, it leaves me little else to say, with the exception of tendering my most sincere thanks to W. Johnson, Esq., Government Analyst, for the great care and attention he has devoted to this matter on my behalf; to Messrs. T. Lang & Co., for their great courtesy in furnishing all the information in their power, and for the facilities afforded by them for my thoroughly examining into this great and valuable discovery, with all the experiments carried out in connection therewith. To you, my readers, I tender my thanks for your kind attention, and I trust that for many years to come you will have cause to value my friend the Majetin, and that in a short time your apple trees will refresh your hearts by being comparatively free from that great pest, *Aphis lanigera*, or American woolly blight. And now, farewell. "*Tempus est optimus iudex rerum omnium.*"

TENDER VINES.

[Concluded from page 135 of last number.]

Myrsiphyllum asperagoidis is one of the prettiest greenhouse climbers in cultivation; its waxy, dark-green and very graceful foliage is very decorative. It may be trained over or permitted to hang from rockwork or from baskets. The *Myrsiphyllum* (sometimes called *Smilax*) is a bulbous-rooted plant, belonging to the order of Liliaceæ, and thrives well under ordinary treatment. Unlike the many bulbous plants, the *Myrsiphyllum* retains its foliage for a number of years; however, we advise giving it a season of rest every two years, by withholding from the plant its usual supply of water. It is propagated without difficulty by dividing the roots, which are formed in abundance, and this should be done during its season of rest. The *Myrsiphyllum* is a native of the Cape of Good Hope; its flowers are insignificant, of a white color, and produced on nodding pedicles at the base of the leaves. It bears a fruit in

the shape of a berry. We have no greenhouse plant of a more graceful and ornamental nature.

Rhynchospermum jasminoides (more correctly *Parechites Thunbergii*) is a greenhouse climber, cultivated for its sweet-scented flowers, of a pure white color. It is a native of China and Japan, and is grown in our climate with considerable success. It flowers spontaneously, and continues in bloom for several months. Its foliage is also ornamental, being somewhat similar in size and form to the myrtle. As a plant for the parlor window or house culture we can highly recommend it, its flowers being graceful, and affording a most delightful perfume. It succeeds well under ordinary treatment, but the soil should be nourishing and enriched by the addition of old, rotten manure and leaf-mould. The *Rhynchospermum* is propagated by cuttings, which strike root readily under glass.

Tropæolum tri-color, a native of Chili and Peru, is a delicate greenhouse climber, of exquisite beauty. It is very little known here, but we have seen a very fine specimen in the conservatory of E. B. Crocker, Esq., of Sacramento. The *Trop. tri-color* is, like the *Myrsiphyllum*, a bulbous-rooted plant; its stem is thread-like, its foliage very small and delicate; the flowers also are delicate, and of a very bright scarlet, edged with black; the calyx is yellow. The only mode of propagation known to us is by seed, which germinates readily in a warm temperature; the propagation, by dividing the roots, is a slow one. The stem should be trained over a wire-frame of a globular or cylindrical form. It thrives well in light loam, mixed with well-rotted manure.

Chorizema is not usually considered a climbing plant, but with us in California it may be treated as such, although it seldom grows more than six or eight feet in height. We do not experience any difficulty in growing it out of doors, but it does not flower well under such treatment. The variety under

cultivation here is, we believe, *Chorizema ilicifolia*, with pretty, pea-shaped flowers, of golden yellow, with purple lips. It is a profuse bloomer almost throughout the year, and its flowers are very ornamental for bouquets. Our florists used to cultivate it very extensively, but at present we see but few plants of it. Their culture is easy, and they are readily propagated by cuttings of the young wood. Like many Australian plants, it is admirably well adapted to our climate, and deserves extensive cultivation. To make bushy, specimen plants, they should be cut back frequently while in a growing condition.

Lantana, like the former, is generally considered more of a shrub than a climber, but its growth is so robust here that it may be treated very successfully as a climber, although it may be cultivated as a shrub by cutting back and pinching off the young shoots. By permitting it to grow *ad libitum*, it will certainly, within a year or two, reach the top of a greenhouse, while we have seen it covering trellis-work in a protected situation, out of doors, ten to fifteen feet high. There are a number of good varieties under cultivation, producing flowers of white, yellow, purple and orange color. The varieties producing yellow and orange flowers vary the shade of color in a remarkable degree. They are not great favorites with our friends on this side of the Continent, but why we are unable to explain; the *Lantanas* thrive well here, bloom profusely, and are effective; they are readily propagated by cuttings.

We might continue our enumeration of greenhouse climbers through several numbers, but we have given the most deserving varieties, and enough of them to enable our readers to make a good selection. Climbing plants add much to the appearance and effect of a greenhouse or conservatory, and many of them are profitable to the florist, yet they should not be allowed to grow too rank, and to deprive other plants of their necessary space and light; if they are kept in proper shape, they will be a source of constant gratification.

DORMANT VITALITY OF SEEDS.

In an article, last week, on the curious and interesting subject of dormant vitality in certain classes of animated beings, a subject which has not received the attention among scientific men which it claims, and which has also important practical bearings, we alluded to the fact that seeds which have the germs of vegetable life within them are much more generally subject to the same phenomenon. When a seed is perfected, it does not at once spring up into a plant or tree. The life that is in the seed may remain dormant for an indefinite length of time. In temperate and cold regions, all seeds continue in this state during the cold season. Every granary is a storehouse of seeds which seem perfectly inert, lifeless, and they will remain so until heat and moisture revive them. How long seeds will remain in this state without losing their vitality, has been a question. It has been asserted that wheat enclosed in sarcophagi with Egyptian mummies for thousands of years, has vegetated. Wheat said to have been reproduced from such seed, has been sold in the market.

There is nothing in this inconsistent with the analogy of other facts. Dr. Lindley, the eminent English botanist, says: "I have before me three plants of raspberries, which have been raised in the gardens of the Horticultural Society, from seeds taken from the stomach of a man whose skeleton was found thirty feet below the surface of the earth, at the bottom of a barrow that was opened near Dorchester. He had been buried with some coins of the Emperor Hadrian, and it is probable, therefore, that the seeds were 1,600 or 1,700 years old."

Numerous cases are recorded in which earth thrown up from a considerable depth has become covered with a vegetation foreign to the neighborhood in which it appears, and the germs of which must have remained dormant for a great length of time. The fact that seeds retain their vitality from year to year, when exposed to atmospheric influences,

makes it appear highly probable that they will retain it for a much longer period, how long no one can say, when light, heat and moisture are withdrawn.

It is a fact with which the agriculturist is perfectly aware, that seeds are not so apt to germinate on being kept over from year to year. This is owing to the effect of exposure to atmosphere and other influences, and every farmer or gardener should be particular to obtain the freshest seed for planting. Sometimes a crop is lost or greatly diminished, by the age of the seed.

This whole subject is of scientific and practical interest, and as such we commend it to the attention and investigation of our readers.

Merced People.

CLERODENDRON.

The *Clerodendron* is a greenhouse shrub, and deserves as such a place in every collection, and we cannot assign any reason why it is so rarely met with. The variety first known to exist, was, we believe, found by Thornberg in Japan, and is known under the name of *Clerodendron fragrans*; of this again several varieties, single and double-flowering, exist. The flowers are white or pinkish white, very fragrant, and are produced at various seasons of the year, if properly treated. During the winter months the *Clerodendrons* should have their rest, and be kept rather dry; when Spring approaches, they should be cut back and receive a liberal supply of water; it is of importance to keep them during their time of growth and flowering, in a warm and moist atmosphere, an occasional sprinkling of the plant is therefore very beneficial. The soil should not be pulverized very fine; leaf-mould and light loam is an excellent mixture for them. They may be propagated by root cuttings, or the cuttings made from strong, ripened wood, which should receive bottom heat, if convenient.

In our climate the *Clerodendron fragrans* will do moderately well with the same treat-

ment as we give Camellias, and cuttings of this particular variety strike root here without any difficulty by being placed close under glass in an ordinary greenhouse.

But of late several varieties have been introduced, which, in our estimation, are far superior to the above-named as greenhouse plants, of which we will mention in particular the *Clerodendron Balfouri*, a very good specimen of which Mr. Reimer had on exhibition during the Horticultural Exhibition of last year. There was much to admire in the peculiar and very handsome blossoms. We are very sorry to learn that Mr. Reimer has not succeeded very well in the propagation of this plant, and he is persuaded that the *Balfouri* must be kept in a dry and rather warm atmosphere during our winter months. We are of the same opinion, but we are in hope that this plant will be brought under trial, wherever a little attention can be given to a few pet plants. We shall certainly give it a trial, and communicate the result in due time.

CALIFORNIA VINE GROWERS

And Wine and Brandy Manufacturers' Association.

Choice of Vines for Wine Making.

BY JOHN A. LOCKWOOD.

(Continued from page 146 of last number.)

These remarks will be confined to the consideration of the best varieties of wine grapes. The market demand for table grapes and raisin grapes will readily determine any questions that may arise respecting individual merits. It is already known with sufficient accuracy what grapes keep best, look best and dry best. We know that the Muscat of Alexandria and Flame Tokay are conspicuous in the category of grapes notable for splendid appearance and safe carriage, that the Muscat is in prominent place for raisin-making, and with the White Malaga extensively used for the raisin of commerce. That the Feher Zagos possesses qualities for raisin grape in having a delicate skin, few seed and a natu-

ral tendency to dry early, that has commended it for raisin making, but that the superior size of its competitors has given them the preference. The Muscats, Tokays, Chasselas, Hamburgs and other fine varieties of table grapes now in successful culture among us, leave nothing to be desired in this department of vine culture.

But the question as to the best varieties of grapes for wine making presents more difficulties. In choosing vines to grow wine grapes, regard should be had to their adaptability to soil and climate, as well as to the description of wine which it is intended to produce. In Europe this choice is less difficult than in California, where we cannot profit by lessons of long experience. In Europe, however, circumstances require them to calculate whether the quality of the product is more profitable than the quantity. Here we cannot afford to sacrifice quantity to quality. If there are favored spots in California, like certain spots on the Rhine, in Burgundy and elsewhere, where 200 gallons of a choice wine brings more money than 1,000 gallons of a wine in less repute, they remain to be discovered. Our object should be to ascertain what varieties of grape will yield the largest amount of wine having berries which contain in suitable proportions the elements best adapted to the manufacture of fine wines. This is the more important, because of the rule that quality and quantity rarely go together. Du Brueil lays it down as an axiom, that quality exclusively should not be thought of, except in those favored localities where the high price of the product will compensate for the smallness of the yield; everywhere else quantity must have the preference.

In this early stage of California vine culture, we do not require an extensive list of varieties. Our long, dry summers give a uniformity to our climate unknown in Europe. And there is, probably, less difference in the quality of such soil as should properly be selected for vineyards or its adaptation for grape growing, as in consequence of their

volcanic origin the elements of true nutrition are more constantly present. In France, 1,200 or more varieties of vines are cultivated. It certainly would simplify our operations, if we could designate those to be planted by units instead of thousands. Yet, it is not probable that we shall ever find a grape to unite with productiveness all the requisites of a desirable wine grape, if we aim to manufacture a wine above the ordinary kind. We require varieties to mix with each other. The wine of our Mission is improved by mixing with almost any variety having less sugar and more tartaric acid; nor are our best varieties so perfect that they may not be made better by commingling the must with the must of other varieties, having constituent qualities adapted to such a union; the quality of the wine is not only improved, but the success of manufacture is rendered more secure. Thus certain musts are liable to remain sweet for the want of ferment. These are corrected by adding must of different characteristics. This principle may be applied in various ways, as when sugar, tannin, acid or water may be in too large or too small proportions, and it is particularly demanded to impart flavor when required.

It is convenient to have varieties with diverse epochs of maturity, in order to prolong the vintage, and have the harvesting done gradually, so as to avoid being pressed with an unwieldy force of laborers at one time. This can be effected by planting such variety as will ripen at different periods. In Languedoc, whose climate more nearly resembles that of California than the more notable wine districts of France, this plan is systematically pursued. By planting one third which ripen in September, one third ripening a fortnight later, and another third which ripen still later. And here it may be remarked, *en passant*, that California might have derived lessons of more practical value in vineculture from Languedoc than she has from Germany and Northern France, from whence we have chiefly derived our example

and reproof, and it is not improbable that her favorite grapes may be those best adapted to our circumstances. Their vines, like ours, are planted comparatively far apart, and are trained as we train, with low stocks and short spurs. Their yield is reported as enormous, in fact, well nigh incredible—1,500, 2,000, and even 2,500 gallons to the acre. Flagg, in his work on European vineyards, mentions one proprietor (M. Mares) as making from 250 acres 375,000 gallons of wine. This would be at the rate of 1,500 gallons to the acre.

The names of the varieties best known among us we propose to give, with a reference necessarily brief to their characteristics, and then select from those regarded as entitled to our confidence and adapted to circumstances now existing in California. The Mission, or California, claims the first notice as the earliest known and most widely cultivated. Many still think it the most profitable grape. This opinion is less common every year, and will probably soon cease to be entertained at all. It is claimed for the Mission that it is of hardy growth, exempt from disease and accidents; that it makes good, sound, well-keeping wine, and in consequence of its large supply of sugar yields abundantly of spirit. This may all be true, and yet there are other varieties possessing all these qualities, and with the exception of its spirit capacity, possess them in a more eminent degree. It will scarcely be denied that it has some positive objections. The proportion of sugar is too large to that of tartaric acid to make an entirely acceptable wine. This saccharine excess is liable to suspend fermentation at a slightly-reduced temperature. The absence of an agreeable flavor is conspicuous. Its red wine is not in popular favor, nor does its dry white wine ever allow an excellence to exalt our State in product to a level of France and Germany. Yet those having vineyards largely planted in Mission grapes need have no regret on that account. It is an admirable adjunct to other grapes, to commingle their merits. Possessing in large measure sugar, the most

essential ingredient in wine, we may get aroma from one and tartness from another to supply its deficiencies in these qualities.

Black Malvoisie, the grape known as Pino, and by other synonyms (for our vinicultural nomenclature is eminently confusing), is entitled to rank among the highest of our wine grapes. It possesses all the good qualities claimed for the Mission, some of them in a higher degree. Thus in some localities it is more certain and more prolific. It ripens earlier. Made into white wine it has thus far promised well, while its red wine is better colored and of more agreeable color. Mixed with Mission for red wine, the last named is decidedly improved.

Zinfindal—a black grape of heavy product, standing among the very first in this respect. The two prominent excellences of its wine are tartness and a peculiar and delightful flavor resembling the raspberry—a flavor which the palate persistently relishes. Mixed with the Mission it favors fermentation and improves its color and aroma. Even when mixed in moderate proportions in ferruginous soils it is, *par excellence*, our red wine grape, the one which we confidently hope to contend successfully for the place in public esteem now worthily occupied by the skilled vintages of France. Those planting vines on suitable sites in soils rich in iron, cannot go far astray in planting ever so largely of this variety, for its white wine is also of superior quality. What other grape have we uniting abundant product and abundant flavor? The color of its red wine, too, is striking, not unlike the famous Montepulchaine. One objection to it should not be omitted mention of: its liability to sun-blast in certain localities. It would not be safe to plant it too freely where the Hamburg cannot succeed; but even then there is a partial compensation in a generous second crop. The second crop of Zinfindals is, as a rule, large, and unlike the second crop of most other grapes, and well worth gathering. It makes a wine of lighter color and body, but the flavor is scarcely inferior to that of the first crop.

The Rose of Peru is of hardy growth, and prolific. Not so succulent as the preceding, the wine product is in less proportion. Its wine is not well known. Some assert that it has made port wine of best promise. The Black Hamburg was extensively planted a few years ago, but now neglected chiefly from its liability to sun-blast. It is probably an inferior wine grape to the Black Malvoisie, besides being more certain.

Of white grapes, the Golden Chasselas, with its multitudinous synonyms, is entitled to a conspicuous place. It has a hardy stock, bears abundantly and ripens early. The wine is smooth and rather light, without a characteristic flavor.

The Berger, called Caveillac by the French, is a white grape, ripening late and a very heavy bearer. Wine light and tart—an admirable adjunct to the Mission to promote its fermentation, reduce its body and communicate tartness. It is, perhaps, the latest bearer among our wine grapes, unless we include the Queen of Nice, or White Nice, which likewise makes a light, tart wine, resembling the white *vin ordinaire*, which the lowest on the Rhine has served to him in the wine shop.

The Feher Zagos, a certain and good bearer, with more sugar and less tartaric acid than the above. The wine is smooth and delicate.

The Chasselas family (not including the so-called Golden or German Chasselas), of which the Chasselas Fontainebleau, Rose Chasselas and Barbaroux are prominent members, ripen among the earliest and bear well. Wine smooth, light, and keeps well, without characteristic flavor. The vines sucker badly, and require pruning with long spurs.

We now approach varieties entitled to a first consideration, if we were in search of the quality of the product without regard to the cost of production. Prominent among these are the Rieslings. The wines made from them in California, though of less excellence than the famous Rhenish vintages, are, in some cases, of superior quality and of high

promise, but the Riesling wine has not, so far, been sufficiently profitable and certain to have encouraged its rapid extension. It is alleged that high training will insure a good crop, but it has not been proven other than on a large scale that vines can thus be trained with profit. It certainly will not do so, if by a few heavy crops we impair the vigor, or, perhaps, sacrifice the vitality of the plant. Wherever high training is practiced in the Mississippi Valley, it requires an amount of labor that differs so widely from our economical processes as would make it to us an unsafe enterprise. On the whole, the profitableness of cultivating the Riesling grape may, up to this time, be regarded as an open question. The De Shay, sometimes called the Gray Riesling, makes a wine with considerable bouquet, but the same objection applies to it. Moreover, it requires more time to mature than our rates of interest justify. These remarks, perhaps, in a great measure, apply to those varieties that are properly classed as Burgundy grapes, as well as some grown in Champagne and the Gironde, and to be found in some California vineyards.

Of the musk grapes, the most valuable variety of wine is the Muscatel, otherwise called the Muscat Frontignac, the German Muscat, and by other synonyms. It ripens early, is a shy or moderate bearer, and requires a warm and rather fertile soil. Its cultivation on a more extensive scale in California is desirable, where we have so few grapes of decided flavor. In the single province of L'Hirault, France, there are 5,000 acres devoted to its culture, and yet the product of wine from it, in many instances, does not exceed sixty gallons to the acre, but it is, in such cases, sweet wine made from partially dried grapes. The Muscat of Alexandria bears better, but the flavor is inferior to the Frontignac. Ripening about the time of the Mission's maturity, their musts may be advantageously mixed.

In our present scarcity of flavoring grapes it may be desirable to those with extensive vineyards to have in them a few of our Amer-

ican grape vines, *V. Lupina*. The Catawba is, perhaps, the preferable, on account of its color. A small quantity of the must of the Catawba and Muscatel, mixed with a much larger quantity of Mission must, has been known to make a sensible improvement. The subject is worthy of consideration.

To sum up in a few words the conclusions derived from the above imperfect descriptions from the best grapes to plant for wine making, where a very small number are to be selected, we enumerate the Black Malvoisie and Zinfindal among the colored grapes, and the Golden Chasselas, with the Berger, Feher Zagos and Chasselas Fontainebleau among the white grapes. Of musk grapes, the Muscatel is preferred. To owners of Mission vineyards, in search of suitable varieties of grapes, to mix with them at the press; or their must in the cask, the Malvoisie, and Zinfindal for red wine, and Berger, and Muscat for white are deemed preferable. When red wine only is intended to be made, and only one variety to be planted, the Zinfindal is esteemed the best, if the site is a proper one and the soil abounds in iron.

To conclude, it must be borne in mind that in the infancy of California viniculture, accuracy is unattainable on this subject. In the oldest and most enlightened wine countries of Europe they still want positive knowledge on points of interest that have elicited their attention for centuries; and yet it will not be without profit if we succeed at this early day in finding ever so few kinds, in our search for the best, that will give assurance to those planting new vineyards or extending old ones, that what they plant will not be of a variety altogether unsuited to surrounding circumstances. The losses sustained by propagating useless vines, whose qualities remained to be tested, has been very great, and continues to be. If hereafter those in doubt would limit their selections to the few we have named, these errors would greatly be avoided. In the meanwhile, it does not follow that we possess the very best kinds for our purpose. With the soil and climate of

California our vineyards should not be surpassed in productiveness by the vineyards of Languedoc, but we have reliable testimony that they are. If the variety cultivated contributes to this superiority, we should not delay in procuring those whose reputation for productiveness is best established.

The views here presented are not set forth authoritatively as the expression of the widest experience and best judgment. It is not probable that they will meet with an approach to general concurrence, but if they accomplish nothing more than to invite inquiry and promote investigation, they will serve a good purpose. It does not challenge criticism, but invokes investigation.

Selection of Varieties of Grapes for General Culture.

BY GEORGE WEST, OF STOCKTON.

The selection of varieties most profitable for planting in different localities, is one of the most difficult points to determine. I have selected the following, which are grown around here, and sufficiently tested for wine or market to warrant planting: For early market the Madeline Chasselas de Fontainebleau and Lady Sweetwater ripen the first of August and ship well. Black Malvoisie, Black Olive, Black Hamburg, last of August; bear well and fine flavor; Black Prince ripens from September 1st to 10th; strong grower, large bearer, ships well; one of the most profitable at present. Rein de Nice, good grower, bears well, fine color, last of September. White Muscat of Alexandria, fine flavor, sets poorly some seasons; last of September. Black Morocco, fine large grape, shy bearer, brings a high price; October. Black Ferrara, grows and bears well, ripens late and keeps longer than any grapes we have in cultivation. Mission, when grown for table use, is large-sized, fine color and flavor; pays well. For wine we are planting White Frontignac; will produce from three to four tons to the acre; considered one of the best of the musk grapes; ripe middle of

September. Riesling, White Tokay, Bergen, Chasselas de Fontainbleau, all bear well and ripen early. Zinfindal bears large crops, makes an excellent white or red wine. Black Malvoisie, fine white or red wine. Black Burgundy, good bearer, makes red wine of good body. Black Malaga; good bearer; fine musk flavor. Mission I find best for port, sherry and madeira. The last two will not develop their flavor until the fifth year. For raisins—White Malaga, good bearer; oval berry of good size; hard, pulpy grape, which dries well; ripens in September. White Muscat of Alexandria—makes a fine flavored raisin; ripens rather late some seasons for drying outside.

—

Planting and Pruning the Vine.

BY J. R. NICHERSON, PLACER.

To the Chairman of Committee on the Cultivation and Pruning of the Grape: I beg leave to report, first, on location. I prefer a granite formation, because it is better adapted to the growth of the grape, producing more saccharine matter, and is more easily cultivated. Next, I would prefer slate, with a high and dry location and perfect drainage, so that the roots will not enter into the perpetual water, and as level as I could get it, with as few outcropping rocks as possible. Next, gently-sloping hillsides. Remove the timber, stumps and roots; plow the land deep and well, say from fifteen to eighteen inches deep; harrow, roll and pulverize well; then lay off the rows eight feet apart both ways and plant good rooted vines, by all means. Upon this depends all your future prospects, for if you plant cuttings to remain in vineyard form, the results will be unfavorable, and you will always regret it, for several reasons. Plant cuttings, and they will strike roots at the bottom that will go down to the water, if possible, and never throw out any surface-feeders, which are necessary to get heat, light and air that will produce good fruit. The effect of cuttings is to make wood in abundance and not fruit, and what fruit they

do produce, is inferior in bunch and berry and destitute of saccharine matter, which is so essential to make good wine. I think that is the reason why we have so much of poor, acid wines in California.

We do not economize when we set out cuttings. The percentage in loss, and the trouble, waste of time and labor make the cost more than to plant good roots at the start. I can tell by the kind and quality of the wood where I have set out a cutting. If good roots are planted they set two kinds of roots, a few deep feeders to get moisture in a dry time, but the most of them are surface-feeders, essential to the development of a perfect grape. This subject is entitled to more consideration than is generally conceded to it. Upon this proposition depends our future success. If I were going to plant cuttings I would select a hard bed-rock that the roots could not penetrate. I noticed in making an excavation eighteen feet deep, to build a wine-house, in the rotten granite, solid though not hard, that the roots from cuttings planted eight years before had penetrated to that depth half an inch in diameter, when rooted vines had not gone into the solid rock. I make mention of this fact, for it is a lesson in nature that we should notice.

After the land is ready, get a lot of stakes eight feet long for sight and measuring poles. Set these up at convenient distances to run a trench by. As the plow passes up the first turn, set the stakes for the next row. Turn three furrows in a trench, making it eighteen inches deep. Every tenth row leave ten feet for a wagon road. In this way the horses do the most of the work. Then prepare a long pole of light material, and mark it correctly every eight feet to dig holes by. Set up stakes across the end to start from. It is necessary to start from one end every time so as to have the rows straight both ways. Lay this pole by the side of the trench. Be sure and see that the end of the measure is straight with the end line; if so, there will be no trouble. Set

four or five men to digging holes. The holes should be dug in front of the mark on the pole, banking up dirt at the mark on the pole, so that the setters will have this guide to set by. When through this row return to the first end and start as before. One man will take roots in his arms and hold them in place, while another will with a shovel throw dirt around them to hold them. When a row is set take a one-horse plow and fill up the trench. In this way the holes need not be dug, except enough to get the roots fairly in and the vines straight. All the old wood should be put in the ground, leaving out but one eye.

In this way a vineyard can be planted quickly and cheaply, and much better than if the holes were dug by hand. If strong roots are planted they will make sufficient wood the first season to form a good, straight shoot for the vine. When the young shoot gets eighteen inches high cut it off at twelve inches high. Place a stake by it and tie the top of the vine to the stake. The two top eyes will start and make spurs for a head. Keep all undergrowth below cut off so as to make them strong and stocky. At the next pruning time cut these two limbs off to two eyes. At the second pruning, when there will be plenty of wood to form a head, leave three or four spurs, cutting back to three eyes.

At the third pruning cut back to the three eyes; this season they will bear considerable fruit. Pains should be taken in forming a good, well-balanced head, the wood equally distributed around the stake so as to give it a perfect equilibrium. In leaving three eyes on the spurs it does not induce so much non-bearing wood, as the first eye is a wood bud; the next two produce fruit. These second and third buds absorb the sap of the vine so as not to force the first. In this way there is less wood and more fruit and foliage to protect the fruit from the sun and admit plenty of heat, light and air for the development of the fruit. If pruned back to one bud the dormant buds will be forced, which will

make wood and very weak. At the fourth pruning select six or eight of the strongest and best limbs for your head, always cutting back to the nearest to the old wood. In this way the head of the vine does not increase in height. I think a vine trimmed one foot high is the best height for many reasons: First—It is more easily cultivated. In plowing the singletrees pass over the head and are less liable to break the shoots; the fruit is not so easily sunburnt; gets the benefit of the warmth of the earth at night; the fruit nearest to the end on the ground is less liable to mildew or any other disease. In fact, I have never seen a bunch of grapes lying on the ground mildewed, and generally they are larger and more perfect in bunch and berry. The ground should be well cultivated every year. I use a one-horse shovel-plow.

For breaking up ground use a small harrow made for that purpose. Plow both ways and harrow so as to pulverize, then level the ground, using the horse-hoe to keep the weeds down and the ground mellow through the Summer. The stakes used in supporting vines should be eighteen inches long, sharp at one end, driven in six inches by the side of the vine. They can be made of oak, red-wood or sugarpine cheaply. They can be removed the third year, as the vine will be able to stand alone. They can be used in young vineyards. Using stakes on a young vine is a great advantage in many ways. They keep the vines straight till they are able to hold up the fruit; they are more easily worked and bear more fruit."

CRAWFORD MARKETS, BOMBAY.

Among the many curious and interesting sights open to the stranger in Bombay, there is none more interesting than the Crawford Markets. These buildings enclose a large square, and are devoted to the sale of almost all that is necessary as food for man. Here the cooks and butlers throng, and of fish, flesh, fowl and fruits, a good supply is offered.

them. The markets have all been erected within the last few years, and each has been designed for its particular trade; but the one on which most favor has been lavished, one may say, both by nature and art, is that which we are most interested in—the fruit and vegetable market. As we get down at the porch, we hear the busy hum of bargaining crowds, and as we enter, the picture that opens to us beggars description. We are in a large iron building, something like a metropolitan railway station. In front is a beautiful drinking fountain, and on either hand stretch the lines of stalls. To the right they are loaded with fruit and flowers; to the left with vegetables.

Let us turn to the right. Here are three lanes running lengthways down the building, with stalls on either side. The lanes are crowded with buyers of as varied race and appearance as the fruits that are offered. Here a Parsee butler is culling the finest for the table of some rich fire-worshipper; there a tall, ebony-faced African is haggling over the price of a dozen plantains. Here the “mild” Hindoo is buying the plantain leaves that will serve as plates at a feast; the Kutchee Bunia, who not only eschews animal food, but will eat nothing that grows under the soil; the British Jack Tar, the tall, grave Arab, the fair European lady and her sable sister are here—every one wants fruit. As we press through the motley crowd we are pressed, in a mixture of English and Hindostanee, to buy, but we don't buy much; we see what can be bought and learn the prices: Grapes, 6d. per lb.; they are a small, white grape, sweeter, but not so good-looking as we get at home for 10d. to 1s. per lb. Cabul grapes are generally plentiful, but are not to be seen now; they are a large, white, oblong berry, of delicious flavor; they come to market in little boxes, with the berries laid out separately in cotton wool, and usually sells at about 1s. 6d. a box of 100 berries. Oranges, 2s. a dozen; pine apples, 3d. each; bananas and plantains, 2d. to 6d. a dozen; peaches and strawberries are to be seen occasionally, but

are out just now. The stalls are about three feet high; underneath is a small store, and, above, the dealer sits squat among his wares, while behind, on a strong iron railing, hang the grand bunches of bananas, some of them half a hundred weight.

Here are the flowers. Roses, 6d. a hundred; they are gathered without stalks, and strung into garlands, that are worn on festive occasions; their fragrance is delightful. Bouquets of jasmine, white and red oleanders, hibiscus of sorts, a pretty poinciana, and allamanda flowers, made up in the showy bracts of *Poinsettia pulcherrima* and the leaves of *Croton longifolium*, rival, in brilliancy of color, at least, if not in tasteful arrangement, the products of Covent Garden; the best may be had for 3d.

Vegetables are in great force; they are almost all European sorts, and a great host of Eastern ones are to be had. Of European sorts, asparagus, broad beans and sea-kale, are absent; the two former can be grown, but don't pay.

Cabbage, cauliflower, kohl rabi, turnips, carrots, peas, vegetable marrows, etc., are plentiful, and sold at about the same price as in London. Here is the wonderful radish that created such a sensation in London a few years ago: the unripe pods are selling at 1½d. per lb.; and the dudia, with a striking resemblance to the “new species of cucumber from China,” that we see advertised at 3s. 6d. per seed; it is a delicious vegetable, and is offered at 3d. each. Cucurbitaceæ are in great variety, from the dudia, a fit load for a man, or the snake gourd, five feet long, to the gherkin, the size of his finger.

Cocoanuts are 1d. each, Betel-nuts, the fruit of the *Areca catechu*, 6d. per lb. Tarwara, the albumen from the fruit of *Borassus flabelliformis*, is a mawkish, tasteless fruit (at least, when uncooked), but it is in great demand. Seedlings of this stupendous palm are offered, and are said to be a delicate vegetable; these, with dates in the dried fruit department, are all which the palm tribe supplies here.

The division of labor seems perfect, for

here are the dealers in pot herbs and small salads; mint, thyme and parsley are plentiful, with mustard and cress in perfection. Then comes the herbalist; he has leaves of *Calotropis gigantea*, for sores, the flowers for affections of the eyes; *Euphorbias*, for cough mixtures; *Datura* leaves, for reducing swelled glands; lemon-grass, for fevers, and many others.

On the other side are the dried fruit stalls, with the same variety and prices as in London.
Melbourne Times.

PROTECTIVE DUTIES ON TREES AND PLANTS

Every year, about this time, there is much agitation about this subject. It is one which concerns every person who has any interest in gardening, but one which agricultural and horticultural papers almost ignore. It is a question so much mixed up with politics, and politics the *Gardener's Monthly*, at least, tries to avoid. People will reason on almost any subject; but on a political question they simply dispute, each party striving for a party victory.

But there are some facts in this matter which seem clear without risk of offending those who listen. A Massachusetts correspondent sends us a communication, in which he states that manufacturers there who are active in demanding a duty of fifty or more per cent. on their own goods, are yet working for a repeal of the plant duty. But if we understand the law right, plants are duty free now to all except nurserymen. Nurserymen and seedsmen pay duties, but not amateurs. The foreign nurseryman or seedsman can sell direct to the American gentleman, but the American nurseryman or seedsman must pay thirty per cent. in gold for the privilege of doing so. Why this spite against the American trader we never knew. We protested with all our ability to the Congressional Committee against this when proposed, a year ago, but it was of no avail.

Suppose the duties are repealed altogether, and the commercial man and what ought to

be his customer, be then put on an equal footing, will the American nurseryman or seed-grower be able to pay the same high wages he now does, and yet compete with the cheap labor of the seed farms of Europe? It was not easy for him to do so before the war, when labor was lower. The expense of working a nursery establishment is now just double what it was before that time, while the actual prices are just about the same. It is not to be expected that he can compete with them. He cannot do it. The question is then narrowed down to this: Is it for the interest of the nation to break up these nursery establishments, in order that the principle of buying in the cheapest market may be carried out? Here we suppose we encroach on the domain of politics, and we shall leave to politics the answering of this question.

One thing, however, remains: Though the interior nurseries may be crushed and broken by the free European competition, those of us who live near the seaboard will be benefited pecuniarily. If we cannot grow things ourselves, we can become agents and importers for European houses, in which the profits are as great as in home raising, as the business of the whole country thus passes through the hands of a few. It is a matter which concerns our large Eastern firms very little. They are safe either way. It is rather a question for the interior and the smaller firms, scattered all over the country, to decide.

There will always be some annoyance from tree duties, on account of the delay at the Custom House with these perishable goods. Generally, however, plants, if well packed, get through even with this delay. But even with this, it is still a question whether for this, a principle which in some measure prevents the great pressure of cheap foreign labor on our tree-raisers and seed-growers, should be abandoned. We do not pretend to decide this question, but merely to present the case as it appears to us.

Gardener's Monthly.

Editorial Portfolio.

DUTIES ON IMPORTED PLANTS AND TREES.

In order to carry on the affairs of a nation, revenues must be established to meet their current expenses, but the revenue system should be founded upon a proper basis, and should not be oppressive or detrimental to any particular branch of industry. An opinion seems to prevail, that the present system should undergo a very material change.

There is no disposition on our part to overstep the limits of our sphere, namely, Horticulture; but when our progress is stayed by a law which works injuriously, we feel called upon to contribute our share towards a remedy. One of the defects in our Custom House regulations, is, the duty on the import of plants. We have agitated this matter quietly among our nurserymen and florists for some time past, but up to the present time nothing has been done to remedy the evil but talk. We noticed a few days since that the *Gardener's Monthly*, of Philadelphia, has taken up the subject in an ably written article, which we publish in another column. We think that more energetic steps should be taken by the various Horticultural and Agricultural Societies throughout the land, and that the Horticultural and Agricultural publications could very ably assist in giving material aid to this effort, to have the obnoxious and injurious regulation making plants subject to Custom House duties, abolished.

There are various reasons why this tax should be removed. We call the attention of men in the business to the most important of them. First of all, it certainly is the true policy of our people to introduce new plants; these may be made useful in various ways, so that we may derive all the benefits which our varied climates and soils are able to afford us, and for this reason there should be no restrictions in the form of duties; nay, we will go beyond that, and assert, that the true policy is to encourage in every possible

way the introduction of foreign trees and plants.

Second, we hold that the vexatious delays in the Custom Houses are most injurious to plants which have already gone through long journeys and rough treatment on their way, especially when we consider what perishable articles plants are, and that a few days of additional delay often results in the total loss of the entire shipment. We know of instances where plants have been detained in the Custom House for weeks. This may have been due, to some extent, to the importer, who may not have made himself acquainted with the routine of business in our Custom Houses; but much blame must be attached to officials, who under our present rude system are not disposed to use proper exertions to facilitate business, and who frequently will not even condescend to answer a civil question or inquiry with ordinary politeness.

It may, on the other side be argued, that the duty on plants and trees protects our establishments at home, and while labor is cheaper in Europe, for instance, than in this country, that our nurserymen and florists could not compete with European establishments in the prices. We think this point is not well taken. Those who are in want of trees and plants will always be willing, and will find it to their advantage, to purchase of our home establishments at an advanced price. The risk and the uncertainty in importing plants from foreign countries will always cause a preference in favor of home growers, who are better judges of that which is best adapted to our country.

We shall at some future time have a little more to say in regard to this matter, but we will take the responsibility of declaring, that our nurserymen and florists are unanimously in favor of having the duties on the import of plants and trees abolished.

We hope that a move will be made throughout the country to lay this matter before our representatives in Washington, who may be willing to entertain such a proposition. Who will take hold and push this matter?

PLANT OUT MAPLES.

It is high time that the young maples you have intended to set out this season along the public highway through your farm, or around your house for shade, should be in the ground. The maple buds are springing fast, indicating an early Spring, and a delay of a week or ten days may seriously damage the prospect of success in the planting.

A few years ago, and scarcely a tree was planted for shade or ornament, while the native growth of trees was wholly, and as we think, barbarously cut down. But latterly the public taste has been improving, and we see, especially in the larger towns, a large annual increase in the planting of native trees, generally maples, for shade and ornament. There is the same reason to induce the people of the small towns and farmers to plant trees, as there is for such planting in the cities. Many of the small towns in the State have a desolate appearance, which would be wholly cured by lines of thrifty maples along the streets. Forest Grove is noted for its great natural beauty, and which is entirely attributable to its beautiful groves of oaks, and which would entirely disappear, leaving nothing but a rambling village in a great fern patch, if those oaks were destroyed.

The new railroad towns, like Gervais, Halsey, Junction, and Cornelius, ought to take this hint (and also take the *Farmer*), plant trees in front of every man's lot, and add to the beauty and attractiveness of the place, and thus add wealth and prosperity. It takes *years* to produce a handsome tree, while a handsome cottage can be erected and finished in three months. Many a homestead, suburban location, or location for the farmer's home, has been robbed of its greatest beauty and attraction by the barbarism that cut down the grand old trees which had been growing and expanding thereon for centuries. Let the oaks and a clump of beautiful evergreens stand. They will be a perpetual delight to the children, and bind their hearts to the old homestead through all after life.

Where you desire evergreens, and they are very desirable, adding cheerfulness to the landscape, and reminding you of Summer throughout the Winter, they can be secured by transplanting just as the buds begin to start in the Spring. But the transplanting must be done with care, selecting trees six to eight feet in height, growing in solid earth, where you can get them out with a large ball of earth attached. As large a ball of earth as it is possible to remove with them should be carefully taken up, and then the ground about the roots should be protected from the drouth the first season, with a couple of wheelbarrow loads of well-rotted manure, sawdust or chip manure spread around.

Every farm will look better and appear to be more thrifty and prosperous, and always sell for more money, if the public highway through it is lined with ornamental trees. It is no trouble to get small maples, topped ten feet up; and then set them in every alternate fence corner, and the work is done.

Willamette Farmer.

FOREIGN INDUSTRIES.

At the meeting of the Foreign Industries and Forests Commission, Tuesday, it was decided to commence the examination of witnesses next week. The gentlemen to be first invited to attend are from those countries in Europe most famous for the special industries deemed suitable for this colony—Italy, France, Spain, and Portugal—and, as experts in their industries, they will be able to speak positively as to the prospects of introducing them here with advantage. The members of the Commission are also to be summoned for the consideration of forest matters next week. Those present yesterday were the chairman (Judge Bindon), the Hon. Captain Cole, and Baron von Mueller.—*Melbourne Times.*

ALL WET LANDS, except cranberry marshes, should be thoroughly drained.

WORK FOR MAY.

The season for planting trees, shrubs and vines is now over. Except in a very few exceptional cases, their growth and development will depend chiefly upon a proper and judicious treatment hereafter. It is important that the soil around them should be constantly cultivated, in order to keep the surface in a porous condition; by stirring the soil frequently, the moisture will be retained for a longer period of time; and if, in addition to this, mulching is resorted to, very little trouble will be experienced in maintaining trees, shrubs and vines through our dry season.

The past season has been favorable for new plantations, but the dry and excessive winds which prevailed during the first part of April exercised a retarding influence over vegetation generally; however, warm weather will soon be with us, and, with the abundance of moisture which has been retained in the soil to this time, we have every reason to believe that our Horticultural operations will meet with bountiful success.

Unexpectedly for this Coast, we experienced some heavy frosts during April; these have damaged, in many localities, the fruits and vines; while we have no remedy for this, we would, nevertheless, recommend to our viniculturists to run over the vineyards and to remove the young shoots which have been seriously injured by frost, by cutting them off close to the bud, where they started from; this operation will stimulate the production of new wood, which will yet yield fruit during the approaching season, although less in quantity than might have been expected before the late frosts.

In the Orchard, in the Vineyard and in our Gardens we should not neglect to keep the ground clear of weeds, which should by all means be removed before their growth to seed. The weeds thus removed will furnish an excellent material for mulching, while in our gardens they may be piled up, allowed to ferment and to decompose, by which means

we will obtain an excellent manure, or a light, porous and nutritious material to be mixed up with loam and sand for pot-plants. Such soil is equal to leaf-mould, and to cart it away, in order to get rid of it, is a great error, which, however, is very often committed.

In the Kitchen Garden, cabbages, cauliflowers and tomatoes may yet be transplanted from the frame, but the young tomato plants in particular should be shaded for a few days.

The Flower Garden is now in its brightest glory, everything appearing in its fullest vigor. We would advise our readers to remove all flowers which exhibit decay, as the fading blossoms mar the effect of those which are in perfection, and give to the plants an untidy appearance; besides, they absorb much of the strength and nourishment which the succeeding flowers so much require.

All summer-flowering, bulbous-rooted plants are making their appearance, and they in particular require a careful loosening of the surrounding soil.

Of Paeonies, we may say from our own experience, that, if newly-planted roots should show signs of flower buds, it will be advisable to remove them. The large flowers of the Paeonies are apt to exhaust the root too much before they are thoroughly established. Paeonies will not bloom well unless they are permitted to remain undisturbed for several years in the ground.

In cultivating Dahlias we strongly recommend the removal of all shoots but one, so that the full strength of the plant may be directed to this one stock, which will produce flowers to a greater perfection than if several stocks were allowed to develop themselves. In this case, it becomes imperative that proper stakes should be planted, to which the young stocks should be tied.

In another column we have given some hints on the culture of Annuals, which may yet be very successfully planted during the month of May. The ground should be thoroughly worked up before planting, and, after sowing, a light sprinkling of well-rotted ma-

nure will keep the surface from forming a hard crust in case of watering, which may become necessary during May.

House Plants should receive frequent airing and a more liberal supply of water than has been awarded them during the wet season. In watering plants, too much attention cannot be paid to the temperature of the water, particularly during warm days; it is very important to let the water stand in the sun for a little while before it is applied to the pot-plants; cold water, such as we receive from the pipes of our water-works, should never be given to plants during hot, or even warm days; the chills which the roots of plants receive must necessarily be very injurious.

Insects will show themselves particularly active among greenhouse plants at this time, and we strongly urge the close examination of plants, from time to time, and to destroy, if possible, these intruders; their destruction is the surest remedy for many of the evils of plant life.

Pinch off the shoots of all slender-growing plants, so as to compel a more bushy and compact growth, as we have already took occasion to urge in our April number.

Give to established cuttings and seedlings a little more air, and whenever the young seedlings begin to crowd each other, transplant into pots or boxes wider apart, so as to give them a chance to grow stocky; frequent transplanting has always a most beneficial effect upon such plants as Calceolarias, Cinerarias, Primulas, Lobelias, etc. After transplanting, shade for a few days; place them also under glass, and give them gradually more air.

GROWING THE TEA PLANT FROM SEED.

Mr. Wm. Saunders, Sup't. of Experimental Gardens of the Department of Agriculture, recommends saving tea seeds in boxes filled with light soil, covering them to a depth of half an inch with the same. A sash-covered

frame will afford the most favorable conditions of growth; but when this convenience is not available, the boxes may be placed in a sheltered and somewhat shaded position, in the open air, and the soil maintained in a damp, although not a wet, state. After one year's growth, they may be transplanted to permanent locations. So says the *Rural Californian*, and we should like the experiment tried on this Coast, in place of importing the plants from Japan.

ORANGES AND THEIR CONGENERS.

A correspondent to the *Rural Carolinian* says, on this subject:

"I am surprised that, when so much attention has of late been bestowed upon the cultivation of the Sweet Orange, no notice whatever has been taken of the *Mandarin*, the very best of all the family. It is rather small, and the tree partakes of this peculiarity, that it never grows quite so large as the common orange; the skin of the fruit is so thin and tender that no knife is required in peeling it, and it is almost as fragrant as the *Bergamotte Lemon*. The flesh is of a delicate rose-color, and is so much pleasanter than that of the other varieties, that it is styled the '*Citrus nobilis*.' The wood is also small and so are the leaves, and when grown from grafts the tree has no thorns, and being naturally of dwarfish growth, is the best suited for growing in tubs or pots. One tree grown in a small tub will yield a peck or more of fruit. It is only a little more tender than other varieties. Two trees grown on the south side of a residence on Bay Street in Beaufort, escaped serious injury from the intense cold of Christmas, 1870, and have borne fruit since.

The *Shaddock* is another variety well worthy of cultivation. The fruit is of enormous size, and is the very best for preserving, especially when canned, and although not very sweet, yet when properly peeled, it is quite palatable. Its flowers are the most fragrant

of all the orange family, and the tree, like the Mandarin, is only a little more easily injured by cold than the sweet orange.

The Bergamotte Lemon is another interesting and valuable variety. The fruit is of full lemon size, filled with juice, and the peel is very thin and emits the Bergamotte flavor upon the slightest scratch.

REPORT ON THE FRUIT MARKET.

In an early number of this Magazine we spoke of the unhealthy pressure of the Commission Business on the fruit-growers. The following article, which we copy from the *Call*, corroborates what we then said, and we again ask, How can this reform be accomplished; and who will inaugurate a movement to deliver us from this deep-rooted evil?

THE FRUIT COMMISSION BUSINESS.

EDITOR MORNING CALL: I was in hopes that some one interested in growing fruit, or selling on commission, would have written something for the papers since my two former communications. I would like to see the matter thoroughly ventilated, to see if there cannot be a more healthy business established for the producer as well as the seller, and throw some protection around the jobber and retailer. The fruit-growing business has grown to be quite extensive in all its branches. I have no reliable statistics to make any calculation from; perhaps there is over a million of dollars invested, directly and indirectly, in some of its branches. We have to send the fruit to market consigned to some one to sell for us; and have to submit to what they say. They sit as judges and jurors, and from their verdict there is no appeal, only to change to some other house, *perhaps for the worse*. *Honorable commission business* is right in the hands of business men of some standing. The commission houses have increased *fifty per cent. faster* than the increase of fruit. They all want to make money; but live they must in some way. They start in the trade with a few consign-

ments and no business capacity whatever; not much money on hand, rents due; and what is to be done? Why, sacrifice the property that belongs to some one else. There may be several that live in the same place, all engaged in the same business, always friends that would not do his neighbor a wrong. No. 1 sends his fruit to A; No. 2 sends his to B; and so on through the entire list, all paying a premium to some one to run an opposition, when they would not do it at home. Unless there is a change for the better, some body will have to *draw out of the business*. It is rather an up-hill business to devote from ten to fifteen years to grow fruit trees (and with some their last dollar is in their orchards, besides several hundreds of borrowed money); then to have our fruit slaughtered, as it has been the past Winter, is rather rough. I think the best thing for our protection is to form associations, elect our Directors, choose some good business house that has a reputation for *fair dealing*, that will work for *our* interest as well as their own, concentrate the business in the hands of a *few houses*, and let the rest do a *jobbing business*, which, in my judgment, would be profitable to them and more so to us. I wish the papers in the country towns would take up the matter and sift it to the bottom. They owe it to their patrons. I hope to hear from those who are producing. Are we like a drove of sheep being driven to the slaughter-pen without a word of remonstrance?

J. W. CASSIDY.

In reference to our more immediate subject—Fruit and Vegetables—the lateness of the season and the prevalence of frosts has somewhat retarded the arrival of various produce.

Cherries have just made their appearance, but are high, from 75c. to \$1 per lb., retail.

Strawberries are very plentiful and very fine (averaging 12½c. per lb.), and there is every promise of continued abundance.

Gooseberries are looking well and are plentiful, but are small; it is a bad practice to

gather them so early—the crop is cleared off before they can attain either size or flavor; they average from 8c. to 12c. per lb.

Rhubarb is fair in quality, at 12½c.

Apples are nearly all out of season, and scarce; the only varieties now left are American and Red-Cheek Pippins and Virginia Greenings.

Pears are quite out.

The Nut season is over, although a few may still be obtained.

Oranges are plentiful, but other tropical fruits are out.

Of Vegetables — Peas are plentiful and good, at from 5c. to 8c. per lb.

Asparagus also good and plentiful, at from 6c. to 10c.

String Beans have just come in; small supply and good, at 25c. per lb.

Cauliflowers are rather scarce.

Cabbages plentiful; new Cabbages fine.

Spinach is also fine and plentiful.

Artichokes are fetching from 2 to 3 bits per dozen.

New Potatoes are plentiful and good; the old are going out. Other vegetables in fair supply.

SAN FRANCISCO, May 6th, 1872.

FOREST AND TIMBER TREE CULTURE.

Our earnest hopes that the Governor would sign the law to encourage forest and timber-tree culture in California, which was passed by a large majority in both branches of the Legislature, have not been realized. The Governor saw fit to crush the bill. We do not know what his objections were. It is said that the great consideration with him was *economy*. If such was the reason, it is consoling to know that we have an executive who is willing to protect the tax-payers; but it was undoubtedly equally important to the people of this State, that a measure which had for its object not only the improvement of the condition of the farmer and the cultivator of the soil, but the future well-being of the nation, should not have been lost sight of

merely for a small pecuniary consideration. As the Governor had no means of knowing the importance of such a law, he should have taken counsel with men of both scientific and practical knowledge in a measure which to so great an extent concerns the welfare of the State.

State aid for the encouragement of forest-tree culture in California is therefore delayed to a more intelligent era; but the matter is being agitated everywhere throughout the United States with a stronger determination than ever before displayed. The people cannot, must not, any longer ignore the imperative necessity of tree culture.

FAVORS RECEIVED.

Transactions of the Wisconsin State Horticultural Society of 1871. The affairs of this Society, which numbers about one hundred members, seem to be in a very healthy condition.

Transactions of the Massachusetts Horticultural Society for 1871. This, the most prosperous Horticultural Society in the United States, has over five hundred life members, over five hundred annual members, and a large number of honorary and corresponding members.

A Colored Plate of new Fuchsias, published as a supplement to the *Garden Calendar* of Henry A. Dreer, Seed and Plant Establishment, Philadelphia, Pa.

From the Secretary of the Massachusetts Horticultural Society we received the schedule of Prizes for the year 1872.

We are indebted to Hon. Chas. W. Kendall for his able speech on Irrigation-wells in the Desert, etc., delivered in the House of Representatives.

CATALOGUES RECEIVED.

Descriptive Catalogue of new, rare and beautiful Plants, for Spring of 1872, cultivated and for sale by John Lane, Washington, D. C.

OUR EXCHANGE TABLE.

The *Boston Journal of Chemistry*, devoted to the science of Home Life, the Arts, Agriculture and Medicine, gives much valuable information in the field of practical chemistry. Published by J. M. Nichols & Co., Boston; price \$1 per annum.

The *American Farmer's Advocate*, official organ of the Agricultural Congress, advocates the business interests of the farmer and planter. Published monthly at Jackson, Tennessee; subscription price, \$1 per year.

The *El Paso Ranchman* is devoted to the general interests of Southern Colorado. Published at Fountain, Colorado, monthly, by B. F. Long & Co.; subscription price, \$1 per year.

The *Scientific Manual*, a monthly journal, devoted to Art, Mechanics, Manufactures, Inventions and Patents. It is published by J. S. Ferbe & Co, Cincinnati, Ohio; price \$1 per annum.

Heald's College Journal, is devoted to the interests of Commerce, Literature and Education, and has steadily improved ever since its first issue. Its present appearance is very creditable. Published by E. P. Heald, San Francisco; subscription price, \$1 per annum.

NEW BOOKS AND PERIODICALS.

Barry's Fruit Garden: By P. Barry. Published and for sale by Orange, Judd & Co., 245 Broadway, New York. This is a late and valuable publication, being practical and to the point. The illustrations are very distinct and easily comprehended. In addition to a complete Treatise on Fruit Trees, it also gives many practical hints in regard to Diseases, Insects, and the Gathering and Preserving of Fruits.

American Manures. We have been looking for a book of this kind for some time. It is written and published by William H. Bruckner, of Monroe, Michigan. Price \$1 50.

Partial Synopsis of the Work:

Chapter I. — Importance of the Work — Farming may be made Scientific — Book-knowledge is necessary to this — Object of Concentrated Manure — Secrecy and Frauds of Manufacturers — Immense Profits, etc., etc.

Chapter II. — Elements of Manures and Plants — Definition of Manure — A perfect Manure — Gaseous Elements — Acids — Basis — Alkalies — Phosphoric Acid — Bone-Phosphate of Lime — Neutral Phosphate of Lime — Super-Phosphate of Lime — Its Composition and Qualities — Ronna's Report, etc., etc.

Chapter III. — Composition of Plants — Analyses of Wheat, Rye, Corn, Oats, Barley, etc. — Elements necessary to be added as Manure, to produce a given crop, etc., etc.

Chapter IV. — Origin and Composition of Soils — Natural Sources of Elements required by plants, etc., etc.

Chapter V. — Money Value of Commercial Fertilizers, calculated from the market value of the raw material — General remarks on the Business, etc., etc.

Chapter VI. — The Nature and Value of Natural Manures — Necessity of their Accumulation and Preparation — Composting — How it should be done, and the Chemical Action necessary to be produced, etc., etc.

Chapter VII. — General Remarks — Analyses of Commercial Fertilizers, with Comments and Criticisms — methods of Analysis — Farmers' Certificates — What they are worth, etc. If desirable, the book may be obtained at our office.

"*Old and New*," for April, is to hand, and presents a very good appearance. Besides a good selection of choice and general reading matter, we find in it most valuable information upon the Condition and Progress of Society, of Literature and the Fine Arts. Published by Roberts Brothers, of Boston. Subscription price, \$4 per year.

Col's Illustrated Scientific Magazine for April lies before us, and is entitled to particular notice. Its first-class reading matter, useful information for the household and notes on the Poultry Yard, Farm and Garden,

should make it most welcome to every family circle. Published by the Colt Publishing Company, New York, Albany and Buffalo. Subscription price with Chromo, \$2 50 per annum.

NEW AND RARE PLANTS.

The Director of the Botanical Gardens, Sydney, obtained a large collection of plants from the north eastern coast of this continent on the occasion of the visit of the Eclipse Expedition to Cape Sidmouth. The arrangements made subsequent to starting, by which the astronomical observations were taken on the island instead of the mainland, no doubt reduced the opportunities for botanical research; but, as a boat was placed at the disposal of the Director, and as he had the assistance of volunteers from the ship, Mr. Moore was enabled to make several excursions on the mainland, and to penetrate some distance into the interior. Time and equipments, however, did not permit of anything like a thorough examination of the country. On the coast there was either mangrove swamp or open forest ground intersected by belts of thick scrub, containing many interesting plants new to cultivation. In the collection by which our Botanic Gardens have been enriched we observe a very graceful palm, probably a species of *Sagus*, and a pitcher plant allied to *Nepenthes distillatoria*. Growing on the trees were species of *Dischidia* and *Dendrobium*, as well as those singular plants, but little known to botanists, called *Myrmecodia armata* and *Hodrophytum formicatum*. The last named were rare, but the *Myrmecodia* was very common, and, as usual, they were the *habitat* of colonies of ants. Plants were obtained. In the open forest grounds seeds and specimens were collected of two arborescent species of *Hakea*, of *Grevillea chrysodendron*, and a very beautiful shrub with large, cream-colored bracts, a species of *Mussenda*. From the sandy reaches near the coast, seeds and plants of a species of *Eugenia* were secured.

The shrub bore a profusion of fruit, about the size of a large cherry, having a most delicious sub-acid flavor, and believed to be one of the most agreeable fruits indigenous to Australia. A species of *Elæodendron* was found growing in company with this *Eugenia*, and it bears fruit of similar color and size. The cotton tree, *Cochlospermum gossypium*, grows everywhere in great abundance; and in some parts the ground was clothed with masses of that beautiful fan-leaved fern, *Schizæa dichotoma*. Seeds were obtained of *Guylandina bondue*, and of two fine-flowering species of *Ipomea*. From the islands touched at during the cruise many valuable acquisitions were made both of plants and seeds. Fitzroy Island was, perhaps, more richly clothed with vegetation than any other. There, a new species of *Acrosticum* was found growing upon the rocks near the sea, to the south of the landing place, and a large quantity of seed of *Myristica insipida*, a very beautiful kind of nutmeg, was got. Among the ferns collected was *Lindseæa*, *Campyloneuron*, *Drynaria*, *Asplenium* and *Adiantum*. Plants of the palm, described by Brown under the name of *Livistona humilis*, but up to the present time not brought into cultivation, were secured, and the fronds of another fan-shaped palm, supposed to have been described by Brown under the name of *Livistona inerinis*, were found by some of the passengers. *Calamus Australis*, or the Lawyer Vine of the Colonist, was very abundant, and a tall-growing palm was seen at a distance, but was beyond reach. Near the shore were *Spathoidia* and *Sarcephalus*, and a large bright-foliaged species of *Eriginia*. That most beautiful of all tropical trees, *Calophyllum*, or *Tamana*, was most plentiful near the shore, and seeds of it were obtained, as also of a fine orange-flowered *Hibiscus*. A large *Scitamineous* plant was obtained, but was not in flower or seed. *Cocoanuts* were growing on the island, but not well. At Cape Sidmouth, on the mainland, the *Nonda*, upon the fruits of which Kennedy's party subsisted for some time, was plentiful, but

the fruit was not ripe. Although the Eclipse Expedition called at Frankland Island and Percy Island, nothing remarkable was obtained. The stay was very short, and these islands presented no great scope for botanical investigation.—*Sydney Mail*.

AMARANTHUS SALICIFOLIUS.

This plant seems to have achieved a great success with the florists of the East and in Europe. We have not yet seen it under cultivation on this Coast. The *Florist and Pomologist* speaks of it thus: "It is one of the most ornamental of its family; beautiful as a specimen pot-plant, and beautiful in suitable sheltered situations of the formal flower garden, during the Summer season. The drooping foliage, except in color, reminds one of some of the narrow-leaved crotons, and the whole plant, from its pyramidal outline, is not only remarkably fountain-like, but singularly graceful and beautiful."

BEAUCARNEA RECURVATA.

The Beaucarneas are of recent introduction, consequently are seldom seen in our conservatories. They belong to the *Liliaceae* or lily family, and are natives of the temperate regions of Mexico. The *B. recurvata* is an exceedingly graceful and ornamental plant, quite tropical in its appearance, and alike suitable for the conservatory or for bedding-out in Summer. The stem is remarkable for its bulb-like swelling at the base, and for the long tuft of gracefully recurved leaves at the top. The plants require considerable heat and a liberal supply of water during the season of most active growth. The soil best suited to the Beaucarneas is one composed largely of fibrous peat, with an admixture of sharp, coarse sand. Large plants should be allowed a full exposure to the sun during Summer, and should also be kept constantly supplied with water, because they require almost as much as the common *Calla* (*Richardia*).

An English writer says that they thrive best with their roots in water and their heads in an oven; but we have found no difficulty in growing this species in an ordinary greenhouse without special care. As Autumn approaches, water should be gradually withheld, to give the plant an opportunity to rest and ripen, and it should be kept quiet until Spring. Young seedlings, of course, can be kept growing, both Summer and Winter, until they are a few years old. The plants are of slow growth.

Moore's Rural New Yorker.

NEW DOUBLE FUCHSIA.

Champion of the World.

This is by far the largest Fuchsia that we yet possess. The footstalk is of unusual length and strength, so that the flowers stand out boldly. The tube is short, the sepals are very broad and of great substance, well reflexed and of a most beautiful coral red. The corolla is of immense size, and as it expands, forms two-thirds of a perfect ball, its color being of the most intensely bright, though dark purple. The plant is of free growth, tall, and blooms abundantly, so that for conservatory decoration it is one of the most valuable Fuchsias yet sent out.

Gardener's Chronicle.

NEW DWARF MIGNONETTE.

A new variety of the *Reseda odorata*, called the *Nova compacta multiflora*, has been brought out in Europe. It forms a dense, semi-globular bush, of about ten inches high, and eighteen inches across, the robust and vigorous branches being clothed with dark green leaves, and decorated with innumerable close spikes of reddish-tinted flowers. These flowers are said to be produced, without intermission, from Spring till late in Autumn, the blooming period being of longer duration in this than in any other variety, owing to the continuous branching growth. It seems very suitable for the garden border, or as a specimen.—*Horticulturist*.

PRIMULA JAPONICA.

(New Crimson Primrose.)

The *Florist* says of this valuable acquisition: "Hail! Queen of the Primroses! for so its introducer designates this lovely flower, which is as hardy as a peasant, and resplendent as a princess. It is just ten years since Mr. Fortune met with it in Japan; some plants were secured, but the journey home was too much for them, and despite every care none reached England alive. Ever since that time endeavors have been made to introduce this lovely plant. At last, perseverance has been rewarded, and plants have been raised in the establishment of Mr. W. Bull, of Chelsea. Our gardeners have thus secured a perfectly new, thoroughly hardy and exquisitely lovely Primrose, one which is really valuable. Of the hardiness of the *Primula Japonica* there can be no doubt, for plants have stood all the Winter, fully exposed, in the trying atmosphere of London. The *Floral Magazine* says: "A Primula a foot and a half high, bearing four or five separate whorls of flowers, each flower an inch in diameter, and of a splendid magenta color, and the plant perfectly hardy! Can anything be added to this to indicate its value?"

BAY DISTRICT HORTICULTURAL SOCIETY
OF CALIFORNIA.

(Regular Meeting, Saturday, April 27th, 1872.)

The minutes of the previous meeting were read, and approved.

The Committee on Exhibition Building reported progress, and asked for further time, which was granted.

The Committee on Premium List suggested that it would be expedient that the matter should be taken up in Committee of the whole.

A communication from W. H. Treen, Esq., Editor of Agriculture in the *Melbourne Times*, was read, wherein that gentleman offered his coöperation with the Society as a corresponding member. The communication was re-

ceived and the Secretary instructed to return thanks, etc.

W. H. Treer, Esq., was elected honorary member of the Society; Dr. F. Behr was also elected honorary member.

George Boreham, of Nicisio, Marin Co., was elected a regular member.

A lengthy discussion took place on the subject of the proposed Spring Exhibition. When the unusual lateness of the season, the exorbitant rents demanded for suitable sites, and the pending negotiations for an Exhibition Building, having all contributed to retard the preparations, it was resolved that it will be to the interest of the Society to abandon the Spring Exhibition, and to hold an annual one this season.

Mr. Reimer offered the following resolution:

Resolved, That the Spring Exhibition, as previously announced, be abandoned, and that an Annual Exhibition be held from Thursday, August 22d, to Saturday, September 7th, 1872.

On motion of Mr. Meyer this resolution was carried unanimously, and the Secretary was authorized to make the necessary announcement.

The Premium List for the Annual Exhibition was then taken under consideration, and finally adopted. The Secretary was authorized to have the Premium List printed.

HORTICULTURAL EXHIBITION.

(Under the auspices of the Bay District Horticultural Society.)

At a late meeting of the Bay District Horticultural Society, the report of whose proceedings is published in another column, it was resolved that it is expedient to merge the proposed Spring Exhibition into an annual one, to be held in the Hall, the time for opening of which was fixed for Thursday, August 22d, to close on Saturday, September 7th.

This will give ample time for every one interested to prepare himself, and we think,

for the reasons urged, that the change is for the better.

We hope and believe that this Exhibition will eclipse anything of the kind ever before undertaken on this Coast. It has our best wishes and support.

AGRICULTURAL FAIRS.

The State Fair, to be held at Sacramento, commences on the 19th day of September and continues for ten days.

The San Joaquin Valley Fair, to be held at Stockton, commences on the 10th day of September, and continues for four days.

An Exhibition of the Sonoma and Marin District Agricultural Fair will be held at Petaluma; it commences on Monday, September 9th, and will continue for six days.

The Santa Clara Agricultural Fair commences on the 2d day of September, and continues for six days at San José.

COLLEGE OF AGRICULTURE AND HORTICULTURE.

At a late meeting of the Board of Regents of the State University, Professor Bolander introduced the following resolution:

Resolved, That a Select Committee of Three be appointed by the Chair, to consider and report upon the best means for the early and practical opening of the College of Agriculture and Horticulture, and that the said Committee shall report at the next meeting of the Board.

The resolution was adopted, and the gentlemen appointed upon said Committee are Messrs. Bolander, Reed and Martin.

This is a good move, and we hope to see the matter taken in hand with energy. Theoretical education connected with physical practice, should be the motto of the college proposed.

WOOD ASHES.—The application of wood ashes will alone keep up the integrity of most soils, by supplying nearly all the organic substances needed.

OAKLAND FARMING, HORTICULTURAL AND INDUSTRIAL CLUB.

The officers elected are: For President—Dr. E. S. Carr; Vice-President—Charles W. Howard; Secretary—A. T. Dewey; Treasurer—Christian Bagge; Librarian—Charles H. Dwinelle.

The following gentlemen were also elected as Standing Committee on Horticulture: J. V. Webster, Christian Bagge, W. F. Kelsey, J. A. Hutchison, Harry Linden. On Floriculture: M. Pryall, S. Nolan, John Ross, J. H. Gilmore, and Mrs. C. L. Pierson. It is expected to hold a Horticultural Exhibition in May.

INJURY TO THE GRAPE CROP.

The *Alta California*, of April 22d, says, on this subject: "Our information in regard to the injury done by the frost on the morning of the 12th, to the vineyards, is not yet precise enough to enable us to say with confidence whether the grape crop will be less this year than last. Some of the grape growers think that it will probably not be larger. The most damage, according to the reports so far received, was done in the foothills of the Sierra Nevada, and in Anaheim, Santa Clara Valley, Sonoma Valley and Napa Valley. The vineyards on the hills and those which, on account of situation or variety of grape, were least advanced in growth, suffered least. Many of the peach and apricot trees in the mountain counties were badly bitten, and numerous peach orchards in the lowlands of the Sacramento Valley do not look well. Some harm has also been done to the strawberry fields in Santa Clara Valley."

One of our exchanges has the following on the

LATE FROST:

The recent frost did much damage to the grape vines at many points. Accounts from Colema, Folsom, Visalia, Knight's Ferry, Chico, and other places, represent the grapes as greatly injured. The orchards at Colema, Uniontown and Michigan Flat have suffered

severely. The crops in Yolo are in fine condition; so also at Colusa. The vineyards near Sacramento sustained no damage. About one third of the Santa Clara strawberry crop is damaged. Petaluma, Healdsburg and Marysville escaped the frost. Great damage was done to the vineyards in Sonoma county, particularly to those situated on low grounds. A meeting of vine growers was held last week, and from a comparison of notes it was estimated that the damage will amount to about one fifth or one sixth of the crop. The copious rains came in good time, and will prove of immense advantage. The ground in the vineyards had become so dry and hard that cultivation of the vines was next to impossible.

We clip the following items from the *Morning Call*:

FARMERS' CLUBS.

A simultaneous movement in nearly all the agricultural counties of the State, for the formation of Farmers' Clubs, where such institutions do not already exist, is at this time in progress. Perhaps no better method could be devised to advance the farming interest and secure to the agriculturists protection, than in monthly comparison of notes and interchange of sentiment. It has been found to work well in other States, and is to be specially commended in a new country like California.

WELL-BORING IN SAN BERNARDINO.

In the town of San Bernardino, which lies close to the margin of the Colorado Desert, several artesian wells have been flowing for some time past. A few days ago, two more were added to the number. Mr. Lepper bored to the depth of 207 feet, and struck a water vein which sends its aqueous flow to the surface through a two-inch pipe, and promises to be of permanent duration. Another fine stream, says the *Guardian*, was obtained on the lot of Judge Boren. A piece of gold was panned out from the dirt of this

well, which was obtained at a depth of 120 feet. These successful experiments at well-boring seem to leave but little doubt that water may be obtained at almost any place on the Desert by boring.

IMPORTATION OF QUAIL.

Several years ago, Hon. Charles Fairfax introduced several live grouse from the prairies of one of the Western States into California, and set them free in Marin County. The pot-hunters came along, however, and killed them off. The California Acclimatizing Society has just received twenty dozen of live Eastern quail, to be let loose in such place or places as may be deemed most favorable for their growth and multiplication. It is to be hoped that a watchful care may be extended over them, until such time as it is fairly proved whether they will flourish in California. Their habits of feeding are somewhat similar to our own varieties of quail, and we can see no good reason—if they are protected—why they should not increase as rapidly here as elsewhere.

THE SPANISH BAYONET.

The plant of the cacti family, known as the *Spanish Bayonet*, is at present bearing large clusters of handsome flowers. Were they one quarter as fragrant as they are beautiful, they would vie with the most choice productions of a cultivated garden. Most of our readers who have resided long in San Diego have seen these flowers; but many of our visitors and recent arrivals have not. To such as wish to gather them, we direct to the hills in the rear of La Playa and Roseville. Here they may be obtained in unlimited quantities, and those who are fond of something that presents a beautiful appearance can find nothing handsomer to adorn a parlor than a bunch of these elegant flowers. They can be gathered so that by giving them fresh water they can be kept for a week or ten days.

Exchange.

Editorial Gleanings.

PARKS FOR SMALL TOWNS.—An excellent suggestion comes from the *Sacramento Union*, to the effect that the small cities and towns of California should take measures for providing themselves with public recreation grounds, and should seek Legislative authority or assistance to that end, if necessary. The last Legislature of New York enlarged the powers of village trustees, so that they might lay out and improve small parks, and, as the *Union* says, an act of the California Legislature, providing for a public park in every permanent village, would have a salutary effect on the habits, morals and tastes of our people. It may be said that the small towns are so closely neighbored by rural landscapes, and are often so rural in themselves, that they do not need tree-planted squares or larger public cultivated grounds. But it is a fact, that the surroundings of these towns and villages are often of the most dreary character, and that only by long drives or walks are pleasant resorts accessible. This is even more true in California than at the East, and especially in our treeless valleys, where the heat is most intense. Every one of our permanent towns should have its public recreation grounds, proportioned in size to the importance and prospects of the place. Now, while the required land can be cheaply procured, is the time to agitate the subject, and to decide what legislation is needed. In many cases, public-spirited citizens would be willing to give the land outright. In some cases, the towns own enough for the purpose. The cost of planting trees and shrubs, and yearly tending them would be comparatively small. Our climate is highly favorable, and the growth of two years, anywhere away from the strongest sea-winds, would secure beautiful shady retreats. The Spanish settlers of the State always left a large square, or plaza, in the heart of each village, intended to be planted and beautified eventually. We ought to improve on this

hint, which with them was a reminiscence of Old-World luxuriance, perhaps borrowed from the Moors, and provide every town with a small park.—*Bulletin.*

ARBORICULTURE.—“Plant trees” has been said so often, by way of advice to the people of California, that we doubt if any article now on the subject can offer any further inducements or lend any interest to the matter. Nevertheless, it is a live topic, which never will become exhausted as long as the consumption of wood is greater than the production. It can be shown, and has often been shown, that the dry plains of the Sacramento and San Joaquin valleys may become vastly changed in the utilitarian sense as well as in landscape scenery, by the cultivation of forests. It is, however, foreign to our purposes to go beyond the wants of our own coast counties in this respect. We wish to impress upon our readers, not a scientific theory, but a practical opportunity for this enterprise. The cultivation of a forest may seem, at first glance, as a matter to be left to enthusiasts and capitalists. Such an idea is very erroneous. There is no one of our farmers or stock raisers who cannot, by a little enterprise and industry, obtain either a title to or lease of some fertile piece of mountain land—some cañon which is at present only used for grazing, or who cannot appropriate a corner of his own lands or even the marginal surroundings, banks of streams, etc. for the purpose. Land suitable for growing trees can be purchased in abundance for five dollars per acre or even less. One hundred acres of even rough, wild land, unsuitable for the plough, may be set out in locust, eucalyptus or walnut at a very slight cost. When once in growing condition, the trees will require but little attention; and while the farmer is dreaming of what shall come next, his fortune is being made for him. In ten or twelve years a piece of otherwise useless land may be converted into a forest which will yield a great income. How this

is true, is easily shown. For fence posts, railroad ties and all purposes which require wood that will not readily rot when in contact with a moist soil, a supply of material for that purpose will always find a ready market. All of our readers have had experience enough to teach them that in a few years a locust tree will attain sufficient size to make several posts or ties. Let them sit down some evening and calculate the number of such trees that can be grown from the seed on an acre of ground, and then demonstrate to themselves the probable profit. It would be thousands of dollars for every one hundred invested in the work. It is not a question of time, simply; while growing, the forest will acquire a commercial value. If the farmer should desire to leave his present home, his work will not go for nought. Take the hint and try it. Look at the nearest and most accessible piece of land that you have heretofore considered worthless, and before this Spring is over, run furrows through it, regularly or irregularly, and drop your seeds. You can buy them at a very small cost, and you will never regret the purchase. —*Saucelito Herald*.

CULTIVATION OF TOBACCO.—W. H. White, of South Windsor, writes thus about the cultivation of tobacco in Connecticut: The geologic conformation of the towns of South Windsor and East Hartford, where the greatest success is attained in growing tobacco, is mainly a succession of plateaus, or steps; first, the bank of the river is higher than the ground a little back to the next step; this portion is usually overflowed by high water, is known as meadow land, and is chiefly devoted to grass, furnishing a large amount of hay, with more or less pasture in the lower ground and back portion; next follows a step affording soil for culture of various crops, pasture, etc. We next come to the highest ground, along which the main road runs, near which is the best soil for the crop. The soil is generally an alluvial, sandy loam, vary-

ing in composition from a heavy sandy loam to a light one containing very little clay. The heavier soils produce the heaviest tobacco, the great crops of 2,900 down to 2,000 pounds. The lighter loams are underlaid with a yellowish sandy loam; the heavier ones have a darker sub-soil, with a darker colored surface soil. The light-colored surface, with light sub-soil, grows the finer qualities of wrappers, and averages, under thorough culture, about 2,000 to 2,400 pounds per acre. In the back part of these towns the soil is of somewhat different character, yet growing good crops of tobacco, usually selling at a little less price than that nearer the river; to the traveler, or casual observer, much of the soil appears like an unproductive one, especially where uncultivated, yet with high culture and manuring, miracles are wrought, almost, in productiveness. The variety of tobacco grown, is that commonly known as "Connecticut seed leaf," which is very similar to the "Virginia tobacco;" there are different varieties, or rather variations, in the seed leaf, grown out of culture, etc., varying in their burning qualities, chiefly. Seed is changed from a gravelly to a sandy loam soil, and *vice versa*. This is thought to prevent what is termed "rust," a not unfrequent disease when the same seed is sown and grown year after year in the same locality or on the same farm. This same variety and seed has been widely diffused throughout the country, especially the West, yet the cured leaf from this seed has very little, if any of the qualities it has grown in this vicinity; I am informed that the tobacco grown in some of the Western States must be worked as soon as it has passed the "sweat," or it is good for little for cigar wrappers; but that grown here improves in quality by age, losing none of its toughness or strength, for fine wrappers, yet unexplained. Farm and stable manure are mainly relied upon for fertilizers; this, on the ground, costs, where purchased, about \$20 per cord of 164 feet, and is applied broad cast, just before corn-planting time in

Spring, evenly distributed over the whole surface, and plunged under four or five inches deep; the land then remains until about a week before setting time, just long enough to prepare the ground for setting previous to time, when it is ploughed again about two inches deeper than at first; in the intervening time one or two harrowings are given to destroy weeds, etc. Ten to twelve cords of stable manure are applied to the acre, and in addition, from 200 to 250 pounds of Peruvian guano, Chinchá brand, with an equal or somewhat greater quantity of plaster, mixed, to the acre, strewed in the drill as the ground is fitted for setting the plants. No other application of fertilizers is made to the crop, with us, but a very important essential is in setting good strong plants well, and then to keep them growing evenly throughout the whole field, from the time they take root to the time of harvesting, doing all in just the right time. Our people never split the stem, but hang without; we find that the tobacco weighs better and cures up better, and is every way better where we hang without splitting the stem. We also find it better to cut and house before it is fully ripe, than to wait till dead ripe.

CRANBERRY CULTURE. — From correspondence of the *Boston Cultivator*, it appears that Cranberry culture is destined to be very profitable in Wisconsin. In Berlin, Aurora and Warren are some 40,000 acres of marsh lands where the cranberry is indigenous and where by ditching, flowing and draining, the finest cranberries can be produced in the greatest abundance. The soil consists of peat or muck and silicious sand. Cass & Brother had, last year, three hundred acres under cultivation from which they gathered about 6,000 barrels, worth from \$11 to 13 a barrel, making the gross receipts about \$70,000. The adjacent Sackett marsh, less extensive, produced about 5,000 bbls. of very fine berries, which brought the highest market price. Lands which ten years since were almost valueless now sell at from \$500 to \$1,000 an acre.

Exchange.

COTTON ON DRY CREEK.—John G. McManus has recently received sixty pounds of cotton seed from Col. J. L. Strong, of Merced county, a portion of which will be planted by Messrs. Miller & Neely, Dry Creek, as an experiment. The discussion of the cotton question in the *Flag*, last fall, has awakened the interest of farmers on the subject, and a number of experiments will be tried this season to test the matter. We shall watch these experiments with interest, and report progress to the public from time to time.

Russian River Flag.

THE CAMPHOR TREE OF SUMATRA.—Among the most luxuriant and valuable trees on the Island of Sumatra, the first belongs to the *dryolanops camphora*. The tree is straight, extraordinarily tall, and has a gigantic crown, which overtops the other woody giants by one hundred feet or so. The stem is sometimes twenty feet thick. According to the natives, there are three kinds of camphor tree, which they name "mailengaun," "marbin tungan," and "marbin targan," from the outward color of the bark, which is sometimes yellow, sometimes black, and often red. The bark is round and grooved, and is often overgrown with moss. The leaves are of a dark-green, oblong-oval in shape, and pointed. The outward form of the fruit is very like that of the acorn; the flower has five round petals, these are placed somewhat apart from each other, and the whole form much resembles a lily. The fruit is also impregnated with camphor, and is eaten by the natives when well ripened and fresh. The amazing height of the tree hinders the regular gathering, but when the tree yields its fruit, which takes place in March, April and May, the population go out to collect it, which they speedily effect, as, if the fruit be allowed to remain four days on the ground, it sends forth a root about the length of a finger, and becomes unfit to be eaten. Among other things, the fruit, when prepared with sugar, furnishes a tasty comfit or article of confec-

tionery. It is said that it is very unhealthy to remain near the camphor tree during the flowering season, because of the extraordinary hot exhalations from it during that period. The greater the age of the tree the more camphor it contains. Usually the order of the Rajah is given for a number of men, say thirty, to gather camphor in the bush belonging to territory which he claims.

PRODUCTION OF HONEY.—In 1860 the product of honey of the United States, reported, was 23,369,357 lbs. In the Winter of 1868-69 the Department of Agriculture sent out circulars to known aparians in most of the States, and received returns from 489 counties in the States. The aggregate number of hives reported was 722,385. Estimating for the other counties not reporting, and making due allowance for the fact that many of the counties reporting were giving special attention to bee culture, 2,000,000 of hives were deemed as low a figure as the returns would warrant. Allowing 15 lbs. of surplus honey to the hive (about two thirds of the average reported), the total product in 1868 would be 38,900,000 lbs., which, at an average valuation of 22½c. a lb., would give \$6,750,000. In 1868 the quantity of honey imported was 212,175 gallons; value, \$50,750, were re-exported. A very small quantity of domestic honey was exported the same year. These figures show conclusively that an immense trade in honey has been built up in this country, and is constantly increasing, which will eventually supersede all necessity for the importation of any from the West Indies. A small township in Minnesota reports 262 hives; from these hives 2,826 lbs. of surplus honey was taken in the season of 1869. When we consider that the cost of production is merely nominal, it will be seen that it pays to keep honey bees.

Exchange.

THE WEEPING WILLOW has a romantic history. The first scion was sent from Smyrna, in a box of figs, to Alexander Pope. General Clinton

brought a shoot from Pope's tree to America, in the time of the Revolution, which, passing into the hands of John Parke Custis, was planted on his estate in Virginia, thus becoming the progenitor of the weeping willows in this country.

GOOD SEED, whether for the garden or field, is indispensable to success. You may plow, pulverize and fertilize until your soil will be in the finest imaginable tilth, but if your seed is not good, your anticipated crops will prove failures. Let the grower who is about to make his seed purchase for the Spring bear these facts in careful remembrance, and not hesitate about the price, when he is fully assured that the article he is getting is the right one.—*Journal of the Farm.*

A KENTUCKY ENTOMOLOGIST has kept two vigorous mosquitoes under an inverted tumbler for six months without food, and they remain in a healthy condition. This clearly proves that their annoyance of mankind is entirely uncalled for, and not at all necessary to their sustenance.

It is now certain that nearly a million trees, chiefly almond and walnut, will be planted in the vicinity of Santa Barbara this year. Mr. O. L. Abbott will propagate 90,000 trees, mostly almond; Mr. N. W. Winton will have some 40,000 or 50,000; and many others will have large numbers. The lowest estimated profit, one year with another, is \$1,25 to the tree, or \$200 to the acre. The true yield is, no doubt, a third higher, or \$300 to the acre, profit. The full capacity of fully-matured groves of almonds is not less than \$500 profit to the acre. It is safe to say that within three years the income from nuts raised in this immediate vicinity will not be less than half a million dollars.

THE WOLFSKIN ORCHARD, in Los Angeles county, the oldest in the State, at present contains 1,700 bearing trees, and the yield this year is estimated at 1,360,000 oranges.

THE

CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

VOL. II.

JUNE, 1872.

No. 7.

ORCHIDS.

We have heretofore said little or nothing about this most interesting and peculiar class of plants, because we have considered that the culture of Orchids really belongs to a more advanced state of floriculture, and because heretofore they have received the attention only of enthusiasts. We are somewhat at a loss to say why this has been so, nevertheless florists will verify our statement.

The opinion was formerly prevalent that the cultivation of Orchids was a difficult enterprise, and many were actually discouraged from embarking in it; now it seems to have become an established fact, that Orchids may be grown to perfection under ordinary treatment. Formerly it was supposed that Orchids must have their own peculiarly-constructed glass-houses, and that they must be kept exclusively by themselves; now many of the varieties are found to do finely, if grown among other greenhouse plants. In the East, Orchid culture is now beginning to attract a great deal of attention, and has become fashionable, if we may use the expression. Geo. Such, the well-known florist of South Amboy, is growing a very large number of varieties, and has given the matter more attention, we believe, than any one else in this country. Prices are somewhat high, and always will be; this is due to some difficulties in their propagation, to the time which

is required to grow them into saleable specimens, and to the difficulty and expense of obtaining new varieties.

In California, Orchids, generally speaking, are hardly known. We see, here and there, an odd-looking specimen, cultivated, it seems, for curiosity's sake, and apparently without any signs of development. The only specimens which have, to our knowledge, come to perfection, are cultivated in Woodward's Gardens.

We have some amateurs among us who have a desire for something new, and we hope to call their attention to the cultivation of this class of plants by devoting some space to the subject.

Orchids are found almost everywhere, except in the extreme north or the extreme south, but the most beautiful varieties are natives of the tropics, where the moisture of the atmosphere and the increased temperature afford the principal requisites for their perfect development.

Asia and America, we believe, are particularly productive of Orchids; Mexico, Central America and Brazil are the more particular localities to which we look constantly for new and rare varieties of great beauty. They are found mostly in the mountainous districts, and within a short distance from the sea.

In the cultivation of Orchids, we must, however, bear in mind that there is no other

class of plants of a nature so diversified in habit and requirements as the one we have under consideration; it is evident, therefore, that they cannot be treated alike, nor is it possible to lay down a general rule for their proper cultivation.

Some Orchids grow in soil, others on blocks of wood, in rustic baskets, on rocks or other material, and all that is imperatively necessary for their growth seems to be an abundance of moisture in the atmosphere and a free exposure to light, although there are some Orchids found in the dark forests of the Tropics, in places where the sun never penetrates.

It is not necessary to keep the temperature very high, when we take into consideration, that in the Tropics Orchids are seldom found less than 2,000 feet above the level of the sea, and that at this height the atmosphere is much cooler than near that level. An atmosphere which will grow oranges or lemons to perfection, is sufficiently warm to suit most of the Orchid families, but certainly they require more moisture than either oranges or lemons. But we should consider a frequent general sprinkling of the house in which they are kept, and an occasional bath of the Orchid in water, of the same temperature as the house, sufficient for ordinary success.

In our next we shall give some practical hints on Orchid culture, from various sources, and will also name some of the most prominent varieties.

THE CRANBERRY AS AN ORNAMENTAL PLANT.

The *Ladies' Floral Cabinet* says: "It is one of the most beautiful of trailing plants in habit of growth; and then, too, its bright red berries are peculiarly ornamental, peeping out from among the bright green foliage. For a hanging basket or a flower stand, it is without a rival. A florist, away up in Minnesota, writes a word or two, showing our readers how to use it: 'Any of the leading

varieties are suitable for the purpose—perhaps the Bell variety, being an upright grower, should be recommended for the common flowerpot, and the others, as being affluent runners, for the hanging basket. They will grow profusely in the house, throwing out luxuriant shoots adorned with delicate blossoms and rich crimson fruit, which remains on the vine until the new blossoms appear. The directions are very simple: Fill the pot or box with rich earth or vegetable mould to within an inch and a half of the top, covering with an inch of clean sand; set the vines singly around the edge and in the middle, and keep tolerably moist. The bell variety makes a very pretty garden border, and is the only kind fit for that purpose, as the others like to claim all the land that joins them. J. E. W.'"

VEGETATION IN ALASKA.

The greater part of continental Alaska is covered with timber, but none of it has any commercial value at present for exportation. The best tree is the yellow cedar, which abounds in the hills and in the valleys in the northeastern districts. It is light, tough, durable, and in every respect well fitted for ship-building. It is, however, not large enough to make large masts. Spruce, hemlock and balsam-fir are also common in the same district, and they extend farther north. On the borders of the icy barrens, the willow, alder, poplar and birch are found.

One of the chief vegetable productions of northern Alaska is sphagnum—a moss which grows very abundantly, covering the ground to the depth of a foot or more, and forming a spongy mass that is always wet.

Edible berries are numerous, including the cranberry, which is now exported, and could be cultivated with profit.

The Aleutian Islands have no trees, and many of them have no vegetation of any kind.—*The West*.

BEAUTIFYING OUR HOMES.

Although we notice in most of our cities and large towns a disposition to improve the surroundings of dwellings, it is a most lamentable fact that very little is done to adorn the homes of our farmers and other residents of our rural districts.

It has been said that the rising generation of this country who are now growing up to manhood, despise farming and a country life, that the highest ambition of our boys and girls is, to live in the city. We think that this unfortunate and dangerous prejudice against rural life is due to the fact that no efforts are made to make farming life a pleasant and desirable occupation. It is true, we meet here and there a farm house which has every appearance of being a happy and pleasant home, but these are few indeed, compared with the large number of miserable buildings, destitute even of comfort (embellishment is entirely out of the question), without a tree or shrub to shelter them. When we inquire for the cause of this shameful neglect, we hear innumerable and varied excuses: this one fails to see the necessity for such improvements; another thinks of selling out at the next good chance; still another finds no time for work that don't pay, etc. All this is wrong; make a home comfortable, and the surroundings cheerful, by planting a few trees and shrubs, watch their growth and development in the hours of rest, and they will be sure to create a taste in you, if it did not already exist, for home improvements. The little ones, as they grow up, will become attached to the trees and flowers, and home will become dearer from day to day.

We sincerely believe that the surrounding trees and flowers exercise a powerful and refining influence upon our minds, while they give an air of comfort to the cottage, which wealth cannot furnish.

But this is not all; trees and shrubs necessarily enhance the value of our homes. As one of our contemporaries says: "It is a

great mistake to suppose that money spent in reasonably improving the appearance of a place is thrown away; it may be doubted whether there is any more direct method to increase its pecuniary value. Certainly its market value will depend very much upon its outward appearance. Tasteful and well-painted buildings, well-arranged yards and gardens with neat fences, shade-trees properly disposed, good farm fences and clean-kept fields, will set off a farm to a great advantage, and make an amazing difference when it comes to be sold; and even if it be not sold, the things just mentioned will add amazingly to the enjoyment of it by its possessor, if he be not blind to everything but the dollar. Every man, too, owes it to the community in which he is living to contribute to general reputation and to public enjoyment by making all his surroundings as attractive as possible. There is such a thing as paying too much attention to outside and show; but there is reason in all things, and a measure of time, attention and expense should be devoted by every one to making his farm and his home more attractive every year that he lives."

LANDSCAPE GARDENING.

California possesses, within reasonable distance from the commercial metropolis, a vast number of estates which are well adapted for first-class rural residences. The landscape is unsurpassed, the climate all that can be desired, and yet our wealthy men hesitate to take advantage of the beauties of these natural parks. Here and there we see an effort made to turn one of these beautiful spots into a magnificent rural home, but no sooner do the proprietors commence improving than we see an indiscriminate cutting down of every living tree, for the purpose of showing off an elegant building. It is absurd to migrate to the rural districts, unless we endeavor to preserve the natural growth of trees and shrubs; our earnest endeavor should be to add to, beautify and adorn by every

appropriate improvement the already-existing condition of the locality. Not only do we see this unmerciful destruction of Nature's chief embellishments practised upon private grounds, but also in the abortive attempts to improve our public parks, etc.

We have frequently complained of the wrong which is inflicted by our public officers in selecting men who are incapable of carrying on works of this description, but our protests, apparently, do not produce any good results.

The Melbourne *Times* seems to be in about the same fix as we are, and says: "While the art of Horticulture, aided by the talents of Loudon, Lindley, Knight and many others, has made so great advancement, and its sister art, Agriculture, has been equally fortunate in this colony, alas! for Arboriculture, its star appears to have not yet risen, its altitude is not yet very great. Our wealthy men have all, or nearly all, fine tracts or breadths of land and timber in their possession; but the great majority do not understand, or otherwise very much mismanage them. Doubtless we have many very eminent corn-growers and breeders of stock, but certainly few good foresters, otherwise we should have more picturesque estates, considering the rate at which other things have moved forward."

We have before stated that there are landscape gardeners among us who have the proper qualifications and experience to take advantage of all the natural resources which California landscape offers, but they will not go around and beg for work, for the sake of making a living; and in this particular our contemporary again says truly:

"The years of study, work, and attention necessarily devoted by any thorough gardener to his profession, has at present been but seldom recognized in this colony; but an improved state of things should now be looked for, never forgetting that 'the laborer is worthy of his hire.' As a rule, the multitude follow great examples; therefore, with the advent of a new Government House, let us hope a brighter morn will dawn upon

Horticulture, and that refined taste may be exhibited; for at present many amongst us scarcely look at flowers, much less think of them, so much so that they will be apt to become like the young law student on his first visit to Chiswick, who upon being asked if he had seen the charming, lovely, new Polly-anthus, he urged the questioner, to his great amusement, to point out at once the beautiful 'Mary,' and, if possible, to introduce him without delay; and thus many have, and still do, wander flowerless through a flowery world."

We had hoped that the work of establishing our new and extensive City Park would have been entrusted to men of undoubted ability, and that success with this improvement would have initiated a taste for similar undertakings, both large and small, on this Coast; but our hopes are disappointed, and we do not expect any good results to arise from the injudicious raid which our Park Commissioners, with the men they have selected for the work of making a park, have made upon the few natural embellishments of the park grounds; indeed, they have destroyed that which a practical and experienced landscape gardener would have conserved as very essential to the making of a park.

After all is ruined and the money expended, the people of San Francisco will doubtless be wiser, but present reform in our park affairs has become absolutely necessary.

NOXIOUS INSECTS,

And the Condition of Plants Fostering them.

Editors California Horticulturist:

On a recent trip to the Warm Springs with friend Bosqui, near the old Mission of San José, I was surprised to see everywhere the young buds and tender leaves of the Plane trees *Platanus racemosa* dried up, as if killed by frost or blight. Similar observations, I have since learned, show that it extends to all parts of the country. A year or more since, great complaints reached us

from the East. It is, therefore, evidently not local, and some general cause must exist for it. What satisfactory solution can we give? First, let it be understood these trees require much root moisture at all times, and also a good degree of local humid exhalation, such as usually abounds along streams and alluvial soils where they flourish. As we have had several years of extreme drought, this condition had at length reached their extreme roots and told sadly upon them, for many years, being unable to mature their seed. The wild cherry is pretty uniformly distributed where the seasons are so, North and West; but South, and where long, hot and dry seasons prevail, they retire to the banks of streams and alluvial bottoms, like the Sycamore; hence in neglected grounds, or those exposed to hot suns, and not well irrigated, a few of the domestic species have suffered or died out, as from their natural habits might have been expected, from the recent extreme droughts.

This is premised, in order to illustrate a principle and practice well known to gardeners, florists and others; that is, starving, or checking back some choice flowers and shrubs, in order to bring them to a given date or desirable season, by subsequent irrigation and other forcing means (boiling water, etc.). It is manifest that our very abundant rains, succeeding such extreme drought here have wrought the same result on the great scale of Nature. By thus forcing forward with extra moisture and warmth, after great privation, their untimely buds and incipient foliage have caught the cold winds or severe weather, and been simply killed back in their early effort. Would it not seem reasonable, at least, that some general climatic causes were responsible for these results?

Suppose the observer does now find *fungi* and noisome lice or insects—from which, by the way, they appear to be remarkably free. Let it be settled as an axiom, that fungoid spores and noisome insect eggs exist, or are ever ready to exist, everywhere—a matter of small import, not to be alto-

gether overlooked in forest, fruit, ornamental shrubbery, or garden herbage, etc. But questions of far greater importance are: What are the causes or conditions that favor, invite, or foster their ravages? Next, how can we forestall or hold in check these devastators? And, lastly, how rid us of them when present, and repair their damage? Empirical answers and remedies abound. Only a few can be noticed; our attention and space is best devoted to principles or reasons *why* we deal thus and so with these pertinent and practical questions. Rationale given, every one's judgment and experience will qualify, adapt, aid and confirm whatever of truth he perceives.

Many tender species of trees and shrubs, and some seedlings of even the more hardy sorts, lack lime and other needful constituents, being too precocious for certain climates, altitudes or localities; a mild but capricious Spring may favor or force precipitate and ill-timed growth, and then usual, or certainly extreme cold winds will weaken and impair the vital vigor. Their starch and sugar exhausted, and no corresponding growth, by resultant stagnation, the diluted sap sours; hence comes the common form of *curled leaf*—apt nidus of varied fungi—effects, rather than primary causes of mischief, or, as the Good Book hath it, “wheresoever the carcass is, thither will the eagles be gathered together”—the Divine utterance of a universal law. We refer now to that sudden and very general form that appears on peach trees, rose bushes, etc., when a warm, forcing spell is followed by a cold snap or bleak wind; some curl more or less every season; but a graft taken from an habitual curler will not curl, though the parent-tree, growing alongside, may continue to do so. From this it will appear that it is the *quality* of the sap, as above stated, however brought about. Similar deterioration, contamination and disturbed circulation is caused by poisonous punctures of plant lice, whereby the leaf-growth is “checked, curled and warped, hollowed beneath, with corresponding red

swellings above." Nor are we to conclude that all habitual curlers have no infestors, because none are seen above ground; animals, worms, root-lice, etc., may be busy beneath. These and manifold proximate causes nevertheless operate upon one common principle — sap-deterioration. Nature, animate and inanimate, writhes in agonized efforts to throw off offending objects or fluids. The remedies are numerous. Change of soil may be said to lie at the bottom and foundation of all, whatever else may be done; the cheapest and most feasible is urine; ponded so as to percolate, it is sure to kill the root-lice and drive away offenders—best fresh from the chamber. (Potash and water; boiling water, with salt, if handy; Carb. Ammonia, one ounce to a quart of water; suds, etc., etc.) It is useless to repeat the advantages of applying stale urine as manure, and composts, etc.

"We know remedies for insects," say cultivators, "but who can guide the seasons and stay the winds?" In northern, or alpine regions, heaping snow to their roots and covering it; or, what is nearly equivalent in warm latitudes, very cold irrigation, will keep them back, aided by judicious finger-pruning to husband the full strength of the sap for its due season. "But what of the winds?" Why, observe and imitate the Great All-Father; destroy not utterly your tree shelters; the kindly nurses His wisdom hath provided; or, being destroyed, replace. A word just here: it is a matter of some importance what trees are selected for shelters, or rather, which to avoid. Ask them, and they will tell thee. Are they invariably free from the pests that scourge you? Then they are the elect. But more of this anon. One among many pre-disposing causes of orchard infestation in milder climates, like our own, is the purient proneness to blossom young, running riotously to such excess as prematurely exhausts themselves. What though these trees of yesterday boast that they are exempt, and all that —. Let us return and consider: Every pomologist knows that his choice seedling, uncared for, reverts back

towards the wild, unsavory stock whence it came. Care and high culture made it, and must still maintain it good; failing in this, and thence enfeebled, or with the best clean culture, when too crowded, and mother earth over-taxed, she will cry out and cause her voice to be heard: Neither plant nor people can defraud and injure, and long prosper. Thus often doubly weakened, sick in soil and sap, they implore the sensitive heart for help. Variety and rotation of crops is the law written by the finger of God all along the pages of experience. "But we cannot undo mistakes already made—perchance by others." Well, rotate the *soil* then, especially if you lack the means to supply the needed manure; change the soil about the roots, and, if you have a favorite tree, or one specially feeble, plant old bones and pile up stones, if at hand, well out from the body, and behold them rejuvenate and bid adieu to blight and bugs beneath the enchanter's wand. We notice line upon line is given to take away nine tenths of the fruit that the remainder may be fair for the market, or the table, and also that you may have a supply *every* season; or, to be still more specific, take off nearly the entire crop from young trees not yet attained to years of discretion. Not a tree in the recently-settled parts of the State should have more than one apple, pear, plum, peach or the like for every six to ten inches space at least; yet, all these precautions being taken, there may have been some radical defect in root-grafting, or transplanting too deep, or lightly or carelessly. Trees may have been sawed, chopped or whittled nearly to death, by rote, and need only one more lick at the root—according to Japanese or some other style suited to the other side of this or some other planet—where they repress, whip and whittle their children in the same way; at all events they are *sickening*, and the minions from beneath are hard after them, and they will never fail to make their appearance where they are invited, *i. e.* so long as the world stands.

Fearing monotonous and tiresome repeti-

tions of what many know, we had concluded to omit the brief natural history of some insects named, but re-considering how often like data are required for reference as aids to memory, instruction of the young and inexperienced; in short, to inform all, let us return and consider the *Great Universal Plant Rogues*, the *Aphides* or plant-lice: Be not alarmed, gentle reader, as if on a tramp to Egypt to learn less than a million or more hard names, "for there is scarcely a plant which does not harbor one or two kinds peculiar to itself," and we have a fraction less than 100,000 species, some of which include vast varieties; nor need one try to prove they were all from one parentage, much less a man from a monkey, shell or polyp; nor whether they all came through Behring's Straits, straight across Atlantic, Pacific, or round the Horn. Nor is it wise here to treat technically of (*Aphis Brassicæ*) cabbage-lice, (*A. Rosæ*), rose do., his highness on sycamore, willow or walnut, etc., etc.

The forms of common green plant-lice are known, but much confusion and some errors are apt to occur for lack of natural history knowledge.

The eggs from which the race emerge are deposited in Autumn; hence the best time for sponging with kerosene, etc., is from Fall to Spring. Not one will be left alive, it is so searching. All hatched in Spring are wingless females. The young are produced alive; each one may give birth to fifteen or twenty in a single day. These give birth to others to the tenth generation—the last brood in Autumn being both male and female, which at length acquire wings, celebrate nuptials, deposit eggs and die.

Much might be said of their habits * * * Piercing and fixed by their long tube or sucker, they rarely change place till they exhaust the part first attacked. Taking in great quantities of sap, they would soon be gorged did they not get rid of it by two little tubes or pores at the extremities of their bodies—often in a sudden shower of honeyed dew or minute drops of sticky fluid, which,

on drying, leaves dark-colored stains on the foliage—often taken for real honey-dew, the true kind being a concrete oozed sap from leaves in dry weather. One may often know the presence of plant-lice in high trees, etc., by seeing ants go up and down in search of this sweet fluid. The upward swarms are slim, hungry and active; others, black shining and lazy, descending with bellies swelled almost to bursting. Every gardener sees ants packing their herds or kine in their mouths, back whence the wind or water had dispersed them, much to his disgust. Many other of their novel solicitudes and cares for the welfare of these lice are well known; hence the reason for belting with a ring of kerosene or the like.

Bark or *scale-lice*, (*Coccidæ*) vary in form and size, being mostly oblong, oval, boat-shaped, kidney, etc. The scale insect is not confined to the bark, but abounds on fruit and foliage and some on roots; surface dark brown, smooth, stick close to the bark, etc., at certain stages, by their flattened surface; six short legs, pointed by a single hook or claw; head so retracted that the sucker is, as it were, from their breast; while torpid, set longitudinally in regard to the branch, head upwards. Their oblong eggs are best seen in Fall and Winter on the smooth skin of an apple, under the thin, skeleton skin of the dead mother, on bark, lying on a tiny patch of cottony web; several broods here in a single year; when hatched, they escape at the lower end of this shield by a notch; active and restless, they disperse over young twigs and leaves, and, finally, fix, suck and grow. At the close of this larvæ state they emit this radiated web to close and secure them for transformation. In a few days the larger ones break up and throw off in flakes their outer scaly coats, and appear active as before; but the smaller ones sleep on for a time, when a pair of hairs and tips of the wings are seen protruding below, and the perfect insect backs out. He is exceedingly small, with only two wings lying flat on the top of his body. After they pair, the size of the female increases, be-

comes quite convex, fixed, as before stated, the eggs under her body, while she shrinks and leaves nought but her shell. If too many eggs, — a few outside, — she provides wool, etc. This general sketch must suffice for all.

As to imported origin and all that — it is well to know that they are native to our Manzanita (*Arctostaphylos*) and Laurel Hawthorn (*Photinia arbutifolia*), etc., etc.

The woolly apple-tree louse (*Aphis lanigera*) appears to be less woolly in the fore part of the season, or in its early state, than at the East. Wherever a colony of these is established, warts, knobs or excrescences arise. As they spread, the tree still more sickens, and dying, it dies. These, too, are natives, whatever some may say. Kerosene is perfectly harmless to the tree, and sure; but potash and ammonia solutions are also the best possible manures, and if any can suggest better modes of riddance, let them "speak out." For cabbage, a good garden engine and abundant water, forced on as strong as the plants will bear, seldom fails in industrious hands; but any soaps, or strong potash, or carbonate of ammonia solutions are good in a double sense.

A. KELLOGG.

P. S.—We came near forgetting the *best remedies*, as many others do, viz.: The carnivorous birds and bugs; let them take the chief charge of this department, as it is in their line, and they like it. Notice those birds that run along the bark, such as the wren, and do as your grandfather did: make him a home,—a nice little ornamental cot in a tree. He is not about for display, even a skull on a pole pleases him. Welcome the titmouse, or tom-tit, and the chickadee, when they deign to give you a call; also friendly bugs, etc. Entertain the angels Heaven sends, and for mercy's sake teach your children affection for the dear little lady-bird bug. A few of these are better than the best gardener you can hire, and no expense at all.

K.

THE BOTANICAL GARDENS OF MELBOURNE
(Australia).

With considerable surprise and regret we have read in the Australian newspapers sundry charges against the Director of the Botanical Gardens of Melbourne, Baron F. von Mueller. These must appear to an impartial mind both unjust and malicious. The Baron, as a government officer, has no right nor opportunity to answer these charges, but he has true friends, who can appreciate the immense services which the Baron has rendered to the colony in particular, and to the civilized world at large. However, his opponents find no sympathy with men who have the progress and development of their country at heart. The leaders of the assailants are neither men of scientific attainments nor of horticultural knowledge, but being but partially educated, narrow-minded and sordid, and having been so far fortunate as to scrape together some of the wealth which ("having left their country for their country's good") they cannot return to spend, and being also of a race that presume to dictate and interfere with the domestic government of that, as well as other thriving parts of the world; inflict an intolerable injury on the community, which, ere long, must be remedied. These men cannot be expected to appreciate, or even to understand the purposes for which botanical gardens are established, and their mean and vicious meddling can weigh but lightly with an intelligent public. To these we must add another class of men who ought to know better, but being engaged in the raising and selling of trees and plants, imagine that the free distribution of plants by the Botanical Gardens injures their business. The selfish motives of such men will, we hope, have no bearing upon a measure which deserves the blessings of the present and future generations.

It has been charged that Dr. von Mueller is not a landscape gardener and that the Botanical Gardens might be more ornamental,

etc. In regard to this extraordinary fault-finding, the *Ballarat Courier* very justly remarks: "Granting, for the sake of argument, that Dr. von Mueller has studied prettiness in flower beds, and scenic effect, less than the propagation of useful timber trees, and shady and valuable shrubs, has he not nobly fulfilled the first requisite in a new country, the native forests of which are for the most part fit only for rough bush and mining work? Has he not produced and distributed hundreds of thousands of young trees amongst the public institutions of the colony, and scattered them broadcast throughout the country? If a mere landscape gardener had been at the head of affairs, would the gardens, streets and roads of so many centres of population be presenting such a cheerful verdure, and affording such a grateful shade as they do now? Notwithstanding the grand flourish of the Commissioners about the whole colony learning botany, horticulture and landscape gardening at the feet of the Gamaliel to be, we are of opinion that the Melbourne Botanical Gardens were originally intended, and should be continued, a vast nursery of plants, shrubs and trees for distribution throughout the country. This idea should never be lost sight of, however the professional nursery seedsmen may set up their backs against Government competition with private enterprise. Wide tracts of land have been set apart for State forests. How are these wastes to be peopled with useful and ornamental timber, unless there is a large reserve in Melbourne from which to draw supplies? But the Commissioners, in their zeal for the creation of a big flower garden, and 'scenic effects,' seem to forget that it is the country at large, and not Melbourne alone, which pays the annual subsidy they complain of as not having been expended to the best advantage; and that it is the country districts which are most in need of constant drafts from the parent nursery. There is something intensely selfish and Melbourneish in the report, and we have no hesitation in saying that our opinion will be confirmed

by the majority of the country journals, the conductors of which only regret that there has not been a wider distribution of plants, shrubs and young trees; and who are anxious to know in what particularly useful work the much-vaunted Inspector of State Forests has been engaged since he received his well-paid appointment."

The people of Australia should congratulate themselves on possessing a man of such high standing and scientific attainments, both at home and abroad, as Dr. von Mueller is universally acknowledged to be, and who has done far more for his country than his ungrateful assailants deserve. We doubt not but there is sufficient public spirit and intelligence in the country to vindicate him, notwithstanding the alloy.

SWEET VIOLETS.

These are among the sweetest and loveliest of the gems of a spring garden; their light blue eyes open very early and their fragrance is unsurpassed by that of any other flower. Then they will grow and bloom in the shadiest nooks and corners and are not particular as to soil, although they prefer a rich, deep loam, and will flower much more profusely if liberally watered, when coming into bloom, with manure water.

Great have been the improvements in these little beauties during the past five years, and various are the shades of blue now offered to us in both single and double sweet violets.

King of the Violets is dark blue and a very fine bloomer, fitted either for house or outdoor culture.

Reine des Violette is very double and hardy and of a blush-white.

Rubro Plena is a very distinct species, hardy and a free bloomer; of a double red or copper-color, entirely different from any other kind.

The Czar is a single variety, very fragrant, and the flowers are borne on long stems.

Devoniensis blooms for months, and is of a

light violet shade with long stalks, which add to its value in bouquets.

Neapolitan is one of the loveliest of all violets, very sweet scented with beautiful pale-blue flowers.

Arborea alba is pure white and excellent for home culture; it is not very hardy, and requires protection during winter; [perfectly hardy with us in California.—ED.]

Ladies' Floral Cabinet.

LOUDON, THE LANDSCAPE GARDENER.

Loudon was a man who possessed an extraordinary working power. The son of a farmer, near Edinburgh, he was early inured to work. His skill in drawing plans and making sketches of scenery, induced his father to train him for a landscape gardener. During his apprenticeship, he sat up two whole nights every week to study; yet he worked harder during the day than any fellow-laborer. During his studious hours he learned French, and, before he was eighteen, translated a life of Abelard for an Encyclopædia. He was so eager to make progress in life, that when only twenty, while working as a gardener in England, he wrote down in his note-book: "I am now twenty years of age, and perhaps a third of my life has passed away, and yet what have I done to benefit my fellow-man?" An unusual reflection for a youth of only twenty. From French he proceeded to learn German, and rapidly mastered that language. He now took a large farm for the purpose of introducing Scotch improvements in the art of Agriculture, and soon succeeded in realizing a considerable income. The Continent being thrown open on the cessation of the war, he proceeded to travel for the purpose of observation, making sketches of the system of gardening in all countries, which he afterwards introduced in the historical part of his laborious "Encyclopædia of Gardening." He twice repeated his journeys abroad for a similar purpose, the results of which

appeared in his Encyclopædias — perhaps among the most remarkable works of the kind, and distinguished for the immense mass of useful knowledge which they contain, all collected by dint of persevering industry such as has rarely been equalled.

OUR WINE INTEREST.

Much has been said about the Wine Product of California for 1871, and the probable increase in the future. The *Alta California*, some time since, took occasion to criticise certain statements from various sources, and bearing upon this matter. It asserted that the amount of wine produced in 1871 has been over-estimated, which fact, if permitted to go abroad uncontradicted, would injure our reputation, and might result in pecuniary loss to business men.

We know that many extravagant statements have been published, both here and abroad, in regard to the products of our soil. This is occasioned by indiscretion on the part of our newspaper men in accepting statements from unreliable parties as facts.

We fail to see, however, that a great error has been committed in estimating the wine product of 1871, in California at 6,000,000 gallons, which the *Alta* wishes to reduce to 4,500,000 gallons. We maintain that if the yield has not been 6,000,000 gallons it certainly *should have been* that much.

The statements upon which all the estimates have been based are incomplete and unreliable, and we do not see how the *Alta* can arrive at any closer estimate of the true facts than others who have watched with great interest the condition and progress of our wine interest.

As others have done their guess-work, we may be permitted to guess a little on the subject.

According to statistics on hand, the total number of grape vines now under cultivation in California is estimated at 30,000,000, of which number the counties of El Dorado, Los Angeles, Napa and Sonoma claim about 14,-

000,000, and the remaining forty-six counties about 16,000,000.

As for the export wine and the supply for San Francisco, it will be admitted, that the before-mentioned four counties certainly furnish ninety per cent. of it—three fourths of the counties having never shipped one gallon from home—and ten per cent. may be credited to small shippers; it will also be admitted that fully one half of the wine produced in 1871 is now on hand at the vineyards of the leading wine-producing counties.

Now, if we entertain the statement of the *Alta*, that the amount of wine shipped to San Francisco and exported in 1871 has been about 2,000,000 gallons, we must credit the four counties named with ninety per cent. of that amount, and also with an equal amount on hand; while the forty-six other counties must be credited with one half of the entire yield of the State, which, according to these figures, must be over 6,000,000 gallons, making due allowance for waste, home consumption, and other uses of the grape.

As for the annual increase of our wine product, it may be stated as a fact, that grape vine planting reached its largest dimensions in the years 1868, '69 and '70; it will, therefore, be fair to presume that the increase of our vineyards, per acre, will be at an average of about ten per cent. per annum; upon which we may base, after the lapse of four years, a future increase of ten per cent. of the vine yield. As vines become more productive from year to year (at least for many years to come), and as experience in cultivation, etc., will produce most beneficial effects, resulting in a better and increased yield, we may add another ten per cent. per annum on that account, which will give us a total increase in the annual product of about twenty per cent.

Vines five to six years old should produce one gallon of wine per annum, with the exception of a very few foreign varieties, which are less abundant bearers and require a larger amount of berries to make a gallon

of wine, but it must be taken into consideration that of the 30,000,000 of vines now cultivated, a very large proportion is scattered over small farms and gardens, and cultivated only for the fruit, while some grapes are also made into raisins; in addition to this, some of our large vineyards carry on an extensive trade in supplying San Francisco and the neighboring States, Territories and Islands with this delicious fruit. We must further remember that a large percentage of our vines are non-producing on account of neglect and mismanagement.

All these considerations combined justify the opinion, that only one half the grapevines of California are actually wine producing, and should give, when in full bearing, 15,000,000 of gallons of wine per annum, provided that the season is favorable.

Last year, in a general view, was unfavorable on account of the long, dry season; this year is somewhat unfavorable on account of the late severe frosts which we experienced, yet it is fair to presume that this misfortune will be fully made up by the yield of vines which have been heretofore unproductive, and therefore the total product may not fall short of that of last year.

To support some of our assertions we may give a number of statements, which we obtained lately in visiting some of the vineyards in Napa. In one vineyard there (for instance) 30,000 vines are cultivated, 15,000 of which are five and six years old. The quantity of wine produced last year amounted to about 8,000 gallons. The vine-grower is confident that in a favorable season the product would be fifty per cent. more. The cellar of the vineyard being located by a public road, the entire product is retained at the vineyard or in Napa city, and not one gallon of the wine has ever been offered in San Francisco or for export. We could mention several other vineyards bearing out the same facts.

In Nevada county we know of a vineyard which has produced wine for the past ten years; the cellar of this vineyard contains

wine made of foreign grapes, of every year since 1863, and the proprietor took extraordinary precaution to keep the wine from the different varieties of grapes separate, so that we may obtain Zinfendar, Black Hamburg, Catawba, Riesling, Burgundy, Muscat, etc., of different ages, in bottles or casks, at this vineyard. The five-year-old vines there have produced, on an average, one gallon of juice to the vine in favorable years, the vines being trained about five feet high and supported by stakes, in the old style. Not one gallon of the wine produced in this vineyard has ever been offered for sale in San Francisco. The wine being of a superior quality, the owner expects to profit largely by keeping it until a proper distinction shall be made and recognized by the trade in the quality and character of California wines. We think the owner is correct.

We could bring more evidence, but our space will not permit.

THE STUDY OF NATURAL HISTORY,

AND

How it Accords with Sundry Pursuits and Recreations.

MR. EDITOR:—It will certainly be conceded that the study of *Natural History* is a kindred science with Agriculture and Horticulture, and I therefore plead that whatever relates directly or indirectly to that study cannot be out of place, but may be considered interesting in a Horticultural Magazine.

I have, therefore, taken the liberty of addressing a few remarks to you on the relation between Natural History and sundry pursuits and recreations, as Hunting, Fishing, Shooting, etc., where the close observation of the habits, food, resorts, etc. of the animals pursued are more keenly (though perhaps not so scientifically) noted by the sportsman than even by the naturalist, the information derived from such sources constituting the great bulk in all works on Natural History.

I must, however, admit that but a limited knowledge of that science suffices for sundry branches of those sports, as riding to hounds,

coursing hares, duck etc. shooting, where the season selected and the mode of pursuit militates against any close study of the prey, and the bustle, noise and excitement causing too much disturbance and affright in the animals to afford any great opportunity for scientific observation; while the season best suited for these sports is not the one best adapted for general study, as the leaf is withering, insects have passed their gay summer day, and numerous varieties of birds have congregated and taken their departure for southern climes.

But the co-relation between the study of natural history and the practice of fishing is undoubtedly intimate, and they certainly may be jointly pursued without neglect of either. The very mode of pursuing his sport, adopted by the angler, necessitates keen observation as to the haunts of his prey, mode and time of feeding, nature of food, condition of weather, water, etc.; the seasons, habits and nature of food of the insects, which are themselves the food of the fish, for the successful angler not only knows from the appearance of a river or stream what fish to expect, but also from the trees, shrubs and herbage overhanging, what is the nature of their food, and, consequently, which are the most inviting flies to offer, for, be it remembered, the fisherman has to deceive his keen-eyed prey, approach them very closely, and tempt them to feed; if he excites alarm in the slightest degree, all his efforts are fruitless. Not so the huntsman or gunner, who cares not, so that he can get within fifty or one hundred yards of it, whether his prey is frightened or not. Angling is thus indebted for an auxiliary charm to this fellowship with natural history in advantage of the other sports—of hunting, shooting, etc. This intimacy, however accidental, links the angler closely with the Botanist and the Entomologist, themselves inseparable from the Florist and Horticulturist; and to excel in his art he must study with them. And how delightful the study! How conducive to health! reinvigorating both

to mind and body; how genial the seasons appropriate to his sport and study! while the beauty of the scenery is enhanced by the soothing influence of rural sounds—the merry notes of birds, the hum of insect life, the rustling of the gentle breeze among the leaves, and the rippling of the brook, the perfume of plants and flowers, with other sweet accompaniments—

“Rivers, to whose shallow falls
Melodious birds sing madrigals;”

the soothing, and thought-awakening influence of the water itself, “Nature’s store-house, in which she locks up her wonders”; the numberless and varied forms of animal and vegetable life which constantly arrest his attention and excite his interest, many of them by reason of the silence and quiet necessary to his sport, being seen to especial advantage. All these things combine not only to present the works of Nature before him in their most attractive form, but at the same time peculiarly dispose his mind to meditate on the impressions they can scarcely fail to make on it. The book of Nature is in fact opened before his eyes—nay, obtruded on his notice—written in such distinct and inviting characters that he must indeed be blind of eye and dull of apprehension if he do not, to some extent at any rate, attain to a knowledge and love of her language.

It is scarcely to be wondered then, that, springing from all these associations, there should insensibly arise in the mind a cordial sympathy with, and appreciation of, those delights and wonders of Nature which hardly any other class of men save botanists and entomologists possess.

The accuracy of these conclusions, as between hunting any animals on horseback, shooting, etc., and fishing, may be, perhaps, not unfairly tested by comparing the standard works on each, and thus forming an estimate of the regard in which Nature and the study of natural history are held by their respective votaries.

To go through the whole list, both Ameri-

can and English, would be a tedious and a needless task; but let us take some of the best works on each subject: say *Beckford’s Thoughts on Hunting* (English), *Murray’s Instructions to Sportsmen* (American), and *Walton’s Complete Angler*. Now, what is there in Beckford but hunting? what in Murray but shooting? But what a change is there when we come to dear old Izaak! How keen and pure is his appreciation and enjoyment of Nature for Nature’s self. There is scarcely a page in his whole book which does not breathe forth his earnest and devoted love of her. Do not his descriptions almost lead away his readers in spite of themselves from the avowed subject of his book, and incite them to become anglers, more for the sake of the accessories which he paints so graphically and invitingly—his “honey-suckle hedges,” his “airy creatures;” his “silver streams,”—than for the actual fishing? Verily, he has done as much to promote a genial and healthy love of Nature as any man who ever lived.

That Fishing by thus leading up to the study of natural history, has acquired a just right to be associated with it, is a question which no philosophical mind will dispute any more than that Agriculture and Horticulture have a like paramount claim to such companionship, and, consequently, the study of natural history (fishing included) and essays upon it, particularly with respect to the insect world, can be beneficially admitted into a Horticultural publication like the *California Horticulturist*.

Should these pleadings for the gentle art induce any readers who may have been inclined to dissent from our view of the case, to refrain from pronouncing against us, these remarks will have answered their purpose. And if our arguments in this article or paper have the effect of bringing forth from any of its readers notes or observations in writing, throwing any light on Ornithology, Entomology or kindred subjects, the object of the writer of the above lucubrations will have been fully answered.

E. J. H.

SAN FRANCISCO, 1872.

FOREST CULTURE.

The Promotion of Forest Culture.

Many of the Western States have already instituted measures for the promotion of Forest Culture; others are only now beginning to move toward the attainment of the same object. They all feel the need of forests, not only for the purpose of protection against the terrible gales that sweep the prairies and to furnish the inhabitants with cheap timber for fencing and building purposes, but to modify climate and prevent the ruinous droughts that afflict every unwooded country. An effort is, this Winter, to be made in the Wisconsin Legislature to adopt some means of restoring the forests, which have been almost wholly cleared away in the northern portion of the State. It is a movement somewhat analagous to that proposed by the sportsmen of this State, and which is, we believe, to be brought to the notice of our Legislature this Winter—to have the State purchase the great north woods and preserve them as a wilderness. The fact that the people are aiming at the same object in so many different parts of the country, shows clearly that it is one whose importance is already recognized.—*Utica Herald.*

FORESTRY.

The forests which remain in Europe are carefully tended by foresters, educated to a proper knowledge and execution of their business.

Forestry includes a knowledge of planting, transplanting and cultivating forest trees, and of felling, removing, rafting and by other modes getting into market the mature timber. By these means the forests are a source of large revenue to private individuals as well as to governments, and are kept up in the best condition. In America the time has come when the art might be profitably introduced: as it is, our vast forests are fast going to destruction, with no effort to preserve them for the future.

Hearth and Home.

THE LARGEST VINEYARD IN CALIFORNIA.

The largest vineyard in California is the Buena Vista, in Sonoma County, where there are 500 acres of vines. The whole tract belonging to the Buena Vista Vinicultural Society, covers some 6,000 acres, on which there are several creeks, and sulphur, iron and soda springs. An avenue a mile long leads to the houses, and on both sides are planted three rows of locust and mulberry trees. Of the latter there are some 3,000 exclusive of cuttings. The dwellings, men's quarters, carpenter shop, blacksmith shop, stable, etc., are all separated so as to prevent the possibility of a heavy loss by fire. The Company make different classes of red and white wine, and 160,000 gallons were produced there in 1871. Sparkling wines are made with the foreign varieties of grape. The press-house, near a hill, is three stories high and 100 feet square. The grapes are brought around on the side of the hill and crushed in the upper story, while the juice is carried by pipes to the vats below. From this house three tunnels or cellars 100 feet long each, are run into the hill for the purpose of storing the wine. The champagne house is also three stories high, and from it are two long tunnels running into the hill containing at present about 60,000 bottles of sparkling wine.

On one side of the creek, near the press-house, is the cooper's shop, where all the casks, which are made from the best Eastern wood, are put together, and on the other side is the distillery where the brandy is made. In the press-house cellars are large tanks holding from 1,000 to 2,000 gallons each, where they have wine from the vintage of 1866 to date. Tunnel No. 3 is what they facetiously term the "library," where they have casks of different kinds of wine, of a variety of ages for the visitors to sample. On the main creek is the Willow House where all the champagne baskets are made from willows grown on the ranch. They employ from forty to one hundred men, according to the

season, and have at present forty six at work. Every department has its "boss," who brings his report nightly to the superintendent, Mr. E. P. Cutter. The manager of the cellars is Mr. A. Ketz. There are at present about 230,000 gallons of wine in the cellar.—*Rural Press*.

MUSHROOMS.

The French are famous for *mushrooms*, as all the world knows, and their cultivation is conducted with great art and on a large scale. The mushroom gardener, like the asparagus gardener, is not content with the production of delicate esculents only, they must be gigantic as well as delicate. The finest asparagus (quoting Geo. Colman) looks like "*three single gentlemen rolled into one*," and now mushrooms are appearing in the shop windows of Paris which look like united families. The method of production is as follows: The spawn of the common mushroom is taken up with a small camel-hair pencil, and laid on a damp strip of glass, so that it can be placed under a microscope, and the process of germination of the spawn watched during its modification. When the mycelium, or *blank de chanipignon*, as it is called in France, is developed, it is placed in highly manured earth, in which the development continues; the finest specimens are afterwards selected and placed in a mushroom bed, in a cave or quarry, and covered first with a bed of sand, ten inches deep, and over that a layer of old plaster, about six inches thick, the whole being watered, with the addition of a small quantity of nitrate of potash. At the end of five or six days very large mushrooms will be obtained, clustered together in masses, and of delicious scent and flavor.—*Gardeners' Chronicle*.

ALL highly concentrated Animal Manures are increased in value, and their benefit greatly prolonged, by the admixture of plaster or pulverized charcoal.

TO DISTINGUISH EDIBLE MUSHROOMS.

A writer in the *English Mechanic* gives what he considers to be an invaluable rule for distinguishing the true Mushroom from the poisonous species. He remarks, in the first place, that the true mushroom is invariably found in rich, open pastures, and never on or about stumps or in woods; and, although a wholesome species sometimes occurs in the latter localities, the writer considers it better to avoid their products. A very good point, in the second place, is the peculiarly intense purple brown color of the spore-dust, from which the ripe mushroom derives the same color (almost black) in the gills. To see these spores, it is only necessary to remove the stem from the mushroom, and lay the upper portion, with the gills downwards, on a sheet of writing paper, where the spores will be deposited, in a dark, impalpable powder, in a short time. Several dangerous species, sometimes mistaken for the true, have the spore, *umber* brown.

In the true mushroom, again, there is a distinct and perfect collar, quite encircling the stem, a little above the middle, and the edge of the cap overlaps the gills. In some poisonous species the collar is reduced to a mere fringe, and the overlapping margin is absent or reduced to a few white scales. Lastly, the gills never reach to nor touch the stem, there being a space around the top of the stem, where the gills are free from the stalk.

There are numerous varieties of true mushrooms, all of them equally good for the table. Sometimes the top is white and soft, like kid leather; at other times it is dark brown and scaly. Sometimes, on being cut or broken, the mushroom changes color to yellow, or even blood-red; at other times, no change whatever takes place. To sum up, it is to be observed, that the mushroom always grows in pastures; always has dark purple-brown spores; always has a perfect encircling collar; and always has gills which

do not touch the stem, and has a top with an overlapping edge.

In addition to the methods just indicated for testing the genuineness of mushrooms, we are informed that, however much any particular fungus may resemble the eatable mushroom, none are genuine or safe, the skin of which cannot be easily removed. When taken by the thumb and finger at the overlapping edge, this skin will peel upward to the centre, all around, leaving only a small portion of the centre of the crown to be pared off by the knife.

Prairie Farmer.

PINUS EDULIS.

Its Adaptability to a Dry Climate.

That this Pine is well adapted to a dry climate, there can be no doubt. It is perfectly at home upon the arid mountains of New Mexico and Colorado, where rain is almost unknown. In some localities it seems to be the only tree that can survive the dry climate. Dr. Warder, in describing the timber observed, during a recent excursion over the Plains to the Rocky Mountains, says: "*Pinus Edulis*, the Piñon or Mountain Pine, was found only on the bare rounded hills of red sand rock that guard the Ute Pass, near the base of Pike's Peak."

Professor Torry says of this Pine, in the *Pacific Railroad Report*: "It is found from 150 miles east of the Rio Grande to the Cajon Pass of the Sierra Nevada." This includes the most rainless, arid region on this continent.

Its manner of growth is conclusive evidence of its adaptability to a dry climate.

It has but few of what are called surface roots; the roots dive deeply, apparently searching for water below the drying sun and air. We have had seedlings send down the radix or tap root, twelve or eighteen inches, with a single spongiole at the end, while the plant was scarcely an inch above the surface. We have experimented with the little seedlings to test this tendency to send the radix downward. We have dug them with the

root ten to twelve inches long, and marked and tied it into a knot, and then replanted with the whole of the root not over ten inches from the surface. In a short time the radix would be found to have again plunged down to its former depth. In this way we have found the little plant to produce a single radix two or three feet long, and not larger than a small straw, while the top was not more than one or two inches high.

Again, it can be grown from the seed in dry, sandy soil, in the hot sun, with no protection, without any inconvenience whatever being felt from the influence of the sun. We have grown them upon the same bed, for the purpose of experiment, with some fifteen other varieties of native and foreign evergreens, without shade or any protection whatever from the sun. None except the *Pinus Edulis* and the New Mexican Red Cedar stood the test uninjured, while nearly everything else was wholly destroyed. We found this pine in every case grow as well from the seed, fully exposed to the sun, and, we thought, generally a little better than where it was shaded. From the foregoing we feel satisfied that it is well adapted to the climate of all our Western States and Territories.

Evergreen and Forest Tree Grower.

INEXPENSIVE ORNAMENTS.—There is no mere ornament inside or out of our houses so cheap and tasteful as plants and flowers. Few pause to regard the architecture of your rooms or your house, but the beauty of flowering shrubs, or the living arabesque of a thrifty creeper over your door, are lessons of taste and beauty. Indeed, suburban residences are sadly deficient without these simple yet beautiful accessories, always within the reach of taste and refinement, no matter how empty the purse. As the real necessities of life require the least expenditure of time and money, so these objects which tend most truly to satisfy the love of the beautiful in Nature, are within the reach of her humblest children.

Editorial Portfolio.

AGRICULTURAL AND HORTICULTURAL SOCIETIES.

Of late, we have noticed with pleasure a disposition amongst the tillers of the soil to form associations, we presume for mutual protection, for exchange of practical and useful information, and for the general advancement of Agriculture and Horticulture. Combined efforts on the part of our farmers and gardeners to establish more intimate relations amongst themselves must produce good. If we were to assume that these associations have been formed merely for show, or (as some see fit to assert) for individual purposes, we should attach but little value to their existence; but the indications are, that their members are in earnest and are determined to make their gatherings productive of improvement in all the branches of Agriculture and Horticulture.

There has been a great deal of talking done during the last ten years, but very little profit from it. What we require are sound and honest deliberations, useful and practical information, and a persevering disposition to benefit ourselves and our neighbors by exhibiting better results. Deep plowing, early sowing, proper and thorough cultivation, manuring instead of exhausting the soils, ornamenting our homes and making them comfortable, necessary irrigation, tree culture, selection of proper soils and locations for the different crops in view, and more satisfactory arrangements between producers and consumers, by dispensing with the present unhealthy commission business as far as practicable; all these improvements are both desirable and necessary, but talk alone will not accomplish these results; we must be prepared to act. If our Agricultural and Horticultural Associations will make success in their purposes their fixed determination, their very existence will inspire people with confidence in the future of California.

The most useful means to aid in the consummation of all this advancement, are our Agricultural and Horticultural Exhibitions; the discussions at the meetings, of subjects belonging to Agriculture and Horticulture; and the maintenance and perusal of Agricultural and Horticultural publications.

Our exhibitions are not generally considered as fully answering the purposes for which they are held; entirely too much attention is given to horse-racing and gambling. The blame, however, cannot be attached so much to the associations holding these exhibitions, as to the individuals who patronize them. It is evident that visitors delight more in horse-racing than in admiring and judging the products of our fields; and so long as the patrons of our exhibitions exhibit more interest in the horse-racing than in the other features, so long will the associations be compelled to gratify their patrons in this respect, in order to meet their expenses. If reform is possible and practicable, our farmers must change front in this matter.

The meetings of our associations should also be reformed, by paying more attention to useful and practical matters than to unimportant formalities and discussions, which are neither interesting nor of sufficient importance to warrant publication. The Secretaries of the various associations should be required to furnish the proceedings of meetings to the Agricultural and Horticultural publications and to the local newspapers; and if these Secretaries cannot afford to give a portion of their time to these duties, they should receive a moderate compensation for their labors and the time they actually devote. But few members of the associations being able to attend the meetings, it becomes necessary to publish the discussions for the benefit of all concerned.

Agricultural and Horticultural publications and periodicals are the proper media through which knowledge and information upon these specialties can most readily be disseminated throughout the country.

For various good and substantial reasons, these periodicals are published in the larger cities, away from the fields, where the practical work is done, and however many and good the qualifications which the respective editors may possess, the co-operation of the practical cultivators is required to make these publications useful, and adapted to the requirements of the people. But very few seem to be willing to contribute to the columns of our Agricultural and Horticultural papers items of general interest and importance which come under their observation in everyday life. This inexcusable neglect and lack of public spirit is due partly to an ill-timed (we had almost said ridiculous) modesty, partly to lack of time, partly to selfishness, but most predominantly to indifference, the worst and most culpable of all the reasons. The modest excuse of not being able to write is a mere fiction; what editors require are facts, plain, and to the point, such as any man of ordinary intellect is able to furnish; the editor and publishers will attend to the balance of the work, and take excellent care that the articles are presentable.

All that may be reasonably expected of the cultivator of the soil is a will to do as much as lies within his power to advance the interests of all, by communicating to the public that which he knows or believes to be useful and practical; and he can accomplish this object best by making our exhibitions complete, by taking an interest in our associations, and by furnishing facts worth knowing, to our Horticultural and Agricultural publications, and thus make them the most useful agents to lead to permanent prosperity.

BERMUDA GRASS (AGAIN).

We have, on several occasions, spoken freely of this grass, but we do not hesitate to publish reports and opinions which may differ from us, as what we seek is the light of experience—that is our mission.

A Texas (the home of the Bermuda) correspondent of the *Country Gentleman* says:

“The Bermuda of this section flourishes best in our very heavy, strong, adhesive clay lands, is very nutritious, much more so than anything else we have, but has two bad qualities with us: 1st, it is not of any value for winter pasture; 2d, it will not relinquish its place when it gets possession of a piece of ground. It kills shrubbery, trees, flowers, and keeps spreading, spreading, spreading, till it is supreme, and takes lawn, garden, orchard, farm, if sufficient time and not enough work is given it. For a summer pasture it is unexcelled. It is rich in valuable matter, it is rapid in growth, and stands trampling and drouth admirably, but otherwise it is dreaded here. Those who have it as a yard grass are each and all entertaining it at great expense and trouble, and advising others to let it alone.”

MARINE AQUARIUM.

As a “Marine Aquarium” is now being constructed at Woodward’s Gardens, in this city, under the supervision of Mr. Schuman, it may be of some interest to our readers to read the following, which we copy from the *Gardeners’ Chronicle*, of London: From the Manchester papers we learn it is proposed to build a good *Marine Aquarium* in that city. The funds are to be raised by a company started under the superintendence of a number of gentlemen resident in the city, who are interested in Marine Zoology, and desire to promote scientific education in all its branches. The building will contain all the recent improvements shown to be necessary at the Crystal Palace and Brighton Aquaria, and will be rectangular in shape, 120 feet long and 70 feet wide. This space will be divided into two wide galleries, each 120 feet long and 15 feet wide, separated from the central saloon by a light screen. Running along one side of each of these galleries will be a series of tanks, about 80 in number, 40 in each gallery, varying in capacity from 300 to 3,000 gallons; and the roofs will be so arranged that the light will pass through at

an angle of about 45 deg., thus rendering distinctly visible the living inhabitants and plants contained in the grotto-like tanks. The grand saloon will be also 120 feet long by 40 feet wide, supporting on eight iron columns an open-panelled roof. All the windows will be so arranged as to admit only the exact quantity of light required, as it is found that an excess of light acts upon the higher marine plants and animals in a manner directly contrary to its action upon terrestrial life, blanching them as ordinary plants are blanched by being earthed up, while the most brilliant-colored marine plants are those which live in comparative darkness.

CEMENT FOR AN AQUARIUM.

Mrs. D. R. B. sends the following recipe to the *Rural New Yorker*: "I send you a recipe which I have used eight years in my own aquarium with perfect success. The cement has never been removed, and the tank has never leaked a drop during the time:—one part (by measure) say a gill, of litharge; one gill of plaster of Paris; one gill of dry, white sand; one third of a gill of finely-powdered resin. Sift and keep corked tight till required for use, when it is to be made into a putty by mixing with boiled linseed oil, with a little patent dryer added. Never use it after it has been mixed with the oil over fifteen hours. This cement can be used in marine as well as fresh water aquaria, as it resists the action of salt water. But the tank must have either an iron or stone frame-work. A wooden one will warp and cannot be made tight with any kind of cement. Be sure your plaster of Paris is pure. Dentists always keep that which is good. It is best to let the tank stand a day or two before the water is put in. The best I have used are the water cress and the calla lily."

CANARY BIRDS are imported to the United States to the annual extent of 30,000, mostly from Germany.

WORK FOR JUNE.

The present is a busy time for all classes of farmers and gardeners, and will continue to be so for some weeks. There will be little leisure for the farmer outside of harvesting, and those who have neglected other work which might have been done during the last two months, must blame themselves for the consequences and loss.

The farmers have commenced harvesting, and although the yields do not come up to former expectations, we believe that most of them are doing moderately well. Some localities have suffered severely from the dry and cold winds, while others promise more than an average crop. Early planting and deep plowing take the first prizes; those who have been satisfied with scratching, and who are always behind time, will profit by another lesson, we hope.

Our fruit-growers have their hands full; cherries, apricots, currants, gooseberries, etc., are ripening:—gathering, packing, and shipping are laborious, and take the entire time for a month to come, of those who grow these fruits for profit. The cherry yield will be unusually large, and much better in quality than last year.

We should like to see our fruit-growers a little more careful and particular in marking their fruit with the proper names, so that the consumer may become familiar with, and be enabled to particularize the different varieties which he prefers. The labor is small to put a label on each box, and the information thus given to the public will be appreciated, and create a more particular inquiry for the most desirable varieties. Unless we educate the masses upon these points, we cannot expect a due appreciation of that which is really good.

In the vineyards, all we can do is, to keep the weeds down and prevent them from maturing their seed; a good hoeing will benefit both the vines and the fruit. Vines which have been planted lately should be staked and the young shoots tied up to keep

them from breaking off. We do not believe in allowing young vines to trail upon the ground.

In the Vegetable Garden attention should be paid to the following duties :

1st. Irrigation, which need not be done more than twice a week, but should then be thoroughly done—a light sprinkling of the surface does not amount to much; as one hour of warm sunshine will evaporate it.

2d. Frequent hoeing; the ground around vegetables should always be in a high state of cultivation, that is, loose, and free from weeds.

3d. To thinning out of young plants, whenever they appear crowding each other; each plant requires a certain amount of soil from which it can draw its nourishment; they should be kept far enough apart to admit cultivation around them.

It is well to throw up the earth a little around the more advanced plants of Cabbage, Cauliflowers, and Tomatoes.

Head Lettuce should be transplanted; late Peas may be sown; Corn may yet be planted; Pole Beans should receive proper support. Fresh horse or cow manure, dissolved in water, will have a wonderful effect upon vegetables, if applied two or three times with the watering pot. A little attention of this kind pays well; we cannot expect good results without some labor; vegetables must grow luxuriously to be of good quality.

The Flower Garden cannot dispense with any less attention than heretofore, or it will exhibit neglect, and result in discouragement. Roses have yielded their first crop, and now the young wood is sufficiently ripened to allow of cutting back to a few strong buds; with moderate moisture these will soon make a new growth and produce new flowers. Our gardeners and amateurs do not pay proper attention to the cultivation of Roses, or we should see them in bloom throughout the year. As soon as the young wood is ripe, which is the case now, four fifths to five sixths of it should be removed, in order to

secure a new growth, which is necessary for new flowers.

Dahlias and Gladiolus make their growth now, and we must keep the soil around them in a loose and porous condition. As we said last month, remove all but one strong stock from Dahlias, if fine flowers are expected.

Young seedlings of Pinks, Pansies, and other hardy bedding plants must be transplanted to where they are expected to flower; do this during the evening, and water well, but carefully. We plant with a small dibble, and after planting we stick the dibble into the soil beside the young plant, forming a small hole into which we pour the water with the watering-pot; in this way the water will penetrate deeper, and keep the roots moister, which is very desirable.

The Greenhouse and Conservatory require all the fresh air we can give, and frequent watering of the floor, in order to produce a moist atmosphere. Fuchsias and Camellias require considerable moisture and shade. Geraniums may be kept rather dry; flowering Begonias and Ferns may be placed under the shelves, as they can do with less light than others. Azaleas may be placed in a sheltered and shady situation in the open air, and should have just enough water to keep them alive; Bouvardias should have a very airy place near the door; Cape Jasmines, young Palms, Caladiums, Gloxinias, variegated leaf Begonias and other tropical plants should have a close atmosphere; warmth and plenty of moisture are requisite for their successful growth. Achimenes bulbs, etc., should be planted.

THE FRUIT TREES OF CALIFORNIA.

Reports are continually received from various localities of the fact, that fruit trees, particularly peach, plum, apricot and nectarine, are dying off without any apparent cause.

We knew the time would come when sad experience would teach our pomologists that fruit trees cannot be expected to live a long life, if planted on the bottom lands. The

most injudicious localities have, unfortunately, been heretofore selected both for orchards and vineyards; and further, left as they have been planted, in most cases they received no attention from the owners, save gathering the fruit.

We have found by experience that it is of no avail to talk to our horticulturists until they have burnt their fingers. Listen to them, and they know it all, when *we* know that, practically and scientifically, we have a larger percentage of ignorant horticulturists, farmers and pomologists here, than in any other country on the globe.

What will be the result of their sad experience, when they see that their injudiciously-planted orchards perish! They will not go to work and profit by it, but will pump at something else, or cry the country down.

We should have the reports laid before the meetings of our Horticultural and Agricultural Societies, and should endeavor to trace the evil to its proper origin. That is the purpose for which we have associations. But if no one is willing to report, we cannot expect to have more light thrown upon the subject.

ORANGE SCALE INSECTS.

Many remedies have been tried, but none seem to succeed so well as *Peruvian guano*, mixed with soap suds. This mixture seems to have the desired effect when applied by means of a syringe (in the Spring), about once a week, the soap and ammonia killing the young coccus as it first emerges from the female scale, and before it has become impermeable to the liquid preparation. The guano will also serve to enrich the soil under the tree. In planting new trees, great care should be taken that they are entirely free from *scales*, as a whole grove may become infected from one diseased tree. The *coccus* has a few insect enemies, which in a measure serve to check its ravages.—*Rural Carolinian*.

ORANGE TREES are growing in the open air at Healdsburg, Sonoma County, and producing fruit.

APHIDES (GREEN FLY) ON HOUSE PLANTS.

The *Rural New Yorker* says, that in the conservatory they can be readily destroyed by fumigating with tobacco, but with parlor plants they are not so easily disposed of. A large box, into which a number of plants can be placed and then fumigated, is a very convenient method, always selecting a warm day for the operation, or using some room in which the smell of tobacco would not be objectionable. The soft-wooded or herbaceous plants are the ones mostly infested with this pest. Place the plants in a deep box, and then put a few live coals into an earthen or metal dish, and throw a handful of fine-cut tobacco upon them. The box should then be covered up lightly, in order to confine the smoke about the plants. Allow the plants to remain in the box two or three hours, then take them out and syringe the leaves and stems with clear, tepid water. Repeat this operation as often as the green fly appears, if you desire healthy plants.

TO DESTROY CABBAGE LICE.

Two remedies have lately been recommended in the East as very effective.

One is, to sprinkle buckwheat flour over the plants affected with the lice, early in the morning, when the cabbages are covered with dew.

Another is, to sprinkle or sift salt over the cabbages, in the early morning, while the dew remains on the leaves.

Unfortunately, we have very little dew here in California; nevertheless moisture can be detected upon the cabbage plants in the morning, wherever irrigation is resorted to, and irrigation being necessary to raise cabbage in summer, the above remedies may be worth experimenting with.

BEEF SUGAR.—The State Legislature of New Jersey has passed a law exempting from taxation, for ten years, any establishment engaged exclusively in the manufacture of beet sugar.

THE BEST STRAWBERRY.

In answer to a correspondent inquiring as to the best strawberry, the *Gardeners' Monthly* says: "There is no more difficult question to answer than this. The vote of the whole United States would be in favor of the *Albany Seedling*. Some, because it bears abundantly; some, because it bears anywhere—in sand or in clay; and some, because the peculiar tartness when plenty of sugar is used with it, is agreeable to them. But there are others who are willing to sacrifice some of these peculiar advantages for the sake of a large, handsome berry, with a pleasing aroma and sweeter taste. These people prefer *Jucunda* or *Triomphe de Gand*;—*Napoleon III*, *Charles Downing* and *Agriculturist* also have merits which commend them highly to various growers. From your letter we judge that you want them for your own use, and not for marketing, and some of the last-named will probably suit you best."

The following items are from the *Monthly Report of the Department of Agriculture*:

REGULATING THE HATCHING OF SILK-WORM EGGS.—Duclaux, after a careful observation of the external conditions which favor and influence the hatching of the eggs of silk-worms, has prepared the following rules, by attention to which it is said that the development of the eggs can be regulated at will. First, to prevent an egg from being hatched at the usual time, it must be kept, from the period of being laid, at a temperature between 59 and 68 degrees of Fahrenheit, and then exposed fourteen days to cold, three months before the time at which the hatching is desired, being subsequently treated in the usual manner. To cause an egg to hatch before the usual time, it must be exposed to cold twenty days after being laid, and kept in that condition for two months, and then removed. Six weeks later it will be in the same condition as ordinary eggs, and can be treated in the same manner. In this way

it is possible to have silk-worms' eggs ready for hatching at any season of the year.

INCREASING THE VIGOR OF GROWTH IN PLANTS.—A very important announcement has lately been made in France as to the effect produced upon the luxuriance of vegetation by the disturbance of the natural position of the branches. It has been known for some time that if two branches of a fruit-tree be selected of about the same size, and the same upward inclination to the horizontal plane, and one of these be bent downward toward this plane, it appears to lose its vigor, while the other gains in like ratio. It is now announced as the discovery of an ignorant peasant on the Danube, named Hooibreuk, that this law holds good only up to the horizontal position; and that if the branch is depressed still further, and below the horizontal, it becomes characterized by much greater vigor than before, and, in fact, will put out leaves and branches to an astonishing and unheard-of degree. But this depends upon keeping the branches as nearly as possible in a straight line, the effect being measurably lost with a considerable curvature. In this case, only the buds which occupy the top of the arc are developed completely, at the expense of the rest, which remain in their original condition, contributing neither to the extension of foliage nor of fruit.

A VISIT TO NAPA VALLEY.

A visit to Napa Valley may now be made with so much comfort and facility, with so little loss of time and at so little expense, that we wonder why thousands of the citizens of San Francisco do not avail themselves of their leisure hours to view the very many interesting natural features of this Valley, as well as the rapid progress of improvement.

Leaving San Francisco in the morning by one of the accommodation steamers of the Central Pacific, in the first place we enjoy a most agreeable voyage of two hours upon the

Bay of San Francisco; being always in sight of the neighboring shores and islands, they present an ever-changing panoramic scene of great beauty. Half an hour before landing at the wharf at Vallejo we come within sight of this thriving city, prominently located upon gently-sloping hills, and, as we approach the landing, a full view of Mare Island, which, fronting the city of Vallejo, adds much to the effect.

But few minutes are occupied in transferring passengers and baggage from the steamer to the comfortable railroad cars, and on we roll amidst the fertile fields of Napa Valley, every mile of travel adding new interest to the beautiful landscape. Within half an hour after leaving Vallejo, we arrive at Thompson Station, named after our enterprising friend—Mr. Thompson, who is the possessor of an extensive farm, sub-divided into orchards, vineyards, grain fields, meadows, and extensive ornamental grounds. All these are in a high state of cultivation; and here we have most attractive exemplification of the comforts and pleasures of country life within a few hours' ride of the metropolis of the Pacific. Glancing over this estate, the first thought impressed upon our mind was: "Here must be happiness!" How many such homes as this one, could be established by just such enterprising men as Mr. Thompson, the traveler may judge by turning his eyes over the length and breadth of this beautiful Valley; and we feel assured we have other localities within our State of equal fertility, and as easy of access.

Another half hour's travel through the grain fields, and we are, almost unexpectedly, in the streets of Napa City; one of the most thriving towns of California, with its hundreds of cozy cottages and magnificent mansions, sprinkled through a forest, not of native oaks and pines, but the result of art and perseverance, to which rich and poor have contributed with equal success. The streets are margined with stately Locusts, Elms, Poplars, Ailanthus, and English Walnuts of advanced growth, which form a

happy contrast with the Pines, Cypress, and Acacias, intermingled here and there with fine specimens of Libocedrus and Abies, the graceful Willow and the towering Eucalypti, giving the whole a most picturesque appearance, while from amongst the dense foliage of trees the choral song of many birds rings out most sweetly; the flowers are scattered in profusion over verandas, the garden plots and borders, and every other available spot, and saturate the air with delightful perfume.

The people of Napa City have accomplished more towards their happiness than we can find in any other of our rural centres of population. Their houses, their trees, and their flowers are comforts to them, which dollars and cents cannot replace. Surrounded by these pleasing evidences of their labors, they are not ready to sell out at any price and at any time, as some of our settlers do, who cannot perceive the value of a tree or a rosebud.

(To be continued.)

REPORT ON THE FRUIT MARKET.

Fruits and Vegetables are still somewhat backward, but the quality generally is superior.

FRUITS.—Strawberries are good in quality, moderate in supply, yet sufficient to meet the demand, at from 12½ to 15c. per lb.

Cherries, very fine and plentiful, from 12½ to 37½c. per lb.

Currants, plentiful and very fine, from 8 to 9c. per lb.

Gooseberries, plentiful, at 6c.

Plums (*Cherry Plums*), are just coming in, at 25c. per lb.

Apricots (*Royals*), in limited supply, at from 25 to 37½c. per lb.

Peaches, one lot has appeared in market at fabulous prices.

Raspberries, a very few but fine, at 25c. per lb.

Pears (*Madeline*) and Apples are just coming in, but look indigestible; the old are out.

Tomatoes are just appearing, retailing at 25c. per lb.

Rhubarb is plentiful and fine, sells for 5c.

Oranges are plentiful; Lemons in moderate supply.

Limes, plentiful.

VEGETABLES. — Asparagus going out, supply moderate.

Peas and String Beans, plentiful and good, at from 5 to 6c. per lb.

Cauliflowers and Cabbages, good and plentiful, at 10c. each.

There is also a good supply of Green Corn in market.

Spinach is going out.

Artichokes are plentiful.

New Potatoes abundant.

SAN FRANCISCO, June 10th, 1872.

OUR EXCHANGE TABLE.

Overland Monthly, for June. There is much highly-interesting reading matter in this number. The article on "Sheep Farming in California" is well written, and worthy the attention of all interested in, or connected with that line of business. "Kodiak and Southern Alaska," and "Northern California Indians" afford useful information on both subjects; as also "Pavy's Expedition to the North Pole." We commend "The Netherland Mettray" specially to attentive perusal by our City Fathers. We notice that this is the closing number of Vol. VIII, and wish its spirited proprietors increased success with Vol. IX. John H. Carmany & Co., publishers, 409 Washington Street, San Francisco, Cal. Terms, \$4 per annum.

The Science of Health. We have received the first number of this new and apparently very useful monthly, devoted to Health on *Hygienic Principles*. Samuel B. Wells, publisher, 389 Broadway, New York. Terms, \$2 per year.

The Little Corporal, for June, came to hand. Reading matter and illustrations are equally creditable. It deserves the success which it undoubtedly enjoys. John E. Miller, publisher, Chicago.

The Virginia Real Estate and Farm Journal, devoted to Real Estate, Agriculture and Immigration, which interests it ably represents. Published monthly by A. F. Robertson & Co., Lynchburg, Va. Terms \$1. per year.

The Colorado Real Estate Register, devoted to Real Estate, Railroads, Agriculture, Mining, Live Stock and the general industry of Colorado, contains valuable information and statistics of the State it represents. Published by E. G. Matthews & Co., Denver, Colorado. Price \$2 per annum.

Through the kindness of G. P. Rowell & Co., advertising agents, 41 Park Row, New York, we received the *American Newspaper Directory* for 1872, etc., a most valuable compendium of information relating to all newspapers and periodicals published on this Continent, and of the towns and cities where they are conducted. We especially call the attention of our enterprising business men to this work, as containing all that is necessary to be known to enable them to systematize that most potent aid to success in business—intelligent advertising.

FAVORS RECEIVED.

Monthly Report of the Department of Agriculture for March and April, 1872; full of interesting notes and statistics.

The Lady's Friend, Monthly Magazine of Literature and Fashion, well illustrated; has a large staff of able contributors. It is edited by Mrs. Henry Peterson, and published by Deacon & Peterson, of Philadelphia. Price \$2 per annum.

From M. Ludermann, copies of a valuable German publication, by Dr. Wilhelm Neubert, on Floriculture.

CATALOGUES RECEIVED.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs and Climbing Vines, Stove and Greenhouse Plants, cultivated and for sale by W. C. Strong & Co., Brighton, Mass.

Wholesale Catalogue of superior Dutch Bulbs and other Flowering Roots, from Grube & Nieuwland, No. 13 First Street, New York.

BOTANICAL WORK.

Baillo's History of Plants is now being translated from the French into the English language. The *Gardeners' Monthly* considers it the best work on classification at present.

FAIRS AND EXHIBITIONS.

INTERNATIONAL FRUIT SHOW.—In September next there will be held a great International Fruit Show in Glasgow, Scotland, under the auspices of the "West of Scotland" Horticultural Society. One of the great features will be the exhibit of foreign fruits, in which France, Italy, Germany, Holland, Belgium, the United States of America, and British North America, are expected to participate. We hope California will be represented.

INTERNATIONAL EXHIBITION AT VIENNA, 1873.—The International Exhibition to come off at Vienna in 1873, it is predicted, will be a very imposing one, and Agriculture and Horticulture are expected to be the leading features. The Lower House of Congress passed a bill to authorize the President of the United States to appoint proper Commissioners on the part of this Government.

OUR HORTICULTURAL EXHIBITION.—Arrangements have been made to hold the coming Horticultural Exhibition in the Horticultural Hall, corner of Stockton and Post Streets, in the City of San Francisco. The Hall will be enlarged, etc.

SPRING EXHIBITION OF THE PENNSYLVANIA HORTICULTURAL SOCIETY.—The Spring Exhibition of this Society, held in April last, is said to have been a magnificent affair. The display of flowers was superb, and nothing was left undone by the various committees to make it a complete success.

The Kansas City Industrial Exposition and Agricultural Fair Association holds its next Annual Fair from Sept. 23d to Sept. 28th, 1872. The Premium List exceeds \$15,000 in cash.

PREMIUMS FOR FLOWERS

(Offered by the State Agrl. Soc. at their next Fair.)

Best and largest collection of Flowering Plants in bloom.....	\$25 00
Best collection of Ornamental Foliage Plants.....	25 00
Best collection of New and Rare Plants.....	15 00
Best collection of Roses in bloom...	15 00
Best collection of Fuchsias in bloom	15 00
Best display of Cut-flowers.....	10 00
Best collection of Australian Plants..	10 00
Best display of Bouquets.....	10 00
Best collection of Plants suitable for greenhouse, conservatory and window culture.....	15 00
Best display of Hanging Baskets containing Plants.....	10 00

NEW AND RARE FRUITS.

Diospyros Kaki. L. f. var. costata, as a hardy fruit.

This is a fine variety of a species that is native of Eastern Asia, and has been cultivated in China for many years. The ripe fruit of this variety is of a nearly globular figure, marked, however, with four longitudinal furrows; it is of a bright orange color, colored with a delicate bloom, and attains, in the climate of Paris, a size of from two inches to two and a-half inches in diameter. The flavor approaches that of an apricot,

gradually passing into that of a medlar, and when fully ripe is very pleasant. Before maturity, the fruit partakes of the astringency which is frequent in other species of the genus. The plant is a vigorous shrub, or rather a small tree, with widely-ovate leaves, shining on the upper surface, which fall sometime before the complete maturity of the fruit. The leaves on the young, barren shoots sometimes reach eight to ten inches in length by five to six inches in width, but those on the flowering shoots are somewhat smaller. The variety was introduced into France from China some time ago, and first bore fruit in the nursery attached to the Paris Museum, in 1869. It was described and published by M. Carrière under the name of *Diospyros costata*. From its appearance there, where I saw it last Summer, I should expect it to thrive in the milder parts of the South of England, in which case it would form a valuable addition to our stock of fruit-trees. The species is dioecious, or nearly so, nevertheless the female plant produces good fruit in the total absence of a male companion, but the seeds are not perfected.

W. P. H. Gardeners' Monthly.

Lawyer Apple.—We received, May 4th, from Messrs. Park & Goodyear, of Parksville, Mo., a specimen of this fruit. It is a beautiful apple—large, dark-red and of mild taste. It is described as of a “rich, sprightly cranberry flavor, hardy and productive.” It is evidently a good keeper; but we cannot call the flavor either rich or sprightly. But it will please many, though not sufficiently cranberry to please us. It is certainly an acquisition as a late keeper for the more Southern latitudes, (and therefore may be tried with success in California.—ED.)

NEW BULBS.

Amongst the bulbs of 1871 the *Liliums* take the first place, and deservedly so, for few of our garden flowers are more beautiful than they. We shall hope to see blooming

flowers (of *Lil. Washingtonianum*) exhibited in the ensuing Summer. *L. Maximowiczii tigrinum*, and *L. Boezlii*, are two very charming sorts—the first from Eastern Asia, the second from the Rocky Mountains. We shall leave Mr. Baker to locate, being content to record the fact of their having found their way to European collections.

The South African *Gastronema sanguineum flammenum* is a charming dwarf greenhouse bulb, with linear lanceolate leaves, and rosy crimson flowers of great beauty.

The Gardeners' Monthly.

THE CAPITOL GROUNDS.

There is some talk of converting the State Capitol Grounds at Sacramento (which by a new law, passed at the last session of the Legislature, have been considerably enlarged) into a State Park. Provisions have now been made for Golden Gate Park, our National Park, and for a State Park; but we are afraid that the interposing of individual interests, political chicanery and the lack of sufficient public spirit, will prove detrimental to the efficient management of these public improvements. These require the services and should be under the supervision of our most skillful and practical landscape gardeners.

HORTICULTURAL HALL.

The fact that San Francisco now possesses a Horticultural Hall, will be gratifying to those interested in Horticulture. The Hall is owned by the “Horticultural Hall Association,” the capital stock of which is \$60,000, divided into 600 Shares of \$100 each. The Trustees are—Robert J. Betge, William Meyer, Christian Westphal, E. L. Reimer, and F. A. Miller. It is proposed to enlarge and beautify the Hall, so as to make it worthy of its name.

Make a slow answer to a hasty question.

THE LOS ANGELES ORANGE CROP.

The most of the present year's crop of Los Angeles oranges has been shipped. The entire crop is estimated at about 28,000 boxes. Oranges have been sold at prices ranging from \$7 to \$30 per \$1,000, and the total amount realized will be about \$100,000.

WINE PRODUCT IN THE U. S. FOR 1871.

Mr. Bush, in a lecture before the Mississippi Valley Vine-growers' Association, at a recent session, estimates the product of Missouri at 1,000,000 gallons; Illinois, 1,200,000; New York, 2,250,000; other States east of the Rocky Mountains, 1,000,000; and California, 7,000,000; total 12,450,000 galls.

BEET SUGAR IN COLORADO.

Denvers and other localities of Colorado raise large crops of sugar beets, and the yield of beet sugar there will be immense, when we take into consideration that the dry climate of the eastern slope of the Rocky Mountains is favorable to this industry.

APPOINTMENT.—N. P. Sangford, of Montana, was appointed (Washington, May 14th, 1872) Superintendent of the Yellowstone National Parks.

We have made arrangements to supply the *Overland Monthly*, together with the *California Horticulturist*, for \$4 50 per annum. Subscriptions at this rate should be for one year, and should be paid in advance. Orders directed to F. A. Miller & Co., box 128, P. O., San Francisco, or to the Office of the *California Horticulturist*, 622 Clay Street, will receive prompt attention.

APHIS LANIGERA.

Dr. Kellogg drew our attention to-day to a number of young cones of *Abies Douglassi* which were severely infected by this terrible

pest. He promises to furnish us with the result of his observations on this subject in our next number.

By the way, we notice two errors in his article on "Noxious Insects," page 198, col. 2, for *pages*, read *ages*; and, page 199, col. 1, for *Rogues*, read *Plagues*.

Editorial Cleanings.

DRYING AND PACKING OF FIGS.—It seems, at first sight, that nothing is easier than to dry and pack a box of figs; yet there are little points to be attended to, which, if neglected, will cause disappointment and loss; to these I will now invite attention. Previous to collecting the fruits, provide light wooden frames; battens will be strong enough, if they be not more than six feet by three feet, over which coarse wire-netting is to be nailed, having meshes about an inch square, the object of which will be evident in a moment. The fruit should be not merely ripe, in the sense of being ready for market, but the whole inside of it should look, when cut, like rather thick oil, and the outside just beginning to show signs of shrinking. Very little practice will guide the eye in selecting the right ones. Where they cannot be easily reached by the hand from the ground, the cane contrivance described before will be found useful. Care must be taken not to crush or damage them. Now, the tray, or frame above-mentioned, is placed on any convenient support, close to the trees, and as the figs are gathered they are placed in the tray, always with the little stalk downwards, and the nose of the fig upwards, and each in its own mesh of the iron net. The reason for this is that very often ripe figs open at the nose, and lose all that is really valuable in their inside long before they are dry. Neither should they be handled more than can be helped, for that removes the bloom. So soon as there is no more danger of their contents running out, which may be at any time from a week to

a fortnight, according to the state of the weather and the ripeness of the figs, they may be placed without much danger on large canvas or Macintosh sheets, and covered up, or taken in at night, and exposed to the sun during the heat of the day.

But while they remain in the trays, they must be covered up from damp. The most economic way, as well as the most secure, is to erect strong posts, of any convenient height sufficiently wide asunder to receive the trays into grooves, or upon pieces of wood nailed to the side about nine inches apart, and then throw over them, at about 5 p. m., a tarpaulin or sheet. On hot-wind days it is just as well to leave them uncovered in the uprights, as the current will dry them well without sunshine. Notwithstanding all that has been said, at the end of three weeks or a month, if the weather has not been of the best, it would be desirable to allow them another week on any warm floor where no damp can get at them before packing, for one undried fig will spoil a box or a basket, as it will cause fermentation. There is also another process which hastens the drying of the figs, and which does not appear to have attracted Dr. Bleasdale's attention. It is as follows: Procure some scalding hot lye, made of the ashes of the fig-tree itself. Dip the ripe fruit in this lye for about half a minute. Take them out and drain, spread them out on straw, exposed to the sun, or put them for the requisite time into the drying closet or stove; when sufficiently dry, pack them tight in rows in wooden boxes. Dr. Bleasdale prefers baskets for picking them in. He says: "I consider far more appropriate for this country is the plan usual in the Algarves and some other parts of Portugal, and it consists in packing the figs in a sort of basket, made of the leaf of a sedge, or something of the kind, the substitute for which would be the leaf of the New Zealand flax. These baskets (Alcofas and Alcofinhas) will hold from seven pounds to about twenty pounds; they must be strong. According as the dried fruit is put in, the sides are com-

pletely covered with a double thickness of bay leaves, and the figs pressed firmly down; and when the alcofa is completely full, the mouth or opening is firmly drawn together and sewed with some strong material. The nearest approach to the basket of figs to which I can direct the reader is a basket of dates, and the firm way in which they are packed. Now, the purpose of packing thus tightly is this: It prevents the fruit from throwing out that mealy substance so commonly to be seen, which is the natural fruit sugar, and supposing the fruit to throw it out, by excluding air and moisture, it prevents decay or fermentation from taking place. Perfectly dry figs should have no mealy coat on them. Packed as described above, our dry figs ought to keep for at least one year. So soon as the difference is discovered between fresh dried fruit and imported, the public will prefer our own, though it will be both smaller and darker in color." It is stated that the best kind of fig for drying and preserving is the true white fig, and it usually bears two crops each season.—*Sydney Town and County Journal*.

THE CAROB-TREE. — A correspondent to the *Rural Press* says: "The Carob-tree might be made a very valuable acquisition for California. It is the fruit of this tree that is referred to in the parable of the prodigal son. The 'husks' were the *Pods* of this tree, which contain a small quantity of a sweet substance, something like the honey locust. It is also sometimes called 'St. John's bread.' The carob-tree is of good size, and when the pods become heavy with sweetness, they weigh down the branches on every side, so that they have to be harvested to prevent injury to the tree. This tree would be very valuable in this country, as, after it is once started, it requires no irrigation, and would suffice to feed stock and hogs in dry seasons. Moreover, the more trees we can grow without rain, the more rain we shall be likely to have."

CINCHONA.—From the Monthly Report of the Department of Agriculture for March and April, we copy the following article :

“Since the publication of our February number, containing an article on this subject, (pp. 73, 74), the Department has received several letters from California in relation to the same subject.

“The first is from Arthur B. Stout, M. D., of San Francisco, with a copy of a proposed act “to create and establish a State Botanical and Zoological farm for the experimental culture of all desirable plants of foreign or indigenous growth, available for economic purposes, for the cultivation of knowledge in Zoology, and for the foundation of a public thermal sanitarium for the cure of chronic maladies.” The plan suggested, and to be carried out by legislation, is to appropriate one million acres of public lands (granted by the State or by Congress), forty thousand acres to be divided into four nearly equal and appropriately located farms, so as to obtain all the benefits of different climates, soils, altitudes, and of thermal springs—all to be under one general government, and each to be managed with reference to the object of its institution. As the California Legislature meets only biennially, the corporators desire, to avoid delay, that permission to occupy at least a portion of the lands be obtained from Congress, so that cinchona plants may be procured and set out immediately. F. A. C. Grebner, of San Francisco, writes that he assisted at introducing cinchona plants into Java, under Dr. Junghuhn, and in their cultivation under the present Superintendent, Van Gookum. He also planted over 200,000 cinchona trees in his own coffee plantation, and when they were six years old their bark was sold in Frankfurt, Germany, at the price of bark from Peru. Though acquainted with the British plantations at Ceylon and Nighberry, he confines his remarks to those of Holland, in Java, as the bark is superior to that of British India, and fully equal to that of Peru as regards the quality of the quinine extracted,

though the alkaloid is generally less than in the Peruvian. He says that the shipments of bark from Peru and Bolivia are annually decreasing. The plantations of Java now contain over four millions of trees of the best kind, and in the course of the next year a factory will be erected there to extract the quinine and prepare it for use. Mr. Grebner thinks the climate of Southern California well adapted to the raising of cinchona and coffee, and that Chinese labor there will not be dearer, considering its greater efficiency, than Malay labor in Java. He says that entire freedom from frost can only be secured south of Los Angeles, along the coast of San Diego, extending back into the country some thirty or forty miles; that in this district the average temperature for years has been about 62 deg., the lowest 51 deg., in January; the highest, 73, in August; the rain-fall is ten inches annually, but there are frequent heavy fogs. Wood-land is scarce, but that is no objection. Mr. Grebner believes that capitalists cannot be interested in the subject until one or two successful experiments have been made, and proposes to commence on a small scale, at the same time trying coffee planting, and increase the planting as results may warrant. That success may be attained in growing the cinchona, there is little doubt; but as the coffee-plant requires a temperature uniformly above 55 deg., there is less prospect of success in its culture.”

THE MERITS AND NEEDS OF A COUNTY.—Humboldt County occupies an isolated position with reference to the commercial centres of the State. She has neither telegraphic nor railroad communication with other towns, but relies in a large degree upon shipping as an outlet for her trade. This kind of intercourse is not only slow but uncertain, and often causes the lumbermen and producers of that region to lose the advantages of a rise in the market. The people of the county are very anxious for a railroad connection with San Francisco, but can hardly hope to real-

ize their expectations for some time to come. Eventually, the Sonoma or North Pacific road, now operating to Cloverdale, will reach that county, when its natural resources will place it prominent among the best producing regions of the State. It is said the county could grow flax enough to manufacture all the grain and potato sacks needed in California, and supply every demand of the flax-seed market besides. The county could also support a woollen-mill and beet-sugar factory. Its saw-mills in 1867 furnished 25,000,000 feet of lumber and employed nearly a thousand men. In the same year over 50,000 pounds of wool and 400,000 bushels of prime potatoes were shipped from her principal harbors. It is estimated that over 500,000 acres of her soil are suited for agriculture and 300,000 for grazing purposes. In several instances, 70 bushels of wheat, weighing sixty pounds to the bushel, or 100 bushels of oats, weighing forty-four pounds to the bushel, have been raised, or fifteen tons of potatoes, from a single acre. One would think that a county that can offer such inducements for the construction of a railroad through its territory ought to be able to secure such an improvement without delay.

INTELLIGENT FARMING. — Intelligent farmers no longer confine their attention exclusively to the raising of cattle and grain. They find a well-managed orchard or garden equally profitable, while it contributes greatly to the comfort and happiness of the family.

The full benefit of this general attention to fruit culture, however, can only be obtained when it is skillfully and intelligently pursued. To plant a tree and leave it to take care of itself, can be expected to benefit no one, except it be him who does so, learning, by repeated failures, the necessity of bestowing the right care and culture.

The climate of a great portion of the American continent is pre-eminently adapted to the raising of fruit. The orchardist has everything to encourage him to anticipate great success. With judicious cultivation, there

are few failures, and they only serve to stimulate an intelligent horticulturist to renewed efforts.

Horticulture is destined to take a high position in California. Much has been accomplished in testing the different varieties of fruit, and in determining the best soil, location, climate and exposure. We need, however more facts bearing on these points, and, still more, some system for recording and comparing them. — *Rural Press*.

PLANTING TREES ON THE PLAINS. — We have received from George Pinney, Esq., of Sturgeon Bay, Wisconsin, a copy of a memorial to Congress, introduced by Mr. Allen, in the Wisconsin Legislature, asking Government aid in making "large plantations of forest and timber trees in various sections of the Western Plains."

The memorial represents:

First: That the State of Wisconsin, together with other of the Northwestern States, are suffering severely through the inclemency of the western and southwestern winds, which burn and wither in Summer, and greatly increase the frequency and intensity of our drouths, and which are dry and severely cold in Winter, materially obstructing the growing of fruit and many other productions of the soil.

Second: That it is well settled among the meteorologists that these winds, that produce the extreme inclemencies of our season, cross in their course the arid plains lying to the eastward of the great ranges of mountains near our western coast, where they are wrung of their moisture, and in that condition are forced through the Northwestern States, producing the extreme severities of both Summer and Winter.

Third: That those Western Plains are destitute of trees, and that history and science prove that trees exercise a marked influence upon the atmosphere, not only increasing its humidity, thereby reducing its liability to become either hot or cold, but do actually impart warmth to a cold atmo-

sphere, and also cool it when very warm, and do increase and regulate the rain fall; and that these effects are realized not only in the immediate vicinity of the forests, but are extended in a greater or less degree over the whole path of the winds passing the forests in their course.

This subject of tree-planting in its effects upon climate, excites more and more discussion, and the Kansas Pacific Railroad and dear Congress are already turning their attention to the matter.

Facts furnished in a paper of M. Mathieu, Professor in the School of Forestry, at Nancy, read before the Congress of Agricole Libre, held at Nancy in 1869, seem worthy of being called to notice in this connection.

The experiments described in M. Mathieu's paper had been carried on during the last eight months of 1865, and also in the years 1867 and 1868, and were aimed at the following points:

1. The influence of the forest state upon the rain-fall of a country. Two points, some miles distant from each other, one in the wooded and the other in the cultivated country, nearly the same height above the level of the sea, and in other respects alike, were chosen, and the amount of rain-fall compared, with the following results:

RAIN FALL.			
Time	In open country	In forest country	Excess in forest
8 mos. 1866...	23.25 in.	27.24 in.	3.99 in.
8 mos. 1867...	33.93 in.	37.41 in.	2.68 in.
8 mos. 1868...	24.84 in.	26.48 in.	2.64 in.

Showing that a considerable excess of rain fell in the forest country.

2d. The amount of moisture that the covert of a forest prevents from reaching the earth. This experiment was made by comparing the amount of rain caught by a rain gauge in the open ground with that caught by a rain gauge embracing a tree in the dense forest. The results were:

Time	Under the trees	In open ground	Difference
8 mos. 1866...	25.90 in.	26.20 in.	.30 in.
8 mos. 1867...	34.17 in.	36.41 in.	2.24 in.
8 mos. 1868...	27.67 in.	29.48 in.	1.81 in.

Showing that less rain reached the ground

where the trees stood, than in the open ground immediately about them; but yet more than fell in the open country, as shown by the previous table. Thus:

Time	Under trees rec'd	In open country rec'd	Difference
8 mos. 1866...	25.90 in.	23.25 in.	2.65 in.
8 mos. 1867...	34.17 in.	33.93 in.	.24 in.
8 mos. 1868...	27.67 in.	24.84 in.	2.83 in.

3d. The influence that the wooded condition of a country has upon evaporation: Vessels containing and replenished with equal amounts of water, were placed, one in an unsheltered nursery of forest trees, and the other in the forest itself, and observed in 1867 and 1868. The evaporation in the unsheltered ground went on four times as rapidly as in the forest.

4th. The influence of forests upon temperature: These experiments were only commenced in 1868, and give no complete results, but so far as conducted, went to show that the annual mean temperature is less in the woods than in the open ground; the difference being greater in Winter and least in Summer. The temperature varies but little between day and night in the forest, whilst it changes a great deal in the open country.

In these facts, we think, are contained principles that have an important bearing on Agriculture and Horticulture, to which we shall, at some time, have occasion to allude.—*Prairie Farmer.*

THE MOSS ROSE.—The Angel who takes care of the flowers, and sprinkles upon them dew in the still night, slumbered on a spring day in the shade of a rosebush. When he awoke he said: "Most beautiful of my children, I thank thee for thy refreshing odor and cooling shade. Could you now ask any favor, how willingly would I grant it!" "Adorn me, then, with a new charm," said the spirit of the rosebush in a beseeching tone. So the angel adorned the loveliest of flowers with a simple moss. Sweetly it stood there in its modest attire, the most beautiful of its kind.—*Krummacher.*

CALIFORNIA BUTTER IN NEW YORK.—California is not entirely satisfied with giving us gold, fruit, wine and flour, but also sends to us butter. The first lot arrived here on Tuesday, and has attracted a great number of spectators, not only from members of the trade, but also newspaper men and others interested. One of our reporters ascertained that it was made on the Pacific Coast and shipped hitherward from San Francisco. On inspection it was found that the butter was of the very best quality, notwithstanding it had been twenty-two days on the road, instead of sixteen, as expected.

The butter was shipped to San Francisco from the dairies, where it was made in two-pound rolls, each roll being wrapped in a cloth saturated with brine and packed in cases containing from sixty to one hundred rolls each, or in casks, each of which held 140 rolls. In the casks the butter, after being duly rolled up, is covered with a strong brine, and reaches here as pure and sweet as any butter could be. This first shipment has been made by Messrs. T. S. Doremus & Co., of No. 178 Duane Street, and Mr. J. S. Martin, of No. 165 Chambers Street. These gentlemen conceived the plan of making the Pacific Coast supply the East with necessaries, and carried it out to the point of making themselves factors of the shippers and manufacturers.

If this new movement in butter proves as successful as it now promises, a new industry will have been opened to California.—*N. Y. Standard.*

INDIA RUBBER TREES.—The belt of land around the globe five hundred miles south of the equator abounds in trees producing the gum of India rubber. They can be tapped for twenty successive seasons, without injury; and the trees stand so close that one man can gather the sap of eight in a day, each tree yielding on an average three tablespoonfuls daily. Forty-three thousand of these trees have been counted in a tract of land thirty miles long and eight wide.

FERTILIZER FOR HOUSE PLANTS.—A writer in the *Ladies' Floral Cabinet* says: "An ounce of pulverized Carbonate of Ammonia dissolved in five gallons of water, makes a capital fertilizer for all plants. If you cannot obtain this, but have a chicken coop and barn-yard close at hand, you can still procure fertilizers. To two table spoons full of the oldest chicken manure, dried thoroughly, add a point of boiling water; stir it until dissolved, and add enough water to make the color of weak tea; water with it quite warm. Horse or cow manure is always very good applied in the same manner.

ANTIDOTE FOR POISON OAK—We find the following in an exchange: A standing antidote for poison by oak, ivy, etc., is to take a handful of quicklime, dissolve in water, let it stand half an hour, then paint the poison part with it. Three or four applications will never fail to cure the most aggravated cases. Poison from bees, hornets, spider bites, etc., is instantly arrested by the application of equal parts of common salt and bicarbonate of soda, well rubbed in on the place bitten or stung. Before retiring at night, apply sweet-oil.—*Alla.*

A FRENCH writer thinks that the very frequent fires which occur in pine forests in summer, far from any habitation, are not due, as has been commonly believed, to careless or mischievous people, but to the action of the sun's rays concentrated by the globules of rosin which exude from the trees. These act as burning lenses and start the conflagration, which, of course, spreads rapidly among the inflammable material.

In the Royal Botanic Garden, of Edinburgh, climbing roses are trained to living posts, consisting of straight poplars, closely pruned of leaves and branches, excepting a small branch at the top.

The first Cherries of the season were received on Wednesday, May 1st, from Marysville, and sold for \$1.75 per pound.

THE

CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

Vol. II.

JULY, 1872.

No. 8.

FIGS FOR PROFIT.

From the earliest period that the plough and the spade have been brought into requisition for the cultivation of the productive soil of California, which, aided by a most genial and varied climate, admitting with equal success the growth of sub-tropical trees and shrubs in one locality and the cultivation of fruits adapted to the more northern climates, in another, it has been the misfortune of our farmers and horticulturists to be continually in search of the most desirable, most profitable and best adapted crop to raise. The consequence has been, that experiments have been made with almost everything which our prolific soil and genial climate are capable of producing. Such experiments are prone to be made in all comparatively new countries, but the results have established facts, which every cultivator should himself store up for his guidance in the future. However, the mere fact that a certain plant or tree will thrive and be productive in this country, does not necessarily insure a profitable return from its culture; and it becomes very important to ascertain, before we embark in any such enterprise, what the probable chances are for a pecuniary success, *i. e.*, for profit, and whether the necessary knowledge and the requisite means are at hand to conduct our undertaking to a final success.

It is useless to embark in Grape Culture

unless we have the proper soil and location, with the necessary knowledge of the business, and a market for the produce, or the means for converting the fruit into a fit condition for either export or storing. We may say the same with regard to Silk Culture, also of Ramie, Cotton, Sugar-Beet, Tea, etc.

But to the point: How about Fig Culture for profit? We know that Fig trees will grow and bear fruit spontaneously in California, as we have tasted some very good Figs, which were thus grown on California soil; and we feel very much like the editor of the *Plantation*, who, while eating some fine Smyrna Figs which had been presented to him, permitted his thoughts to suggest as follows:

“This fruit was plucked thousands of miles from this spot, by an Ottoman hand. It was dried under an Oriental sun. It has sailed over the Mediterranean. Passing through the Straits of Gibraltar, it has crossed the Atlantic Ocean to New York. From New York it has sailed southward, doubling Cape Hatteras and landing at Savannah. From Savannah it has traveled three hundred miles by rail to Atlanta, and, as the finale of its perils by land and sea, it was being devoured in his sanctum by a remorseless Georgia editor.”

“Well, why was this Fig brought here? Is the Fig a rarity with us, like the Cocconut, or Pine-apple? On the contrary, in

portions of the South, it is the commonest of fruits, growing like a weed without cultivation. Is our Fig inferior? We cannot believe that Turkey can produce it in greater perfection. Is there any mystery in the art of drying and preparing it for market? We are told that the process is cheap and very simple. Yet while this fruit grows so readily and in such perfection, thousands of dollars are annually expended for Figs from Turkey?"

Admitting all this to be so—and we believe it to be—and knowing also that these circumstances apply to us in California with equal force, yet we would have the matter of Fig Culture more carefully taken into consideration, before advising any one to enter into the business for profit. Many people have an erroneous idea, because Figs, Grapes, Apples, Cherries, etc., are grown to perfection in California, and are offered in so fine condition in our markets, that they can be grown everywhere.

Orchards, vineyards and other plantations have been located without any regard to soil, aspect and climate, and many of these enterprises have failed on that account, and if their proprietors or occupants will not admit this to be the case, it is for some reserved reason; however, their products, when presented in our markets, are sufficient proof of what we have said.

The Fig is a sub-tropical fruit, and the climate within the boundaries of California which is best suited to it is, perhaps, that of Sacramento, Marysville, Stockton, Napa, Sonoma, San Luis Obispo, Los Angeles, San Diego, etc. Fig trees may be grown in almost any other locality for shade, (it will make a very handsome and effective shade tree,) or its fruit for family use, but to compete with the Smyrna Fig, it becomes imperatively necessary to select our warmest localities and to give them a deep, light soil. For two or three years they should be irrigated once or twice a month, which may be discontinued as soon as the tree begins to bear fruit, although with an occasional wa-

tering during June and July the fruit will become much larger.

Bearing Fig trees should be treated thus: Clip off the ends of the young shoots early in Spring, before the tree shows any sign of growth, and as soon as the fruit begins to form along the stem, break off the leaf-buds adjoining, in order to throw the entire strength of the sap into the fruit. This is very essential, and gives also more room to the fruit, which it requires in order to acquire flavor. Let the fruit ripen well, and after gathering cut off the branches which have produced the fruit, inasmuch as young wood will bring you larger and better fruit than old wood. All this causes some labor, but if we wish to raise Figs equal to the Smyrna Fig, we must not mind this additional work. About the drying process, we refer to the article on page 219 of our last issue.

Now all of the points of which we have spoken are easily enough attended to, but the most formidable difficulty to overcome, is the obstinate and senseless though widely prevalent prejudice in the mind of the consumer, to prefer an imported article to that produced at home, even although the latter may be obtained equally as good in quality as the former; but this difficulty can also be mastered by the energetic and persevering coöperation of the producers, by placing their superior and genuine article before the public at a reduced rate until they rule the market. It can be done, and is only a matter of time and perhaps of some slight sacrifice at the beginning. There ought to be some satisfaction in establishing another important branch of industry to which California is entitled, and which will prove profitable under judicious management.

THOMAS O'BRIEN, a well known florist of Sacramento, has lately shipped flowering plants to Salt Lake City, for sale among the Mormons. Our friend O'Brien seems determined to open a new field for his surplus stock.

VERBENAS.

The name *Verbena*, is supposed to be derived from *Verbum*, (Word,) and may be accounted for by the historical fact, that the Romans gave their oath by this weed. However, this must have more particular reference to *Verbena officinatis*, which is in reality not the *Verbena* from which our present numerous varieties have been raised. The mother of our Garden Verbenas is, undoubtedly, *Verbena chamædrifolia*, discovered by Feuillée at the beginning of the last century near the Rio de la Plata, of South America. The color of the original flower is a bright red.

The Verbenas, as a class, form a most important and prominent feature in our gardens as bedding-plants, in masses as well as for the purpose of filling up the borders; and as their flowering season, in California at least, in its milder localities, is continuous or nearly so, they have become indispensable to the florist and amateur.

Undoubtedly the art of Floriculture has achieved most wonderful results in the improvement of many tribes of the floral world, and the *Verbena* rivals them all in brilliance of color and productiveness of flowers, to which qualities is now added the delicate perfume which many of the finest varieties possess.

To some extent Verbenas are divided into groups, certain qualities being characteristic of them; this, in some instances, we believe, is carried too far for practical purposes.

We find, first, the *Verbena hybrida*, which includes many large flowering varieties of diverse colors, and comprises most of the Verbenas in general cultivation here. They are a decided improvement on the older varieties in point of size, color and habit.

Another still more attractive and interesting group is *Verbena auriculæflora*, resembling in form and character the well-known *Auricula*, only being smaller in size, all having a white eye in the center.

This group originated, we believe, with the French as well as the English, and by both they are grown to perfection.

The next group, which is particularly interesting and novel, comprises the varieties of the *Verbena hybrida striata*, or new *Italian striped*, similar to the Carnations.

We will close these divisions with the *Verbena odorata*, in which the fragrant varieties are included. Although all Verbenas possess more or less fragrance, we only refer here to those which are new and most remarkable in this particular character.

The varieties of Verbenas are almost endless, and new ones are produced every season from seed. We shall particularize a few of each group, from the catalogues received this year.

Of VERBENA HYBRIDA, we mention—

Mrs. Douglass, color cherry-pink;
Magnum Bonum, violet-crimson;
Goliath, brilliant scarlet;
Defiance, dazzling scarlet;
Mrs. Dick, pure white;
Challenge, dark maroon;
Calvert's blue, deep blue.

VERBENA AURICULE FLORA:

Acme, deep maroon, yellow eye;
Crimson king, blood-crimson, white eye;
Gazella, deep blue, white eye;
Loyalty, scarlet-crimson, black eye;
Peerless, scarlet, white eye;
Rising sun, crimson, white eye.

VERBENA HYBRIDA STRIATA:

Jackson's seedling, white striped-crimson;
Hattie, blue and white-striped;
Punctata, spotted and striped with crimson.

VERBENA ODORATA:

Ultra-marine, deep blue, fragrant;
Excellent, indigo-blue, fragrant.

The propagation and cultivation of the Verbenas requires no skill; they thrive luxuriantly here in all of our soils; they will do

well in our sands, if sufficiently manured; the best soil we can give them is light loam. We find that by permitting plants to become old, their appearance lacks the neatness which one, two and three year old Verbenas possess; nor are the flowers so perfect as on young plants; they exhaust the soil rapidly, and a good top-dressing of manure should be given annually. The soil should always be well cultivated around them. We advise amateurs to plant out some new and young plants every year, by dividing old roots or by purchasing the varieties desired, as they are cheap enough; but we would not make it a practice to replant them in the same spot always, but prefer to change about in regular rotation. The best plants are grown from small cuttings, such as our florists use for growing them in large quantity, but glass cover is required to root them in this way. After roots have been formed—which is within two weeks—they should be potted separately in small pots, and placed close under glass, in order to produce well-branched and bushy plants; which are always preferred by purchasers to those with long straggly branches. After they have become established in those pots, they may be transferred into the open border at any time of the year; if this is done in summer, all they require is newly prepared soil before planting and a thorough watering afterwards.

Verbenas are trailing plants, as everybody knows, and to grow them in good shape and uniform, the branches, which are thrown out in rapid succession, should be pegged down with little wooden pegs wherever they are desired to develop themselves. These branches soon form new roots, wherever they are brought into contact with the soil, and establish themselves as independent from the mother plant; a large circle can thus be formed within a few months, and the product of flowers is most wonderful. The effect is a most pleasing one, and the contrast of color most beautiful, such as no other class of plants can produce in so short a time and for so long a period.

EVERGREENS IN THE EASTERN STATES.

We hear through our Eastern exchanges continuous complaints that many of the Evergreens have died during the last two years. This remarkable phenomenon is attributed, principally, to the severe and dry winters and to the scarcity of rain during summer.

We have no doubt that the extreme cold of our Northern localities is too much for many of the Conifers lately introduced; but when it comes to the scarcity of moisture, we cannot very well comprehend how Evergreens in the East should suffer more than the Evergreens of the Pacific Coast—the rain-fall of the Eastern States being certainly far in excess of the amount of moisture deposited on this Coast. Yet we do not hear of instances where our Evergreens have thus suffered, save in rare and extreme cases. However, a similar fatality has come under our observation, in the dying out of some of our native deciduous trees; this fact is coupled with the extreme scarcity of some of our beautiful wild flowers. This may be attributed to various other circumstances, of which we should not entirely lose sight. Certain native trees and shrubs seem to dislike the proximity of civilization, and absolutely refuse to subject themselves to our notions of cultivation; the very proximity of human habitations, and the inevitable changes arising therefrom, seem to demoralize native vegetation as well as native animal life—of this the present condition of our Indians is a fair instance. Yet there is no doubt that the extremely dry seasons of the last two years, in addition to the other causes, have caused a falling off in our otherwise luxuriant vegetation.

The scarcity of native herbaceous plants may be attributable principally to the want of the necessary moisture and to the fact that our cattle, by thousands, are roaming over the hills and valleys and devouring everything which is digestible, and in consequence very few plants are permitted to ripen their seeds or even to come to flower.

Although, practically speaking, this state of things has not yet subjected the farmer to any inconvenience, yet may it not be reasonably supposed, that a falling off in the vegetation will lessen the chances for abundant rain and moisture?

ACHIMENES.

Ere long we shall see this charming bulbous-rooted plant again in flower, and wherever it presents itself it is sure to meet with friends and admirers. Producing as it does an abundance of flowers, which are particularly effective in their rich and striking colors, the Achimenes should be a great favorite with amateurs.

We will say a few words about its proper cultivation. The Achimenes is a greenhouse plant and is also well adapted for the window, but it will not thrive with us in the open ground. The proper season to plant the little bulbs, is at any time from May to July. By planting at various times, we succeed better in keeping up a succession of flora for a number of months. Plant in shallow pots, one third of which may be filled up with broken pieces of pots, over which put a layer of moss, which is easily obtained, then fill up with a soil consisting of one half leaf-mould, one half light sandy loam, and a small quantity of coarse sand and bone-ashes. Plant the bulb about one half to three fourths of an inch deep, eight to ten in a six inch pot, and place them close under glass. The young shoot will soon make its appearance, and it is advisable to fill up with soil a little around the stems, while they are pushing ahead. After the plants have grown a few inches high, it will be well to pinch off the shoots, which may be used as cuttings and will flower during the same season. Pinching off the tops will make the plants bunchier and more compact and secure a greater profusion of flowers. During their season of development and flowering, they require a good and regular supply of water, which should not, how-

ever, be any colder than the air in which they grow. Draft and fresh manure are injurious to the vegetation of the Achimenes.

After flowering, and when the foliage has decayed, it is best to take up the roots and bury them all in a pot filled with sand, which may at first contain moisture, but should be kept dry during the winter time and should be placed in a protected locality, as, if exposed to too much cold, they are apt to perish. They should remain undisturbed in that condition until the time for again planting them.

There are about ten or twelve varieties of the Achimenes, of which we will name: *A. coccinea*, flowers of a rich scarlet, and abundant; *A. coccinea rosea*, flowers rose-colored, very fine; *A. longiflora*, flowers of a beautiful blue, profuse bloomer; *A. multiflora*, flowers blue and fringed; *A. gloxiniaeflora*, flowers white and fragrant; *A. cupreata*, flowers scarlet; *A. grandiflora*, flowers large bright purple.

Care should be taken that the bulbs of the same varieties are kept separate and by themselves, as the habit of the different varieties is not exactly the same, and a uniform growth is desirable.

SOUTH YARRA NURSERIES.

Every gardener will at once confess that few days in the year are more unfavorable on which to visit a nursery, than a scorching hot wind day in January. However, not having seen a few of the latest novelties introduced by Mr. Harris in the spring, we did not wish to miss a sight of them in the summer; therefore, all the same for hot winds, we paid a visit to this well known establishment, (and assuredly it is not the fault of its enterprising proprietor if it be not well known), Mr. G. Runnington, who is in charge during the temporary absence of Mr. Harris from the colony, kindly acting as guide. We need not tell the horticultural readers of *The Weekly Times* where this nursery is, or what sort of things are grown there,

for most classes of trees, plants, and roots are well represented, in considerable numbers. It is not to be expected that quite the extreme freshness of a provincial nursery is to be seen here, situated as it is in the outskirts of our ever increasing metropolis. Though free from the more deteriorating influences of the heart of the city, it still must bear its share of the dust, smoke, etc., which a large city always more or less engenders. The South Yarra Nurseries have long been known and noted for their excellent collection of coniferæ cultivated in pots; and we found a fine lot of young plants in capital health, notwithstanding the very trying hot weather lately experienced. Amongst the most noticeable were:—*Araucarias imbricata*, *A. excelsa*, *A. Bidwilli*, and *A. Cunninghams*; of these we found well-grown, compact plants succeeding admirably. *Cedrus deodara*, and *C. Atlantica*; *Cryptomeria elegans*, and *C. Japonica*; *Cupressus Lawsoniana*, *C. Lambertiana*, *C. torulosa*, *C. funebris*, *C. Corneyana*, and others. Amongst *Piceas*, *Nordmanniana*, or *Nordmann's silver fir*, was looking particularly well. The *Pinus* family were well represented, fine lots of young *Pinus insignis*, *P. excelsa*, *P. halepensis*, *P. Benthamiana*, *P. pinea*, *P. sylvestris*, and a number of others are thriving capitally. The beautiful genus of *Retinospora* was here; the majority of which are charming dwarf shrubs, and very suitable for small gardens. *R. plumosa* has a very delicate and fern-like appearance. *R. squarrosa* is very distinct, of glaucous green color, and pyramidal habit.

We noticed nice plants of the umbrella tree, *Sciadopitys verticillata*, and also the maiden hair tree, *Salisburia adiantifolia*; this is grown in Japan for the sake of its almond-flavored fruit, its foliage is handsome and unique. *Thujaopsis Bidwilli* (new), *T. borealis*, *T. dolabrata* were in good form and condition. Of *Thujas* we noted excellent plants of *Thuja Lobbi*, *T. variegata*, *T. orientalis*, and others; a fine stock. There were also a nice lot of young *Wellingtonia gigantea* coming on rapidly, near to which was a pit of very good

Picea Webbia. Hardy ornamental trees and shrubs are also cultivated largely; the collection contains most kinds of merit, and includes some of the latest additions to our ornamental plants. The *Jambosa acida*, from New Caledonia, is a distinct and curious plant, bearing a fruit not unlike a small pear, with a very acid flavor. *Melia azederach*, or bead tree, is very ornamental, and of rapid growth, affording excellent shade, at the same time it bears a handsome flower; of this there was a nice lot. *Ficus* of various kinds, *Magnolias*, *Phytolacca dioicia*, and the various kinds of *Pittosporums* are largely grown and look healthy. Considerable space is devoted to the growth of hardy climbing plants; *Clematis*, a great variety, including handsome novelties. *Bougainvillea spectabilis* and *glabra*, *Loniceras*, *Mandevillas*, *Passifloras*, a great variety. *Tecomas*, and *Tacs-onias*, various *Tropæolums*, and many others. Herbaceous flowering plants and bulbs are not by any means neglected, many of the more fashionable kinds being grown extensively. Of *Gladioli* we noticed some very fair spikes, although the hot weather had almost spoiled them. *Liliums* were in force, including the ever-charming *auratum*. *Pentstemons* are grown numerous, the collection containing some capital new kinds. Amongst bedding plants the new set of *Verbenas* lately raised by Mr. G. Brunning were, with one or two exceptions, looking very excellent, being an advance in the right direction. Numbers of bedding *Pelargoniums*, both double and single, were exhibiting their heat-standing qualities; we remarked as good, *Madame Rudolph Abel*, a new dwarf-growing, and free-blooming, double-flowered variety, *Sapeur Pompier*, a large well-shaped, double, orange-scarlet flower, foliage handsomely zoned. *Claudius* and *E. G. Henderson* are also excellent new kinds. The ivy-leaved variety, *L'Elegante*, proves itself to be very useful and unique. A capital collection of the new kinds of improved *Chrysanthemums* were bidding fair to make nice plants; and the same can be said with regard to *Fuchsias*,

of which there are a numerous variety. The collection of Dahlias, which is large, has lately received a considerable addition by the arrival of new ones from England, some of which will shortly be in bloom, when their qualities can be tested. Petunias (double and single), show and fancy Pelargoniums, Roses, Verbenas, etc., are well represented; while in the glass structures, Indian Azaleas, Camellias, Begonias, Coleus, Caladiums, Gloxineas (a large collection), Ferns, Marantas, Pleroma elegans, Crotons, Dracænas, and Achimenes, all receive attention. Amongst choice plants, *Sanchezia nobilis variegata*, *Allamanda Hendersoni*, *Pleroma sarmentosa*, *Gardenia florida variegata*, *Fittonia argyreaurea*, and *Bignonia argyrea violescens* are all valuable in their respective divisions, and they appear to be receiving extra care and attention. In the stool-ground we noted an extraordinary collection of ornamental shrubs and other plants embracing several rare and beautiful things; such as our old friend *Pimelia rosea*, some fine Mahonias, Cotoneasters, *Staticea*, *Cerasus ilicifolia*; a beautifully variegated variety of *Salix caprea*, and numerous others. Fruit trees, hedge plants, culinary roots, herbs, etc., are also cultivated, and each department we found clean, and in good order. The greenhouses and various glass pits, as well as all the shelter-houses, were evidently well looked after, which, in a season like the present, is no easy matter. Persons looking at gardens not over-critically would perhaps not exactly see the difference that this last month has made; but to those having the care and management of large collections of pot plants it becomes daily manifest, and the difficulties of the task of keeping them in good health is by no means light. Mr. Harris has long been known as a most persevering and unostentatious cultivator, and at the present time there is every appearance of his long retaining this satisfactory standard.—*Melbourne Times*.

NEW JERSEY has six thousand acres planted with cranberries.

AZALEA CUTTINGS.

In answer to a correspondent, "T. E.," about the treatment of Azalea Cuttings, the *Gardeners' Chronicle* says:

When the young wood of the present season's growth is half ripe, it is in a proper state to make cuttings of; when it is in that condition, will depend upon the time the plants were started into growth. They will strike freely at any time of the year when the wood is in the proper condition. Insert the cuttings, not too closely, in six inch pots, in silver sand; cover with a bell glass, shade from the sun; keep decayed leaves well removed, and keep the sand moist. It is immaterial whether they receive bottom heat or not. As soon as struck, pot off the cuttings into three inch pots in good peat and sand, and treat them as stove or intermediate house plants for two years, and they will be as large at the expiration of that time as they usually are met with at double that age; they will then be nice small blooming plants, and should have a rest in the winter.

GRAPE GROWERS' ASSOCIATION

OF
Sonoma, Napa and Solano Counties.

This Association holds monthly meetings for the purpose of discussing subjects of vital importance to the Grape and Wine interests.

At a recent meeting held in Napa, the effects of the late Spring frosts came up for discussion.

The facts brought to light upon this subject may be summed up as follows:

The loss of Grapes in the above counties from the effect of frost may be from 15 to 25 per cent.

Vineyards which had been considered as safe from frost have been cut off by it this year, and up-hill lands have not been excepted.

The vineyards on the Western slope of the Valley escaped serious injury, while those of the Eastern slope suffered more severely.

[Personal observation among the vineyards of the Eastern slope has demonstrated to us that the up-hill plantations escaped the late frosts entirely, which is more particularly due, perhaps, to their protected situation from the cold winds of April and May.—Ed.]

In regard to the relative hardness of varieties, the conclusions arrived at were, that Rieslings, Chasselas and Fontainbleau had suffered less from frost than other more vigorous growing varieties.

The attention of the Association was called to the premiums offered by the State through the California Vine Growers' and Wine and Brandy Manufacturers' Association at the coming State Fair; and the absence therefrom of a recognition of wines older than the vintage of 1870, was severely criticized.

The following resolution was passed:

Resolved, That it is the sense of this Association, that in the award of premiums for wines, through the "Vine Growers' and Wine and Brandy Manufacturers' Association," all vintages from 1860 should be included for competition.

The next meeting of the Association will be held in Sonoma, June 1st.

PROCEEDINGS

Of the Meeting held in Sonoma, June 4th.

[From the Napa Register.]

A. S. Edwards, from the Committee on "Frost," reported that on further investigation, the Committee are led to the conclusion that the grape crop in Sonoma and Napa Counties will not suffer an average reduction from the effects of frost beyond 15 per cent.; as, although many vineyards had sustained great damage, on the other hand, there are districts where no damaging results have been experienced. The loss of crop will be fully met by the young vines coming into bearing, and hence the crop will not be less than that of 1871, if the vines are well set.

A Napa member remarked, that in some varieties the promise is not equal to last

year's. This is especially the case with his Hamburgs, and with shy, or uncertain bearers generally; but he thought it might be expected in all vines bearing heavily the year before, as it is well known that a heavy productive year impairs the bearing capacity of vines for the succeeding year.

The Sonoma members thought the crop of this year, independent of last, promised to be fully equal to any previous year. In regard to Hamburgs, the promise was especially flattering.

On motion, the Committee was continued, with instructions to report any fact of interest that might be developed in connection with the subject, in the course of the season.

The Chair caused to be read the following item, from the report of the Commissioner of Agriculture for April:

"WINE PRODUCT OF 1871.—In a paper read before the Mississippi Valley Vine Growers' Association, at a recent meeting, Mr. Bush estimated the production of Missouri at 1,000,000 gallons; Illinois, 1,200,000; New York, 2,250,000; other States east of the Rocky Mountains, 1,000,000; California at 7,000,000: total, 12,450,000. Mr. Bush predicts that St. Louis is to become the center of this interest—another Bordeaux for the distribution of wines."

J. A. Lockwood remarked, that as California is the principal source of the present and prospective supply of American wines, the idea of St. Louis occupying the prominent place as assigned by Mr. Bush, will not find ready acceptance. It is more probable that Vallejo will attain this distinction. The site of Vallejo, however, may be more aptly compared with Xeres and St. Mary's, the Sherry entrepot of Spain, where crude wines are stored for ripening, until sold and lightened on board ship in the Bay of Cadiz. It is understood that a wealthy company will shortly build wine-houses at Vallejo, to meet a want urgently felt at this time by grape growers. As Mr. Harazthy, of that city is present to-day, the meeting would listen with interest to any statement of the plans of the

Company he may be disposed to communicate.

Mr. Harazthy, in response, stated that the "Land Improvement Association" of Vallejo, of which General J. B. Frisbie is the Business Manager, has in hand the sum of \$250,000 to be expended in the development of the wine business in Vallejo. That the Company propose to proceed at once to the erection of a commodious wine-house on the Railroad, for the storage of wine. Their primary object is, to lend money at moderate rates of interest on wines that may be stored with them; thus doing away with the necessity of vineyard proprietors putting up costly buildings on their own premises, or sacrificing their wines at forced sales. If their cellars are not filled in this way, they will enter the market as purchasers, expecting to confine their operations to the products of Northern California. Competent persons will be employed for the care of wines, among them an expert, as appraiser, to estimate their value, in order to determine the sum of money to be advanced upon them. The price of storage will be merely sufficient to cover expenses. It will be to the interest of the Company to make their wine-house known to the trade at home and abroad, and to give every assistance in their power to have their customers' wines quickly and advantageously disposed of. The Company, likewise, propose to rent casks, and thus obviate the present necessity of vineyardists employing a large capital in that direction. The rent of casks, like the charge for storage, is not intended to be a source of profit. The profit of the enterprise is expected to be derived from the money advanced on wine deposited in their wine-house.

Leonard Goss offered the following resolution, which was adopted:

Resolved, That the proposed erection of buildings in Vallejo, by the "Land Improvement Association," for the storage of wines, is, in our judgment, calculated to benefit the grape-growing interest, and is entitled to our best wishes and support.

G. L. Wrattan, of Sonoma, called the at-

tention of the Association to the subject of the taxation of vineyards and their products, as effected by recent legislation. There has been some complaint of the alleged inequality of assessments, and it would be prudent to communicate with the Board of Equalization, with a view to a proper understanding of the subject. We would therefore move that a Committee of three, consisting of Messrs. Snyder, Krug, and Lockwood, be appointed to communicate, personally, with the Board of Equalization to ascertain their views and purposes with regard to the appraisement of vineyards and wine, and to take such action as may be necessary for the protection of the interests of viniculturists.

A full discussion by Messrs. Wrattan, Goss, Walton, Craig and others, followed, when the motion was carried.

After other business, on motion of C. Krug, of Napa, the Association adjourned to meet at St. Helena, on Saturday, July 13th.

JNO. A. LOCKWOOD, *Sec'y.*

ROSEBUDS.

The commercial value of Rosebuds, at special important holiday seasons, would astonish the ordinary lover of flowers. Peter Henderson, in an article to *Hearth and Home*, gives a few ideas of how often the dainty Rosebud brings its high price of one dollar: "Twenty years ago Camellia flowers retailed at from fifty cents to one dollar each, and no piece of flower-work was thought complete without them. Now they are at a discount, and do not, throughout the season, average half the above named price. Now Rosebuds, that then were not worth as much by the dozen as a single Camellia, are now nearly of equal value, and some particular kinds even more so. One of the leading florists on Broadway informed me that in the week ending December 2d, he sold one hundred buds of the Mareschal Niel Rose for a hundred dollars, for which he paid the grower fifty dollars. 'Tea' Roses, as they are called, are required this season in every basket or bunch of flowers, and the bouquet makers are nearly driven

to their wits' end to get them. The fashion for Tea Roses has already spread to the country towns, and hardly a day passes that orders are not sent to us that we cannot fill. Church fairs, which did not formerly invest in our expensive and perishable commodities, now find that the Tea Rosebud, for the buttonhole, is sought after by hundreds of purchasers. I was waited on the other day, by the Flower Committee, for a Church fair in one of our suburban towns. The first item on their list was three hundred Tea Rosebuds. The wholesale price was twelve dollars per hundred, yet they were much disappointed that only one hundred, instead of three hundred, could be spared. The number of glass structures for growing Rosebuds, in the vicinity of Boston and New York, has probably been doubled during the past year, yet the price has advanced one third. The kind mainly grown are *Bon Silene* (carmine purple) and *Safrano* (orange yellow). The *Safrano* is popularly known as the Tea-rose, but there are a great many others belonging to this class. The *Marechal Niel* (golden-yellow) and the *Lamarque* (white) are grown, but not so extensively as the 'Tea' varieties, as they require greater age before they begin to flower, and being climbers, flower best when trained to trellis-work. The large price paid for the buds of the former, however, will no doubt stimulate to its more general cultivation.—*Cent. Un. Agriculturist.*

THREE BEST ROSES.—Fifteen of the most distinguished rose growers in England were separately asked to name thirty six roses, and out of that number to designate twelve which they considered the best twelve. The result was that of the roses which were named, only three were on the record named by all as worthy to be placed on the first twelve. These three roses ought to be universally known, as every one who cultivates flowers wants the best roses as a matter of course. They are: 1. *Marechal Niel*; 2. *Baroness Rothschild*, 3. *Marie Baumann*. It will be observed that at the head of the three stands *Marechal Niel*, sweetest of the sweet.

Pacific Rural Press.

ORCHIDS.

(Continued from page 194 of last number.)

We promised to give, in this number, some practical hints on Orchid culture, and name some of the most popular varieties. Our experience in Orchid culture having been rather limited, we shall quote extracts from the exhaustive articles supplied by Mr. James Taplin, Manager to Mr. George Such, of South Amboy, New Jersey, and published from time to time in the *Gardeners' Monthly*.

“*CYPRIPEDIUM INSIGNE*.—This is one of the people's Orchids; it is cheap, very easily grown, and very free blooming; it will grow and flower well either in a hot or cold house, and may be placed in the open air from June to September.”

[We would say, here, that this rule cannot apply to the climate of San Francisco, nor even to any portions of our State. Orchids require a moist atmosphere, which we lack in California, and it is our opinion that they must be treated by us strictly as greenhouse plants, establishing the requisite moisture by frequent sprinkling.—ED.]

“If grown in a hot house, the Orchid will flower in October; and, if kept cool and shaded, the flower will last in perfection for two months. If grown in a cool house, it will flower about Christmas; so that it may be had flowering in succession for four or five months. The *Cypripedium* having no pseudo bulbs, must never be allowed to get very dry at any time, but when the growth is finished it must not receive quite so much water as in the growing season, which, with this variety, is from March until September.

“The best soil to grow this variety is one half of rough peat and the other half of rough loam, with a little thoroughly dry decayed manure, and a good addition

of sand; fill the pots one third full of broken pots, make the soil firm round the plants, and then fill up level with soil. The best time to repot, when necessary, is just before the plants commence to grow, but they will do well for several years without repotting, by top-dressing in the Spring with the same sort of soil. Nice plants with four or five flowers may be grown in six inch pots, or larger specimens, with from twenty to thirty blooms each, in large deep frames.

"We have over two hundred flowers on a batch of plants occupying less than twenty four square feet, the flowers being five and a half inches across.

"There are two varieties of this Lady's Slipper plant; the one known in England as Maule's variety, has more white in the top or dorsal sepal. The flower is larger and the marking is brighter than in the more common variety. This is the variety we grow.

"I may add, the plant will do very well, and last a long time in flower in a moderately warm sitting room, and the cut flowers will also keep fresh a long time in water.

"*ZYGOPETALUM CRINITUM*.—This is one of the very old-fashioned plants frequently met with, growing with little care and attention among a general collection of stove-plants; and, without any care, it is seen to flower more or less each year. The flower being large, and also sweet scented, it is a very desirable plant. The season for flowering is from October until Christmas, according as the plant is grown in a hot or cool house. The above plant is one of the best for growing in a cool house, in a temperature of from 50 to 55 degrees in winter, and it will take no harm if a few degrees lower on very cold nights. I will here mention, that none of the Orchid family should be placed in

cold draughts, although many will do well in a cool—not cold—house; but when grown in a low temperature, they require less water, and more care in giving it. The water should also be at least ten degrees warmer than the average night temperature of the house the plants are grown in. This is a safe rule in watering all Orchids.

"The *Zygopetalum* being evergreen, of large growth, and also, when in good health, making a large quantity of roots, requires liberal watering at all times. The proper soil is one third rough peat, one third rough fibrous loam, and one third dry rotten dung, with some coke, or charcoal and sand, mixed with it. Fill the pots or pans one third full of coke, then fill up with some of the rough soil, placing the plant bulb just above the pot, and make the soil firm. The bulb need not be kept above the level of the pot. The proper time to re-pot is soon after flowering, but if treated well, large plants will not require fresh pots for several years, but can be top-dressed instead with the same mixture of soil. We grow one large plant in pans twenty inches wide by ten deep, and they flourish and flower well. We had fourteen spikes on one plant this season, bearing a total of ninety six flowers. This, of course, is nothing extraordinary for this free blooming plant, but one plant was quite small three years ago.

"I can safely recommend this plant to beginners in Orchid growing, and also to lovers of winter-blooming plants generally."

(To be continued.)

· BEET SUGAR.—Sacramento County enters heavily into the Beet Sugar business this year. The Sacramento Beet Sugar Company has imported ten tons of Beet Seed from Hamburg, for planting on its grounds.

RAISING TROUT.

DRY IMPREGNATION.

The practice of our American ichthyotechnists has been to take the spawn and fertilize it in water—in this respect following the teachings of the breeders in Western Europe. Notice of another method of fertilization has been introduced to American readers by G. Shepard Page, in the *New York Citizen*, the past season. It is the result of the experiments of M. Vrasski, a Russian breeder, at the government establishment in the district of Demiansk. He began his experiments as far back as 1854. He followed the directions of the French and German writers upon pisciculture with very poor success. From many thousands of eggs, there were only some dozens of young fry, and this probably accords with the experience of many beginners in this country. In the autumn of 1856, M. Vrasski studied the eggs with a microscope, and kept a minute record of every impregnation of eggs that he made. He discovered, as he thought, that his failures were owing to the fact, that he followed the practice of the French and German writers. He found that the longer he delayed the mixing of the milt and spawn in water, the less eggs were impregnated. If ten minutes elapsed between obtaining the milt and mixing it with the spawn, the fecundation failed almost entirely. His observation showed, first, that when received in water at the instant of issuing from the fish, the eggs absorb the water, and preserve the power of being impregnated only as long as this absorption is not finished—that is to say, during a half hour at the utmost. Once saturated with water, the eggs do not absorb any spermatozoa; but if received into dry vessels on issuing from the fish, the eggs remain, on the contrary, for a sufficient time in a neutral state, and do not lose the power, when once put in water, of receiving the spermatozoa. Second, the spermatozoa of the milt, in falling into the water, commence immediately, with much vigor and rapidity, to make move-

ments, which only last for a minute and a half or two at the most; when this time has elapsed, only in some few spermatozoa can there be seen particular movements and agonized convulsions. When at the issuing from the male the milt is received in a dry vessel, it does not change for many hours, and during this interval the spermatozoa do not lose the power of beginning to move when they find themselves in contact with water. Closed in a dry tube and well corked, the milt preserved its impregnating virtue for six days.

The theory of dry impregnation formed from those observations was immediately put in practice, and every ripe egg was impregnated. He immediately enlarged his establishment, and put \$32,000 into fish culture. In 1868 it became a government establishment, and is now used for the hatching of salmon, trout and lavarets, to stock Russian streams. The process of taking the spawn and of fertilizing is like our own in every respect, except the eggs and milt are taken dry and mixed with water as near simultaneously as is possible. In this hatching house the temperature is kept as near 34 degrees as is possible during incubation. This is about the temperature of Mr. Wilmot's water at Newcastle, which is under the direction of the Canadian government.

It seems to be clearly established that M. Vrasski's discovery is one of great value to all fish-breeders in this country. It will be tried very thoroughly this season, and if successful here, it will work an entire revolution in the business. It cannot fail to cheapen the production of fish, and to hasten the day when all our waters will be stocked with the most valuable kinds.

In November, 1871, the process of dry incubation was tried at the hatching house of the Poquonnoc Fish Company, near Mystic Bridge, Ct., on trout spawn, and at Orland, in Maine, on salmon spawn, by Charles G. Atkins, Fish Commissioner of that State, with the most gratifying success, so far as can be ascertained at the present writing;

very few trout eggs have failed of impregnation. In former years a large per cent. failed, and many were thrown out within a month after they were put in the hatching boxes. In a note received from Mr. Atkins under date of Nov. 18th, 1871, he says: "I am able to report complete success in the fecundating of the 43,000 salmon eggs taken during our first week's operations at Orland. I examined them yesterday: 13 samples, containing 10 eggs each sample, were taken from 13 different grilles, and not one unfecund was found among them. Their ages were 15, 14 and 13 days. We owe our success to the dry method." So good results of course cannot always be looked for, for the eggs are not always in contact with the milt. As the final result of Mr. Atkins' experiment, given in his annual report to the State Legislature, he gives 70,500 eggs, packed up on the 18th of December, about five weeks after they were taken, and not more than three per cent., in his opinion, unfecund; 27,000 of these eggs were taken to the hatching house of the Poquonnoc Fish Company, at Poquonnoc, Ct. The loss of eggs has been very small, although they have had a remarkably long period of incubation, owing to the low temperature in the month of March. The water in the hatching boxes has been at 34 degrees every morning, with few exceptions, for nearly four months, and has not varied from that figure probably more than two degrees in the whole time.

At the meeting of the American Fish Culturists' Association at Albany, in February, *Dry Impregnation* was up for discussion. Livingston Stone, the Secretary, produced a lot of trout spawn impregnated in this way, taken indiscriminately from his boxes, as a fair sample of the lot, and submitted them to the examination of the members. Nearly every egg was impregnated. Mr. Stone has entire confidence in the success of this method, and thinks it would add fifty per cent. to the average product of any fish-hatching establishment into which it may be introduced. In all the places in which it has been tried thus

far the testimony is unanimously in its favor. On comparing notes, it was found that Messrs. Green & Collins used very little water in their impregnating pans, and much of their large success in raising fry is no doubt owing to this fact. In manipulating fish just taken from the water, it is hardly possible to prevent a few drops from falling into the pan. When the manipulation of the fish is rapid, this may not prevent success. But the less water, the better.

The results likely to flow from this discovery are of the highest importance to fish-breeders and to the country. It must lead to the abandonment of impregnation in water, and to a very large increase in the products of our fish-breeding establishments. We have no doubt that most of them will double their products, eggs and fry, the first year it is tried. They may not, indeed, hatch every egg that is taken, for many ills betide the eggs in the boxes during incubation. The labor of caring for the eggs will be diminished, for fewer eggs will have to be thrown out. Of course many more good eggs and fry will be for sale, and they can be furnished at cheaper rates. In the governmental establishments of Europe, where parent fish are abundant, the spawn is sold at from one to two dollars a thousand. Here the common price of trout eggs is from six to ten dollars, and until this year, salmon eggs in Canada have been sold at forty dollars gold per thousand. The actual cost of the lot taken on the Penobscot was \$18.09 per thousand to the producers. There can be no doubt that we can produce eggs as abundantly as in Europe, and probably, within a few years, as cheaply. With cheap eggs and fry, which this discovery makes a certainty, we can stock all our waters with the best kinds of fish they are capable of producing. The anadromous fishes that feed in the sea—shad, alewives and salmon—can be made more abundant than they were when the country was first settled, and though they may never be bought again, as in the early days, at a cent a pound in our well-peopled country,

they can be made the cheapest of all animal food, and be put within reach of the poorest people. Cheap fish must affect the price of all other meats, and cannot fail to improve the condition of all the laboring classes. Cheap, wholesome food, means a better education for our children, more books and pictures in the home, and more leisure to enjoy them, better dwellings, and larger and better kept gardens, more culture and refinement in every home in the land.

This discovery throws some light upon an idea held by some of our fish-breeders, that a large portion of the eggs taken by hand are necessarily immature, and on that account are abortive; or if fertilized, produce weak fish, that die early. The results attained by the dry method do not favor this idea. If 95 per cent. of the eggs taken by hand are impregnated and produce fish, it looks as if the trout and salmon do not part with their eggs until they are mature. Sometimes we take trout from the spawning race not quite ready to spawn. By keeping them one or two days in separate water, they part with their eggs readily at the second trial, showing that they have a rapid development, and that when they yield to the gentle pressure of the breeder, the eggs are probably as ripe as they would have been if spawned in the natural way, and make just as strong fish, if they have proper incubation. The bearing of this discovery upon the use of spawning races, will be discussed when we come to that subject. In the use of any of these races a large per cent. of the eggs fail of impregnation, and I apprehend a still larger per cent. are lost through the failure of the trout to visit the spawning race at all.

This discovery opens a wide field of experiment to the scientific breeder. The milt of the Salmonidæ can be kept in a close phial for six days at least. In this time it can be sent across the continent. We can use, here upon the Atlantic shore, the milt of trout and salmon taken in the waters of the Rocky Mountains to improve our own species, and probably to originate hybrids of great value.

And if it should appear that we have the better varieties of these fish, we can easily send the milt of Penobscot salmon to fertilize the eggs of the salmon of the Sacramento. We have no doubt that a brilliant future awaits the fish-breeder's art in consequence of the new facilities afforded by this discovery.

Country Gentleman.

ARRANGING FLOWERS.

It is an art, requiring no small degree of taste and skill to arrange cut flowers so as to form an attractive bouquet, for the vase or basket. It may be said in general that the more loose and unconfined the arrangement is, the better. Crowding is especially to be avoided, and to accomplish this, a good base of green of different varieties is needed to keep the flowers apart. This filling is a very important part in all bouquet-making, and the neglect of it is the greatest stumbling-block to the uninitiated. Spiked and drooping flowers, with branches and sprays of delicate green, are of absolute necessity in giving grace and beauty to a vase bouquet. Flowers of similiar size, form and color, ought never to be placed together. Small flowers should never be massed together. Large flowers, with green leaves for bouquets, may be used to advantage alone, but a judicious contrast of forms is most effective. Avoid anything like formality or stiffness. A tendril or spray of vine can be used with good effect, if allowed to wander over and around the vase as it will. Nevertheless, the faculty of arranging the flowers can hardly be acquired. It is innate.

Pacific Rural Press.

ARTESIAN WELLS.—It is said that Artesian Wells produce disease, particularly in hot climates, owing to the effect of moisture upon the increased decay of vegetable matter.

THE CURRANT CROP of San Lorenzo has been severely damaged this year by the late frosts.

HORTICULTURAL AND AGRICULTURAL
EXHIBITIONS IN AUSTRALIA.

During the latter part of March, the various Societies held their Autumn Shows. This may sound rather strangely to our readers, but it is readily explained by the fact, that, owing to the geographical location of Australia, its seasons are the reverse of ours,—what is early Spring with us, is Autumn in that country.

It will undoubtedly interest many of our readers to know of what the Exhibitions in the month of March consist, and we make a few extracts from the *Weekly Times*, of Melbourne, of extensive reports upon

THE VARIOUS SHOWS.

*The Horticultural Society's Autumn Show,
Saturday, March 16th, 1872.*

The Autumn Exhibition of the above Society was held on Saturday last, at the Botanical Gardens. The Show, on the whole, must be pronounced a success, the number and quality of the fruits alone making a grand display, and clearly evincing that the culture of choice fruits is fast extending in Victoria. The collections of pot plants, although few in number, were very creditable, being particularly clean and healthy. Flowers were but poorly represented. The last two months of severe and trying weather would, doubtless, in a great measure, account for this. Some very good samples of vegetables and culinary roots were also staged. * * * *

[We have not the space to give details in full, but make the following extracts.—Ed.]

The Ferns were a nice lot, both Mr. Stewart and Mr. Walters having excellent specimens. The following were well grown:

Gymnogramme chryophylla (the Golden Fern), Pteris Cretica albo lineata, P. serrulata, P. scaberula, Adiantum cuneatum, A. tenerum, Polypodium glaucum, P. Billardieri, Phymatodes pustulata, Blechnum Brasiliensis, B. Spicant, Lastrea montana, Doodia aspera, Aspidium obliteratum, and others. Very good Lycopodiums, including

L. denticulatum, L. umbrosum, and others, were staged.

Of other plants, there were—

Dracæna ferres, D. Cooperii, D. marginata, and D. terminalis; Cycas revoluta, Cissus discolor, Maranta zebrina, Latanias, Cyperus alternus variegata, Crotons, Zamia pungens, and Phormium tenax variegata.

We also noticed, in Messrs. Taylor & Sangster's collection, the following among others:

Allamanda Schottii, A. nerifolia, in good bloom, Hibiscus variegata, Abutilon Thompsonii, Bambusa Fortunei variegata, Vinca rosea, Hibiscus Cooperii, Angelonia grandiflora, and Alternanthera spathulata. * * *

Baron von Mueller made quite a display from the gardens, he having extensive collections of useful, ornamental, rare and valuable plants, including—

Forty-nine species of Palms, forty seven kinds of Willows, sixty kinds of Industrial Trees, etc.; also, particularly noticeable: Anæctangium setaceum, from Java, and A. longiflorum, from the South Sea Islands. These are both terrestrial orchids, with delicate and lovely markings, and beautifully fragrant perfume. The whole of these plants were plainly named and effectively arranged.

The fruit show was both extensive and good, the samples staged in their several classes being unusually fine. With large collections of fruit not for competition, Mr. John C. Cole, of the Richmond Nursery, comes first, with a collection containing 160 valuable kinds. From the gardens of the Society came a splendid collection, nearly filling one tent, neatly named and effectively staged. From Messrs. John Smith & Sons, of Riddell's Creek Nursery, came no less than 80 varieties of Apples, including most of the standard and valuable varieties. They also exhibited a Peach of the new variety named Lady Palmerston. From Mr. John Harbison, of Essendon, came 35 kinds of well-grown Pears, twenty five varieties of Apples, and one dish of Peaches. This was a highly meritorious collection. * * *

Very excellent Black Hamburg Grapes came from Mr. Jas. Banks, of Flemington,

not for competition; a first-class certificate was, however, awarded him. Mr. Murdoch had also very good samples of the same variety of Grapes, which were highly commended. Mr. Draper had, to all appearance, some valuable seeding Apples, which will receive attention at the hands of the Fruit Committee of the Horticultural Society. The competition classes for both Table and Wine Grapes had no entries, which is much to be regretted, the smallness of the prizes being doubtless the primary cause.

Ballarat Agricultural Society's Autumn Exhibition, March, 1872.

The above Society's Autumn Show commenced on Friday morning, under somewhat unfavorable circumstances, so far as regards weather, the rain falling rather heavily for some little time. The show was, however, on this occasion altogether independent of the weather, so far as the exhibits and the comfort of the visitors were concerned; for the Committee had wisely availed themselves of the large Alfred-hall, which is very suitable for holding an exhibition of this character therein. The hall was capitally arranged for effect, the centre being filled with the collections of ornamental, flowering, and other plants.

In the fruit classes there was a great falling off, to what some of our late fruit exhibitions have been, Mr. Moss, of Buninyong, Messrs. J. Smith & Sons, Riddell's Creek, Messrs. J. and S. Learmonth, and Mr. Isaac Westcott being the chief exhibitors. Messrs. J. Smith & Sons' collection of Apples was very good. Mr. Moss had good Pears and Apples, Damsons, Plums, Blackberries, Loquats, Spanish Chestnuts, (poor grapes), and a number of other kinds. The same may be said of Messrs. Learmonth. The best Pears were Williams' Bon Chretien, Beurré Clairgeau, and Gausell's Bergamot. Apples: Lord Suffolk's Reinette de Canada, Emp. Alexander, Ribston Pippin, and Stone Pippin. There were also good Pomegranates, Loquats, Barberries, and a few late Strawberries.

Bendigo Agricultural Society's Autumn Show, March, 1872.

The first day of this exhibition commenced on Wednesday, at Sandhurst, under very favorable auspices, the weather being delightfully fine, at the same time not the least inconvenience was experienced from the usual Sandhurst dust. The arrangements were excellent, and the appearance of the different buildings in which the various productions were displayed, had a lively and interesting appearance. * * * * *

The collections of fruit were well shown, being exceedingly good. In many respects the show of Grapes was highly meritorious. In Wine Grapes Mr. C. Pohl obtained first honors, with the six following varieties:

Carbinet, Hermitage, Mataro, Verdelho, Pineau Blanc, and Riesling, very well grown. The Pineau Blanc and Burgundy of Messrs. Bruhn Brothers, who took the recent prize, were remarkably fine, the wine made from the former being highly spoken of. Mr. W. M. Maplestone's six varieties of Table Grapes were a splendid collection, comprising White Crystal, Wortley Hall Seedling, Muscat of Alexandria, Black Hamburg, Raisin des Dames, and Black St. Peter, and were awarded a first prize. The same exhibitor obtained first prizes also for the best six bunches of White Table Grapes, and Black ditto. Mr. Thos. Craike was first for six bunches of Red Grapes (Wantage), very fine; also for a single bunch of the same variety. The Grapes formed the leading feature in the exhibition of fruit, and were arranged on a long table two sloping sides down the middle of the orderly-room, occupying a space of about 300 square feet. On the whole the quality was good, but inferior to former years, on account of much of the low-lying lands being lately too wet, and showed a marked contrast to the paucity of the same fruit round Melbourne in the present season. The exhibition of Apples was only of medium excellence, and the absence of their names was a great mistake, which should be remedied on future occasions. Mr. W. Eagle took the

first prize for twelve varieties of dessert kinds, as well as for twelve do. of Kitchen Apples, the latter being very good indeed. In Desert Pears, Mr. J. C. Cole, of the Richmond Nursery, Melbourne, showed twelve kinds, for which he obtained the first prize. The same grower was also first with six dessert Pears of one variety, which was Beurré Hardy; and the only prize (there being no other competitor) for twelve sorts of Cooking Pears. Six Pears of the variety Napoleon le Grand, shown by A. Heine, secured a first prize, one being 19 inches longitudinal circumference. The general collections of fruit were very creditable, Mr. Henry Eley being awarded first honors. A fair display was made with flowering plants and cut-flowers, Messrs. Taylor & Sangster, and Mr. James Scott, of Melbourne, having numerous exhibits. Thirty six dahlias were shown, in better condition than we have seen them this season, by Messrs. Taylor & Sangster; also, cut-flowers, and a collection of conifers and other plants, by the same exhibitors, not for competition. Mr. Scott had a number of prizes for plants and cut-flowers, which included Fuchsias, ornamental plants, Dahlias, Roses, and miscellaneous flowers; Messrs. Jno. Melrose, C. Yarnold, W. Hyde, and D. Brewster also exhibiting successfully. In the miscellaneous classes we noticed capital looking sewing-machines, dried and preserved fruits, jams, colonial lemon and orange peel, sausage machines, native pigeons, and a variety of other interesting things. Towards 5 o'clock the number of visitors was very large, and with a continuance of fine weather, it is expected that the attendance will be good throughout to-day.

CURIOUS PHENOMENON.

The Burlingame artesian well at Compton, one hundred and fifty feet deep, ejects live fish resembling speckled trout, from a half to two inches long. The same phenomenon, met with in an artesian well on a ranch near by, seems to indicate the existence of a subterranean lake.—*Alta California.*

[Correspondence of the Pacific Rural Press.]

'HELP FOR OUR SILK GROWERS.

Our associate editor, I. N. Hoag, has just received from the American Consul at Zurich, Switzerland, the following correspondence, which will be read with interest by our silk growers and all others interested in the general prosperity of the State. We publish both letters in full; they explain themselves, and show the interest that is being waked up in the silk districts of Europe in the success of silk industry in California.

[From S. H. M. Ryers, U. S. Consul, to the Directors of the Bank of Milan.]

UNITED STATES CONSULATE, }
Zurich, April 22d, 1872. }

Dear Sir:—Recently, while visiting the city of Milan, Italy, I had the pleasure of a conversation with the Directors of the Silk Bank lately established there, relative to the importing into Italy of California cocoons, or raw silks.

Since my return to Zurich I received from the Company a letter, a copy of which I enclose. The letter explains itself, but I will add, the Company composing this silk bank are of the most respectable and worthy raw silk dealers in Italy and represent in their bank unlimited means. By their letter and by their remarks to me personally, I am convinced that they mean business, and are willing to aid California in developing what might easily prove one of her greatest and most profitable industries.

Milan has been, is, and will be, from pure necessity, one of the greatest centers of the raw silk trade of the world, and why then should not California profit by the opportunity offered by this bank, and reap the advantages to be gained by a steady and profitable market for the cocoons or cheap reeling for her own account?

Lombardy almost does the reeling for Europe, and the prices paid workmen in the business here, when compared with those paid in California, are little less than in the proportion of francs to dollars.

The intention of the bank, as I understand, is to make, by use of their large means and experience, Milan still more of a centre of the raw silk trade, and to encourage the development of the silk industry wherever their efforts may be seconded in the way of directing an interest in the trade to their house. Their business, like their opportunities, bids fair to be enormous, and I believe if they meet with encouragement, a branch house will be established in California. Of course they must have a fair opportunity of testing the California cocoons before taking further steps in the matter, and my advice would be, that some of you, or a number perhaps combined, should consult about the matter in a quiet way, and send at once the amount of cocoons suggested by the Company's letter, to be reeled, and reported on. Whatever is done should be done in time to complete the reelings soon, and be prepared for the next year's operations.

Feeling interested in anything that tends to benefit the trade and industry of our country, I shall take pleasure in receiving your reply to this and presenting it personally to the Italian Company.

I send copies of this to Messrs. Wm. M. Haynie, Sacramento; Louis Prevost, San José; Mr. Garep, Los Angeles; each of whom I address, because, like yourself, they are interested in the growing of cocoons, and I will be glad the matter should receive your prompt attention and reply. The requested samples of cocoons should be sent direct to the Silk Bank, at Milan, Italy.

I will be obliged to you for any information you can give me relative to present prospects of cocoon growing in the State, especially as to the number of mulberry trees growing in the State, and the amount of cocoons produced in the last year.

I am, sir, with regard,

Yours truly,

S. H. W. BYERS,
U. S. Consul, Zurich, Switzerland.

GRASSHOPPERS have made their appearance in San Bernardino.

Editorial Portfolio.

IMMIGRATION.

The subject of Immigration is continuously agitating the minds of our statesmen, and is considered by the people in general as most essential to the full development of this country, and most particularly of our Agricultural and Horticultural resources. Although at times attempts have been made to throw cold water upon this continual flow of population, into the broad area of the United States, by denouncing the foreign element, and by passing laws, which by their restrictions are liable to discourage the more intelligent classes of foreigners, yet as these movements had their origin mainly with men, whose selfishness, arrogance and political trickery were well known and appreciated, the effect of their exertions has been but to defeat their obnoxious schemes. Such men, not knowing the wants of this country, it is not safe to trust them with any position in the management of our public affairs.

We are well aware that certain classes of immigrants are preferable to others, and the country would perhaps be better off without some; but to be just and true to the principles of an enlightened nation, we cannot discriminate between the good and the bad, and say who shall come and who shall not.

Labor and all the necessaries of life must become cheaper, if we want to compete with other countries. Most important industries suffer with us on account of high labor, and so long as this is the case, we cannot expect capital to assist in the development of these industries. While labor is too high in this country, it is too low in Europe and other parts of the globe; but if the present strikes for higher wages in Europe are successful, the price of labor will be more equalized and the emigration of mechanics to this country will fall off considerably. This falling off we may perhaps endure with very little inconvenience. But the country calls loudly and persistently for settlers upon our agri-

cultural lands, on the improving and development of which depends our prosperity and the reduction in the cost of the necessaries of life. What we require here more than anything else, are industrious and intelligent farmers with moderate means. Can we induce them to come here? We may by proper exertions, at least that is our sincere belief. A handbook for immigrants has lately been published in England by the owners of a steamboat line. It concludes thus :

"To no other part or lot in the United States can the emigrant be more welcome than to a share in the public lands. The country needs intelligent and enterprising settlers to enter upon its great domain and bring out its varied resources. To such it is sure to hold out an open hand. It offers them its best possessions, and they have only to accept them.

"Nor is any other lot better for the emigrant. On these lands he will find opportunity of proving his manhood, and maturing his powers. His property, if wisely chosen and faithfully cultivated, will improve in value, and as his means increase, his higher wants can be supplied. His children will grow up under influences tending to make them hardy, industrious and temperate, and as soon as the neighborhood is sufficiently settled, schools will give them the intellectual nurture which they need. He will not escape hardship or loss; where could he in this world? But they will be less severe, less crushing, as a general rule, than if he were living on wages and without a home. The great advantage, after all, in settling upon public or other accessible land is, that instead of a hired tenement, poor in itself, and poorer in its close and crowded situation, one has a home of his own, humble, it may be, but healthy, it may also be, with the fresh air about it, and the open sky above it, where he and his family may live in liberty.

"But we would not confine our welcome to such emigrants as settle upon our public lands. To all who are honest and capable, wherever they choose to fix themselves, and

in whatever labor they prefer to engage, we would give kind greeting. This volume began with words of discouragement, or, at all events, of caution against imprudence in leaving the old home. Let it end with words of hearty encouragement for such as have gone to a new home. The land of their adoption is large enough to hold them, active enough to employ them, and generous enough, one may trust, to care for them."

Now this is all very well, but we do not think that such talk has the desired effect; enough of this kind of work has been done, especially in California. What immigrants to this Coast want, is material aid and practical assistance when they arrive here, nothing else. Some new comers may have had sufficient funds to bring them here, but if they rely on material aid, they find themselves sadly disappointed. To go to farming here costs money, and practical information is required to insure practical results.

Suppose that some of our large land-owners were to subdivide some of their lands, which are not now productive, into small farms, and were to offer them to actual settlers on reasonable terms, and if need be, furnish them with shelter, stock and implements, upon which a reasonable interest might be charged, can any one doubt, that proper persons could be found abroad who would gladly avail themselves of such opportunities and by proper exertions would be able to pay back interest and capital within a few years. The State might assist by proper legislation; by providing for irrigation, tree culture, and by exempting such lands as were actually occupied by such settlers, from taxation for a certain number of years, and also by distributing gratuitously the reports of our Agricultural Societies and other practical information necessary for new comers. We believe that were such and similar inducements held out, we should not fail to induce settlers to come here and make their homes among us. To accomplish this, it may require some sacrifice on our part at the beginning, but the result would well repay us.

COAL ASHES FOR GARDEN WALKS.

The *German Town Telegraph* says on this subject: "We wish again to impress upon the readers of the *Telegraph* that nothing makes better garden walks than coal ashes. They are of more value for this purpose than any other that they can be applied to, of which we know. When the walk requires it, dig it out two or three inches; put the coarsest portion of the ashes at the bottom, spread the other on the top, to the depth altogether of three or four or even six inches, and then roll well. These walks are always dry and pleasant to the feet, and are rarely troubled with weeds, and when they are, they can be readily removed."

THE WANT OF RAIN.

The West is not the only part of the country or section of the world that has had a short allowance of rain for many months.

Baltimore, Philadelphia, New York, and Brooklyn, all entertain fears of a deficiency of water. Throughout the Middle and New England States the wells are low, as are the streams. The *Boston Journal* says: "Our exchanges from nearly all sections of the country bear out the statement, that what is most generally needed now, everywhere, is a liberal and protracted rainfall. The last winter closed in upon us without being preceded by the customary heavy fall rains; and instead of the usual spring freshets this season, there has been a drought." Nor are the United States the only country now suffering from deficiency of rain. Carefully collected returns from England give a general average of only twenty two inches for the past year, instead of thirty inches, the proper rainfall of England. The deficiency is computed at over a million gallons of water for every square mile of British territory.—*Prairie Farmer*.

CUBAN TOBACCO.—Near Gilroy, a thousand acres of land are to be planted with Cuban Tobacco.

FOREST CULTURE.

THE CALIFORNIA TREE LAW.

The California Legislature has passed a law which has for its object to largely extend Forest Tree Culture in that State. The law provides the appointment of a Commissioner of Forestry, or a State Forester, who is authorized to expend annually \$6,000 to \$8,000, in providing seeds and seedlings for free distribution. By this move California has virtually laid aside the indifference upon this subject that has so long been characteristic of the great masses of the people. Below we give a synopsis of the law, which we clip from the *California Horticulturist*.

We clip the above from a Wisconsin Exchange, and wish we could say it was the case with our State, but our cotemporary here was a little fast in his statement. There was a bill before the Legislature to do this grand act—the bill *did* pass—but unfortunately the Governor's sanction was not given; the law did not go into effect, and we are not as a State in the *forward march* in "Tree Culture" as was hoped to be. Another Legislature will make all right.—*California Farmer*.

FOREST TREE SALVATION.

Science is now demonstrating that the cutting down our forests and cleaning off trees, and leaving our lands in barren plains, is one of the chief sources of many evils that are now inflicted upon the people in the form of tornadoes, whirlwinds, drouths, fevers, plagues, and many other diseases which every country is subject to that strips the land of trees.

We notice that several of our Scientific Societies, and our Agricultural Societies in other States, are taking up the subject of *Forestry* in order to call the attention of the several Legislative bodies to this matter.

A valuable paper was recently read before the New York State Agricultural Society upon Forestry, and many Institutions are noting the effect it had upon the soil, climate

and health wherever the land had been bereft of trees.

It will be seen we have given large space in this number to the subject of Trees, in hopes to draw attention to the importance of this State being saved from the evils that other sections of our country have suffered by the sweeping away all our forests and not supplying their places.

We are confident that one of the best investments that could be made with *capital* would be to *plant Forest Trees*, it would pay better than any *Land* or *Stock* speculation known, as it would be certain at a great interest—the money would more than *compound itself*.—*California Farmer*.

A VISIT TO NAPA VALLEY.

[Continued from page 215 of last number.]

YOUNTVILLE STATION (Groezinger's Station would perhaps be more appropriate,) is situated nine miles from Napa, on the California Pacific Railroad. The principal feature of Yountville is the extensive vineyard of Mr. Groezinger, our well-known and enterprising wine merchant of San Francisco.

Mr. Groezinger's vineyard covers a tract of some 500 acres of land, of which 120 are now planted out in grape vines, of from one to eight years old. A visit to this vineyard and a chat with its genial proprietor, is both interesting and instructive, as his knowledge and experience, which are extensive, are well worthy a most careful study.

Mr. Groezinger now cultivates almost exclusively foreign varieties of grapes, and the very few vines of the Mission variety at present remaining, will soon be grafted with the foreign varieties. He is certain that the latter are worth four times more than the former for the manufacture of wine.

The varieties most extensively cultivated in this vineyard, are: Riesling; Muscats; White Tokay and White Nice, (of which he produces bunches of six to eight pounds each); Clevner, (Burgundy); Silvaner, (va-

riety of Chasselas); Rolander, (also a variety of Chasselas); Black Riesling, (Miller's Burgundy); Trousseau and Charbanot, (being of late introduction); Malvesia; Zinfindal; Burger and Gray de Shay; all of these Mr. Groezinger considers first-class for wine making, and recommends highly for general cultivation.

In regard to low or high training of Vines, he has come to the conclusion that the following do best under low training; White Chasselas, White Tokay, White Nice, Rolander, Muscat, Burger, Malvesia and Zinfindal; while for high training he recommends Riesling, Red Chasselas, Early July (July Cleavner and Gray de Shay, (Gray Riesling.)

Mr. Groezinger has made wine of all these varieties, and knows what they are.

In the manufacture of wine, he does not rely upon his own vineyard entirely; he purchased over 600 tons of grapes last year for that purpose, paying from \$20 to \$30 per ton for them. His total wine product of last year was 130,000 gallons, in addition to which he has purchased about 170,000 gallons; of this quantity over one half he exported.

In order to keep so large a quantity of wine in good condition, an immense cellar is required, and he has spared no means to erect a very extensive and substantial wine cellar, which, we believe, is the largest and most practical in California for the treatment of wines after they leave the press. This cellar now contains 37 large vats of from 1,500 to 2,000 gallons each, besides a great number of smaller ones. The entire capacity of this cellar is 400,000 gallons.

The transporting of the grapes to the crusher, from thence to the press, and the transfer of the juice into the vats, is all done by machinery at a small expense, which seemed very apparent, when he assured us that he employs but twelve men for the vineyard and cellar, except through vintage time, when the force is increased to about twenty four.

In connection with this establishment he has a distillery, with a steam boiler able to

manufacture 1,000 gallons of brandy per day, which finds a ready market in the East.

Mr. Groezinger apprehends much difficulty in obtaining wine barrels for the next vintage. The importation of foreign wines is on the decline, and the supply of barrels from that source is therefore limited; our California Oak is not very well adapted for this purpose, and these circumstances necessitate the importation of Eastern Oak. For vats, he thinks our Redwood will answer every purpose.

The cardinal principles involved in wine manufacture are, he says, *equal temperature*, at from 60 to 70 degrees; *close attention* during fermentation and the after treatment; *cleanliness* and the drawing off of the wine after the separation from the sediment. The fermentation should be perfect, and in order to facilitate the process, the wines should be brought into contact with the air as much as possible, avoiding, however, a material climatic change, which so frequently results in great loss.

His wines are shipped to New York by steamer; to the Western States by railroad; to Oregon, Mexico and Central America; Good ordinary wines obtaining from 50 to 60 cents per gallon, while superior qualities made from Riesling, Muscat, etc., sell readily at from \$1 to \$1.50 per gallon.

Wines improve during their voyage, which is due to the continual motion, and there is no doubt that this could also be accomplished by machinery at home, and should receive the attention of our large viniculturists. [This has long been recognized in Europe as important, and properties characteristic of old wines have, by these means, been established in a short period.—ED.]

Mr. Groezinger has first paid attention to practical matters, in order to make the business pay; but he has not lost sight of the beautifying of his estate, when circumstances permitted. He is now contemplating improvements which in point of taste and effect, will give his settlement all the attractions of

a popular place of resort. The landscape and natural advantages which are characteristic of Napa Valley, will facilitate the consummation of his projected plan, and we certainly wish him all the success which his energy and enterprise so justly deserve.

TREE PLANTING.

Plain Talk, and to the Point.

A contributor to the *Rural New Yorker*, says: "The silver and scarlet maple seed are ripe (May 22) and falling from the trees, and now is the time to gather them for planting. The seeds of these trees are very delicate, being very little more than two thin leaves folded up into the form of a bud. If planted within a few days after ripening, they will grow readily and rapidly, and by Fall become plants two or three feet high. How simple an operation it is to grow trees when one knows just how and when to begin! But there is little use of trying to teach people who do not want to learn; although, whenever I ride over the Western prairies, and see thousands of farmers' homes with not a tree about them, I feel like turning missionary and *go to preaching about trees*."

A silver maple tree will grow large enough from seed in four or five years to make quite a handsome shade tree; and yet nurserymen have to beg of people to purchase them, when one year old, for a dollar and a half per thousand, delivered free to any post office in the United States! Sun-stroke ought to be far more prevalent than it is among those land-owners who will neither furnish their cattle nor themselves and families with cool, refreshing shade, when it can be had so cheaply. A dollar and a half per thousand for trees, and still you have none for shade, shelter or ornament! I wish I could pin this in big letters on your coat tails, you miserable, shiftless specimens of humanity, who have neither a green spot in your hearts, nor a green leaf spread to the winds before your doors!"

WORK FOR JULY.

The dry season is upon us again, and vegetation throughout the land is on the decline, except where irrigation can be resorted to, or where other conditions are favorable to the growth of trees and plants throughout the year.

Gathering in the crops, storing and shipping, are now the leading occupations in the rural districts, and we hope for the country's sake that the recompense for the hard and industrious labor will be encouraging to all. According to the accounts received, there is no just cause for complaint, and those who are disappointed may trace their losses back to their own negligence and indifference.

Very little can be done in the Orchards except the thinning out of fruit where too much crowded, if size and flavor are worthy of consideration. Young trees should not be allowed to bear much fruit; as, if permitted, it will retard their growth.

The Vineyards may be let alone. Young vines of this year's planting should be looked after, and if more than one branch is growing upon them, it should be removed. Where water can be had, lately planted vines should be irrigated once or twice during the dry season; if this is done at all, it should be done thoroughly—it will help the vines much in establishing themselves and making a good growth; such vines will certainly come into bearing a year sooner than those which have to do without irrigation.

In visiting the rural districts, we miss the verdant covering of our hillsides which adorns them during the winter season. This seems the only difficulty which the landscape gardener has not yet overcome. In some particular localities water may doubtless be had to irrigate with, but to keep up extensive lawns and to retain the vegetation of grass, etc., during our long dry season, is too laborious and far too expensive. If there is a means to overcome this difficulty, we ought to demonstrate the practicability, of it. We have frequently referred to the

Bermuda Grass, and we have carefully weighed the objections raised to its introduction here, but we have a rather decided opinion on the subject; we are in favor of it for all extensive grounds occupied as rural residences. Our landscape gardeners should give it a fair trial; we shall certainly do so during the coming rainy season. It would have been an excellent move on the part of our Park Commissioners to make some experiments in this direction. Extensive lawns, which we must have in the Park, will be entirely too expensive, in fact impracticable, with any of the grasses now under cultivation for that purpose. We think, also, that the experiment should be made upon the grounds of the State University during the coming rainy season. Are there no practical men in the employ of these institutions, who can suggest some plan which may result beneficially and in the saving of thousands of dollars?

In the Kitchen Garden not much can be done except keeping the soil moist. We advise to water thoroughly, loosen the soil frequently, and to keep weeds down.

The Flower Garden requires some care during the hot weather, if plants are expected to grow luxuriantly and to produce fine and perfect flowers. Wherever irrigation is resorted to, it should be done well, if done at all; even watering once a week, so as to penetrate the soil to a greater depth, is much preferable to a light sprinkling every day, as an hour of sunshine will evaporate every drop of water applied in the usual manner. Cut away withered flowers and clean up dead leaves, etc. Running vines should be carefully secured to pillars, verandas and other supports, as they make their growth. They will answer their purposes much better by a little attention once or twice during the week, than if you let them run *ad libitum* during the entire season and then expect to do it all in a day by forcing them into shape.

Where the seeds of desirable plants, particularly annuals, begin to ripen, it is well to

collect a small quantity for home use. Seeds should be gathered during the afternoon or evening, when there is no moisture upon the plants; they may be cleaned at once, and should be stored away in some cool place, protected from insects, etc. It is of daily occurrence, that we hear of some one complaining, that some of their pot-plants do not thrive at all. We have assigned, from time to time, various causes which occasion such results; we cannot repeat them so often, but in reading the *Gardeners' Chronicle* the other day, our attention was attracted to a small matter which, we acknowledge, has been of assistance to us. The *Chronicle* says: "If any plant in the house is found not to be progressing satisfactorily in the position in which it may happen to have been placed, it will frequently occur that by removal to the opposite end or side of the house it will be favorably affected or otherwise; by the accidental angle at which the light will strike upon its foliage. This influence will become apparent by noticing how many of our common British plants establish themselves when they are under certain peculiar conditions in this respect. When these conditions of light are wanting, I have frequently observed, that although a plant may have been placed in such a position as to light, as might be thought calculated to insure its well-doing, yet unaccountably it has refused to grow; but the simple removal of it to another position in the same house, has had the desired effect.

Before closing this chapter, we would call the attention of our amateur gardeners to the pegging down of bedding plants, such as Verbenas and Petunias; but we would not stop here, and would also advise the pegging down of Roses, Laurustinus, and other flowering shrubs, as well as Geraniums, Heliotropes, etc. By securing them to the ground, many will form new roots, and the result will be immense profusion of flowers and protection against the strong winds. This mode of producing masses of flowers, applies more particularly to extensive grounds, where this mode of cultivating flowering shrubs produces a very pleasing effect.

HOW TO HAVE ROSES ALL WINTER.

BY GRACE SANFORD.

One who spent some time in Germany, tells us that on a certain fête day in mid-winter, he was surprised to see how exquisitely all the windows in the houses, and the occupants, were decorated with "June Roses," so beautiful! and such quantities! If every "Blumengarten" in the village had been stripped, and more besides, he was convinced they could never produce such masses of pink, white, and tea roses. They must be artificial! Could any flowers, but those of God's own handiwork, think you, fill the air with such subtle, delicious fragrance? The pure "attar of roses" in its own native element. Interest as well as curiosity prompted our traveler to find out, if possible, the "Eden" from whence these lovely things were gathered in such amazing quantities. Thank Heaven! he was a man with curiosity; an animal never found (according to themselves), except in woman's garb. Listen, reader! every one who is blest with a rose bush, and I will tell you how to carry June right into December, and garland your homes with these tell-tale blossoms: "Gather the roses while you may," a poet sang, and isn't the time when you may, in June? Take the buds when they are *just ready* to burst in full bloom, lay them carefully in table salt, don't let them touch each other, cover them well with the salt, keep the box, or whatever you put them in, closely covered, leave them in the coolest place you have until winter, when you want them. Then take them out, lay a few at a time on a plate, and put in an oven, just warm enough to unfold the leaves gradually. Do this, pretty reader, and you can feast your eyes all winter, in fact all the year round, on what these unlucky mortals who haven't the German traveler or this "FLORAL CABINET" for a guide, can enjoy only during the short-lived summer. Try a few for next winter.—*Ladies' Floral Cabinet.*

AN ARTESIAN WELL has been sunk 1,200 feet in Chicago without finding water.

GENTLEMAN'S BUTTONHOLE FLOWER,
Or Bouquet.

At the Birmingham Show of the Royal Horticultural Society, on June 25th, three prizes are offered for "Coat flowers," in the words at the heading of these remarks. A Buttonhole flower is generally understood to mean one single flower or spray of flowers, with or without a piece of its own foliage, or a Fern-frond. By a Buttonhole bouquet is meant, a collection of two or more kinds of flowers, made up with foliage or Fern-frond, or both combined. Surely it would have been better, and it may not now be too late, to make separate classes of these very different productions. Another suggestion occurs to me, and as the prizes offered are liberal, I have no doubt intending exhibitors will readily agree to my proposition: Let each exhibitor, who notifies his intention to compete in class 135, be informed that he must exhibit one Coat-flower and one Coat-bouquet. W. T. C.

Gardeners' Chronicle.

REMEDY FOR CUCUMBER BUGS.

Take pieces of paper, dip them in coal tar, and place them on the ground near the plants; with the foot, move a little soil on one corner of the paper to prevent blowing away, and the work is done. An observer, recommending this remedy, says: "Not a leaf on land so treated was touched, while all the other plants were entirely destroyed. Two or three pieces to the hill are quite enough."

CURRANT WORMS.

Nothing so effectually destroys the vermin as soot, which is both the cheapest cure and the most certain preventive. When dusted on the branches after a light shower has fallen, or after the leaves have been wetted, the vermin will soon drop off and the leaves perish. The application of a sprinkling of dry soot around the roots of bushes, when early digging operations are being proceeded with

in Spring, will act most successfully in preventing their appearance; and this, resorted to in successive seasons, will entirely extirpate the pests.—*Farmers' Journal.*

OUR EXCHANGE TABLE.

The *Scientific Manual*, a Monthly Journal, devoted to Art, Science, Mechanics, etc. Published by J. S. Zerbe & Co., Cincinnati, Ohio. Subscription price, \$1 per annum.

The *Cincinnati Commercial Review*, a Weekly Journal of the Markets, and Industrial and Trades Interests; valuable to Commission Merchants, Manufacturers and Tradesmen. It is published by Murray, Davis & Co., Cincinnati. Price, \$3 per year.

FAVORS RECEIVED.

We have received the *Premium List of the Nineteenth Annual Fair of the California State Agricultural Society*, which is to commence on the 19th and end on the 28th day of September next, at Sacramento. Over \$20,000 are appropriated for premiums, to which will be added special premiums and a gold medal to the most meritorious exhibition in each of the seven departments.

Proceedings of the National Agricultural Convention, held at Washington, D. C., in February last. The pamphlet is voluminous, and we shall speak of it more minutely hereafter.

The *Premium List, and Rules and Regulations for the Cincinnati Industrial Exposition of Manufactures, Products and the Arts*, came to hand, and is a model of neatness. The Exposition will be opened Wednesday, September 4th, and continue until Saturday, October 5th. The Horticultural Department will be a most prominent feature, many liberal premiums being offered; the Floricultural Department alone proposes premiums exceeding three thousand dollars.

We have received the *Transactions of the Wisconsin State Horticultural Society, and its*

Proceedings, Essays and Reports, at the Annual Winter Meeting, which was held at Madison in February last. It is handsomely illustrated, and entitles the officers and members of the Association to much credit.

Diseases of Cattle in the United States. The Secretary of the Horticultural Society authorizes us to acknowledge the receipt of the above work, published by the Department of Agriculture in Washington. The volume is full of interest and contains many valuable illustrations.

CATALOGUES RECEIVED.

Catalogue of Dutch Flower-roots, etc., offered by A. E. Barnaart, Vogelenzang, near Haarlem, Holland. Ben. T. Wells, of Boston, is the Agent for the United States of America.

NEW AND RARE PLANTS.

AMORPHOPHALLUS RIVIERI.—Introduced from Cochin China by Mr. Rivieri, the head gardener of the Luxumberg Gardens.

This very curious Aroideæ will make a striking figure in our gardens. Planted in the open ground in May or June, (like the Dahlia,) the tubers will produce on a thick stem a very extraordinary looking palmated single leaf in the shape of a reversed umbrella. The leaves are from two to three feet in diameter, supported on stems of about the same height. Planted in pots and kept in a greenhouse, they will grow still larger than in the open ground, and from the very little care required, they are well adapted for the decoration of drawing-rooms, etc. The whole plant is of a dark green; the stems and nerves of the leaf are irregularly spotted with white; it requires a light, rich soil, well manured and worked during the summer. When the frost has destroyed the leaves, take up the roots and preserve them like those of the Dahlia. Planted in small or large beds, or in groups on the lawn, etc., it will present a curious and extraordinary specimen of vegetation.—*Journal of the Farm.*

DRACŒNA SURADOSI, (*variety Maculata.*)—The description of this *Dracœna* we find in the *Rural New Yorker*, accompanied by an illustration of a specimen in flower.

“It was found on the banks of the old Calabar River, in 1863, by G. Mann, but afterwards sent to the Glasgow Botanical Gardens by Mr. Clarke. It is a shrub six or eight feet high, throwing up copious, stout, erect, rod-like sureuli from the roots. Leaves in scattered, opposite pairs, and whorled in threes, spreading, flat, four to six inches long, one to two inches broad, beautifully blotched with golden yellow. Flowers in a globose corymb; greenish-white. A beautiful shrub for the conservatory or the parlor, readily propagated from cuttings.

LOCKHARTIA AMOENA.—A pretty *Lockhartia*, with strong stems and beautiful yellow flowers, the lips painted with purple, the column with brown. Discovered by M. Endres, in Costa Rica. Now flowering (March 16th) in the Hamburg Botanic Garden.

Gardeners' Chronicle.

ERIA (FLAVÆ) BERRINGTONIANA, n. sp.—A very unexpected novelty—a giant *Eria Flava*, bearing a raceme of flowers, each nearly equaling a flower, *Bolbophyllum (Sarcopodium) Lobbi*. The flowers are at first yellowish-green, the side sepals and lips marked with purplish streaks inside; afterwards they become ochre-colored. The outside of the sepals is covered with very short arachnoid white hairs, as are also the stalked ovary and the blackish bracts, and the peduncles are more than two spans high. Till now all *Eriæ* of this section were small flowering things, in the way of *Maxillaria squalens*, the *bete noire* of those who introduce Orchids, producing finally the long expected flower-stalk with small dirty flowers, in lieu of a *Houlletia* spike. Now we have a member of this section coming from Borneo, much excelling all these by its large flowers, commonly reversed and with the inside petals rolled, as in a *Vanda*. It has recently flowered with A. D. Berrington, Esq.—*Gardeners' Chronicle.*

PAULLINIA THALICTRIFOLIA.—When this charming plant was exhibited at one of the recent shows of the Royal Horticultural Society by Messrs. Veitch, it was no wonder that bystanders mistook it for an *Adiantum*. At a little distance the resemblance is so striking that the plant may be put down on the list of those given to “mimicry” as the awkward phrase goes. The plant in question is a stove climber, and a native of the southern province of Brazil. The “habit” of the plant in its native country seems, as in the case of our Ivy, to alter when the flowering stage is reached. It then becomes much coarser looking, and as the flowers, though interesting botanically, have no horticultural merit, gardeners need not care to induce the plants to flower, unless they are of a botanical turn of mind. The younger branches are covered with a velvety down. The leaves are of a rich green color, and beautifully cut like those of a *Thalictrum* or *Adiantum*. As a decorative plant for table decorations, few can surpass it, as shown by Messrs. Veitch & Sons, of Chelsea.

Gardeners' Chronicle.

DOUBLE WHITE ZONALE PELARGONIUM.—The *Revue Horticole* announces the appearance of a Double White Zonale Pelargonium, lately obtained by a nurseryman at Toulouse, who has disposed of his stock to M. Boucharlat, of Lyons. The plant in question is a sport from *Beauty*—a single flowered white variety with a pale flesh-colored centre. So says the *Gardeners' Chronicle*.

VIOLA CORNUTA *var. magnificent* belongs to a strain of which *Perfection* and *Enchantress* are the type. It is equal in size to either of them, has the same branching habit, “but is somewhat more robust in growth, while in color it is very distinct and superior.” The flowers are borne well above the foliage; they are of a rich, deep violet color, with a small yellow eye, surrounded by rays of deep violet-purple.—*Gardeners' Chronicle.*

HYDRANGEA PANICULATA is mentioned among

new and rare plants as particularly worthy of notice, and the finest flowering shrub of recent introduction. It grows from eight to ten feet high and bears large pyramidal panicles, from twelve to eighteen inches long. Its flowers are white, and continue long in bloom.—*Horticulturist.*

NEW FRUITS.

THE TELOFSKI APPLE.—This Apple, which is rapidly becoming a favorite, is a native of Russia, and appears to be particularly adapted to our climate. Dr. Warden describes it as follows:—Tree vigorous, hardy, productive, upright. Leaves broad, pale or light green. Fruit small to medium; round, flattened, somewhat conic, angular; surface smooth, yellow, striped, splashed carmine; white bloom; basin shallow folded; eye long, closed; cavity wide, wavy or deep; acute stem, short yellow; core large, clasping; seeds numerous, plump, brown; flesh yellowish-white, breaking fine-grained, juicy; flavor acid; quality good, use market or kitchen; season June, July; before early harvest.—*Journal of the Farm.*

GRIMES' GOLDEN APPLE.—We have on several occasions referred to this variety as one of great merit. It is hardy, produces abundantly, and bears regular annual crops. In one of our early plates, we selected Cornell's Fancy as one which would always do credit to the Eastern States; and looking about us for one to serve the West in the same way, we could think of no variety which had been already pretty well tested, and found to be so generally likely to hold its own, as this one. We do not regard it as of the highest flavor, but in all other qualities, think it is the equal of the best, and as near the average of perfection as people are likely to get in one single fruit.—*Gardeners' Monthly.*

PEAT.—It is said that large quantities of Peat have been discovered in the southern part of California.

NEW VEGETABLES.

FIEDER KRAUT CABBAGE.—This is a new variety recently introduced from Germany, and as far as it has been tried is highly esteemed. It is the general "Crout" of that country, it being preferred on account of the solidity of its heads. It has a very fine flavor, and heads freely, the heads being of a conical shape.—*Journal of the Farm.*

NEW VARIETY OF CUCUMBER.—In *Land and Water* we have a figure and description of what is called the new White-spine Cucumber. This, when raised on a trellis, grows to an enormous size, one vine having three specimens, each of them three feet in length, besides many others over two feet long. The flesh is said to be very solid, with but few seeds, and the flavor very fine. This method of growing Cucumbers is recommended as furnishing a much superior result to that of allowing them to trail on the ground, as they thus grow finer, straighter, and with a larger yield. This new Cucumber has the skin perfectly smooth. It is very short in the neck, and is considered a decided gain to the resources of the vegetable gardener.

FRESH VEGETABLES.

Those who value *Fresh Vegetables* and *Sweet Salads* will have none washed in the garden. Neither the one nor the other should be washed until they are just about to be cooked or eaten. Even Potatoes lose flavor quickly after being washed, so do Carrots and Turnips; while water will speedily become tainted in summer in contact with Cauliflowers and Cabbages, and thus destroy their freshness and flavor. The case is still worse with Salads. If washed at all, it should only be just before they are dressed—and they should be dried and dressed immediately. Nothing ruins the flavor of vegetables, and renders good salading uneatable sooner than water hanging about them. If Lettuces are quite clean, they make the best salad unwashed;

but if washed, the operation should be done quickly, and the water instantly shaken out, and the leaves dried with a clean cloth. But, alas! how often are they cut and washed in the garden in the morning, and pitched into water in the scullery sink until wanted. Then we are gravely assured that our gardeners cannot grow salading like the French! but what French artiste would be mad enough to rinse out his salad juice, and then recharge his Lettuces and his Endives with semi-putrid water?

The best practice is simply to remove all superfluous earth by scraping or rubbing, and all rough tops or leaves by cutting. Enough tender leaves may still be left on Cauliflowers and Broccoli to overlap the flowers. Salad should be sent in from the garden with most of the outside leaves and main root on. The tender leaves are easily tainted and injured by exposure, and if the chief root is cut off sharp, much of the juice oozes out at the wound.—*Gardeners' Chronicle.*

PEAR GROWING.

Fourteen Years' Experience.—The Quince as a Stock.

Aside from the causes of the blight, there is no one point in Pear culture, upon which there is a greater diversity of opinion among fruit growers, than the comparative merits of the Quince and the Pear as a stock.

We propose, therefore, to give some of the reasons which incline us to prefer the quince, especially in certain localities. When we shall have given our reasons for this preference, we will give some of our own experience, both with the quince and the pear.

1. The quince causes the pear to fruit much earlier than when worked upon its own root. Such varieties as unite kindly with the quince, as the Duchesse d'Angouleme, Louise Bonne d'Jersey, White Doyenne, and others, will generally bear at the fourth year from the bud, and under favorable circumstances will continue to bear regularly until they cease from old age. This we con-

ceive to be a very satisfactory argument in favor of the quince, since the pear on its own roots does not usually bear in less time than from eight to fifteen years. When we speak of the quince as a stock for the pear, we always mean the *Angeres Quince*, the most thrifty growing variety now known.

2. The quality of the fruit in many varieties, as *Beurré Langelier*, *Soldat Laboureur*, *Duchesse d'Angouleme*, *Easter Beurré*, *Glout Morceau*, *Louise Bon d'Jersey*, and *Vicar of Winkfield*, and others, is very considerably improved. This is another reason why the quince stock should be used, especially when applied to these varieties.

3. Trees grown on the quince are much more successfully transplanted than when grown on the pear; since the quince roots much more readily than the pear, being raised easily from the cuttings, while the pear will scarcely grow at all from the cutting. It is only when the trees are frequently transplanted while quite young, that they can be satisfactorily set at suitable age for final transplanting on the pear root.

4. Those trees worked on the quince are sometimes less liable to *blight* than when worked on the pear stock. This is because the quince has, to some extent, the same effect as root pruning in checking unusual and exuberant growth of young wood. This unusual growth being the most prolific, predisposing cause of blight, for the next season. Trees thus worked upon the quince come into bearing early, and although the trees may make roots from the pear while quite young, yet the amount of fruit produced makes such demands on the root for sap that the unusual growth of wood which would otherwise be made, is reduced, and consequently danger from blight greatly lessened.

5. Whenever a tree is so transplanted as to sink the junction of the pear with the quince, from two to four inches below the surface of the ground, the pear will, in most cases, without any other manipulation, take root, and thus gradually convert a dwarf into

a standard tree. By thus using the quince as a stock, we secure an early supply of fruit and in the case of some varieties an improvement of size, beauty and flavor, and at the same time are gradually increasing the size of the tree with the enlargement of the crop of fruit, while the life of the tree is prolonged to quite an old age.

The foregoing remarks are intended to apply to those soils that are more congenial to the growth of the quince than to the pear.

Our own soil is composed of loam, gravel and shale, with a sub-soil of strong, heavy clay. We have about sixty-five trees in bearing, about fourteen years of age, most of them having borne for several years. Our site is an inclined plane, inclining at an angle of about 30 degrees, affording ample surface drainage. In the soil above described the quince grows finely. The pear root, especially when deeply sunk, does not succeed near so well as the quince. When our trees were set in their present position, there were three of them on the *pear* root, the balance on the quince. Those on the quince, generally, have greatly outgrown those on the pear root; so that for soils of the above description, we feel quite safe in recommending the quince as the better stock for those kinds which unite readily and successfully with the quince. Among the varieties which may be relied upon for such soils, when so worked, are the following: *Beurré d'Anjou*, *Beurré Diel*, *Duchesse d'Angouleme*, *Easter Beurré*, *Glout Morceau*, *Louise Bon d'Jersey*, *Vicar of Winkfield*, *Urbaniste*, *White Doyenne*, *Stevens' Genessee*, and *Tyson*.

Many of our trees originally planted as dwarfs, have, without any assistance of ours, thrown out roots from the pear, and have consequently become standards—we use the word *standard* in its common acceptation. Those trees whose pear roots are growing near the surface are now making fine growth, and promise to become quite large. We know that many of them have rooted from pear, because they throw up pear suckers from the surface. Hence, the preference to

be given, either to the pear or the quince as a stock for the pear, must be determined, mainly, by the composition of the soil in which we wish to plant.

We would remark, that the best informed among us have much to learn upon the subject of successful pear culture, not only in the adaptation of stocks, soils, and climates, but also in regard to the various diseases which attack both tree and fruit, with their preventives and cure.—*Pomologist*.

KILLING GRASSHOPPERS.

An Australian newspaper says, that the practice has been very successfully adopted in gardens, of sowing rows of common larkspur, the leaves of which attract grasshoppers at once, and when eaten is certain death to them—and that thousands of grasshoppers have been thus seen lying dead—all of which may or may not be true. We cannot say that we believe it. Let some one try this season.

Moore's Rural New Yorker.

NATIONAL AGRICULTURAL ASSOCIATION.

The next session of the above Association will meet in St. Louis, Missouri, on Monday, May 27th, 1872.

Each State Agricultural Society is entitled to two delegates, each Agricultural College to one delegate, and every Local Agricultural Society of 50 or more members, which has contributed to the funds of this National Organization, to one delegate.

The circular says: "We hope that every Local Organization in the United States will be represented. Essayists have been appointed, and it is expected that the occasion will be one of great interest to those engaged in Agriculture. All who want more definite information can procure a copy of the Constitution and proceedings by addressing the Secretary, S. B. Killebrew, Nashville, Tenn.; F. Julius Le Moyne, Washington, Penn., President."

APPOINTMENT.

Dr. George Vasey, of Illinois, has been appointed Botanist of the Department of Agriculture, in Washington.

REPORT ON THE FRUIT MARKET.

We have on several occasions spoken of the incubus of the *commission business* on the producers of fruits and vegetables, and on the public. We extract the following from the *Pacific Rural Press* as endorsing what we have already expressed; it appears under the heading of

"FRUIT COMMISSIONERS."

It is just as clear as daylight, that the commission merchants, who receive as middle-men, standing between producer and consumer, make the largest share of the total profit on our annual fruit production. Immense quantities of fruit are yearly dumped into the bay, because consumers will not come forward and pay the exorbitant prices asked, over what the same quality can be bought for directly from the wagon of the producer, who is so fortunately situated that he can market his own fruit at retail.

The country is equal to the production of fruit in quantities that should place it within the reach of the poorest of the land in full abundance, at a cheap rate and still pay the producer a fair price for his skill, time, land and labor. But so long as the middle-men can set their own prices on what they buy, as well as what they sell, so long will the profit of the producer be made secondary.

A quantity of fruit of any kind is thrown upon the market in the hands of the commission merchant at a fair profit to the producer; but the price is immediately put up to so high a figure, in anticipation of a large profit on sales, that nobody, or but a few that are able, buy. As a consequence, the next consignment of fruit finds the former one on hand and no purchasers; of course, down goes the price and profit to the producer, and the first consignment goes into the bay.

The whole story is told in this—the retail prices of fruits in the city are too high for the good of the producer or consumer, whilst both would be benefited if a more extended system of retailing from first hands could be inaugurated.

Our Markets are now abundantly supplied with Fruits and Vegetables of superior quality and in fine condition.

FRUITS:

Raspberries are fine and abundant, retailing at, per lb., 20 cts.

Strawberries, still in good supply and fine, at, per lb., from 8 to 12½ cts.

Blackberries are very fine and plentiful, retailing at, per lb., 15 to 20 cts.

Gooseberries are going out.

Apricots are also on the decrease, selling at, per lb., 15 to 20 cts.

Peaches are now becoming plentiful; there is every prospect of an abundant supply; quality good, selling at, per lb., 12½ cts.

Cherries are very fine and plentiful.

Plums are increasing in supply, but variety inferior; retailing at, per lb., 15 to 20 cts.

Currants are going out, selling at, per lb., 8 to 12½ cts.

Grapes (Sweetwater) are looking well, and sell for, per lb., 25 cts.

Apples, (Red June, Red Astrachan,) selling at, per lb., 8 cts.

Pears (Russet) selling at, per lb., 8 to 12½ cts.

Figs are becoming abundant, both white and blue retail for, per lb., 12½ cts.

Melons, (Cantelopes,) a few in market, sell at 50 cents each.

Watermelons a few, but inferior.

Tomatoes are becoming abundant and selling, per lb., for 8 cts.

Rhubarb, fair in duality and quantity, selling at, per lb., 6 to 10 cts.

Pie Squash, selling at, per lb., 2 cts.

Bananas, a few retailing at, per doz., \$1.00.

Oranges, " " " .75.

Lemons, " " " 1.00.

Limes, " " " .25.

VEGETABLES.

Cabbages and Cauliflowers are plentiful, and sell at, per doz., from 75 cts. to \$1.00.

Sweet Corn, per doz., from 25 to 37½ cts.

Egg-plant, per doz., 12½ cts.

Squash, good supply, at, per lb., 5 cts.

Peas are going out, sell for, per lb., 5 to 7 cts.

String-beans plentiful, at, per lb., 5 to 7 cts.

Shell-beans, small supply, at, per lb., 8 cts.

Peppers in sufficient quantity, at, per lb., 12½ cts.

Asparagus is going out, a limited supply at, per lb., 12½ cts.

Onions are selling at, per lb., 3 cts.

Spinach in fair quantity at, per lb., 8 cts.

Cucumbers in moderate quantity, at, 25 cts.

Potatoes are selling by the sack, at, per lb., 2½ cts.

SAN FRANCISCO, July 9th, 1872.

Editorial Cleanings.

BOTANY IN NEW YORK.—Philadelphia has hitherto enjoyed a pre-eminence in botanical studies, through the large herbariums of the Academy of Natural Sciences; but of late, New York City has shown a commendable activity in the pursuit of this interesting science. A modest but highly valuable periodical, *The Bulletin of the Turrey Botanical Club*, at the low price of \$1.00 per year, is very well supported, and the working Botanists of the Club, have proved to be an active set of gentlemen. Recently, Columbia College has secured the herbarium of Meisner—some 60,000 species—which, with the already fine collection, will excel that of Philadelphia considerably. We congratulate our sister city on her good fortune in securing this prize.—*Gardeners' Chronicle*.

THE FIRST FIGS—Three days since we saw the first ripe figs of the season, of the kind known as the green or white Ischia—quality fair, but smaller than need be. Do our amateur fig-growers generally know, or if

knowing, practice a method common all over Europe where figs are grown, of increasing the size of the fruit just before ripening, by the application of a small quantity of oil to the flower end of the fig? "At Argenteil", says Loudon, "the maturity of figs is hastened by putting a single drop of oil into the eye of each fruit. This is done by a woman, who has a vial of oil suspended from her waist, and a piece of hollow rye-straw in her hand. This she dips into the oil, and afterwards into the eye of the fig." "We have ourselves," says Downing, "frequently tried the experiment of touching the fig with the finger dipped in oil, and have always found the fruits so treated to ripen much more certainly and speedily, and swell to a larger size than those left untouched." Sweet or olive oil should be used.—*Pac. Rural Press.*

HOP GROWING.—More attention has been paid to Hop growing this year than formerly. A large number of Hop-yards have been planted this season. C. T. Bird, Esq., of San José, one of our successful Hop growers, has sold over 50,000 Hop roots this season.

California Hops, on account of their great strength and high flavor, readily command 20 to 25 per cent. higher rates abroad than Hops grown in other States.

FRUIT PROSPECTS IN OREGON.—The *Willamette Farmer*, of Oregon, says: "The fruit crop this season will be light, many orchards hardly bearing enough for family use. In many localities the frost has been very severe, killing large apple trees; even town raspberries and blackberries are much injured."

PITCHER PLANT.—Mr. Geo. Such, of South Amboy, N. J., has succeeded in bringing the California Pitcher Plant into bloom.

AGAVES.—J. T. Peacock, of Hammersmith, England, cultivates two hundred species and varieties of Agaves, of which he produced fifty named species at the late Floral Show in London.

HOP-CULTURE.—We understand that Hop-culture is to undergo a trial upon the plains of the State of Nevada. Some, who ought to know all about it, say that a superior quality of Hops can be raised there.

PROFIT OF CHERRY TREES.—Some of the Cherry trees of Mr. Bidwell's orchard, in Butte County, yielded \$200 dollars to the tree this season, the fruit selling as high as 60 cents per pound in San Francisco.

"THE GARDEN."—Mr. W. Robinson, who paid a visit to California during the latter part of 1870, is now publishing "*The Garden*," in London.

COTTON PLANTATIONS.—The experimental Cotton Plantations of California look most favorable this year, and a complete success is expected.

AUSTRALIAN SEASONS.—Autumn commences on March 20th, Winter on June 21st (the shortest day), Spring on September 23d, and Summer on December 21st (the longest day.)

MAMMOTH FLOWER.—There is now in bloom, in Mr. Frederick Sunkle's garden, corner of Railroad Avenue and Walnut Street, a flower known as "Aaron's Cup," which measures two feet eight inches from the but end of the flower to the tip of the cup.—*Encinal.*

STATISTICS OF 1870.—According to the Statistics of Agriculture, as compiled from the Census of 1870, the total value of Orchard products in the United States has been \$47,335,189; the produce of Market Gardens, \$20,719,229; and of Forest products, \$36,808,227. As compared with the statistics of 1860, the increase in Orchard products has been \$27,343,304.

 We have made arrangements to supply the *Overland Monthly*, together with the *California Horticulturist*, for \$4 50 per annum. Subscriptions at this rate should be for one year, and should be paid in advance. Orders directed to F. A. Miller & Co., box 128, Post Office, San Francisco, or to the office of the *California Horticulturist*, 622 Clay Street, will receive prompt attention.

THE

CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

VOL. II.

AUGUST, 1872.

No. 9.

DECORATIVE PLANTS.
FOR OPEN AIR CULTURE.

It is a general rule in the laying out and arranging of ornamental grounds, however small or large they may be, to select some one or more of the most conspicuous or prominent places for the site of some choice and effective plant or group, which in itself may form a leading feature of the grounds.

It is not our purpose here to designate what plants are thus used in the East and in Europe, where immense prices are paid for well-grown specimens of suitable character; but we wish to call the attention of our readers to the fact, that the climate of California permits the introduction into our gardens of many classes of highly decorative trees and plants, which cannot be grown in the open air in colder countries; we should, therefore, take advantage of these fortunate circumstances to cultivate those which are of the greatest decorative value. It has always been admitted that the tropical and semi-tropical climates supply the most beautiful, the most ornamental, and most imposing of decorative plants; and many of these may be grown in California with gratifying success, such as Palms, Draccenas, Yuccas, Pampas-grass, Phormiums, Araucarias, etc. There is something in tropical vegetation which all admire, and we cannot produce either a better or grander effect in

our gardens, than by the introduction of such tropical plants as are now known to be adapted to our climate. It is scarcely necessary to say, that some little discretion should be used by gardeners and amateurs in locating such plants; they require room, and unless they are planted by themselves and in a conspicuous position, the desired object is not attained. In this connection we will mention, for example, the *Corypha Australis*, of which we have seen the best specimens at Calistoga Springs, the trunks of many measuring about a foot in diameter and the luxuriant foliage extending to the height of probably twenty feet. These fine specimens of this hardy Palm are confined within spaces of about fifteen by twenty feet square, which constitute the small front gardens of the cottages; they are thus crowded in between the house and the fence and occupy the entire space, thus certainly resulting in a complete failure. Had these Palms been planted in a conspicuous place, where they could have had all the room they needed for their full development, they would have formed one of the leading features of the Springs, but as it is they are an eye-sore to the place, and the sooner they are removed the better. We could cite many similar instances where errors have been committed, showing lamentable lack of judgment and taste. However, our present purpose is to encourage the cultivation of decorative plants of this character,

and to enumerate those which we may grow here with every prospect of success. We shall first speak of

PALMS,

some of which are so useful in their native countries for numerous purposes, but must be accepted as strictly ornamental plants or trees in California; we therefore cultivate them for their beautiful and effective foliage. Their flowers are magnificent, and are of a whitish-yellow or whitish-green color; developed in bunches of thousands. Of about 350 varieties of Palms which are now known, we believe that over three hundred are natives of America and Australia.

A few words may here be desirable in regard to the propagation and raising of Palms. They are mostly obtained from seed, which it is difficult to procure in good and fresh condition; while the seeds of some retain their vitality for a year or more if kept in a cool temperature, most of them will not germinate unless they are sown soon after they are ripe. They require bottom heat, and to be covered by a very light and porous material, sawdust of a resinous pine is considered best for the purpose. If the seed is surrounded by a dry shell it should be taken off before planting, and to chip them a little with a sharp knife is often instigatory to rapid germination. While some seeds may lie in the ground for two years or more before they sprout, others will germinate within a few weeks. As soon as the first foliage is formed they should be potted in light and porous soil, kept in a close and warm house, and watered frequently. To increase their growth, they should be repotted frequently.

One of the best Palms for our California climate, is the

Corypha Australis (sometimes called Cabbage Palm), of which, as we said above, a few fine specimens are growing at Calistoga. This Palm may be grown in the open air in almost every locality in the State; it is also a fast grower. Plants may now be had at very reasonable prices at our nurseries, viz: from fifty cents to three dollars each; this places

them within the reach of everybody. The foliage is very large and characteristic, its form is effective, and all it requires is moisture for the first two or three years, and when once established it will grow without any further attention. It is a native of Australia.

Chamærops humilis may be successfully grown in California. In its growth it is more shrubby than the former, but will make a novel appearance in our gardens, requiring moisture, but otherwise satisfied with a good common garden-soil.

Chamærops excelsa is a much more rapid grower than the former, and will be quite hardy in California. Wherever the Laurustinus will grow, the Palm may be cultivated with equal success. This fact must be encouraging to all who are lovers of Palms for decorative purposes.

Chamædorea is the name of another class of Palms which are now very popular in Europe. They may be grown wherever the Orange tree will prosper in the open air. The flowers of these Palms are deliciously fragrant and are produced in abundance; they require very little care and develop themselves with great rapidity. The foliage also is very neat and graceful. We do not, however, know of any now under cultivation here, but the plants may be easily imported.

Cocos nucifera (*Cocoa palm*) the large fruit of which is well known to all our readers, is one of the most useful Palms. We think it may be successfully grown everywhere along our coast range, particularly in all localities where the Redwood is found. It seems to thrive well in the vicinity of salt water, and where the atmosphere is influenced by its evaporation. The Cocoa Palm is a most beautiful and picturesque tree and is well worthy of a trial. Moisture is necessary for its success.

Zamia, (of which there are several varieties,) is one of the most beautiful of Palms, but we are not certain whether it is adapted to our climate; a moist atmosphere is requisite.

Cycas is another family which is universally admired; we think the *Cycas* may be grown here without any difficulty, and that it will thrive exceedingly well in Sacramento, Marysville, and similar climates. The most beautiful of this family is the *Cycas revoluta*, a native of Southern Japan. This plant is highly valued in Germany, its foliage being used very extensively for decoration. It is commonly known as the Sago Palm, and furnishes the well known Sago of commerce.

The *Phoenix* (*Date Palm*) is a lofty Palm, attaining the height of from sixty to eighty feet. Date Palm seeds germinate readily, and by proper treatment will grow rapidly. We think there would be very little difficulty in cultivating them in our gardens.

We might mention many other varieties of Palms, but they can not at present be obtained from our nurserymen; we hope, however, that with a little encouragement, and a development of taste for them among our amateur gardeners, more attention will be devoted to their cultivation.

In our next we will speak of other valuable decorative plants.

CHOICE VARIETIES OF FUCHSIAS.

From experience we can recommend the following varieties of Fuchsias for this climate; and in making this selection we are guided by various important considerations: *First*, of form and color; *second*, foliage; and *third*, habit—all of which characteristics form very important considerations in selecting the best:

Striped Unique, very double, tube and sepals crimson; corolla, purple with scarlet stripes.

Wave of Life, beautiful rich foliage of light green; splendid habit; sepals, rich scarlet, well recurved; corolla, violet blue, of fine form.

Avalanche, very double; compact; corolla, pure white of extra size, with long crimson

filaments; tube and sepals, brilliant carmine scarlet.

Talma, flowers double, of globular form, sepals well reflexed; of fine, graceful habit; and free bloomer.

Dreadnaught, tube and sepals, bright crimson, well reflexed; corolla, of a compact form, and of a beautiful purple color.

May Felton, light-red tube and sepals, well reflexed; corolla, mauve and very double; fine.

White Eagle, rich scarlet tube and petals; white corolla; free bloomer; vigorous habit.

Eugene de Camirand, sepals, coral red; corolla, deep blue to amaranth red; very showy.

Majestic, tube and sepals, scarlet, well reflexed; corolla, purple; flamed carmine; very large, full and expanded; a very desirable variety.

George Felton, one of the very best; tube, short and thick; sepals, elegantly reflexed; corolla, of a beautiful bright purple.

Gazelle, bright scarlet tube and sepals; large, violet-blue corolla; graceful flower, splendid habit; free bloomer.

Striata Perfecta, corolla, well expanded, cup-shaped, and beautifully striped; one of the very best.

G. Grant, sepals, bright red; corolla, rosy lake; quite novel and distinct.

Harvest Home, long, pink tube; broad, scarlet sepals, well recurved; large, open, double corolla; violet, with large flakes of rose; very desirable.

Tower of London, sepals, carmine-scarlet, well recurved; corolla, rich violet-blue; double.

Angelina Braempt, sepals, deep scarlet; corolla, double; pure white, striped with rose; one of the very best.

Taghioni, sepals, white; corolla, violet-lake; fine habit; profuse bloomer.

Souvenir de Cheswick is one of our oldest varieties, but will always be popular; the sepals are well recurved, and the flowers are

very graceful; sepals, bright scarlet; purple corolla; very desirable.

Duchesse de Gerolstein, sepals and tube, white; corolla, a rich crimson. We can recommend this variety highly. It is an early and profuse bloomer, and of excellent habit.

Madame Cornelisson is a very popular variety, with a white corolla; free bloomer.

Comte de Flandre, sepals, dark carmine; corolla, very double; indigo blue; a very desirable variety.

Francis Desbois, very double corolla; an old, but much-favored variety.

Exquisite, sepals, bright crimson, well reflexed; corolla, large, and very double; purple and rose, flamed and flaked.

Extraordinary, one of the best; corolla, very large and double; of a rich violet-blue; blooms very freely with us, and is of good habit.

Grand Cross, sepals, scarlet; very large and double corolla, of a rich purple.

Chas. Gailly, sepals, scarlet; corolla, violet-purple, shaded with carmine; one of the best.

All of the above varieties may now be had in our nurseries, and, we believe, form about as good a collection of Fuchsias as can be obtained in the United States or in Europe.

The following species of Fuchsias are novel and remarkable in their character, and should also be in every collection:

Serratifolia multiflora, an excellent winter-blooming variety; white and pink.

Fulgens, orange-pink; will bloom profusely (out of doors all winter) with us.

Meteor, foliage of a rich, golden color; flowering late.

Microphylla, a beautiful little gem; flower and foliage very small; highly ornamental and graceful; always in bloom; excellent habit; a most desirable acquisition.

Corymbiflora, producing long corymbs of carmine-colored flowers, with long tubes and very short sepals.

GRAPE-GROWERS' ASSOCIATION

Of Sonoma, Napa, and Solano Counties.

Pursuant to adjournment, Association met at St. Helena, July 13th, Maj. J. R. Snyder in the chair.

Minutes of previous meeting read, and adopted.

Mr. Hill, from Standing Committee on Vines, reported the present promise of the grape crop in Sonoma as fully an average one: the effects of frost are less pernicious than had been anticipated. Some mildew had been seen on low sites, but not to an extent worthy of notice.

Mr. Krug reported the crop in Napa, according to present indications, as excellent, but not equal in some varieties to the extraordinary yield of 1871.

Dr. Lockwood had heard of mildew in some unsulphured vineyards.

Mr. McCord's vineyard had suffered from cut-worms.

Major Snyder remarked that cut-worms could best be combated by bottling. It could be done by the hands engaged in hoeing or suckering.

Mr. Pellett deemed the effects of frost less disastrous than has heretofore been represented. He considered it noteworthy that unplowed ground was less obnoxious to the effects of frost than ground recently upturned.

Capt. Sayward instanced some facts, proving that an obstruction to the circulation of air conduced to danger from frost.

Mr. Hill announced, on the authority of Gen. Frisbie, that the proposed erection of wine-storehouses in Vallejo, by the Land Improvement Company, had been abandoned.

Mr. Goss moved, that the Association had heard with regret the announcement made by Mr. Hill, and hope some other parties will essay this channel for the investment of capital. Carried.

Major Snyder thought that wine-makers would do well to form co-operative associations among themselves, for the erection of buildings for the storage of wine. Such an

association was now in progress of formation in Sonoma, with the design of having a building for the accommodation of four or five hundred thousand gallons of wine, to be erected and maintained by the wine-makers using it.

Mr. Krug, from Committee on Distilling, reported that the government tax on grape brandy had been raised from fifty cents to seventy cents per gallon.

Mr. McCord moved, that the recent increase of the U. S. internal revenue tax on grape brandy is viewed by the Association as injurious to the vinicultural interests of California, and detrimental to the revenues of the General Government. Carried.

Mr. Backus called the attention of the Association to the difficulties likely to arise in procuring a supply of casks, in consequence of the scarcity and high price of oak staves. It is important to get full information as to the adaptability of redwood for the purpose.

Mr. Hood, of Sonoma, had used, for some years, large redwood casks, to his entire satisfaction. Their cost is fifty per cent. less than those made of oak; and, if properly made, answered fully as well.

Mr. Pellett had several, of 1,000 gallons each, in use, and found they kept both white and red wine in as good condition as oak casks. There was some leakage the first year—probably from imperfect construction; but now that a tartar deposit is formed, they are quite tight.

Mr. Edward's experience with redwood was likewise favorable.

On motion, the subject was referred to a special committee of two—Messrs. Snyder and Backus—to report at the next meeting.

During an informal discussion respecting the wine market, Dr. Crane pointed out some difficulties in the California wine trade, which had come to his knowledge in his visits to the East. California wines had not made a reputation, and dealers, in selling them, if of superior quality, did not hesitate to label them as foreign—poorer wines, of course, they call California.

Maj. Snyder read a paper which was ordered to be spread upon the minutes and published. It controverted the oft-repeated declaration that all California wines have an extraordinary degree of alcoholic strength. This was disproved, in regard to the wines made in the counties north of, and bounded by the Bay of San Francisco, by a comparison of French wines as assayed by Prof. Brande, and of Sonoma wines as assayed by Major Snyder himself. By these assays their average strengths are almost identical; the French wines 13.3—the Sonoma wines 13.1. The objection to California wines is their newness, and this objection must be overcome before the reputation of California, for her wine product, can be established.

Adjourned to meet in Napa City, July 20th.

Jno. A. Lockwood, *Sec'y.*

HOUSEPLANTS AND THEIR TREATMENT.

Window Gardening has of late made rapid progress, and our Eastern friends, particularly the ladies, have become enthusiasts in the culture of home and window plants. It may be said that there is less occasion for window gardening in California, where we may have flowers in bloom in the open air all the year round. This argument may hold good with some, but not with the majority. There are many ladies residing in the city who are passionately fond of flower culture, but have no space for a garden; to them window gardening must be a great comfort and pleasure, while to those who are so fortunate as to have a flower-garden around their dwellings, we would say, that many of our most charming floral beauties will not come to perfection in the open air, and require more delicate treatment, care and protection. Frequently the question is submitted to us: What plants are best adapted to home culture? We could name many different species, but will confine ourselves to a few of the very best.

The *Chinese Primrose* (*Primula sinensis*) is exceedingly well adapted for the window; it

is hardly ever without flowers, which are exquisite, and its foliage keeps well. We would advise everybody to purchase a pot or two of this Primrose, and we know they will repay well for the small outlay and the little labor they require. They are fond of moisture and delight in a sunny situation. During the hottest part of the day it is better to shade them slightly, as the rays of the sun act too powerfully through glass. A six inch pot filled with moderately rich garden soil will produce an abundance of flowers for a year, if the watering is regularly attended to. After that, we would advise to replace them by purchasing new plants; but if for economical reasons the old plants are retained, they should be repotted in fresh soil. This should be done as follows: Turn the plant out of the pot, remove carefully about three fourths to four fifths of the soil, cut back the exposed roots with a sharp knife, also remove the leaves with the exception of three or four young and healthy-looking ones, near the center, and then plant firmly into a clean pot of the same size. Very good soil consists of one fourth loam, one fourth leaf mould, one fourth river sand, and one fourth old rotten manure; in the absence of some of these ingredients, good garden soil mixed with a little manure will answer the purpose. Three or four pieces of broken pot at the bottom for drainage will be beneficial. The flowers are white or lilac; the fringed are preferred. The fern-leaf variety is very popular now. There are single and double flowering varieties; the latter, however, are scarce, and as yet command high prices. Chinese Primroses may be raised from seed, but we advise our readers to purchase grown plants. The raising them from seed requires more care and watchfulness than amateurs are generally willing to devote to it.

The *Cyclamen* is another most charming house plant which will flower freely during Winter and Spring, some of the flowers being exceedingly fragrant. The *Cyclamen* is a bulbous-rooted plant and requires a season of rest during Summer. This is accomplish-

ed by gradually diminishing the quantity of water given, until the leaves begin to wither and decay. After that they should receive just sufficient water to keep the roots from shriveling and drying up entirely. During the time of rest they should be placed in a shady, out-of-the-way place. In September or October they should receive attention by taking the roots carefully out of the soil, removing the damaged or decayed parts of them, and then planting them in new soil so as to expose about one half or one third of the bulb above the surface of the soil. For about ten days put them in a shaded place and water sparingly, after which place them close to the window and give a good and regular supply of water. Plants thus treated will flower abundantly from November to May. Common light garden soil with one third of leaf mould—if it can be had—will do very well for *Cyclamens*. The colors are various shades of white, pink, and purple.

The *flowering Begonias* are also a most desirable class of plants for window culture. They delight in partial shade and abundance of moisture. Several varieties are blooming with us constantly. Those which flower most abundantly are: *B. fuchsioides*, *B. rubra*, *B. parviflora*, *B. nitida*, and *B. Sandersonii*. The most magnificent flowers are produced from *B. Verschafeltii*, but its flowering season is short. *B. Weltoniensis* and *B. Boliviensis* are said to be very fine, but the plants are not yet sufficiently known here for us to form a proper estimate of their merits.

The flowers of which we have thus far spoken may be obtained at low prices, and everybody can afford to have them and by adding to them one or two plants of *Coleus*, which are so remarkable and pleasing for their beautifully colored leaves, and also one or two Ferns, such as the Maiden-hair, one or two double Geraniums, and a pot of *Mignonette*, we can assure our lady friends that the little necessary outlay for a small collection of this kind will be a source of continual pleasure and gratification to them. Let them try it and we are sure they will not regret it. More of this hereafter.

HINTS ABOUT WINE-MAKING & PRESERVING.

BY JACOB KRAUTH.

Read before the California Wine Growers and Wine and Brandy Makers' Association.

In my first report I mentioned that casks containing light, dry wines, should be full always, and I will only add some further explanation, so that beginners may understand it more fully.

Casks which, under all circumstances, must be clean and sweet, when first filled with wine-juice or must, cannot be kept full without loss, which should not be, especially if fermentation sets in at once, as is the case in warm weather.

The running over, if it were only oxydated ferment, without loss of wine, would be well enough. But this running over of lees and wine is very apt to sour and fill the whole cellar or room with acetic or vinegar gas, transplanting itself, which answers very well for a vinegar factory. The casks want filling only so much as to prevent this. The carbonic gas generated by fermentation will keep the casks full for the time being; the superfluous will escape through the bung hole.

In strong fermentation a light covering answers very well, but when it goes down or evolves less gas, it would appear necessary to either make the vent hole so small as to correspond with the quantity of gas generated, or to use fermenting pipes.

The first method is not practicable, for if not fully proportioned, vacancies will be created and atmospheric air—the great generator and destroyer—will have a chance to penetrate and convert such light percentage of alcohol in solution to vinegar very readily. This is a well known fact, that the thinner alcohol is spread and exposed to warm air, the sooner it will turn to vinegar; and upon this principle vinegar factories are carried on. If any one will examine the vacancy near the bung-hole he will find it coated over with a

slimy, oxydated matter, and being thin and half-dry is the very thing to start the spolia-tion of wine.

For these reasons I prefer the use of fermenting pipes. These consist of tin pipes (lead should never be used) or small India rubber hose, one end to go into a well-fitting bung, having a corresponding hole bored through it and fastened perfectly air-tight, the other end bent over to go into a dish or can of water, penetrating not more than one inch. In this way the water will offer very little obstruction, let the excess of gas escape, close up again and leave the cask full all the time.

If fermenting pipes cannot be had, then a very good substitute is to fill the hole bored through the bung with cotton. This will give vent to the gas, and in a measure prevent the ingress of air, only care must be taken that the wine does not reach it. Stirring up occasionally is very promotive of fermentation, because it brings the ferment in closer contact again with the sugar, and forces out the gas, to make room for more.

After fermentation is over entirely, or when it appears that the gas does not keep the casks full, then is the time to fill up with wine and close the well-fitting bung moderately tight. Fill up again, whenever necessary, and keep it full.

If the juice is of proper proportions, right temperature, and not charged with different kinds of salts, which are kept afloat by resinous matter, which most always accompanies them, or an excess of (ferment) vegetable matter not belonging or not necessary in the juice, it cannot fail to make sound, dry wine.

It is impossible to prescribe a certain way of making wine. What holds good if the juice is constituted one way, will not answer if it is otherwise. There are no secrets about the business as so many are found to believe, but all depends upon the quality of the juice itself. A fundamental knowledge and practice to ascertain what treatment is wanting, is all that is necessary, and all little important doings and fineries do not amount to much.

Rags on bungs should never be used. They act like syphons, are most always wet, and sour in a short time. This will appear evident from the vinegar flies which collect around them. Pine bungs, steeped in oil, I prefer any time to oak, because they are driven better and will not crack so easy in dry weather. I have been rather long in describing these points, but may be excused for the reason that my lines are directed to beginners only, through whose ignorance and carelessness a great deal of wine is spoiled every year, and offered for sale only to be rejected, for acetic acid is no product of the grape, but of decayed or oxydated alcohol. Wines started once that way cannot be cured entirely, and had better be stilled as soon as possible.

The practice of many, drawing wine from the same cask every day for a length of time, or boring holes in it lower and lower, should be discontinued, for it not only spoils the wine but the cask also. When a cask is partly empty for some time, in a dry atmosphere, the staves will shrink and admit air, let the bung be ever so tight. These sieve-like openings allow not only the escape of the alcohol, but that of the ether, which gives the aroma, also, the latter being even more flighty than alcohol. Such wine, when not positively soured, will appear flat, and many be considered nearly worthless.

I have been speaking all this time of fine, light, dry wines, as they should be and as they are mostly wanted, not of those strong, heady, half fermented ones, which in fact are not wines at all fit for use, and have spoiled our market East, to a great extent. These will stand bad practice longer in draught, at home, which circumstance can easily be explained, as follows: Alcohol escaping, by opening so often, gives a fresh impetus or chance for a light after-fermentation, which fills the cask again with gas, and hence the opinion of many, that this or that man's wine will keep to the last drop. But such wines cannot be sent with safety any distance, as they are liable to spoil, burst

the cask, and even a man's stomach, if it is not well bound.

Ordinary foreign wines imported very often suffer on that account. Frequently they are sent before they are ripe, and as good luck will have it sometimes, arrive safely enough, with the exception of being turbid and forcing out the corks, if sent in glass. But there is this difference: what they lack in quality they make up in price. And I may here add in conclusion, because this holds good throughout, that wines are admired for their taste and the invigorating effect they produce; taste makes their price, and not the amount of alcohol they contain.

From this it may be seen, that the producing and making of fine wines is not all that is wanting. The well keeping and handling, also, when for use, is very important, and needs correcting as much as anything else.

In giving these statements I have in view, as may well be supposed, my own experience and practice in the winery of the Orleans Hills Vinicultural Association, and it is my firm belief that I justly can do so. I have had not even one cask of wine spoiled yet, even in the warmest weather. Besides, large shipments have been made East; and never yet a complaint of anything being spoiled has been made.

FORESTRY.

We might write volumes in favor of forest and timber tree culture and would gladly devote more space and time to the subject, if we could achieve a practical result by so doing. We are convinced that the large majority of the people are by this time thoroughly convinced of the great importance of preserving and cultivating forests wherever it is practicable. That tree-growing is practicable and can be made a success almost everywhere on the Pacific Slope, is well known to men who have given the subject an earnest thought. But we are certain that the people

throughout the country will not take hold of tree-planting in earnest, unless they are encouraged by some judicious measure, such as our last Legislature was willing and ready to inaugurate, and as the legislative bodies of many other States of this Union have lately had under consideration.

The law to encourage forest and timber tree culture in California, as passed by our Legislature, but unfortunately vetoed by our Governor, is universally considered the best of the kind yet proposed, and all the arguments that have been produced against this law may be summed up in the presumption that no one could be found who could be trusted with the expenditure of a few thousand dollars under the provisions of said law. Some of our leading journals denounced and ridiculed the attempt to pass the law at the time of its introduction in our Legislature, but they failed to suggest any more potent objection, and no sooner was the bill vetoed than these same journals repeatedly published articles in favor of forest tree culture.

So long as one is striving to demolish what another is working hard to build, we cannot succeed. If the law as proposed was objectionable, why not correct the mistakes and propose something better.

All we can now do, is, to wait for a more favorable time, which we earnestly hope and believe will come sooner or later. State aid we must have, as without it our people are not prepared to embark extensively in the timber raising business. In the meanwhile we think the matter ought to be agitated among our Horticultural, Agricultural and Scientific associations, so that we may purge obtuseness from high places and may stand fully prepared, when the opportunity again offers, to enlist State aid in favor of this all-important measure.

The State Board of Agriculture on

FOREST CULTURE.

No more important subject can engage the attention of a California Legislature than the encouragement of Tree and Artificial Forest

Culture. The most wisely managed and most enterprising and prosperous countries of Europe long since saw the importance and necessity of planting and cultivating forests; and England and Scotland can boast of their thousands of acres of majestic pines, beeches, and oaks, at home, and their extensive forests of valuable timbers in their provinces abroad. Germany has large groves of our valuable California redwood growing in Government forests, in connection with other groves of valuable timbers collected from all portions of the world, and these forests are the pride as they are monuments of the wisdom of the nation. Germany has a special Bureau of the Government, devoted to the cultivation of the science and practice of artificial forest culture, and the preservation and protection of the natural forests. France, Austria, and Russia, even at an early day, gave to forest culture the countenance and encouragement of the governments, and now the artificial forests of those countries are classed among the most valuable and highly prized government property. California naturally was but a poorly timbered country, and the limited natural forests within her borders have been most recklessly destroyed. While it is one of the first duties of the State to check this reckless destruction of the natural forests, it is a matter of no less importance to encourage and foster the growth and cultivation of artificial forests.

Comments on our defeated Forest Bill.

FORESTRY LAWS.

As our reference to the California Tree Law and brief synopsis of the act, given last month, has elicited considerable inquiry, many expressing a desire to see the act itself, we this month publish the act entire. Senator Betge has, by this measure, acquired a position among the great benefactors of the race. No one move, in our opinion, has ever been made by any man in our nation that promises greater results than this. Other States will follow the example, and soon we shall find upon the statute books of every State, laws for

the growth of forest trees, having vitality, and puissant for the end desired. By the perusal of this act any observer can readily see how much more effective this law would be than those encouraging tree planters, which has been done by several of the States. What surprises us most, is, that the Governor of California should veto the bill after it had passed both houses by a large majority.

Exchange.

The *Rochester Express* thinks that California never made a wiser move than when she engaged a professional arboriculturist, at a salary of \$1,500 a year, to attend to the setting out of forest trees in different parts of the State. Our forefathers found two fancied enemies when they landed on this continent—the Indians and the forests. They at once proceeded to exterminate both, and their fury, transmitted to their children, has been nearly successful. We may find it difficult to regard the Indian as a friend, but our feelings toward the forests have changed. We want trees judiciously distributed everywhere—on the mountain side, in the field, along country roads, in front of city residences, in parks and gardens; everywhere some, nowhere too many.

GRASSES FOR FIXING A SHIFTING SOIL.

Several inquiries have recently been made for a kind of grass adapted to growth on the sandy borders of our lakes and the ocean, for the purpose of fixing the shifting sandy soil. Several kinds of long-rooted, deeply penetrating grasses seem to be well adapted to that purpose. On the shores of Lake Michigan the long-leaved *Calamagrostis* (*C. longifolia*, Hooker) takes possession of the sandy ridges, in connection with several species of low willows, and makes a permanent barrier against the encroaching waves. The sand-reed (*Calamagrostis arenaria*, Roth.) occurs on low, marshy borders, not only of the great lakes, but also of the ocean coast, both in this country and in Europe. Indeed,

in some instances the planting and preservation of this grass have been provided for by law. The roots are very tough, and are used, for making brushes and brooms; and the leaves are used for thatching, for mats, and for paper. For forage this grass is valueless, being rejected by all kinds of animals.

This subject has excited attention in Europe, as will be seen by the following extracts from an article on "The Caspian Willow and Buffalo Grass as a means of fixing blowing sand," recently published in the "*Landwirthschaftliches Centralblatt fur Deutschland*."

The Caspian Willow has been recommended lately for fixing blowing sand. This species, however, does not come from the Caspian Sea, as one might conclude from the name, for we have never seen it there, at least on the western side; but it grows without doubt all over the Empire of Russia, and even to the interior of Siberia. Possibly its home is the sandy wastes of Southern Siberia, and from thence it came to us by way of Astrachan. At any rate we have received it through Poland. The introduction of home plants from foreign countries on account of their utility is not a new thing. The meadow-grass (*Phleum pratense*) was taken from England to North America, and there discovered to be a good fodder-plant. Englishmen found it cultivated, and took the seed back to Europe, where ever since it has been highly esteemed under its North American name. The Caspian Willow is probably a small-leaved variety of another species, which has been found in Pomerania by Wildenow, and received the name of *Salix Pommeranica*, but which is not different from the Linnean *Salix daphnoides*. Many, however—among them Wildenow—consider it as a distinctive species under the name of *acutifolia*. Besides the smaller leaves, green on the under surface, it grows more rapidly on sandy ground, does not soon become a tree, and has slender hanging branches. As a binding plant, *S. acutifolia* has the preference over the ordinary *S. daphnoides*. *S. acutifolia* also has the merit of having its branches covered with a

purplish bloom, and thus giving a charm to the landscape when seen against a dark background of evergreens. It also unites well with the red twigs of *Cornus alba* of Siberia. We can also recommend *S. longifolia*, Host., (commonly catalogued as *S. dasyclados*, Winton,) to protect sandy shores. We saw it grow luxuriantly on a sandy field belonging to the Flottbecker school of forests. The shoots attained a length of six to eight feet, and made good withes in winter, which were used in place of those that previously had to be purchased at a high price.

A grass has recently been brought into notice for the purpose of fixing sandy soil, which is widely distributed through North America, from Canada to Texas, and furnishes food for the buffaloes or bisons. From this fact it has acquired the name of buffalo-grass, but is known scientifically as *Buchloe dactyloides*. This grass makes long runners, and consequently covers the ground rapidly. It is very nutritious, which adds to its value, and if it will grow as well with us as it appears to in New Holland, we shall have a fodder-plant of more value than lupines; just the thing for the barren sands of the Mark and other northern districts.—*From the Monthly report of the Department of Agriculture.*

[It will be well for our Park Commissioners to give this matter some little attention. Two thirds of the park grounds consist of drift sands, and we cannot see how they can accomplish much good without establishing some vegetation to check the continuous drifting of the barren sand-hills. This matter is very important for this coast, and particularly for San Francisco, yet we see no effort made to experiment in this direction. Grasses and other vegetation which may answer every purpose in the East and Europe, may not be adapted to our dry climate; but we are satisfied that our drift sands can be reclaimed with little expense, if any one will demonstrate a practical method. An early experiment on the part of our Park Commissioners is very desirable.—Ed.]

[From the Melbourne Times.]

HORTICULTURE.

Being an Essay read before the Horticultural Society of Victoria, by Mr. W. H. Treen, and ordered by the above Society to be printed.

Horticulture includes, in its very extensive signification, the cultivation of all kinds of vegetables, ornamental plants, and fruits, also the formation and management of rural scenery for the purposes of utility and embellishment. The earliest efforts of the various inhabitants of different countries to emerge from barbarism was directed to the tillage of the ground. This proceeding is indeed the first act of civilization, and gardening is the first step in the career of refinement; at the same time, it was, and still is an art in which man last reaches perfection.

When the ancient warriors exchanged their wild and wandering life for the more confined and peaceful pursuits of cultivators, the harvests, herds, and flocks took the place of simple gardens. Mechanical arts were next developed, followed by commerce, and soon succeeded by manufactures. As wealth increases, ambition manifests itself in the style and beauty of residences, entertainments, and equipages: science, literature, and other arts are unfolded, when a high degree of civilization is attained. Not, however, until all this has taken place does Horticulture become cultivated as one of the ornamental arts. Even in ancient times the city of Thebes had its numerous brazen gates, stupendous pyramids and temples, the then wonders of the world, before the hills and plains were celebrated for their beautiful gardens. According to ancient history, the Queen of the East had "heard of the fame of Solomon," his fleets had brought him gold of Ophir and treasures from Asia and Africa, before he "made orchards" and delighted to dwell in gardens, and planted the vineyard of Baalhaman.

The Persian Empire had extended from the Indus to the Archipelago, when the paradise of Sardis excited the astonishment of a

Spartan General, and Cyrus mustered the Grecian auxiliaries in that spacious garden. Athens had reached the height of her glory when Cimon established the Academus, and presented it to his fellow-citizens as a public garden. Numerous others were soon after planted and decorated with temples, statues, and monuments, more particularly during the polished age of Pericles, when Plato taught philosophy in the groves and gardens. Rome had subjugated the world, and emulated Athens in literature, science, and the arts, previous to the handsome villas of Pompey, Cæsar, Crassus, and others being erected, environed by magnificent gardens.

It has been also thus with modern nations. Horticulture long lingered in the rear of other pursuits; the majority of common fruits, flowers, and vegetables which had been collected by the Romans from Asia and other climes, were successfully extended over Western Europe, but so slow and gradual was their progress that, until the reign of Henry VIII. scarcely any table vegetables were cultivated in England, the small quantities then consumed being chiefly imported from Holland.

Gardening appears to have been first brought into England for profit about the commencement of the seventeenth century. Our ordinary fruits, peaches, plums, pears, cherries, melons, etc., were luxuries but little enjoyed before the time of Charles II., who introduced French gardening at Hampton Court, and had the first greenhouse built. It was at this period that Evelyn translated the "Complete Gardener." In France, Germany and Italy, a formal but imperfect system of gardening was practiced with success, although generally Horticulture was in a languishing condition until the commencement of the eighteenth century, when it all at once attracted the attention of some of the first men in Great Britain. Eventually Bacon was the prophet, Milton the herald, and Addison, Kent, and Pope the champions of true taste. The principles which were developed in their writings were successfully ap-

plied by Bridgeman, White, Brown, and Eames, the system then becoming popular, and rapidly extended.

The history, literature, and science of gardening open a wide field for study and inquiry. The pleasure which gardens afforded men even in the earliest times, appears in the account of the Garden of Eden. The bards, scholars, and philosophers of the classic ages have transmitted descriptions of the gardens of the ancients. Passages are to be found relative to this subject in Virgil, and Horace; Pliny's "Natural History," and Columella's book on Gardens, contain the most correct information on Roman Horticulture.

Italy was, however, the first country to produce books on Agriculture and Gardening. The Germans, as in all branches of letters and science, have an immense number of books in the department of gardening, more especially on the subject of planting and forest trees. The Dutch have on the other hand, excelled more in the practice than the literature of gardening, while Russia and Poland have produced but few original works on Horticulture or Agriculture. At the same time, in St. Petersburg at the present, there is an extensive imperial botanical garden under the direction of able professors. The horticultural literature of France is of an early date, and the authors are both numerous and many of them of the highest repute.

In the United States of America have appeared, of late years, very excellent works relating to Gardening and Agriculture, highly creditable to the authors and the country; many of these works are now largely circulated and held in great estimation.

The greatest improvements in horticulture have, however, been effected within the last half century. During the age of Cicero a formal kind of gardening prevailed, characterized by clipped hedges and long avenues of trees: Pliny gave an account of his "Villa at Laurentum," and, from the description, it was more distinguished for its numerous superb edifices, extensive prospects, and the systematic arrangement of the pleasure grounds,

than for the improvements and decorations of the surrounding scenery, in accordance with those principles which are derived from a close observance of the pleasing effects of Nature. The rural residences of the Romans appear to have been mere places of temporary retreat, and were planted generally with odoriferous flowers and shrubs. During the 12th century, the monks were the only class of persons who attended to ornamental planting and gardening.

After that period the style throughout Europe consisted in tall hedges, square parterres fantastically planted, straight walks, and rows of trees uniformly placed and pruned. Improvement in horticulture was slow indeed from the time of the Emperors Titus and Vespasian until the reign of George III.

It is certainly true that Hampton Court was laid out by Cardinal Woolsey; Greenwich and St. James' Park by Le Nortre during the reign of Charles II.; and in that of George II., Queen Caroline enlarged Kensington Gardens, and formed the Serpentine; but Lord Bathurst was the first who deviated from straight lines. For a long period the Dutch system prevailed—the shearing of yew, box, and holly into horrible figures of various kinds, so that if you walked in their gardens by moonlight you were continually haunted. This was carried to such an extent that the absurdity became contemptible, and a better and more natural taste was induced.

It was, however, reserved for Kent to realize the beautiful descriptions of the poets, and carry out the ideas of Milton, Pope, and Addison. He, in fact, leaped the ancient fence, and saw at once that all Nature was a garden of itself. He bade adieu to all stiff, formal modes, dealing in none but in the true colors of Nature; the living landscape was chastened and polished, never transformed. This improved style of horticulture quickly spread, and became everywhere apparent in Great Britain, soon attracting the attention of the other nations, and English gardening became the designation of all that was charming and beautiful. Within twenty five years

of the establishment of the first London Horticultural Society, upwards of fifty similar institutions were established in Great Britain, England still maintaining the first rank in the art, with France making efforts to rival her. The first Horticultural Society established in Paris was in the year 1826. In two years afterward it had no less than 2,000 paying members, including the court and most of the nobles of distinction. Holland has been distinguished since the period of the Crusades, for her flower gardens, vegetables, and plantations of fruit trees, England being still in a measure dependent upon her florists for the most splendid varieties of bulbous-rooted plants. In the United States a like spirit has yearly become more developed, and here in Australia we are following the example, having brought our home ideas with us—determined, I trust, to make yearly our homes more beautiful and interesting.

[To be continued.]

ORCHID CULTURE.

[Continued from page 235 of last number.]

We will give a few more varieties, as described in the *Gardeners' Monthly*, by Mr. James Taplin, Manager, to Geo. Such, Esq., of South Amboy.

Lycaste Skinneri, being one of the most easy to grow and flower, is very handsome and lasts a long time in bloom. This is a South American variety, or rather species, of which there are many varieties, both in size of flower and in color. The same plant often flowers twice in the year and lasts a long time in perfection. We have a plant that has been in bloom over two months, and there are more buds coming out, so that it will probably last until the end of November. [This was written, we suppose, in October.—Ed.]

These plants are recommended for winter flowering, but we have them in flower at all seasons.

The *Lycaste* are best grown in pots, half filled with crocks, to secure good drainage,

and potted in fibre from peat, from which the fine soil has been sifted, to which add some live sphagnum moss and a little white sand. It is not necessary to raise the soil for these above the level of the pot, but do not bury any part of the bulbs; there is not any part of the year fixed for repotting, but the proper time is, when they are making young shoots and roots. They require abundance of water while growing, less when growth is complete, and never water over the flowers or they will decay, and the young shoots may also do so if water is permitted to lodge in the heart.

These plants will grow and flower in any house not lower than 45 degrees, with a slight shade from bright sun from March to October. The plants will also last a very long time in flower in a sitting-room. Frequent sponging of the leaves of these as well as of all of the Orchids is necessary, if only to remove dust.

Dendrobium nobile.—If I were limited to growing only one variety of Orchid, I think I should have most satisfaction from this variety; others may be more rare and expensive, but this one may always be depended upon for flowering well under the simplest treatment, and certainly few plants are more lovely when in flower; a well established plant in a six inch pot, will give comparatively as many flowers as a specimen of the largest size. Many growers cultivate their plants in a basket, but I consider this a mistake, for it is naturally of upright growth, and I do not recollect ever seeing plants so vigorous as when grown in pots or in a frame. I consider another mistake is frequently made with this and other Orchids by keeping them so dry that the leaves drop off and the shoots shrivel. I am aware this is done under the idea that it will make the plants flower freely, but if more flowers are produced, they are all smaller and do not last so long, and the young growth is weakened. The extra drying is not necessary at any rate for this variety, and a moderate quantity of foliage is an addition to the beauty of the plant when in flower.

The above variety being so common, there are probably many large and handsome specimens in the country, and it being a free grower, any one may get up a nice plant in a short time. I began with one of our best plants three years ago, when it was quite small, after it had been growing in an amateur's greenhouse for several years, and was getting smaller instead of increasing in size. It is now four feet in diameter, with shoots three feet long and thick in proportion; many of the shoots are covered with flowers for two feet of the length. It has been in flower now (April 8th) for six weeks, and will last for some time longer. I gathered 150 flowers from it at Easter, and they are not missed.

If the plants require repotting, do it after blooming, but large plants, properly treated, will not require fresh pots for several years. The soil I use is the fibrous part of peat and sphagnum moss in about equal parts. Fill the pots nearly full of broken pots, (not "coke" as I was made to say in my last,) shake away all of the old soil, if decayed, and fill in with fresh without breaking the roots, raise well above the pot; it will then take abundance of water, both at root and overhead during the growing season; shade from bright sun until growth is finished, then gradually expose to full sun. I have placed the plants out of doors in full sun with good results. The plants will winter in any house not below 40 degrees with only water enough to prevent shriveling, and shaded when flowers commence to open, they will last a long time. This is a plant little subject to insects if in good health.

CHANGING THE COLORS OF FLOWERS.—The *Mirror of Science* says that a case is known of a yellow primrose which, when planted in a rich soil, had the flowers changed to a brilliant purple. It also says that charcoal adds great brilliancy to the colors of dahlias, roses and petunias; carbonate of soda reddens pink hyacinths, and phosphate of soda changes the colors of many plants.

ON THE ECONOMIC VALUE
OF CERTAIN
AUSTRALIAN FOREST TREES,
And their Cultivation in California.

BY ROBERT E. C. STEARNS.

Australian forest trees propagated from the seed, with perhaps a few exceptions, thrive remarkably in California; the climate and soil appear to be nearly or quite as favorable to the growth of these exotics as of the native forest forms.

In many of the principal towns in this State, especially in and around San Francisco, in the neighboring city of Oakland and adjoining towns on the easterly side of San Francisco bay, fine specimens of many of the Australian forest species are exceedingly numerous. The most popular of these belonging to the genera *Acacia* and *Eucalyptus*, have been planted for ornamental and shade purposes; the light feathery fern-like foliage of some of the Acacias, their gracefulness, beauty and color, combined with their rapid growth, present so many advantages as to fairly entitle them to popular esteem. Of the Acacias recommended by Dr. Mueller on account of their economic value,* I am not aware of any being cultivated in this State for that object. *A. decurrens* (= *A. mollissima*) also *A. lophantha* and some other species, are frequent, and highly prized for ornamental purposes: from twenty to thirty species are enumerated in the catalogues of the principal nurseries.

The many valuable properties of the species mentioned in the foot-note, combined with rapidity of growth, would warrant cultivation on an extensive scale, which, if judiciously conducted, would be highly advantageous to the State and yield a handsome return upon the capital invested. Mueller says that the wood of *A. decurrens*, popularly known as the "Black Wattle or Silver Wattle," can be used for staves, but its chief use would be to

afford the first shelter, in treeless localities, for raising forests. Its bark rich in tannin, and its gum not dissimilar to Gum Arabic, render this tree also important.

A. homalophylla, has a "dark brown wood, is much sought for turners' work on account of its solidity and fragrance; perhaps its most extensive use is in the manufacture of tobacco pipes."

A. melanoxydon "is most valuable for furniture, railway carriages, boat building, casks, billiard tables, pianofortes (for sound-boards and actions), and numerous other purposes. The fine-grained wood is cut into veneers. It takes a fine polish and is considered equal to the best walnut." Under favorable circumstances it attains "a height of 80 feet with a stem several feet in diameter." This species requires a deeper and moister soil than *A. decurrens* and *A. lophantha*, which are especially recommended for their ability to resist drought, and therefore particularly applicable to treeless and sterile areas in the southern part of California, and the adjoining country, where the temperature does not decline below 10 degrees.

The peculiar yellow displayed in the China silks and other articles, is obtained from the yellow flowers of a species of *Acacia*, and is of an exceeding permanent character.

The Acacias are easily propagated from seed, as I have (with some species) practically tested; and it is not unlikely that the flowers of most of the species, which are yellow, might be equally as valuable for the dyer, as the variety cultivated or used by the Chinese.

Of the Eucalypti, *E. globulus* is very common in California, and easily cultivated; it is the Blue Gum of Victoria and Tasmania.

"This tree is of extremely rapid growth and attains a height of 400 feet, furnishing a first-class wood; shipbuilders get keels of this timber 120 feet long; besides this they use it extensively for planking and many other parts of the ship, and it is considered to be generally superior to American Rock Elm. A test of strength has been made be-

* *A. decurrens*, Willd., also *A. homalophylla*, Cunn., and *A. melanoxydon*, R. Br.

tween some Blue Gum, English Oak and Indian Teak. The Blue Gum carried 14 lbs. weight more than the Oak, and 17 lbs. 4 ozs. more than Teak, upon the square inch. Blue Gum wood, besides for ship building, is very extensively used by carpenters for all kinds of out-door work, also for fence rails, railway sleepers—lasting about 9 years—for shafts and spokes of drays, and a variety of other purposes.”*

Of the rapid growth of this species of Eucalyptus and the facility with which it is propagated, most people in California who have had any experience with it are familiar; but as perhaps few persons who have specimens of it growing upon their grounds or in their yards are aware of its value otherwise than for ornamental purposes, I have deemed it a matter of interest as well as of importance to quote from Dr. Mueller’s valuable paper. Having propagated the Blue Gum from the seed and raised many specimens under not particularly favorable circumstances, I can endorse the remarks of the author from whom I have quoted. An instance of rapid growth immediately under my observation, is that of a specimen purchased by me of a nurseryman, which at the time of planting (Jan. 5th, 1871) measured from the ground level to the extreme tip six and a half feet, and in about eleven months (Dec. 8th, 1871) had reached a height of a trifle over fifteen feet; the diameter of the stalk when set out was half an inch, and at the final measurement one and three quarters inches. I am prepared to hear of instances far exceeding my figures, but it should be borne in mind that we had very little rain after this tree was planted, and furthermore that the locality was upon nearly the highest ground in Petaluma. This tree was occasionally, but only moderately watered during a part of the time. Other trees of this species planted at the same time, also made a

remarkable growth; specimens raised by me from the seed, whose growth I have noted, show a gain of ten and a half inches in twenty-one days, or half an inch per diem.

The development of the lateral branches is as surprising as its perpendicular growth.

George C. Potter, Esq., of Oakland, informs me that specimens upon his grounds nine years old, show a diameter of twelve inches.

Of the large plantation of Eucalyptus of the Blue and Red species made a few years ago by Mr. J. T. Stratton,* of Alameda, I hear indirectly that the trees have done well. I hope at a future meeting to be able to learn from Mr. Stratton, and inform the Academy more definitely of the success thus far, and prospects of this highly commendable and important enterprise.†

]To be continued.]

THIRD SESSION

OF THE

AGRICULTURAL CONGRESS,

AT ST. LOUIS.

We have before us an extensive report of the transactions of this Congress, as published in *The American Farmers Advocate*, and we give a few of the most interesting points.

It was arranged between the “National Agricultural Association” and the “Agricultural Congress” to meet together in order to consolidate the two Associations into one. This effort resulted in the establishing of a “National Agricultural Congress.”

The following officers were elected: *President*, John P. Reynolds, of Rockford, Ill.; *Secretary*, Charles W. Greene, of Jackson, Tenn.; *Treasurer*, Lee R. Shryock, of St. Louis, Mo.

* Report of the Commissioner of Agriculture, 1870, page 232.

† I do not refer to other forest plantations made in California, by Mr. Aiken or Mr. Edwards, and which I sincerely wish may be successful, for the reason that in this paper the chief object has been to call public attention to certain Australian forms.

* Vide “The Principal Timber Trees readily eligible for Victorian Industrial Culture, etc. etc., by Ferd. Von Mueller.”

A number of valuable essays were read, of which we mention: "Influence of Forests upon Rainfall," by Maj. T. W. Woodward, of South Carolina; "The Proper Sphere, Objects and Duties of Agricultural Colleges in the United States," by H. N. McAllister of Pennsylvania; "Meteorology and an International System of Crop Reports," by Comm. M. F. Maury, of Virginia.

The following Constitution was adopted:

ARTICLE I.

Sec. 1. This organization shall be called the "National Agricultural Congress."

ARTICLE II.

Sec. 1. Each State and Territory shall be entitled to two representatives for each and every State organization engaged in fostering agricultural pursuits.

Sec. 2. The United States Department of Agriculture, and each agricultural school or college with an endowment of not less than \$20,000, shall be entitled to one representative.

Sec. 3. Each regularly organized agricultural and horticultural society of not less than fifty members, which shall contribute to the support of this organization, shall be entitled to one representative.

Sec. 4. Representatives shall, in all cases, be active members of the organization they represent, and shall present credentials signed by the President and the Secretary of their respective organizations, and the certificate shall state the number of members of such body.

ARTICLE III.

Sec. 1. Each representative shall be entitled to one vote; no voting by proxy shall be permitted; all votes, except in elections, shall be *viva voce*; and one member of the Society may demand a division; ten members may demand the ayes and nays, which must be entered on the journal; a vote by ayes and nays shall be by States, and each State shall have one vote.

ARTICLE IV.

Sec. 1. A President, Secretary and Treasurer, and one Vice-President from each State and territory, shall be elected at the annual meeting, by ballot; the President, Secretary and Treasurer, on a majority of all the votes cast; but the Vice-President for each State shall be chosen by the delegates of the respective States.

Sec. 2. The term of service of the President, the Vice-Presidents, the Secretary and Treasurer, shall not expire until the close of the annual meetings of each year.

Sec. 3. The President and Vice-Presidents of this Congress shall constitute an Executive Council, and shall have vested in them the administration of the affairs of this Association. They shall serve until their successors are chosen. Five members of this council shall constitute a quorum for the transaction of business. In the absence of the President, they shall choose a chairman.

Sec. 4. The duty of transacting the business of this Association *ad interim* shall devolve upon the President and Secretary. The Secretary and Treasurer shall receive such compensation as the Council may determine.

Sec. 5. Special meetings of the Council may be held on the call of seven members thereof, twenty days' notice thereof to be given by the Secretary.

Sec. 6. In case of the resignation or removal of any member of the Council, his place shall be promptly filled by the State or Territory from which he was chosen in the same manner that representatives at large are chosen, and should they fail to appoint, the vacancy shall be filled by the President; a vacancy in any State or territory shall be filled in like manner.

Sec. 7. It shall be the duty of the Executive Council to recommend such measures as will promote the interests of the Congress.

Sec. 8. They shall provide for full and accurate records of the proceedings of the Council and the meetings of the Congress;

they shall submit them at the annual meetings, with a statement of such business as may require attention, and shall apportion to each constituent body, State or local, the assessment for the expenses of the Congress.

Sec. 9. The Treasurer shall give security in such sum as may be required by the Executive Council, in no case to be less than the amount assessed upon the constituent bodies; shall receive and account for all moneys belonging to the Congress, and collect all assessments and sums due; but he shall pay out and dispose of the property of the Congress only on a warrant of the Secretary, approved by the President. The Treasurer shall make a report at the annual meeting.

ARTICLE V.

Sec. 1. The annual meetings of the National Agricultural Congress shall be held at such time and place as a majority of those present at the previous meeting may have determined.

Sec. 2. Notice shall be given to each of the constituent bodies, by the Secretary, at least thirty days previous to the annual meeting, of such subjects as may be presented for their consideration.

ARTICLE VI.

Sec. 1. The expenses of this Congress shall be provided for in such manner as the Executive Council may determine.

Sec. 2. The Executive Council shall meet, on the day previous to the assembling, to arrange the order of business and determine the mode by which subjects may be brought before the meeting for consideration.

ARTICLE VII.

Sec. 1. This Constitution may be amended at an annual meeting by a vote of two-thirds of the delegates present.

Sec. 2. The President shall, within two months after adjournment, appoint one Vice-President, *pro tem.*, from each State and Territory not represented.

Of many important resolutions, which were passed, we mention:

WHEREAS, We recognize the agricultural

and horticultural press of our country as having a common aim and sympathy with us in advancing the interests of the agriculture and horticulture of the nation, and as being the best medium through which to disseminate the facts and principles which it is the object of this organization to promulgate. Therefore, be it

Resolved, That we earnestly recommend to the county and district agricultural and horticultural societies throughout the country, the propriety of offering copies of the best agricultural and horticultural periodicals published in their respective States, or sections, as premiums on articles for which money or silver ware, of equivalent value are usually given; and that they aid, by all other legitimate means in their power, as corporate bodies, to extend the circulation of such periodicals.

Of Committee Reports we give one on Forest Culture, as read by Mr. R. S. Elliott, of Kansas.

"The forests of the continent are rapidly passing away. Large districts in the Atlantic States are already stripped of their most valuable timber. In less than twenty-five years the accessible forests in the region of the great lakes, on the upper waters of the Mississippi, and in the British provinces adjacent, will be exhausted. The industrial progress of the Southern States is consuming trees both deciduous and evergreen at an accelerating rate. In the Rocky Mountain regions (where the hard woods are unknown) the pines, spruces and cedars are disappearing before the farmer, the miner, the architect and the railroad builder. On the Pacific coast, the immense home demand, ever increasing, together with the exportations to England, France, Australia, China, Japan, South America, Mexico and the Pacific Islands, foretell the exhaustion of the California timber trees in twenty years; and those available in Oregon and regions northward within a comparatively brief period.

The demand for the product of the forest constantly increases. The supply constantly,

and in a growing ratio diminishes, and prices constantly augment. The causes now in operation and daily gaining strength, can have but one effect, that of exhausting all the available sources of supply within the lives of persons now in existence.

This appalling prospect, the view of which becomes more vivid the more it is studied, should arouse the farmers, land-owners and legislators. It is vital to the future welfare of our people that the reproduction of our forests should at once begin, not on a small scale or in a few localities, but in a large measure, and co-extensive with our settlements. A broad statemanship in the national and State Legislatures should at once take up the subject and deal with it year by year, until the great work shall be adequately begun.

The few and hesitating experiments in isolated localities, which have been made in the growing of forest trees, have no significance, so far as the general supply of future wants is concerned; but they are of inestimable value, in so far as they teach the ease and comparative rapidity with which forest trees, useful to the farm, to the workshop and to the railroad may be produced, and in so far as they show that the agricultural men of the country have already (in advance of the men in high political life) appreciated the necessities of the present and the future. They are also of value in demonstrating, that, however remote the profit of forest culture may have been heretofore considered, it is yet true that the artificial plantation may, in a very few years, by judicious planting at first, be made to yield current returns equal to the cost of planting and care.

Modifications and ameliorations of climate, due to the destruction or extension of forests, have begun to enlist serious consideration. There can be no doubt of the beneficial influence of forest areas equal in aggregate to one-fourth or one-third of the entire area of any extensive region. But however important climatic effects may be in this connection—however desirable it may be that the crops and animal life of the farm should enjoy the

benefits of forest influence and shelter, the need of extensive forest planting is imperative enough without taking into consideration its effects on atmospheric movements, temperature or rainfall. The store, the dwelling, the shop, the factory, the railroad, the wharf, the warehouse—all these and more demand action—demand it in the name of domestic life, of farm economy, of commerce, of all the arts of our civilization. What we shall save in climate by preserving forest areas, or gain by their extension, is just so much to be enjoyed in addition to other compensations. The less violent sweep of the winds in Illinois, as compared with forty or fifty years ago, due to the obstruction caused by buildings, hedges, fences, orchards, artificial groves and wind-brakes on the prairies, speak to the understanding of plain men more forcibly than any language we can use.

There may be those who regard forest planting as a work of mystery and grandeur beyond the reach of the common farmer. This is a mistaken view. Nearly all the most important deciduous trees may be grown from seed as readily as Indian-corn. Of many species the seed may be sown broadcast and harrowed in, if the planter prefers to use the seed lavishly rather than give more care. The seeds of many trees may be planted either in Fall or Spring as may be most convenient. Some of the softer wooded trees grow from cuttings as readily as the grape; and with most deciduous trees the seeds or cuttings may, if desired, be at once planted where the trees are to stand; nor need the most unlettered farmer deny himself the pleasure and profit of the Conifers and Evergreens. The plants, furnished at prices which are insignificant in comparison with their value, are abundant at reliable nurseries, and, with the simple precaution of keeping the roots moist, and proper care in planting, are as sure to grow as any other tree or shrub.

No part of the earth is blessed with a greater variety of useful trees, both of the hard and soft-wooded kinds, than the United States; and these native trees can all be

readily grown in artificial plantations. It is not alone the Pines and Spruces and Cedars that make up our valuable timber. The harder wooded trees—the Ash, the Oaks, the Hickories, the Maples, the Walnuts and the Chestnuts—of which we have heretofore been so lavish—have a value in the arts, that no figures can estimate. They may be said to be essential to the continuance of our present civilization. New forests of these trees must be grown, or our grandchildren must depart from our modes of life. West of longitude 100° from Greenwich, the material of a common wagon does not grow on the continent, and we are fast exhausting it East of that meridian. Ohio and Indiana, Kentucky and Missouri have girdled and burnt hardwood trees, that would to-day be worth hundreds of millions of dollars. If failing springs and protracted droughts and extremes of temperature suggest replanting, the people may safely rely on a future market, more certain than that for any other product of the soil.

JOHN A. WARDER, }
 R. S. ELLIOTT, } *Committee.*
 W. C. FLAGG, }

To carry out the views embodied in this report, the following resolutions were adopted:

1. That we recommend farmers throughout the United States to plant their hilly or other waste lands, and at least ten per cent, of their farms, with trees, in such manner as to provide shelter belts or clumps of rapid growing and useful timber.

2. That we solicit the Legislatures of the several States to pass laws providing bounties for planting trees, encouraging the planting of the highways, and for the provision of State nurseries of young timber trees, and also the appointment of an arbor day for the annual planting of trees, as has already been done in the State of Nebraska.

3. That we ask the Congress of the United States to require, so far as practicable, that railroad companies and settlers hereafter receiving the benefit of the homestead and other acts donating lands, shall plant with

timber trees one-tenth of the land so donated.

4. That we urge upon the professors of agriculture in the several colleges to give their special attention and investigation to the important subject.

5. That we ask the railroad companies of the country whose necessities have led to the destruction of so large a quantity of our forests to co-operate with us in restoring the timber growth, and that they will provide for the planting of such lands as may be at their disposal and as are adapted to the purpose, with timber trees.

The Congress, which met in May last, adjourned to meet at Indianapolis, Ind., on the fourth Wednesday in May, 1873.

Editorial Portfolio.

OUR HORTICULTURAL EXHIBITIONS.

It is now almost a century since Exhibitions of Agricultural and Horticultural products were inaugurated in France. The utility and importance of such exhibitions were soon recognized by other nations, and during the past twenty years they have ranked among the most important, most attractive and most instructive features of civilization.

While nations are endeavoring to excel each other in the grandeur and magnitude of "International Exhibitions" and "World's Fairs," every State, and nearly every county in this Union, seems to be striving to have an exhibition of its own.

We have frequently expressed our opinion as to the utility of fairs and exhibitions of this kind, and we sincerely believe that they greatly stimulate the better development of new and important industries, particularly in a recently established country such as ours. They demonstrate the resources and capabilities of the regions, establish a friendly rivalry in the best productions, and bring the tillers of the soil into closer relation with each other.

We are well aware that our agricultural and horticultural exhibitions are not exactly

what they should be; such, however, may be said of many other institutions of this country. But all who are well disposed toward fostering the true interests of our State, should take more interest in the management of our agricultural and horticultural associations, and bring their influence to bear toward the most needed reforms. While the management of our fairs and exhibitions is left entirely to a few interested parties, those who neglect to take part in such management must blame themselves if affairs are carried on unsatisfactorily. Exhibitions of this kind should be the work of the people, and not of a few individuals.

These remarks are prompted at this time by the approaching of the season for fairs and exhibitions. The *Bay District Horticultural Society of California*, now nearly two years in existence, will open its Second Annual Horticultural Exhibition on the twenty-second day of August, and will maintain it for fifteen days.

The State has given aid to the Society to the amount of \$2,000, and through most strenuous efforts of some of its members, the hall at the corner of Post and Stockton Streets has been purchased in the interest of the Society for the purpose of holding exhibitions therein.

At a very heavy expense the hall, now known as the "Horticultural Hall," has been enlarged and fitted up in so pleasing a style as to entitle the managers to our warmest commendation. All that is now really requisite is, united action on the part of all our horticulturists to make the pending Exhibition one of unparalleled success. This *can* be done, and we feel every confidence that it *will* be done, notwithstanding the antagonism of the customary few who, as usual, rather tear down than build up. We are confident that *all* are welcome to take part in the enterprises of the Society; nevertheless, there are some who strive to discourage by saying, "It will not pay." We do not advocate the getting up of exhibitions for the sordid purpose of making money out of them; we think

there should be a higher ambition than merely *exhibiting for pay*.

The purpose of horticultural exhibitions is, to afford opportunity for friendly competition and the display of patient skill in raising the varied products of orchard and garden; and premiums are offered to stimulate exertion and to compensate, in some degree, for the extra expense and labor incurred in special preparation, which is frequently considerable; it being found that while with some competitors of generous nature, the fact of success is sufficient recompense for their exertions, with others, some tangible reward must be offered to induce an effort. This competition promotes friendly intercourse between cultivators, and stimulates to greater care, ingenuity and skill in raising their specimens, and necessarily improves general cultivation. Another purpose is, to display to the general public these varied products under the most favorable circumstances and to the best advantage; to familiarize them with many products of the nurseries, greenhouses and gardens, which but for such opportunities would be known but to very few; to demonstrate how easily and at what small expense their homes may be gaily, even superbly decorated with Nature's sweetest products, and thus foster a taste for one of the purest delights that can be enjoyed at home in the bosom of a family.

It is necessary to charge fees for admission, as very considerable expenses are incurred in the indispensable preparations for such exhibitions. The premiums amount to a large sum in the aggregate, frequently exceeding the amount of State aid; and the current outlays at such times are large, while the revenues of the Societies are derived solely from the subscriptions of the horticulturists themselves, and from some few friends who take an interest in their efforts. When balances in their favor accrue to the Societies from these exhibitions, they are devoted to adding to their libraries and similar laudable purposes.

The effort to establish a Horticultural So-

ciety, with its Horticultural Hall, Reading-room and Horticultural Exhibitions, deserves great credit, and we hope that the people of San Francisco and of the State at large will heartily indorse the invitation by filling the hall, to its full capacity, from the opening day to the closing one. We can assure the public that the exhibition, and all the arrangements connected therewith, will be managed in the most satisfactory manner. Rich and poor, young and old, all ought to devote some time to the pleasurable inspection of the various horticultural products of our soil, the result of our patient and skilled labor!

LOQUAT FRUIT.

Through the kindness of Col. Warren, of the *California Farmer*, we have been presented with some fruit of the *Loquat* (*Eriobotrya Japonica*, syn. *Mespilus Japonica*, also popularly called *Japanese Medlar*.) This fruit has ripened at Col. Warren's garden on Pacific Street, San Francisco, and is, we believe, the first ever ripened in this city. Some two months since we were presented with some of the ripe fruit grown at the garden of E. B. Crocker, Esq., of Sacramento, which shows evidently that the fruit will ripen earlier in a warmer locality.

This fruit is roundish, the size of a small Crab Apple, of a pale orange color, flavor agreeable and not very unlike the Pine Apple; we think it might become a very desirable and popular dessert fruit, certainly excellent for jellies, etc. There are now many trees of the Loquat growing around San Francisco and throughout the country, but the trees are young yet and therefore very few in bearing. The tree itself is very ornamental and perfectly hardy wherever the Orange will grow in the open air, *i. e.*, in our valleys and along our coast-range.

The Loquat was introduced into France in 1784, by Thunberg, yet but few are under cultivation and those principally for ornament. The flowers of the Loquat appear in

Autumn, and as we have no severe winter in California, the fruit in most cases will be apt to ripen here.

Its leaves are evergreen, large, oblong, of a rough appearance, bright green above and downy underneath.

We think that the Loquat may be cultivated successfully, and perhaps profitably in California.

MARKETING GRAPES, PEACHES, And Other Soft Fruits.

It is very evident that fruits are not offered for sale in our markets in the best condition. This fact must be attributed:

1st, To the gathering before the fruit is ripe;

2d, To the rough handling in the gathering; and,

3d, To the careless packing.

It seems to us that the fruit-growers do not understand their own interests; we know, and in fact every body knows, that superior fruit in good condition brings a better price than poorer fruit, and such as arrives in the market in a bruised and otherwise damaged condition; yet we rarely meet with fruit in a perfectly sound state, or if so, it has been picked green and is not fit to be eaten. We fully understand that ripe and over-ripe fruit is difficult to ship to any distance, without damaging its appearance; but, certainly, a little more care in handling and picking, would modify the difficulty to a great extent.

Peaches are generally picked green, and allowed to ripen in the boxes. This is carried so far, that four-fifths of the Peaches offered in San Francisco are unfit to eat. Of late we have taken much pains to find some fine Peaches in our market—for we love them dearly—but we hardly ever succeed in obtaining them palatable, and if we do eat them, it is simply because they are called Peaches. We love all kinds of fruit when it comes to us in a ripe and perfect state, but, indeed, we care very little for it, when it comes half ripe, bruised and half decayed;

and we are certain, there are many who feel as we do in this matter. Good fruit pays well, but a poor quality is a drug in the market.

Blackberries are easy to gather, and they may be shipped in small boxes without difficulty; but when we see them half black and half red, we know they have been picked in an unripe state and cannot be palatable.

Grapes, generally, reach us in ripe condition, but they show sometimes very rough handling in the gathering, retaining very little of the perfect form and the tempting bloom, which adds to the beauty of the Grape on the vine. For this abuse in gathering and packing, there is no excuse—it is all carelessness, and the grower is the loser.

Apples and Pears invariably show signs of rough handling, full of bruises, and unfit to keep for any length of time.

The *Boston Journal of Chemistry*, in speaking of the Grape, says: "Grapes of the greatest excellence of their kind will be found in the long run to prove the most profitable. Let the bunches which are the most perfect in form, color and flavor, be put up by themselves, and those of a second quality by themselves. In this way they will sell for a much larger price than if the best and second qualities were together." The same journal advises dipping the end of the stem, immediately after cutting, into a little gum shellac dissolved in alcohol. This could be done instantaneously, almost, and would tend to prevent the fruit from shrinking, and thus prevent the deterioration which it is almost certain to undergo, if this precaution is not attended to. If treated in this way, it is said, that Grapes will keep two or three weeks beyond the usual time.

THE ARTESIAN WELL on the land of Emill Kower, in Fruit Vale, throws up about two hundred gallons per minute, or 288,000 gallons in twenty-four hours. It is four hundred and eighty-four feet deep, and the pipe rises two feet above the surface of the ground.

SHIPPING OF PLANTS.

If plants of any kind are to be shipped to distant points, it becomes necessary that they should be packed well. In the East and in Europe the packing of plants has almost become a science, and is carried to great perfection. Plants, as packed by responsible dealers, will go in safety for several thousands miles, tied up in damp moss, and enveloped in a sheet of brown paper; they are put in in layers—one on top of the other—and each layer of plants is well secured by a cross stick fastened by a nail at each end, so that the plants cannot move. With the exception of Camellias and a few other choice Evergreens, it is not to be expected that the plants should arrive at their destination in full vigor, and covered with flowers; all that can be reasonably anticipated is, that the plants are actually alive. How different do we find things here! Our florists and nurserymen are requested to forward plants in open boxes—and purchasers expect to see them arrive in full bloom, or they think that they are swindled. The packing of plants in open boxes should be abandoned, except in a few rare cases; open cases are difficult to handle, and they are subject to various mishaps. Our people should become accustomed to receiving plants in closed-up packages, even if they lose a few leaves; if the plants are in sound condition, they will soon, under judicious treatment, recover their foliage, etc. Express companies can afford to ship tied boxes much cheaper than open ones; and, if forwarded by mail, they must be sent in closed-up packages, giving postmasters an opportunity, however, to examine the package.

One serious difficulty in packing plants here, will be the extreme scarcity of packing material, which can be had in abundance at the East. To furnish Moss, for such purpose, would be too expensive with us, and we do not know of any special material so well adapted for packing. As we must sooner or later inaugurate a simple, cheap and safe system of packing plants, we should like to

hear from some of our florists what sort of material may be obtained in California that will answer the purpose?

WORK FOR AUGUST.

In the Orchards and Vineyards the entire time is now consumed in harvesting, gathering and packing of fruit. In another column of this number we offer a few suggestions to fruit-growers in regard to the packing of fruit, etc. Growers will find it to their advantage to pay some regard to our suggestions, and to deliver their fruits in our markets in as perfect condition and as well assorted as possible; the additional labor and care are very trifling, and the returns will prove vastly more satisfactory.

There being a deficiency of farm-laborers this year, little time can be given just now to other work. Wherever irrigation of young Vineyards or young Orchards is practiced, this should be done thoroughly once more during the present month in order to secure a good growth, and to allow the young wood to ripen well, before the Winter season approaches.

In the Vegetable Garden the beds filled with early Vegetables should be cleared off, thoroughly watered, manured and prepared for late Vegetables. Lettuces, Turnips, Carrots and Beets may be successfully sown for Fall and Winter use; also, Cabbage and Cauliflower, for Fall planting. Cabbage-lice are again very destructive; we know of no better remedy than a diluted solution of whale-oil soap sprinkled over the leaves once or twice a week. The same solution will also destroy many other insects, and may be applied very successfully as a wash for all kinds of plants thus infected.

Particular attention should be paid to the frequent mowing of lawns; the best, quickest and cheapest method to do it, is by using the well-known lawn-mowers, which may be handled by any one.

Evergreen-trees and Hedges are apt to

grow out of shape, and this is a most favorable time to clip them, as sufficient growth may yet be obtained to give them a fresh and neat appearance for the rest of the season. Pinch off the shoots of running Vines so as to secure more lateral branches, and secure them to their proper places.

If you will take the trouble to cut back your Rose-bushes, in the same way that is generally done in Winter, a profusion of flowers may be obtained in another month, if occasionally watered. The frequent cutting back of Roses as soon as the new wood is ripe, will secure a more desirable shape to the plants and a greater quantity and a better quality of Roses.

The Shrubs of our Gardens generally lack neatness; they are allowed to grow too rank and out of all proportion. The impression which seems to prevail generally is, that it is sufficient to engage a gardener once a year to trim up the trees and shrubs—this is very erroneous: to secure a neat and uniform growth and a greater quantity of flowers throughout the year, the pruning-knife should be used at least every two or three months with Evergreens and such flowering Shrubs as produce their flowers monthly.

Flowering Bulbs—such as Hyacinths, Tulips, Narcissus, Anemones, Ranunculus, etc., may now be taken up, dried in a cool and shady place and stored away to be planted again after our first Autumn rains. These bulbs, with the exception of Tulips, seem to do better here if replanted, although we think this may be done once only every two years. Tulips may remain in the ground for several years, unless it be desirable to divide the groups. If transplanting, shifting or dividing of the roots is contemplated, this is the proper season to take them up.

Fuchsias, Geraniums, Pelargoniums, Heliotropes, Petunias and other soft-wooded flowering plants should now be propagated. Although we may do this successfully at any time in this climate, the present season is considered the most favorable, particularly where the young plants are intended to be

offered for sale during the next Winter and Spring.

Camellias have now formed their flower-buds, and should be kept cool and well watered. There is no utility in forcing them at the present time for early flowers, as the result will be a second growth which will surely prove injurious to the flower-buds. If forcing is deemed necessary, it should be done in early Spring and at no other time.

Calceolarias require great care now to save them from damping off. Be very cautious in watering them; water frequently and moderately; not a drop of water should be allowed to stand on the foliage. The plants should have plenty of pot room; and the pots should be well drained, and be placed in an airy situation, free from draft. Insects are very hard on *Calceolarias*, and they should be carefully watched and kept clean. This is a most interesting class of plants; but we seldom have seen good and healthy specimens in California, with the exception of the Shrubby *Calceolaria*, which has proved perfectly hardy in our gardens, and produces a great abundance of flowers.

Cyclamens, which are so well adapted for window-culture, should now be allowed to rest, and only sufficient water—say once a week—should be given, to keep the bulbs from shriveling up.

If *Gladiolus* bulbs can yet be obtained from our florists, we would advise to plant once more, in order to have them flower late in Autumn.

NEW WAY OF PROPAGATING ROSES.

European Horticulturists have lately adopted a mode of making Rose-cuttings root with more certainty, by bending the shoot and inserting both ends into the ground, leaving a single bud uncovered at the middle and on the surface of the ground. The cuttings are about ten inches long, and are bent over a stick laid flat on the ground, holes being dug on each side of the stick for the reception of the ends of the shoot. The roots form only

at the lower end of the shoot, but the other end being buried prevents evaporation and drying up. A correspondent of the *London Garden* states that he has tried this, along with the old mode, and that while the weaker cuttings of the latter have shown symptoms of drying and failure, all the former have grown vigorously.—*Journal of the Farm.*

[Rather hard for us to find a good supply of cuttings 10 inches long.—Ed.]

BAY DISTRICT HORTICULTURAL SOCIETY.

At a late meeting of the Society, the following Extra Premiums were offered at the coming Horticultural Exhibition:

Best and largest exhibit of Californian-grown Seeds.....	\$10 00
Best and largest exhibit of California Dried Fruits.....	10 00
Best and largest exhibit of California Preserved Fruits and Jellies..	10 00
Best California White Wine.....	25 00
Best California Red Wines.....	25 00
Best California Dessert Wines.....	20 00
Best California Port Wine.....	10 00
Best exhibition of Silk Cocoons and Reeled Silk	25 00

Charles Mohr, of White Sulphur Springs, (Vallejo) was duly elected a Regular Member of the Society.

The vacancy of Trustee and Vice-President of the Society, occasioned by the prolonged absence of E. J. Hooper, Esq., was filled by the unanimous election of C. Stephens, Esq., as Vice-President, and C. Schuman, Esq., as Trustee.

The President and Secretary were authorized to invest the sum of \$1,500, out of the funds of the Society, in stock of the Horticultural Hall Association.

STRAWBERRIES.—One hundred and thirteen tons of Strawberries came into the market here in one day in the month of June, and the range of prices obtained was from 6 to 11 cents per pound.

OREGON STATE FAIR.

The opening of the Oregon State Fair has now been fixed for Monday, September 30th, to continue for six days.

HORTICULTURAL FAIR IN PORTLAND, (OR.)

The Second Annual Fair of the Horticultural Society, held Thursday, Friday and Saturday of last week, was a very pleasant affair. The exhibition in all the departments was very good. The attendance, though not large, was, we believe, sufficient to defray expenses. It should have had better patronage though, as great pains had been taken to render the exhibition pleasant and entertaining for spectators. The exhibitors deserve great credit for the tasty display made.

With good management the Horticultural Fair may develop into an exhibition which will rival the State Fair itself. This latter institution is now run almost exclusively by the horse jockey element, to the disgust of sensible people. If the Horticultural Fair will only enlarge its sphere of operations so as to include exhibitors of all departments of labor, it will arouse an interest in its behalf which will make it a gratifying and permanent success.—*The New North West.*

CINCINNATI INDUSTRIAL EXPOSITION.

The managers of the Industrial Exposition which is to open in Cincinnati on September 4th, are making every exertion to render it a complete success. We received a communication from the Chairman of the Horticultural Department, stating that besides the many and most liberal prizes which are offered for exhibits of every product of Horticulture and Floriculture, a gold medal will be awarded to the best State display of fruits and vegetables. The managers would like California to compete and say "that nothing would add more to the general interest than an announcement that the Golden State would be represented." We should be pleased if some of our horticulturists would move in the matter.

VACAVILLE FRUIT GROWERS' ASSOCIATION.

The Fruit Growers of Pleasant Valley held a meeting, on June 22d, for the purpose of forming an association. A number of practical men were present and inaugurated a Society under the name of "Vacaville Fruit Growers' Association," of which O. Bingham was elected President and H. H. Lewis, Secretary. We hope it will prove a complete success.

A BOTANICAL GARDEN PROPOSED
FOR NEW YORK.

Several gentlemen of New York City have projected the establishment of a Botanical Garden on Madison Avenue, and the erection of a substantial and ornate glass and iron structure for the reception and exhibition of plants from all parts of the world. It is proposed to make this not only a perpetual plant exposition, and hence a place of public resort, but to establish, in connection therewith, a School of Botany. The aim is to make it a means of instruction as well as a place where the senses may be gratified by the sight and fragrance of beautiful plants and flowers. So says the *Rural New Yorker*.

OUR EXCHANGE TABLE.

We have received the "*Country Gentleman*," which is issued weekly, and is designed to include every department of Agriculture, Stock-raising, Horticulture and Domestic Economy; now in its 37th volume. It is published by Luther Tucker & Son, Albany, N. Y. Price \$2.50 per annum, in advance.

Farmer and Gardener; a semi-monthly journal of Southern Agriculture, Horticulture and Rural Life. It is published by E. H. Gray, Augusta, Ga. Terms of subscription, \$1 per annum.

The Poultry World; for the Fancier, Family and Market Poulterer, exclusively devoted to Poultry. It is a monthly publication,

nicely illustrated. Published by H. H. Stoddard, Hartford, Conn. Subscription price, \$1 per year.

National Live Stock Journal; devoted exclusively to Improvement in Live Stock and to the interests of Stock-raisers and Dairy-men; finely illustrated. Published monthly by Geo. W. Rust & Co., Chicago, Ill. Terms, \$2 per annum.

The Farm and Fireside Journal; devoted to the Culture of the Soil and the Cultivation of the mind. A new monthly, published in New York at the exceedingly low price of 50 cents per year. This should be in the hands of everybody. It is a model of typographical elegance, and its contents are interesting and instructive. We wish it success.

The Overland Monthly, for August, has come to hand. It is now in the 9th volume of its successful career. This Magazine has become universally recognized as the best exponent of the Social, Literary and Material Progress of the Pacific Slope, and deserves the reputation it has so well established for itself. The present number is one of the best ever published. John H. Carmany & Co., publishers and proprietors. Terms, \$4 per annum, in advance.

The American Land and Law Adviser; a weekly journal, devoted to Real Estate, Finance, and Building and Popularization of Law. Published in Pittsburg, Pa. Subscription price, \$2.50 per annum.

FAVORS RECEIVED.

From the Department of Agriculture in Washington, "List of Agricultural Colleges and of Farmers' Clubs, and Agricultural, Horticultural and Pomological Societies of the United States."

"Premium List, Rules and Regulations of the Twelfth Fair of the St. Louis Agricultural and Mechanical Association, to commence Thursday, October 3d, and close Sat-

urday, October 12th." Competition is invited from the whole Union. We notice a long list of premiums offered for Fruit, Vegetables and Flowering Plants of all descriptions. Address G. O. Kalb, Secretary.

"Transactions of the Nebraska Horticultural Society for the year of 1871." Thanks to R. W. Furnas, the President of the Society. The pamphlet is interesting, and we shall refer to it again.

"Colt's Illustrated Scientific and Family Magazine; an Eclectic of Choice Reading for the Family."

"For Everybody." The July number of this favorite illustrated family paper is on hand.

"The Science of Health." The August number of this new monthly lies upon our table.

We have received the "Premium List" of the Sonoma and Marin District Agricultural Society, for the Sixth Annual Exhibition, to be held at Petaluma from Monday, September 9th, to Saturday, September 14th, 1872.

Also to hand, "List of Premiums, Rules and Regulations," of the Kansas City Industrial Exposition and Agricultural Fair, to be held in Kansas City, Mo., September 25th to September 28th inclusive, 1872.

 We are under special obligations to the Managers of the State Agricultural Society for a complimentary ticket to the State Fair. We shall certainly make good use of it during the Fair, which promises to be a perfect success.

CATALOGUES RECEIVED.

C. L. Allen & Co's *Wholesale Catalogue* of Hyacinths, Tulips, Crocus, Lilies, French Hybrid Gladiolus, etc., for Fall and Spring of 1872-73.

Wholesale Catalogue of Dutch Bulbs, Flower Roots, Tuberculous Plants, etc., offered by E. H. Krelage & Son, Haarlaem, Holland. B. Raoux, of New York, is the agent for the United States.

Catalogue of Vegetable, Agricultural and Flower Seeds, Young Plants of Fruit and Forest Trees, and Shrubs cultivated by J. Monnier & Co., of Trelazé, France.

Chambersburg Nursery Association's *Descriptive Catalogue of Fruit and Ornamental Trees, Roses, Shrubs, Greenhouse and Hardy Plants.* T. B. Jenkins, Superintendent, Chambersburg, Pa.

NEW BOOKS, ETC.

THE MODEL POTATO.—An Exposition of its Proper Cultivation; the Cause of its Rotting; the Remedy therefor; its Renewal, Preservation, Productiveness and Cooking. By Dr. John McLaurin. Edited with Annotations, by R. T. Trall, M.D. 12mo, 102 pp. Price 50 cts. S. R. Wells, Publisher, 389 Broadway, New York.

A work in which every farmer, every gardener, and every reader is interested. Any effort made to improve this universally used tuber is worthy of commendation. Here are new views on the subject of Potato Culture, and a plan to prevent its rotting and "running out." The work is the result of twenty years' experience and observation.

THE SCHOOL OF CHEMICAL MANURES, OR ELEMENTARY PRINCIPLES IN THE USE OF FERTILIZING AGENTS.—From the French of M. George Ville, by A. A. Fresquet, Chemist and Engineer. The work is published by Henry Cary Baird, Industrial Publisher, 406 Walnut Street, Philadelphia. For the small sum of \$1.25, the book will be mailed post-paid.

Heretofore the people of California have paid but very little attention to the use of manures, depending too much on the natural fertility of the soil. This cannot go on much longer in this way; it is evident that our fields and gardens are being exhausted and are less and less productive every year. It becomes necessary that we inform ourselves upon this subject.

INDIGENOUS SUGARS AND DIRECTIONS FOR MAKING SUGAR FROM MELONS.—Compiled and Original, by W. Wadsworth. Published and for sale at the *Pacific Rural Press* office, San Francisco. Price, post-paid, 50 cts.

NEW AND RARE PLANTS.

Nyctocalos Thompsoni. This, the *Rural New Yorker* says, is a beautiful climbing plant, sent to the Kew Gardens (England) from the Calcutta Botanic Garden, six or seven years ago.

The plant is a tall, rapid climber, with slender branches, with leaflets four to six inches long. Flowers stand erect, four to five in a cluster, borne on terminal pendulous peduncles, and of (according to an illustration in the *Rural New Yorker*) about two and a half inches in diameter. The flowers are succeeded by a pod six inches long by two broad, and quite flat. This beautiful climber would not be hardy in our climate, but must be well worthy of a place in a conservatory where it could be trained to the rafters or upon ornamental trellis-work. We do not know that any of our florists have as yet any plants for sale; but as all the *Bignoniaceae* are readily propagated by seeds or cuttings, we presume it will soon be abundant—at least, there is no good reason why it should not be.

[We have very little doubt, that this plant as described above, will prove perfectly hardy in California, and would be quite an acquisition to our list of valuable climbers.—Ed.]

Bronze Ivy-leaved Pelargonium.—Mr. Grieve, of Culford, says the *Gardeners' Chronicle*, has sent us examples of a Bronze Ivy-leaved Pelargonium, an entirely new strain, of singular beauty. It was obtained by fertilizing an Ivy-leaved variety by pollen of a Bronze Zonale, and the result is a well-marked gold and bronze Ivy-leaved variety, of robust and compact habit, which promises to be equally useful in the flower garden and as a pot or vase plant. The flowers are crimson, and the leaf of a rich golden tint, with a bronze zone, the older leaves becoming tinted with red at the margin. We look upon it as a great acquisition.

CURRENT CULTURE.—In Alameda County 621 acres are devoted to Currant Culture.

REPORT ON THE FRUIT MARKET.

Our Markets are overflowing with the abundant supply of Fruits and Vegetables, which are now displayed in profusion and of very superior quality; and although Cherries, Strawberries, Gooseberries, Currants and Rhubarb have passed out of season—and Raspberries nearly so—their places are supplied in rich abundance by various other fruits.

Raspberries are now nearly out; what few remain sell at, per lb., 20 cts.

Blackberries are fine, retail at, per lb., 8 cts.

Apricots and Nectarines, retail at, per lb., 8 cts.

Peaches are very abundant, and retail at, per basket, from \$1 to \$2; the choice varieties have not yet made their appearance.

Plums are in great variety and sell at from, per lb., 3 cts. to 8 cts.

Grapes, in variety and plentiful, sell at, per lb., from 5 cts. to 25 cts.

Apples are not yet plentiful, sell at, per box, \$1.50 to \$2.50.

Pears (Bartlett) sell at, per lb., 8 to 10 cts.

Melons (Cantelopes) extremely plentiful; according to size and quality, 12½ cts. to 25 each.

Watermelons are also very plentiful, sell at, each, 12½ cts., 25 cts., to 37½ cts.

Tomatoes, very plentiful, sell at, per lb., from 2 cts. to 3 cts.

Huckleberries, sell at, per lb., 20 cts.

Pie Squash, sell at, per lb., 1 ct.

Pineapples and Bananas are scarce.

Oranges are in moderate supply, at, per dozen, 75 cts.

Lemons are scarce, sell at, per dozen, \$1.

Limes are plentiful, sell at, per doz., 25 cts.

VEGETABLES in every variety are now very cheap and abundant.

MESQUIT.

Some two years since the Mesquit grass was introduced into this county direct from Texas. L. Harbine, of Sebastopol, states that in bottom land it is a complete success, and does well, also, on uplands of certain kinds of soil. He has nine acres of this grass now on his

land, and intends to sow more. Some of it is six feet high, and the field averages four-and-a-half feet high.—*Russian River Flag.*

YELLOWSTONE PARK,

(Our National Park.)

The Geyser region of the Upper Yellowstone, which Congress has wisely made sacred to the people, is unquestionably the most astonishing combination of natural wonders, and imposing, beautiful scenery in the world. The forthcoming official report of Professor Hayden, United States Geologist, who visited that region last summer and returns this season, will fully demonstrate this fact. When this Park is rendered easily accessible by railroads—say two years hence—I predict that it will become the great summer resort and sanitarium of the continent.

For sight-seers and lovers of the wonderful and picturesque, it will have more attractions than Niagara, Yosemite and the White Mountains combined. There is the best reason to believe that the myriads of hot and mineral springs in the Yellowstone region possess valuable curative properties. The summer climate of the region is delightfully cool, bracing and healthful. To reach them from the Northern Pacific line, a short branch will be needed, and this, it is understood, will be built as soon as the main line reaches the proper point. At present the Geysers are only accessible by horsemen traveling circuitous paths.—*Gen. B. F. Potts, of "The West."*

WINE OVERLAND.

The Central Pacific Railroad Co. proposes to ship Wine overland as follows: Wine in wood, in car loads, from Santa Rosa to Chicago, St. Louis and New York, \$2.21 per 100 pounds; in quantities less than car loads, \$3 per 100 pounds. To Indianapolis, Cincinnati, Boston, Philadelphia and Baltimore, \$2.46 per 100 pounds in car loads, and \$3.46 in less quantities.

THE ARMY WORM.

The Army Worm has made its appearance in the northern parts of the State.

The *Appeal* of June 25th says: "They have made their appearance on an island which is and has been completely surrounded by water, hence the theory of their reaching localities by traveling, is pretty much exploded. They could not reach this place by crawling, and must have been bred and born there. They are sweeping everything green before them. The alfalfa fields especially afford them a rich repast, and they are eating it to the ground."

The Grass Valley Union of the 25th says: "Great armies of worms, organized in companies, regiments, brigades, divisions and so on, are at present doing great mischief on Wolf Creek, below this place, and near Dodge's ranch. Mr. Dodge informs us that the worms devour everything green that they come to, and that there is no use in fighting them. The army was, at last accounts, heading toward Grass Valley."

RAISING FLOWER SEEDS.

This is becoming a very important business, and the extent of some of the "flower farms" is enormous. James Vick's *Verbena* bed at Rochester (New York) measures three quarters of an acre; the *Asters* cover twice as much ground; the *Phloxes* and *Dahlias*, each two acres; *Lilies*, one acre; *Tuberoses*, about the same; and so on, until about seventy-five acres are included in the fragrant category. Such a farm must be a brilliant and beautiful sight, and no less delightful to the olfactory sense, if the sweetness be not overpowering. And how many flower gardens, through the length and breadth of the land, will these blooming acres furnish, or reinforce! It is a pleasant employment thus to scatter blossoms, like the classic Flora, and one to which every lover of the beautiful will heartily wish success.—*Boston Journal of Chemistry*.

ERROR.—On page 258, tenth line, article "Decorative Plants," sub-head "Palms," for *magnificent*, read *insignificant*.

Correspondence.

July 8th, 1872.

Editors California Horticulturist and Floral Magazine.

GENTLEMEN:

Being a constant reader of your valuable Magazine, and having noticed several articles concerning the management of Lawns, the best Grass Seed, the best mode of Sowing, etc., I will again presume to take up the subject, which is certainly one that should have special attention at our Horticultural and Agricultural Society meetings; and the question, "Which are the best Grasses to stand our long and arid summers?" should be thoroughly debated. I have noticed an article in Vol. II, N^o 2, of the CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE, stating that Kentucky Blue Grass and White Clover make the prettiest lawn, although the most expensive, and requiring the most care.—That we are willing to admit at present; but certainly next comes the Italian Rye Grass. I am happy to be able to corroborate what has already been said of the Italian Grass, and wish to inform you and all whom it may concern, that it should be more strongly recommended than it is, for cheap and large country lawns. I sowed in rather a shady situation, on the 16th February, 1872, a few pounds of Italian Rye Grass, and in three weeks it was fit for the mowing machine, although I cut it with the scythe, and continued to cut regularly every two weeks up to the present time. The grass has a neat appearance thus far. Therefore I feel confidence in saying that the Italian Rye Grass can be kept green four months of the year without water. It should be cut frequently, say every two weeks. I would recommend that all varieties of grass be sown early in the rainy season. As soon as the first rain falls, the ground should be got in order and the seed sown; don't wait for all the heavy rains to come or you cannot work

your land until Spring, when your grass seed will be late unless forced by abundance of water.

There are many complaints that grass cannot be grown in this country, but it is the people's own fault and negligence in not taking advantage of the rainy season, and not sowing in the proper time or in the proper manner. Cannot some more experienced and qualified voice re-echo in the ears of the members of our Agricultural and Horticultural Societies the admonition to make experiments, and prove whether we cannot have some other grasses and herbage to survive on the rich and beautiful hillsides of California, besides the wild oats and other herbage which Nature herself has sown? I hope this will be satisfactorily proved, and that the time will come, when tourists who come to visit us and to speculate in our golden fields, will not have the opportunity to say, when they return to their native homes, that all kinds of grass and clover are almost unknown in this Queen of Countries—California. So no more for the present on the Grass question.

Your sincere friend,
P. J. FORD.

Editorial Cleanings.

LOSS OF EVERGREENS IN THE EAST.—The wholesale destruction of Evergreens, in the East, is attributed, by a writer in the *American Agriculturist*, to the following causes: The unusual depth to which the soil was frozen; the unusual cold, (zero, or near it) in March, following a mild spell in February; the unusual dryness of the soil, during the Winter, and the prevalence of drying winds. I think that a combination of the last two causes produced the results. Some curious cases appear difficult to account for. With trees, apparently just alike, standing side by side, one was taken and the other left unharmed; also, one half of a tree would be killed, and the other half left untouched.

CHESTNUT TREES.

We do not see why Chestnut trees are not more extensively cultivated in California; we are certain they will do well here if properly cared for while young—they will take care of themselves after two or three years. The Chestnut succeeds best in a dry and even rocky soil. If planted in autumn and after the first rains and heavily mulched, they will even live during the first year without irrigation. Yet we advise moderate irrigation, if water is convenient, for a year or two, in order to advance this growth more rapidly.

By the way, it is a well established fact, that the Chestnut can be grafted or budded on the Oak in the proper season, which with us, is in Spring before and during the time the sap rises. Budding may also be performed in late summer if trees can be found in proper condition for the operation, that is, if the bark will separate easily from the wood.

It seems to us that it would be advisable to experiment on this suggestion. There are plenty of young spare Oaks in the country, and it would cost nothing to try it. We know it has been done successfully in Germany, and it is there sometimes practiced by nurserymen.

ALASKA CEDAR.

The Oregon *Herald* speaks well of this new species, and says:

On the last trip of the steamship Gussie Telfair from Sitka, there were brought several pieces of Alaska Cedar, that, when finished, are equal to the laurel. We are informed that two or three of our prominent citizens forwarded orders to Sitka, by the last steamship up, for several hundred feet of the cedar. We are also informed that it is the intention of a party in San Francisco to manufacture cedar lumber on an extensive scale from the timber secured in Sitka.

THE GRAPE CROP.—While the Grape Crop throughout the mountains will be above the average, the yield of Los Angeles will probably be less than last year's.

CHERRY CURRANTS.

J. A. Wilcox, at his experimental garden, two miles northwesterly from Santa Clara, is now supplying the market with from twelve hundred to fifteen hundred pounds (of Cherry currants) per day. He is also shipping about double this quantity to San Francisco daily—and this in the commencement of the fruitage. By next week his shipments will exceed 6,000 pounds a day. His bearing plants are two years old. The Cherry currant grows in immense clusters attached to the main stalk, and commences fruiting close to the ground. To preserve its bright scarlet color, it must ripen in the shade of its own foliage. It can only attain perfection by thorough cultivation of the soil and abundant irrigation. By this means Mr. Wilson has brought his fruit to a state of perfection truly remarkable. In Alameda County, the lack of irrigating facilities is severely felt; the plant makes less foliage and the color of the fruit is more or less dimmed by the sun.—*San Jose Mercury*.

DESIRABLE PLANT FOR A DRY COUNTRY.—In a tract of country in the north-western part of Africa, distinguished for its dry and rich soil, the *Boston Journal of Chemistry* says, a gigantic perennial melon has been discovered, which is a most deliciously wholesome fruit, and which is largely consumed by the native inhabitants as food. In order that this melon should flourish, it is necessary that it should strike its roots through the sand 30 feet to reach permanent moisture. This it does, and grows in great luxuriance where all else is shriveled and parched with the heat. But this is not all. If it was simply a huge melon, with smooth and delicate skin, every one would be destroyed by wild beasts before coming to maturity. To prevent this, Nature has armed its outer rind with a covering of long, sharp, terrible thorns, which so lacerate the mouth and nose of animals that they are glad to let them alone in all their tempting freshness. Man, with his hands and sharp knives, finds little difficulty in

opening the luscious fruit. The natives have no necessity for putting fences about their melon patches, for the plants are self-protective.

CARE OF FORESTS.—Forests are guarded with especial care in Russia. The use of wood fuel on railways is interdicted. At the rate of destruction now going on, California will be destitute of timber in twenty years; and if the predictions of meteorologists be of any account, it will effect a terrible revolution in our climate, that will reduce our farm lands to a low valuation.—*Alta California*.

PARADISE OF FLOWERS.—A lady writer in the *New York Observer*, says: "Who knows the value of a garden of flowers? Like music, they possess magic power. The one adds to our happiness by beauty and fragrance—the other by melody and harmony, by which the sentiments are refined, and the virtues of the heart stimulated and strengthened. All surrounding objects exert an influence upon the mind, and a correspondence always exists between outward objects and the inner feelings of the heart. Where flowers are cultivated, the dispositions become sweet and the affections purified. Homes are constituted paradises when made so attractive that both parents and children find them the center of earthly bliss."

IMPROVEMENT.—The San Joaquin Agricultural Park is being improved in a most creditable manner.

REMOVED.—The tea plantation of Samuel Brannan near Cailstoga is being removed from the low lands to the hillside.

CALIFORNIA CAULIFLOWERS, have been shipped from Sacramento to New York, and arrived there in apparent good condition.

 We have made arrangements to supply the *Overland Monthly*, together with the *California Horticulturist*, for \$4 50 per annum. Subscriptions at this rate should be for one year, and should be paid in advance. Orders directed to F. A. Miller & Co., box 128, Post Office, San Francisco, or to the office of the *California Horticulturist*, 622 Clay Street, will receive prompt attention.

CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

VOL. II

SEPTEMBER, 1872.

No. 10.

DECORATIVE PLANTS

FOR OPEN-AIR CULTURE.

(Continued from page 259 of last number.)

Next to the Palms, we consider the *Dracoenas* the most desirable class of Decorative Plants—many of their kind being perfectly hardy with us, and thrive better in the open air than under glass. The *Dracoenas* are subdivided into several classes; however, the classification seems to be as yet a little mixed. The principal subdivisions are the *Cordylines*, *Charleswoodias*, *Dracoenopsis*, and *Dracoenas*.

The *Cordylines* have long, lanceolate leaves, which are drooping, particularly as the plant grows older; they make graceful and symmetrical trees of about fifteen feet in height, in their native country. In our estimation they look best when about two to three years old. If grown in the open air, they retain their dwarfish habit for some years, and have a most pleasing effect upon the lawn; they are, also, admirably adapted for large vases. The most desirable varieties are *Cordyline indivisa*, *C. congesta*, and *C. stricta*, all of which we can strongly recommend for decorative purposes. They are satisfied with almost any kind of soil, but require moisture. Plants may be had at our nurseries, at reasonable prices. They are natives of Australia and Java, and are easily raised from seed, if a little bottom heat is employed.

Of the *Dracoenopsis* we would particularly

mention the *D. Australis* (sometimes called *Cordyline Australis*), which is grown here with so much success. The sword-like leaves are distributed all around the stem, and give the plant a very symmetrical appearance. It is a native of Australia; but we have some very large trees growing here, which already furnish any amount of seed. These plants are satisfied with any kind of soil, and require less moisture than the *Cordylines*; they also withstand our heavy winds admirably.

Of the *Dracoenas* proper, we will only mention the *D. draco*, which is known here as a valuable Decorative Plant; The leaves of the *D. draco* are much fleshier than those of the other *Dracoenas*, and are of a more upright, but slower growth. Plants are easily grown from seed in a warm-house; it is, however, difficult to obtain good seed.

We will now say a few words of the *Yucca*, which is also a very desirable Decorative Plant.

The *Yucca aloefolia* is a native of Jamaica, Vera Cruz, Carolina, and Florida. It is a beautiful variety; the foliage is erect, of a light green, and serrated. It will grow to the height of from ten to twelve feet and upward. The flower-stem rises above the foliage in a large spike with beautiful white flowers, the outside shaded with purple; it is superior to *Y. gloriosa*.

Y. angustifolia is found on the Missouri

River; its narrow, sword-like leaves are of a grayish green, with white edges, with long, white threads pendent from their margins, which give this plant a fine appearance.

Y. draconis, resembling *aloefolia*, is found in South Carolina, but has its smaller leaves drooping, the upper part erect; they are lancet-shaped, three feet long, and sharp pointed; the flowers form a fine pyramid of a greenish white—a very desirable variety.

Y. filamentosa is a very fine variety; it is well known, and should be in every garden. It is a native of Virginia and Carolina.

Y. glaucescens, without stem, is a fine variety, with large, white flowers.

Y. longifolia is found in Mexico. This is a very fine variety; foliage two feet long, ending in a long, black, sharp, needle-like point.

Y. superba. This is one of the best varieties; foliage two to three feet wide; flower-stem carmine; flowers pure white, bell-shaped, the outside of the flower purple-striped.

Y. rubra variegata, *Y. variegata*, and *Y. quadricolor*, also, *Y. Americana variegata*, are the gems of this tribe of Decorative Plants, and should not fail in any collection.

Phormium Tenax linea, fol. variegata, is known here under the name of New Zealand Flax. This beautiful plant created quite a sensation about four years since, in Europe, and is as yet very scarce and valuable. Three years since we saw a large-grown plant at Mr. Heineman's Nursery in Europe (Erfurt). It was six or seven feet high, and its foliage from three to four inches wide; we never have seen anything more beautiful. The lines in the foliage were very distinct, and the first impression it made upon us was that they were painted; the leaves are lined with five distinct colors: yellow, white, pink, brown, and green. It is of good habit, a strong grower, and a magnificent sight to behold.

Arundo Donax variegata, is a very ornamental, hardy-foliaged plant; it will grow to perfection when planted out in the ground,

and will reach the height of six to eight feet in one season. It is propagated by dividing the roots, and by cuttings.

Agave Americana. A very nice tribe of plants; they are best suited for vases, and may be used for rockery also; they are of easy cultivation, and will stand any amount of dryness.

Agave Americana variegata, *A. crachystachys*, *A. stricta*, *A. tepida*, *A. concinia*, and *A. elegans*, are some of the very best varieties, and should be in every collection.

Pittosporum undulatum. A native of Australia; is a fine Decorative Plant; perfectly hardy out of doors.

Ficus Australis; hardy in our climate; is a beautiful plant, and is grown from seeds and cuttings.

Corynocarpus laevigata; New Zealand; is a beautiful tree; foliage resembling *Magnolia grandiflora*; hardy out of doors; flowers white, resembling *Legustrum Japonica*.

Sanguinaria Pattersonii, or *Ligustrum Pattersonii*, is a fine dwarf-tree, perfectly hardy here: the flowers, of pure white, come in spikes on the end of each branch.

Aucuba Japonica has a beautiful foliage of spotted yellow; it is commonly called the "Gold-dust Plant;" it will thrive out-doors when planted in the shade.

Aucuba maculata is also a fine and newer variety; it is hardy, and will grow easily from cuttings.

The *Banksias* are all natives of New Holland, and are hardy Decorative Plants. Their peculiarly shaped foliage affords a great and pleasing contrast when intermixed with other plants. They are grown from seeds, which can be obtained from Australia. The following are some of the best varieties: *Banksia macrophylla*, *B. serrata*, *B. speciosa*, *B. paludosa*, *B. Australis*, *B. Cunninghamii*, *B. dentata*, *B. coccinia*, and *B. quercifolia*.

Aspidistra Jap. lurida variegata is a beautifully foliaged plant from Japan. It is well worthy of cultivation; it has no stem, and its leaves spring up from its roots. They are from one foot to two feet long, and from

four to six inches broad. This is a beautiful, hardy Decorative Plant. Sometimes the leaves will come half white, half green; others will be striped; but will never lose its variegation. It is hardy, and will do well as a border-plant.

WINDOW GARDENING.

BY L. K. BOWDITCH.

The amateur's great difficulty in the management of plants in rooms, is, from the dryness of the atmosphere. This may be obviated in part by having the stands on which they are placed made with ledges, and covering with about an inch of sand, on which place the pots; the sand should be kept moist.

The leaves of the plant must be kept clean, and frequently sprinkled with water or washed with a plant-syringe, which not only keeps off the insects, but clears the leaves of dust and opens the breathing pores.

Watering plants, whether in a room or greenhouse, must be regularly attended to. Never allow the soil to become so dry that it will crumble under the pressure of the finger; at the same time avoid a constant dribbling of water, as in either case it is sure to terminate fatally, with more or less of the collection. Never water unless the plant really needs it, and then give freely, observing that the surplus runs out at the bottom. If water stands on the surface, it is an indication of insufficient drainage, and should be at once remedied. When saucers are used, the water must be removed from them as soon as it has drained through the pots, as nothing can be more injurious to the roots of most plants than to have the pot they grow in kept standing in water. There are some exceptions, however, to this rule, such as all kinds of *Mimulus*, *Hydrangeas*, *Calla*, *Æthiopica*, *Lobelias*, and all such as require an abundance of water. Plants in a state of bloom or vigorous growth require more water than at other times. Here the amateur's judgment must be exercised, as scarcely any two plants require the same quantity of water at all times. Never use cold water; but let it conform, as near as possible, with

the temperature of the room. Over-potting is also a fruitful cause of sickly plants. In transferring a plant to a larger pot, never advance more than one size at a time. The novices in plant-culture, when they find their plants becoming sickly, usually resort to over-feeding—namely, over-potting, with the use of stimulants, such as guano or liquid manure—where an opposite course is necessary. By an observance of the above hints, nearly all greenhouse plants may be grown successfully in a room.

In the care of hanging baskets, considerable discretion must be used not to let the soil get dry, as there is nothing so injurious to plants, whose roots are so much exposed, as to be allowed to get so dry as to wilt—too frequently the case with hanging baskets. In watering, it is best to scouse the basket in a bucket or tub, and hang it in the cellar or yard to drip, before removing back into the room; but do not over-water: keep the soil in a moderately damp, but by no means soaking condition. Sprinkle or wash the foliage of the plants every day. Plants should never be sprinkled or watered on the foliage when the direct rays of the sun are upon them, or it will burn and blister the foliage.

When gas is used in the room where plants are kept, a light article of paper or muslin should be well dampened and laid over them during the evening, as there is nothing more injurious to vegetable life than gas. Where hot-air furnaces are used, the same precautions would greatly assist the plants, if practiced during the night and two or three hours of the morning.

The best means of wetting the foliage of plants is a light syringe, for, if properly used, the object may be effected without injury to the room or carpet, thereby not rendering it necessary to remove the plants for this purpose.

If the above simple rules are followed, the most unsuccessful can soon become experts at this beautiful pastime of the culture of flowers.
—*Ladies' Floral Cabinet.*

The Tea Plantation of Calistoga has, we regret to say, proved an entire failure, but six specimens remain of half a million planted.

[From the Melbourne Times.]

HORTICULTURE.

Being an Essay read before the Horticultural Society of Victoria, by Mr. W. H. Treen, and ordered by the above Society to be printed.

[Continued from page 269 of last number.]

It is only necessary that information should be disseminated, examples presented, and experiences communicated to remove the too common prejudice that gardens are costly and useless appendages, requiring great labor, and greater expense, without adequate profit or satisfaction. At the same time there is not a farmer, or an owner of a piece of land, who will not be enriched and gratified by devoting a portion of his industry to the tillage of a garden.

Personal attention with judicious arrangements will accomplish much. Many of the most valuable products of agriculture were first introduced, and their qualities tested in a garden. If, therefore, says the learned Poiteau, "We would ascend to the origin of agriculture, it is in the garden that her cradle will be found." There, like young Hercules, she first tried her powers, and prepared, like him, to overrun the world, which she speedily cleared of monsters, and brought to civilization. In all ages and countries flowers have been universally cherished. "Who," asks Boursault, "does not love flowers?" They embellish our gardens, and give more brilliant lustre to our festivals; they are the interpreters of our affections; we present them to those to whom we are under obligations; they become necessary to the pomp of our religious ceremonies and great entertainments; therefore, happy are those who love and cultivate them. We are told that the bouquet of flowers was daily renewed upon the table of Lord Bacon, while composing the volumes of his sublime philosophy; the great Descartes prosecuted with equal ardor the study of astronomy and the culture of flowers.

But to ourselves and our own doings. The proceedings of our own Society, representing

as it does the chief horticultural society in Victoria, are naturally watched somewhat keenly by those who really take an interest in the growth and improvement of horticulture; more so by those who have the interest of the Society at heart. No doubt the majority of our members, from many causes, trouble themselves but slightly about horticulture, taking just so much interest in the Society proportionate to the advantages they derive from it, viz., an afternoon's outing twice a year. Some members, doubtless, care very much for horticulture, but very little about the Society itself; while others again, we have evidence of, have horticulture really at heart, and the success of the Society also, looking upon it as one of the best agencies for improving and extending the progress of their favorite pursuit. Therefore it behoves the workers of our own Society to do all they can in every way to promote and further its interests. Our non-horticultural members contribute equally to the funds, and deserve every encouragement. But it is to our practical horticulturists that we must look, to make our exhibitions a success, for without them our efforts we fancy, would be very few. Therefore, we hail with delight the encouragement given this season to our growers by the liberal prizes offered for competition at our next Spring Show, for without exhibitors we can have no show, and the laborer is worthy of his hire. I therefore congratulate our cultivators on the more hopeful prospects open to them for the coming season. I have also pleasure in noticing that our usual monthly meetings have been more largely attended, and greater interest felt therein. The value of this cannot well be overestimated, and I believe they are looked upon with favor by the majority of our members. The floral and fruit committees have done good service, although perhaps the work has not been quite equally distributed, the burden falling on the most willing ones rather more than it should, but it is somewhat difficult to avoid this. The great thing is for the working members to stick together, and

pull one way, all having but one aim in view—the promotion of Horticulture, and the well-being of the Horticultural Society of Victoria. It is but natural for us to hope that the Society may derive considerable benefit from our Spring Exhibition. At the same time my own opinion is, to make a great success, we must hold our exhibitions in town, availing ourselves of the splendid Town-hall and its organ, where plants can be displayed to the best advantage, where hundreds can attend who cannot leave town, where we are in a measure independent of the weather, and where we are not obliged to shut up at six o'clock.

We have certainly made many strides in the right direction, and doubtless this matter will receive due attention. We have found a number of gentlemen who have willingly responded to the call for special prizes, while again others have readily become members of the Society, thereby benefiting the cause we all espouse.

In conclusion, gentlemen, I would say, let us all with one heart and one hand endeavor by all means in our power, either directly or indirectly, to secure the promotion of Horticulture, yielding allegiance, in the first instance, to Horticulture and its associate arts, and, secondly, to this Society as the best agent for promoting the progress of our favorite pursuit.

TREES AS PROTECTORS OF CROPS.

Prof. Bolander, State Superintendent of Public Instruction, and one of the editors of the *California Teacher*, makes a suggestion of great importance in the September number of that periodical. Referring to the burning of valuable grain-crops, when ripe, by accidental fires, he says that the planting of rows of Monterey cypress, subdividing the grain-fields, the rows running at right angles to the prevailing summer winds, will be an effectual barrier to the spread of flames. This cypress, as Prof. Bolander says, is easily raised from seed, making a growth of thirty to forty feet in four years, even in poor, dry

soil, spreads so widely as to make a sure shelter against wind and fire, and if not trimmed—as for this purpose it should not be—forms a dense and impenetrable thicket.

It is free from insects, and stands firmly against the wind, for it takes a firm hold in almost any kind of soil, if the final transplantation is made in the first year of its growth. It thrives in every part of the State, except in the higher and colder mountain regions, attaining a height of 150 feet, with a stem of nine feet in circumference. Prof. Bolander says:

“Large grain-fields should be subdivided, and the boundary lines planted with a row of this tree. The heat of burning grain is not sufficient to set it on fire. Thus planted, it would also prove an excellent shelter against the heavy north winds in spring. At first, these trees should be planted closely, and gradually thinned out as they grow up. We have seen this experiment successfully tried. There is no better shelter known. It is contrary to rural economy to buy a quantity of cypress-trees necessary to encircle the subdivisions of grain-fields; they should be raised on the farm. Seeds of any kind of trees are best sown in portable boxes three feet long, two wide, and about four inches deep. The soil should be a mixture of two-thirds of fine sand and one-third of loam. Upon this mixture of sand and loam spread sawdust to the depth of half an inch, and wet the whole thoroughly. This being done, sow the seeds upon the sawdust; cover it with a sheet of paper, or better still, with a layer of moistened moss. Keep the box in a shady place, and the ground moist, but not wet. As soon as the seeds have germinated and developed their leaves, they should be left uncovered, and gradually exposed to light. When the plantlets have attained the height of eight or twelve inches, they should be taken up, one by one, with a dull knife, and planted in the open field in a similar manner as cabbage. By sowing the seeds about the 1st of September, the plantlets will have attained the proper size for transplantation after the first rains have fallen.”

We have no doubt that the extensive planting of hedgerows of cypress, both for the outer inclosure and subdivision of grain-fields, would not alone prevent the extensive fires which occur when there is no natural

obstacle to check their spread, but would also serve to break the force and dessicating effect of winds, and exercise a modifying influence on the climate of our interior valleys. Planted along roadways they would be a cheap and lasting fence, as well as an ornament to the landscape. In many instances, where large tracts are not to be permanently used for grain alone, it will be found preferable to substitute other trees for the cypress, such as the eucalyptus, which is a rapid grower, a graceful ornament, and valuable for its timber, to say nothing of its medical qualities; or the walnut and other nut trees, with the mulberry, where its leaves can be used to feed silk-worms. Without extending these hints in this place, it is enough to say that the appearance of our large interior valleys could be beautifully transformed, the winds and heats to which they are subjected much modified, their salubrity enhanced, and the precipitation of rain sensibly increased, by the general planting of trees upon a rational plan.—*Bulletin*.

SELECT PLANTS

(Exclusive of Timber Trees) readily eligible for Victorian Industrial Culture, with Indications of their Native Countries and some of their Uses—an Enumeration Offered

BY BARON FRED. VON MUELLER.

[From the similarity of our climate to that of Victoria (Australia), we are induced to believe that selections, from time to time, from this list, may be useful and highly suggestive to our intelligent farmers and gardeners.—Ed.]

ACACIA FARNESIANA, Willd. — Dioscorides' small Acacia. Indigenous to South Asia; found westward as far as Japan; a native also of the warmer parts of Australia, as far south as the Darling River; found spontaneously in tropical and sub-tropical America, but apparently not in tropical Africa. Prof. Fraas has recognized in this Acacia the ancient plant. The scented flowers are much sought after for perfumery. This bush may

also be utilized as a hedge plant, and a kind of Gum Arabic may be obtained from it.

ACHILLEA MILLEFOLIUM, L. — Yarrow, or Millfoil. Europe, Northern Asia, and North America. A perennial medicinal herb of considerable astringency, pervaded with essential oil, containing also a bitter principle (Achillein) and a peculiar acid, which takes its name from the generic appellation of the plant.

ACONITUM NAEPELLUS, L. — The Monk's Hood. In the colder, especially the mountainous parts of Europe and Northern Asia. A powerful medicinal plant of perennial growth, but sometimes only of biennial duration, variable in its forms. It was first introduced into Australia, together with a number of other Aconites, by the writer of this communication. All the species possess more or less modified medicinal qualities, as well in their herb as in their root; but so dangerously powerful are they, that the plants can only be administered by the exercise of legitimate medical practice. Napellus root, according to Professor Wittstein, contains three alkaloids: Aconitin, Napelin, and Narcotin. The foliage contains also a highly acrid, volatile principle, perhaps chemically not unlike that of many other Ranunculaceæ. Aconitin, one of the most potent of any of the medicinal substances in existence, can likewise be obtained from the Nepalese *Aconitum ferox*, and probably from several other species of the genus.

ACORUS CALAMUS, L. — The Sweet Flag. Europe, Middle and North Asia, North America. A perennial pond or lake plant. The somewhat aromatic root is used as a stomachic, and also in the preparation of confectionery, in the distillation of gin, and in the brewing of some kinds of beer. The flavor of the root depends mainly on a peculiar volatile oil.

ACTEA SPICATA, L. — The Baneberry. On forest mountains, mainly in limestone soil of Europe, North Asia, and North America. A perennial medicinal herb. Its virtue depends

on peculiar acrid and bitter, as well as tonic principles. In North America, this species, and likewise *A. alba*, are also praised as efficacious antidotes against ophidian poisons.

ADESMA BALSAMICA, *Bertero*.—The Jarilla of Chili. A small shrub, remarkable for exuding a fragrant balsam of some technic value.

ÆSCHYOMENE ASPERA, *L.*—The Solah of tropical Asia. A large, perennial, erect or floating swamp plant, probably hardy in the warmer tracts of our Colony. Introduced from the Botanic Garden of Melbourne into the tropical parts of Australia. The pith-hats are made from the young stems of this plant. The Solah is of less importance for cultivation than for naturalization.

AGAVE AMERICANA, *L.*—The gigantic Aloe of Central America. It comes here into flower in about ten years. The pithy stem can be utilized for some of the purposes for which cork is usually employed, for instance, to form the bottom of insect-cases. The honey-sucking birds and the bees are very fond of the flowers of this prodigious plant. The leaves of this and some other Agaves, such as *A. Mexicana*, furnish the strong Pita-fibre, which is adapted for ropes, and even for beautiful textile fabrics. The sap can be converted into alcohol. Where space and circumstance admit of it, impenetrable hedges may be raised in the course of some years from Agaves.

AGROSTIS ALBA, *L.*—The Fiorin or White Bent-grass. Europe, North and Middle Asia, North Africa, and North America. Perennial, showing a predilection for moisture. It is valuable as an admixture to many other grasses, as it becomes available at a season when some of them fail. Sinclair regards it as a pasture grass, inferior to *Festuca pratensis* and *Dactylis glomerata*, but superior to *Alopecurus pratensis*. The variety with long suckers is best adapted for sandy pastures, and helps to bind shifting sand on the sea-coast, or broken soil on river banks.

ALETRIS FARINOSA, *L.*—The Colic root of

the woodlands of North America. This pretty herb is of extreme bitterness, and can be medicinally administered as a tonic.

ALKANNA TINTORIA, *Tausch*.—On sandy places around the Mediterranean Sea. It yields the Alkanna root, used for dyeing oleaginous and other substances. It might be naturalized.

ALLIUM SCHENOPRASUM, *L.*—The Chives. Europe, Northern Asia, and North America. Available for salads and condiments. This species of *Allium* seems not yet so generally adopted in our culinary cultivation as *Allium Ascalonicum* (the Shallot), *A. Ceba* (the ordinary Onion), *A. fistulosum* (the Welsh Onion), *A. Porrum* (the Leek), or *A. sativum* (the Garlic). *A. Scorodoprasum*, or the Sand Leek of Europe and North Africa, resembles both Garlic and Shallot.

ALOE FEROX, *Mill.*—This species yields the best Cape Aloe, as observed by Dr. Pappe. The simply inspissated juice of the leaves of the various species of this genus constitutes the Aloe drug. It is best obtained by using neither heat nor pressure for extracting the sap. By re-dissolving the aqueous parts in cold water, and reducing the liquid through boiling to dryness, the Extract of Aloes is prepared. All species are highly valuable in our Colony, where they are hardy, and can be used, irrespective of their medicinal importance, to beautify any rocky or otherwise arid spot.

ALOE LINGULIFORMIS, *Miller*.—South Africa. According to Thunberg, from this species the purest gum-resin is obtained.

ALOE Plicatilis, *Mill.*—South Africa. The drug of this species acts milder than that of *A. ferox*.

ALOE PURPURASCENS, *Haworth*.—South Africa. Again one of the plants which furnishes the Cape Aloe of commerce.

ALOE SOCOTRINA, *L.*—Hills of the Island of Socotra. Also cultivated in Barbadoes and elsewhere, thus yielding the Socotrin Aloe.

ALOE SPICATA, *Thunberg*.—South Africa.

This aloe provides Cape Aloe. It is an exceedingly handsome plant.

ALOE VULGARIS, *Lamarck.*—The Yellow-flowered Aloe. Countries around the Mediterranean Sea, also Canary Islands, on the sandy or rocky sea-coast. Such places could also here readily be utilized for this and allied plants. Dr. Sibthorp identified this species with the *'Akon* of Dioscorides; hence it is not probable, that *A. vulgaris* is simultaneously also of American origin, although it is cultivated in the Antilles, and furnishes from thence the main supply of the Barbadoes Aloe. In East India this species is also seemingly only existing in a cultivated state. Haworth found the leaves of this and *A. striata* softer and more succulent than those of any other aloe. It is said to be the only species with yellow flowers among those early known. It is also this species only, which Professor Willkomm and Professor Parlatore record as truly wild in Spain and Italy.

ALOE ZEYHERI, *Harvey.*—South Africa. A magnificent, very tall species, doubtless valuable like the rest.

ALOPECURUS PRATENSIS, *L.*—Meadow Fox-tail Grass. Europe, North Africa, North and Middle Asia. One of the best perennial pasture grasses. Though so extensively cultivated for years in our Colony, it is mentioned, for completeness' sake, in this list. It attains to its full perfection only after a few years of growth, as noticed by Sinclair. For this reason it is not equal to *Dactylis glomerata*, for the purpose of changing crops. Otherwise it is more nutritious than the latter, although the annual return in Britain proved less. Sheep thrive well on it. Sinclair and others found that this grass, when exclusively combined with white clover, will support from the second season five ewes and five lambs on an acre of sandy loam. But this grass, to thrive well, needs land not altogether dry. In all permanent artificial pastures, this *Alopecurus* should form one of the principal ingredients, because it is so lasting and nutritive. In our Alpine regions

it would also prove prolific, and might convert many places there gradually into summer-runs. It is early flowering, and likes the presence of lime in the soil.

ALSTONIA CONSTRICTA, *F. v. M.*—Warmer parts of East Australia, particularly in the dry inland districts. The bark of this small tree is aromatic, bitter, and regarded valuable in ague, also as a general tonic.

ALSTREMERIA PALLIDA, *Graham.*—Chili. Palatable starch can be obtained from the root of this plant, which, for its loveliness alone, deserves a place in any garden. The tubers of others of the numerous *Alstroemerias* can doubtless be utilized in a similar technic manner.

ALTHEA OFFICINALIS, *L.*—The real Marsh-Mallow. Europe, North Africa, North and Middle Asia. A tall, perennial herb, with handsome flowers. The mucilaginous root and also the foliage are used for medicinal purposes. The plant succeeds best on damp, somewhat saline soil.

AMELANCHIER BOTRYAPIUM, *Candolle.*—The Grape-Pear of North America. This fruit-tree attains a height of thirty feet. The purplish fruits are small, but of a pleasant taste, and ripen early in the season. This bush or tree will live in sand-soil; but it is one of those hardy kinds particularly eligible for our Alps.

AMYGDALUS COMMUNIS, *L.*—The Almond-Tree. Countries around the Mediterranean Sea and Orient. Both the sweet and bitter Almond are derived from this species. Their uses, and the value of the highly palatable oil, obtained by pressure from them, are well known. This oil can well be chosen as a means of providing a pleasant substitute for milk during sea voyages, etc., by mixing, when required, with it half its weight of powdered gum-arabic, and adding then successively, while quickly agitating in a stone mortar, about double the quantity of water. Thus a palatable and wholesome sort of cream for tea or coffee is obtained at any moment. There exist hard and soft-shelled

varieties of both the sweet and bitter Almond. In time, they should form an important article of our exports. Almonds can even be grown on sea shores. The crystalline Amygdalin can best be prepared from bitter Almonds, through removing the oil by pressure, then subjecting them to distillation with alcohol, and finely precipitating with æther. The volatile bitter Almond oil—a very dangerous substance—is obtained by aqueous distillation. Dissolved in alcohol, it forms the Essence of Almonds. This can also be prepared from peach kernels.

OPENING OF THE HALL OF THE BAY DISTRICT HORTICULTURAL SOCIETY.

SECOND ANNUAL EXHIBITION.

On the twenty-second of last month, the Bay District Horticultural Society opened their New Hall, on the corner of Post and Stockton streets, for their second Annual Exhibition.

This Hall, which they have purchased from the Skating Rink Association, has been refitted at a very considerable expense, for the purposes of the Society, and although some incongruities exist in the decorations attributable possibly to crudity of taste in the Hall Committee, yet it presents altogether a very creditable appearance.

Owing to the want of sufficient publicity being given to the hour of opening, there were not so many in attendance as might have been otherwise expected. There was, however, quite a respectable sized assemblage present, when Professor H. N. Bolander arose and delivered the following speech of welcome :

*“Ladies and Gentlemen :—*It behooves me, as President of the Society, to make a short and brief statement of its history.

Having recognized the necessity of a society whose object and design should be to bring before the public, from time to time, as it were in a collective view, useful and ornamental vegetable productions of our own

as well as of foreign lands, and whose aim should be to disseminate useful knowledge on objects of the vegetable world, that might contribute to increase the minor and larger industries of our State—we organized this Society, to fill this want, in October, 1870, and incorporated it in 1871.

The original members were thirteen in number, they increased, however, steadily ; and the Society consists to-day of seventy regular, five life and ten honorary members.

In 1871, we held, in connection with the Mechanics' Institute, our first exhibition, which was an acknowledged success. A suitable library has been established, containing over 200 volumes on agriculture, horticulture and systematic botany. In the Society's reading-room are constantly kept on file, for the use of its members, thirty different leading periodicals on agriculture and horticulture.

In a financial point of view, we must confess the Society is still weak ; it is in need of a more general support of a generous public to become more useful and more influential. Our library should be increased, and an herbarium of useful and ornamental plants should necessarily be established.

The last State Legislature generously appropriated \$2,000, for the years 1872 and 1873, each. This timely support will help materially in carrying out the Society's legitimate object and design.

Under the auspices of the Society is also published a monthly journal, devoted exclusively to the interests of horticulture, floriculture and forestry.

The want of a suitable hall for holding our exhibitions was keenly felt. Fortunately the Society had, among its own members, men of enterprising spirit, who came cheerfully forward and bought and fitted up this spacious and beautiful hall. This new Society, within our own, was organized and duly incorporated three months ago, and is known as the Horticultural Hall Association.

All this is the work of two years ; due to the energy and enterprise of a few members,

firmly devoted to a noble and edifying cause.

In future, it is intended to hold annually two exhibitions, one in Spring, and one in Fall."

The Professor then introduced Dr. E. A. Carr, Professor of Agriculture and Horticulture to the University of California, who delivered the following eloquent opening address :

PROF. CARR'S ADDRESS.

It is a matter for congratulation that the people of the Pacific Coast, and especially of San Francisco, have learned so to esteem their displays of art and industry as to warrant such annual exhibitions as will most fully illustrate our performance and possibilities. It was a happy conception to adapt the European winter garden, a place combining instruction and innocent amusement, to our local circumstances, our more modest and humble beginnings, and to make the competitive Horticultural Exhibition its chief specialty.

For so great a public benefit I have no doubt the public will show substantial appreciation, but the results of the effort will not all show in your columns of profit and loss; the most valuable of them are found in tangible influences by which Beauty proves her divine origin and claim to our homage and devotion. Far excelling our expectations, it shows not only what nurserymen and florists can do, in the way of enlarging the boundaries of Nature, and making her obedient to the demands of Art, but it shows that where yesterday the miners' cabins dotted these barren sand hills, there is growing up a substantial civilization.

There is always a moral significance in a scene like this, a promise of better things to come, which is worth more than the objective reality. What is the meaning of Nature, and what the meaning of Art? "Heavenly capital and earthly labor make the firm called Providence," and neither partner is seen comprehensibly without the other. I think this sublime partnership is never seen to such advantage as when some noble edifice or in-

stitution, some public park or art museum, is opened to the uses of religion, or charity, or education.

Every stone in the temple, every polished panel on which is written the record of the tree's life, the luscious fruits which displace the worthless wild product, the multiplied petals of the Rose, are witnesses of Nature's welcome to the hand that unfolds her secret store of uses.

We live, we are told, in a godless age, the tendency of which is toward materialism. The application of machinery to our industries, the thousands of inventions which emancipate men from the bondage of toil, are, we are told, of questionable advantage. There is a maudlin sentimentality in these moans over the degeneracy of our own times, and I notice that these mourners make the smallest investments in things of an immaterial value. They invest in cheap prayers, cheaper than Sir Godfrey Knellers', who "prayed on canvass," cheaper than Mozart's or Handel's, who prayed as David did, on stringed instruments and organs.

There is no worse infidelity than that which refuses to see the infinite, wonder-making builder, in the houses which he has fashioned with human hands, as well as in the wondrously carved outlines of the eternal hills. There is a tendency to exalt nature and natural beauty far above the products of human intellect and skill. It is the last enfranchisement of thought to see in art the higher nature, and, that man is not man until he is cultivated.

"Earth proudly wears the Parthenon
As the best gem upon her zone,
And morning opens with haste her lids
To gaze upon the pyramids.
For, out of thought's interior sphere,
These wonders rose to upper air ;
And Nature gladly gave them place,
Adopted them into her race ;
And granted them an equal date
With Andes and with Ararat."

It is easy to see how much art has had to do in developing humanity out of the creature man, who may be studied to-day in all his

primitive naturalness, a fit companion for the bison of the plains. First, we see his superiority to the brute, not in provision for food or shelter, but in the decoration of his person. In colors warranted not to run, the Polynesian dandy still struts in his Dolly Varden skin, a parrot tattooed on one side and a palm tree on the other. By and by his love of finery will yield to a desire for comfort, his ear-rings, his feathered head-dress and his paint will be made over to the female of his species.

Now, all the hints of nature are decrees. This savage adornment puts the gratification of taste above the merely animal wants, and all that we see as exterior or brute nature is built up with reference to man's higher necessities and powers. This is our warrant for art. The universe is not a gallery of living pictures, a sublime mystery to move our awe and wonder; it is a storehouse of the noblest supplies for our industry and our holiness (for holiness simply means wholeness): it is a school for the development of our whole being.

The stones lie in the quarry in smooth plates, ready, almost, for the builder's hand, or to be ground into food for trees and flowers. Buried under the roots of the mountains, or crumbling into soils, or wrought into cathedrals, or carved into statues of the gods, they are pure use, and are as natural in one place as in another.

You remember the story of the shipwrecked Phœnician sailors, who, stirring the embers of the fire they had built on the sea shore, discovered the fused particles of sand and alkali which we call glass. It shared the aboriginal fate of things for a long period, that is, became a personal ornament, but after this apprenticeship, became, first, solid air, and then in the mirror, solid space, and finally, in the telescope and the microscope, it became the All-Seeing Eye, revealing a world in every star and a world in every atom! This is what it is the nature of sand and alkali to become when it is married to art. This truth is illustrated at every step

in our lives. It is a wonderful pursuit,—this following of nature into her realized spirit—realized forms and services. The silkworm weaves its cocoon, winding-sheet and cradle for the life that belongs to its race, but does not exhaust thereby the uses of its lovely manufacture, which in royal robe and brodered banner comes into still higher service.

Here is a volume—leather, cotton or flax, oil and soot are its materials; but in these the soul of Shakespeare or of Dante has been caught and imprisoned. There is no end to these transfigurations. We can never know that we have reached the last or best use of anything. We plant the Eucalyptus for timber, shade and fuel, and then find it a cure for malarious disease. We burn the coal, which gives us the light and heat it gathers in elder ages, and the very smoke reappears in delicate perfumes and gorgeous dyes.

The old definitions of art are becoming obsolete through the advancement of the sciences. A more universal knowledge of these will give a new impulse to the fine, as already it has to the useful arts, and to none more certainly than this youngest art of landscape gardening and its handmaid horticulture. Every principle of art is founded on science, and how much more scientific knowledge is needed by him who works with living materials, and on a grand scale, than by him who operates on canvas or a single block.

It is claimed that Architecture is the highest of the fine arts, as it employs Painting, Sculpture and Music, and if this be so, I think there is a higher still, which includes Agriculture also, which takes a segment of the Earth's surface and makes it a fit abode for Earth's sovereign. This art, by whatever name it may be called, is in its infancy, and will be slow in growth, for it depends upon much that is not strictly within the domain of art—upon the general culture and the development of a true social spirit.

My house may be lined with cedar and camphor wood, its courts may be paved with mosaics richer than those of the Alhambra,

Aphrodite may rise in the spray of my fountains, and Morpheus scatter poppies in my luxurious chambers of rest; crystal domes and walls may enclose as with a new heaven some new tropic earth for my delight, but it can never be the "House Beautiful" while there is a beggar or an outcast at the gate.

At Chatsworth, the residence of the Duke of Devonshire, the Arboretum is filled with trees from every part of the world. The conservatory covers an acre of ground, in which seven miles of pipes are used to distribute heat, and forty miles of glazed sash to keep out cold; from its gallery you can look down into a forest of tropical foliage, palms and ferns, orchids and cacti, the royal lily of the Amazon, the lotus and papyrus of the Nile. This is a grand showing of what Aristocracy, which has tried many costly experiments for us, can accomplish in the hereditary home of a family. For a thousand years its high park fences have enclosed high-bred men and women, noble architectures and millennial trees, through periods when ignorance was a standing threat against order.

Nearer home, at Lewellyn Place, near Orange, New Jersey, we have what I consider the most perfect example of what coöperation and association will do under a democracy. Only time is needed to produce results equal to those at Chatsworth, and the hundred owners increase the interest, pleasure and advantage an hundred fold.

In our country the public park shows what estimate the people put upon beauty; it has a very different and greater value than Kew, or the garden of plants at Paris.

A number of families may combine to create a paradise of rural enjoyment, every member of which would increase his individual capital in contributing to the enjoyment of all. This is democracy, social and constructive. The meaning of that word is continually enlarging. Our forefathers said it meant liberty and equality, and that equality meant the equal standing of man, as man, before his Maker. Now we mean by it "the quality of

the quantity, the whole, the royalty, the imperial attributes of the people."

The idea of perfected manhood inheres in this of popular sovereignty, and here is our warrant for education. Our sovereign is not merely a biped animal, twenty-one years of age, nor yet one further endowed with intellectual gifts, enabling him to secure every selfish end. Manhood only is attained when these are dominated by the sovereign soul—"open on all sides." This "freeman" will make a home suited to his character, enriched with all the treasures of nature and art.

"To learn what is beautiful is the first step; to live it is the second."

Art has its political relations—it is fostered by liberty, and all its tendencies are towards peace. "Bowie knives are the thorns on the human crab-apple tree, which disappear when civilization reclaims it to sweetness." The four and a half millions of soldiers which make up the peace establishment of Europe—the annual cost of them, and loss through them, applied to industry, would fill the land with plenty. Applied to education it would make war impossible. Universal education in art would of necessity create a higher civilization.

If the subject were not too large for the hour, I would like to show what Horticulture especially might do in reference to popular refinement. It has created the rural beauty of England, it has recovered Holland from the sea. Originally there was only one variety of coniferous tree in Great Britain—the Scotch Fir. Now there are a hundred. The sea coasts of France, covered like so much in this vicinity with shifting sand, has been reclaimed by the culture of the Pinaster.

LEGISLATIVE PROTECTION.

One of the recognized objects of an association of this kind should be to keep the duty of legislative protection and promotion of Arboriculture before the people. And I hope to see much accomplished through the University, where they have ample

facilities for growing every useful tree and plant which our climate will sustain. I expect to see our railroad tracks made green with turf, and pleasant with trees, instead of dismal stretches of noxious weeds, and their stations beautified with rural surroundings.

I expect to see villages grow up in which inequality of surface and crookedness of streets and "eccentricities" of building will be tolerated. For the Germans, our masters in æsthetics, to whom flowers are as necessary as corn, will add their old world culture to our new world vigor and strength.

A small part of the money that has been expended in so-called improvements, which are but costly violations of taste, would make San Francisco one of the most picturesque of cities.

Enough is wasted in shoddy display to enclose our shifting sands with walls of verdure, thus modifying our climate, tempering our winds, and making it as healthful as beautiful. And enough is worse than wasted to build and sustain our temples of art and learning, our parks and public gardens, and make the fairer Athens of which the poet dreamed.

We only need to feel that these things, just as much as our banks and railroads, are factors in civilization. Nor can we boast of what Nature has done for us until she is justified of her children—

"Who toil to leave as their bequest
An added beauty to the earth."

Schlott & Smidt's band was in attendance and discoursed some most excellent music, and at the close of Prof. Carr's oration, after the President had announced the Hall duly opened, the company dispersed and promenaded to the sweet strains, around the exquisite groups of choice plants and fragrant flowers.

VANCOUVER'S ISLAND. — We hear that two Agricultural Fairs will be held on this island during the coming month.

THE EXHIBITION.

In glancing over the various collections of Evergreens, Plants, Flowers, and Fruits, which have been displayed at the Horticultural Exhibition, it was evident that they were, in every respect, far superior to those exhibited last year; the number of varieties was much greater, and the plants, on an average, far better than on former occasions; yet there were many specimens which did not present sufficient merits to entitle them to be placed in such an exhibition. Exhibitors should always bear in mind, that a plant for exhibition should be well grown and in perfect condition. This evil can be remedied by a more careful guarding in the preparation of the Premium List. Too much attention was paid to the offering of premiums on "largest collections." We would suggest, in the future, that superior quality should have the preference of quantity.

The general collections of *Flowering Plants in Bloom* were not what might have been expected; but this was more particularly attributable to the very cold and unfavorable weather which San Francisco had experienced during the month preceding the exhibition; however, there was a decided improvement visible, compared with the exhibits of last year. The Hydrangeas, Begonias, Lantanas, Polygalas, Agapanthus, Ericas, Gloxinias, Zonale Geraniums, Hoyas, Sollyas, Bouvardias, Liliun auratum, Grassulas, Valottas, and Lobelia cardinales, were well represented. There were, in all, three collections exhibited. The Evergreens indigenous to Australia were very numerous, although but one exhibit was made, by Mr. Reimer. The collection contained over 200 varieties, the most prominent of which were: *Acacia pycnantha*, *A. umbricata*, *A. salicifolia*, *A. longifolia*, *A. pulchella spinosa*, *A. decipiens*, *A. pendula*, *A. armata speciosa*, *A. cardifolia*, *A. linearis*, *A. conspicua*, *A. molissima*, etc. *Grevillea robusta*, *Ficus elastica*, *Eucalyptus* (26 varieties), *Haakeas*, *Dracoena draco*, *D. nigricans*, *D. latifolia*, *D. Brasiliensis*, *D. stricta*,

D. Haagenii, etc. *Yucca rubra variegata*, *Y. Americana*, *Y. quadricolor*, *Y. filamentosa*, *Y. longifolia*, *Y. gloriosa*, *Maranta* (in var.), *Phormium Tenax fol. var.*, etc. *Pittosporum undulatum*, *P. nigra*, *P. Tobira*. *Psoralea pinnata*, *P. Australis*. *Tristania macrophylla*, *Leptospermum* (in var.), *Corynocarpus*, *Fabricia lævigata*, *Escallonia rubra*, *E. floribunda*, *Podalyria*, *Melaleucas*, *Chorizemas*, and many others.

The Exhibit of *Coniferæ* was also very creditable, and the only collection of foreign and native species numbered over 350 varieties. We will also mention *Cupressus glauca*, *C. glauca pendula*, *C. excelsa*, *C. Gunnii*, *C. ericoides*, *C. Australis*, and several others. *Pinus tuberculata*, *P. ponderosa*, *P. contorta*, *P. Lambertiana*, *P. Canariensis*, *P. Benthiana*, *P. maritima*, *P. monticola*, *P. monophylla*, *P. Sabiniana*. *Picea grandis*, *P. amabilis*, *Sequoia gigantea*, *S. sempervirens*, *Abies Douglassii*, *A. Menziesii*, *Araucaria Cunninghamii*, *A. glauca*, *A. Bidwellii*, *Juniperus Canadensis*, *J. excelsa*, and others; *Cedrus Lebani*, *Cedrus deodora*, *Larix*, *Thuja compacta*, *T. gigantea*, *T. Chinensis*, etc. *Thuyopsis borealis*, and many other species too numerous to mention.

Greenhouse and Conservatory Plants were numerous, three collections having been entered by Messrs. Reimer, Lüdemann, and Meyer. We also particularly noticed Ferns, in considerable variety: *Marantas sanguinea*, *zebrina*, and *discolor*; *Fittonias*, *Gesnerias*, *Begonias*, *Coleus*, *Caladiums*, *Euphorbias*, *Daphnes*, *Eranthemums*, *Gardenias*, *Hoya carnososa*, *Hoya bella*, ; a number of *Palms*, *Achyranthus*, *Sanchesia*, *Diosma*, *Althernantheras*, *Smilax*, *Bambusa gracilis*, *Primula Chinensis*, *Bignonias*, *Forfugium*, *Azalea Indica*, *Bouvardias*, *Ericas*, *Camellias*, etc. Mr. Reimer carried off the first prize, and Messrs. Lüdemann & Co. the second.

Of *Bedding Plants* there was but one exhibit, that of Mr. E. L. Reimer, comprising about seventy-five varieties.

The exhibit of *Hardy Ornamental Foliage*

Plants was very interesting. Two collections were entered by Mr. Reimer and Messrs. Lüdemann & Co.; the former obtained the first prize. Of his collection we mention *Agave Americana variegata*, four varieties of variegated Grasses, *Arundo donax variegata*, *Aspidrista var.*, *Phormium tenax*, *Phormium tenax fol. var.*, *Dracoena Australis*, *D. indivisa*, *D. draco*, *Ficus Australis*, *Mespilus Japonica*, *Cordylines* (in var.), *Veronica variegata*, *Gesnerium argenteum*, *Euonymus Jap. variegata*, etc.

Tender Ornamental Foliage Plants. This was, in our opinion, the most meritorious exhibit, and attracted the attention of every visitor. Mr. Brown, of Woodward's Gardens, competed with Messrs. Lüdemann & Co., and the first prize was very justly awarded to Mr. Brown.

We call the attention of our readers to the following specimens in this choice collection of rare and beautiful plants.

Eranthemum pictum, *Fittonia argyrea*, *F. Verschaffeltii*, *Hibiscus Cooperii*, *Maranta zebrina*, *M. discolor*, *M. paradina*, *M. lineata rosea*, *M. sanguinea*, *M. tuberspatha*, *Passiflora trifasciata*, *Gesneria amabilis*, *G. cinnabarina*, *G. refulgens*, *Croton pictum*, *C. discolor*, *C. carcasaria*, *Canna zebrina*, *C. grandis*, *C. nigricans*, *Alocasia esculentum*, *Costus zebrinus*, *Caladium pictum*, *C. alba maculata*, *C. bicolor*, *C. marmoratum*, *C. regale*, *C. Smitzii*, etc. *Begonia Rex*, *B. Marshallii*, *B. Mad. Stuart*, *B. Empress*, *B. Silver Chain*, and others. *Cissus discolor*, *Columnnea Shediana*, *Cacalobia platyclada*, and many others.

Truly this group has been very effective and one of the great features of the Exhibition, and we regret to notice that some of the most delicate specimens suffered severely from the effects of gas and the insufficiency of ventilation.

The collections of *Bulbous-rooted Plants* were meagre, and might have been much better. Perhaps it was not well considered to restrict the exhibit, in this class, only to those which were in flower, as at this season

of the year not many can be found in bloom. *Gladiolus*, *Lilium auratum*, *Valotta purpurea*, *Achimenes*, *Gloxinias*, *Cannas*, *Crinum*s, *Tuberoses*, and *Cyclamens* were the best specimens. The first prize was awarded to Miller & Sievers, and the second to F. Ludemann & Co.

The Tropical Group exhibited by T. Brown, of Woodward's Gardens, was one of the most effective displays, and deservedly merited and received general admiration.

The *Cycas revoluta*, *Corypha Australis*, *Chamaerops humilis*, were exceedingly fine; and when we add the various *Cordylines*, *Dracoenas*, a Lemon-tree in bearing, several species of *Musa*, all in thrifty condition, we think that Mr. Brown has succeeded admirably in his exhibit, and well deserved his first prize.

The collections of *Climbing Plants* were unusually well filled, and the contest between Mr. Reimer and Messrs. Ludemann & Co. was close. The number of varieties decided in favor of Mr. Reimer for the first prize—the collection of Ludemann & Co. being inferior only in numbers. We mention a few of the most remarkable specimens: *Hedera*s (varieties of), *Physianthus*, *Tecomas*, *Maurandias* in var., *Clematis* in var., *Lophospermum scandens*, *Clerodendron Balfourii*, and *Cl. Thompsonii*, *Bignonia venusta*, *Stephanotis floribunda*, *Cissus discolor*, *Hoya carnos*a, *Sollya Drummondii*—a new climber, with exquisite foliage and beautiful blue flowers—adapted for greenhouse culture as well as for our gardens, *Jasminum*, double and single, *Myrsiphyllum asparagoides* (popularly known as *Smilax*)—one of our best decorative climbers, and many others.

Of *New and Rare Plants* we might have expected larger collections. There seems to be a mistaken idea, among our nurserymen and gardeners, as to the term "new and rare plants." We know that they might have exhibited numerous collections of plants, which to our people are both "new" and "rare." The idea that a plant must have been imported or produced within a year, in

order to be "new" or "rare," is certainly erroneous.

Two collections were exhibited—one by Miller & Sievers, who obtained the first prize—and the other by F. Ludemann & Co., who received the second one. In the collection of the former, we noticed *Adamia versicolor*, *Eranthemum tuberculatum*, *Torre-
nia Asiatica*, *Richardia maculata*, *Begonia Wel-
toniensis*, *B. Boliviensis*, *B. Sambo*, *Acorus Japonica*, variegated *Ivies* in var., *Sedum azoidum* var., *Ampelopsis Veitchii*, *Sanche-
sia nobilis* var., *Amaranthus salicifolius*, *Dracoenas* of var., etc.

Messrs. Ludemann & Co.'s collection contained a number of very interesting plants. We noticed in particular *Allamanda Hender-
sonii*, *Daphne odorata* var., *Crotons* of varie-
ties, *Orchids*, *Hibiscus splendens*, *Sanchesia nobilis* var., *Erythrin*as, *Lisianth*as, *Anthi-
gonums*, etc.

Of *Plants for Hanging Baskets and Rock-
work*, there was but one collection, entered by Mr. E. S. Reimer, who obtained the first prize for his very numerous exhibit.

The *Exhibit of Ferns* was one of the most meritorious; and we found that much more interest is being manifested among our people than has hitherto been the case. We are glad that the lovers of floriculture are so rapidly advancing in their taste for this interesting and most pleasing class of plants. Three collections of Ferns were respectively entered by Miller & Sievers, E. Myer, and Theo. Brown of Woodward's Gardens. The most numerous collection was that of Miller & Sievers, who showed some forty varieties, and obtained the first prize. In this collection we call particular attention to the following species: A very fine specimen of the Australian Bird-nest Fern; also, an exceedingly fine *Platycterium grande* (Stag-horn Fern), *Pteris argyrea*, *Asplenium Fabianum*, *Cyrtonium falcatum*, Australian Tree-ferns, *Lastria glabella*, *Gymnogramma tomentosa*, *Polypodium postulat*um, *Adiantum culpodes*, *A. diaphanum*; *A. cap. Veneris*; the following California Ferns: *Adiantum Chilense*,

Woodwardia radicans, Polypodium Calif., Pellaea acuminata, P. Andromedæfolia, Cryptogramma triangularis, Adiantum pedatum, Aspidium argentum.

Mr. Meyer's collection contained many very good specimens of rare Ferns, particularly natives of Japan. The finest specimens, however, were exhibited by Mr. Brown, although the number of varieties was limited.

The *Exhibit of Roses* was quite showy, but inferior to that of 1871. The mildew, which has of late attacked Roses with so great severity in this neighborhood, is the cause of this. Roses always form a very important feature in an Exhibition of this kind, and many visitors were disappointed in their anticipated pleasure. Mr. Reimer, as usual, had the finest exhibit, and produced some fifty varieties in good condition.

Coleus were well represented, and they always form a pleasant feature in floral shows. Their rich and varied foliage is always pleasing, and they are admired by all. Three collections were entered—one by Messrs. Ludemann & Co., who had thirty-five varieties, and obtained the first prize. The next prize was awarded to Miller & Sievers.

The competition in *Fuchsias* was lively and very close. Three entries were made: by Messrs. Ludemann & Co., Mr. E. L. Reimer, and Messrs. Miller & Sievers. The first prize was awarded to F. Ludemann & Co., their collection containing sixty-four distinct varieties. Mr. Reimer, whose collection contained many well-grown specimens—and mostly of the very choicest varieties—received the second prize.

Double Geraniums were exhibited in three collections, and Messrs. Ludemann & Co. received the first prize; their collection comprised sixteen varieties.

The Exhibit of *Variiegated Leaf Geraniums* was very creditable; the first prize was awarded to E. L. Reimer. The most remarkable of his collection were Reimeriana, a seedling of great beauty—perhaps the best

of all the variegated leaf Geraniums: Sophia Cussack, Lady Cullum, Mrs. Pollack, Mountain of Snow, Beauty of Oulton, Duke of Edinburg, Sunset, Silver Pheasant, Cloth of Gold, etc. The second prize was awarded to Ludemann & Co.; also, a very beautiful collection of many varieties of great promise, and not yet generally cultivated.

Zonale Geraniums are not well adapted for exhibition, as their flowers fade too quickly; however, there was a much greater variety to be seen than in former exhibitions. Mr. Reimer obtained the first prize, and Miller & Sievers the second.

The Show of *Flowering Begonias* was very poor indeed, and could hardly be expected to be otherwise at this time of the year. Ludemann & Co. were awarded the first prize; and of their collection we mention: B. nitida, B. parvifolia, B. semperflorens, B. hybrida multiflora, B. Sandersonii, B. Verschaffeltii, B. Fuchsoides rubra, B. incarnata, B. speciosa odorata.

Of *Variiegated Leaf Begonias* we noticed but one collection, exhibited by Mr. E. Meyer, and containing a goodly number of choice and rare varieties; the first prize was awarded to Mr. Meyer.

Auriculas and *Primroses* could not very well be expected in flower at this time, although a small collection of them was exhibited by Miller & Sievers, who obtained the first prize.

Some very fine *Pansies* were shown; Miller & Sievers received the first prize.

Of *Verbenas* there were two collections, which might have been much better. We attribute this deficiency to the fact that florists keep but very few *Verbenas* in pots during the summer. The first prize was awarded to Miller & Sievers.

Of *Pinks* two fine collections were shown by Messrs. Ludemann & Co. and Mr. E. Meyer; the former carried off the first prize.

The *Petunia* Show was extremely poor, and the less there is said about it, the better. The same must be said of the *Cactus*.

Plants in three-inch Pots were exhibited by

Mr. Reimer. The collection was very numerous, and contained many valuable plants.

Of *best-grown Plants* (so-called Specimen Plants) two entries were made—one by Mr. E. L. Reimer, and the other by Mr. E. Meyer. Mr. Reimer's collection well deserved the first prize; and if we had the space we should give a very minute description of his many well-grown specimens. We notice in particular the following: *Thujopsis dolobrata*, *T. borealis*, *Erica persoluta*, *E. citriodrica*, *Crinum Asiaticum*, *Lunicera Jap. variegata*, *Adiantum*; *Arundo donax variegata*, *Clyanthus Damperii*, *Laurus Indica*, *Magnolia grandiflora*, *Russellia juncea*, *Cupressus funebris*, *Juniperus virginica*, *Ferugium*, *Cordyline indivisia*, *Dracoena draco*, *Yucca longifolia*, *Taretia ectinodendron*, *Tradescantia bicolor*. In the collection of Mr. Meyer the fine specimen of *Araucaria imbricata* found many admirers.

The collection of *Plants indigenous to California* was meagre; and we express our surprise that not more attention is paid to the cultivation of our many valuable and beautiful flowering Plants, Shrubs, and Trees, which are becoming so popular abroad. In the collection exhibited by Miller & Sievers, we found the *Darlingtonia Californica*, ten varieties of native Ferns, three species of California Lilies, two species of *Sedum*, Pentstemons, *Diplacus glutinosus* (*Mimulus glutinosus*), *Aplopoppus*, etc. This collection received the first prize.

The Display of *Cut-flowers* was better than in the previous year; but not so good as might be produced by giving some little more attention to careful selection and proper care. The general display of *Cut-flowers* was made by Mr. Reimer and Messrs. Ludemann & Co., the latter winning the first prize. The space set apart for the purpose was too limited, and others were unable to exhibit.

Of *Gladiolus* there was a grand show, which would have been creditable to any country. Three collections were entered—one by Mr. Thompson of Napa; another by

Miller & Sievers, and a third by Mr. E. A. Upton. The first prize was awarded to Miller & Sievers; their collection numbered about seventy varieties. The second prize was awarded to Mr. Thompson, who showed some forty varieties; and Mr. Upton, who had some very beautiful spikes, received the third prize.

The Show of *Cut-roses* was good. Mr. E. L. Reimer had about 120 distinct varieties, and received the first prize. The second prize was awarded to Miller & Sievers.

For *Pansies* the first prize was awarded to Miller & Sievers, and the second to Messrs. Ludemann & Co.

In *Dahlias* there was a grand rivalry. Mr. E. A. Upton had again his magnificent collection on the stand, and won the first prize; while Mr. Malmgren exhibited some rare and most exquisite varieties, perfect in form, and obtained the second prize.

The Exhibit of *Phloxes* and *Hollyhocks* was meagre.

The *Bouquet Show*, we are sorry to say, was not worthy of an Exhibition held in a country so favorable to the growth of fine flowers as California is. There seems to be but very little interest felt in arranging a creditable Bouquet Show, and we cannot refrain from remarking, that this year's exhibit of Bouquets was sadly inferior to that of last year. We hope most sincerely, for the reputation of our florists, that they will cast aside this indifference in the future—or the public, who know they have the flowers, will say they lack both taste and skill.

The Display of *Hanging Baskets* was grand. Mr. E. L. Reimer had not less than twenty-one well-arranged Baskets on exhibition, which were suspended from the Arches of the Hall, and were most effective in decorating the Galleries. Mr. Reimer received the first premium.

Two *Miniature Gardens* were entered—one of which was arranged as a permanent arrangement by the Hall Association, and received the first premium.

The Exhibit of *Wire-Work*, adapted to

Gardens and to Floriculture, by Messrs. Gruenhagen & Co., was a credit to the Exhibition and to the manufacturers, who merited the first prize and obtained it.

This is the first time that efforts have been made to exhibit Rustic work, which has hitherto received but very little attention on this Coast. We were pleased with the creditable display made by Mr. S. S. Tonnar of San José, and Mr. Hill of Napa; both of whom show skill in their work; and we hope they will persevere in their efforts to produce such work in this line as will be both serviceable and ornamental.

But one design for a Suburban Garden was entered, by F. A. Miller, who received the first prize. Mr. Mohr of Vallejo entered a design for a Public Plaza, and received the second prize.

Mr. E. Meyer had on exhibition a Fern Case, which was well arranged, and developed a decided taste for Fern culture.

Under the head of "Rockery," Mr. Reimer and Mr. Meyer entered the two Grottoes which formed such an important and popular feature of the Exhibition; and, although these Grottoes are intended as a permanent decoration of the Horticultural Hall, the Committee awarded to them the first prize for the best Rockery; the point, we think, was well taken.

The Display of *Cones of Coniferæ*, by Mr. C. Stephens, was very creditable. Between twenty and thirty varieties were exhibited in his collection, which received the first prize.

The Exhibit of *Vegetables* did not meet the general expectation—it was exceedingly poor for San Francisco and the State at large; this must be attributed to the fact, that our vegetable gardens are exclusively in the hands of a class of people who take no interest whatever in exhibitions of this kind, and who fail to see any corresponding benefit to be derived from them.

We now come to the Exhibit of *Fruits*, which was acceptable, but by no means as brilliant as our orchards and markets would warrant us to expect. But few of our fruit-

growers take the desired interest in our Horticultural Fairs, although a better feeling for the exhibition of fruits is growing up. Some have done well; others might have done much better.

For the *Best and Largest Collection of Fruit*, there was but one entry made—by Mr. Z. W. Moore, of California Market, a commission merchant, and although the propriety of awarding a premium to a party who did not himself grow the articles exhibited, was called in question, he received the first premium, more, we believe, on account of the display and the taste of the arrangement, than on account of the number of varieties. His display certainly deserved a reward.

Three *Collections of Apples* were entered, of which the collection of Mr. A. S. Greenlaw, of Sacramento, received the first prize. This Exhibit comprised the following varieties: Yellow Bellflower, White Bellflower, Yellow Newtown Pippin, Autumn Strawberry, Roxbury Russet, Rhode Island Greening, Tompkins Co.'s King, Vandevere, Spitzenburg, Maiden Blush, Fall Pippin, Vandevere Pippin, Jonathan, Peck's Pleasant, Baldwin, Hooper, Gloria Mundi, White Pippin, Buckingham, Wine Apple, American Golden Russet, Swaar, and others.

Mr. John Rock, of San José, received the first prize for the *Best Twelve Varieties of Apples*. This collection was very good, and contained the following varieties: White Winter Pearmain, Esopus Spitzenburg, Nicajack, Alexander, Yellow Newtown Pippin, Gravenstein, Yellow Bellflower, Summer Pearmain, Wine Sap, Jonathan, Golden Pippin, Gloria Mundi, etc.

The Collection of Apples of Mr. Woodward was also numerous and creditable. We noticed among them, in particular, the following varieties: Tulpehocken, Es. Spitzenburg, White Winter Pearmain, Porter Spitzenburg, Canada White, French Pippin, Vandevere, Smith's Cider, Williams' Favorite, and many others.

Of *Pears*, Mr. R. B. Woodward presented the finest and most numerous collection from

his farm in Napa County, for which the first prize was awarded. We name the following varieties: Onondaga, Glout Morceau, Marie Louise, St. Lawrence, Gansel's Bergamot, Seckel, Louise Bonne de Jersey, and about twenty-four other varieties.

The first prize for the *Best Twelve Varieties of Pears*, was awarded to John Rock, of San José. We mention: Beurre, Gris d'Hiver, Easter Beurre, Flemish Beauty, Doyenne d'Alencon, Winter Nelis, Beurre d'Anjou, Beurre Bosc, Beurre Superfine, Beurre Hardy, Beurre Clairgeau, Seckel.

Nectarines. Were but few brought in, on account of the lateness of the season. John Rock was awarded the first prize.

Of *Prunes and Plums*, Mr. Rock had a very fine and numerous collection, and obtained the first prize. We noticed the following varieties: Coe's Late Red, Damson, German Prune, Bradshaw, Coe's Golden Drop, Red Gage, Duane's Purple, Fellenberg Prune, Quackenboss, Lombard, Victoria, Columbia, Washington, Reine Claude de Bavay, St. Martin's Quetsche, Fulton, and General Hand.

Mr. Rock also received the first prize for the *Best Quinces*. We recognized the Portugal, the Orange, and the Angers.

Of *Grapes*, four entries were made, and the Exhibits were very good, and creditable to our Grape interests. West Bros., of Stockton, received the first prize for the largest and best collection of Grapes. We subjoin a list of the varieties which were represented by beautiful and well-formed bunches: Black Prince, Black Olive, Rose Chasselas, Black Malvoise, Reine de Nice (Flame Tokay) White Malaga, White Frontignan, White Muscadine, Deacon's Superb, Black Hamburg, Purple Damascus, Large Holland, Zibeba (Italian Wine Grape) Black Burgundy, Red Frontignan, White Tokay, Zinfindal, White Chinese, Chasselas Musque.

Mr. J. H. Carrington, of Sacramento, had some beautiful specimens of Grapes on exhibition, and received the second prize.

For the *Best Six Varieties of Table Grapes*,

Mr. R. B. Woodward obtained the first prize. In his collection we found the Black Morocco, Black Prince, White Nice, Muscat Hamburg, Bowood Muscat, Muscat of Alexandria, Black Hamburg, and Golden Chasselas.

Mr. J. Rutter, of Florin, near Sacramento, received a Diploma for his meritorious Exhibit of Grapes.

West Bros., of Stockton, also received the first prize for the *Best Collection of Wine Grapes*, of which they exhibited sixteen varieties.

It is a well known fact to all Californians, that the immediate surroundings of San Francisco are not well adapted to the growing of fruits; however, under favorable circumstances, we have frequently met with very good success in producing not only fine specimens of fruit, but also of very fair flavor. Some very good fruit was presented from the residence of the late Hon. H. H. Byrne, corner Thirteenth and Howard Street, in this city. This fruit would have been a credit to almost any part of our State. The people of San Francisco should bear in mind that if fruit-trees are planted in a sheltered position, where they can also have the full benefit of the sun, say for five to six hours per day, very fair fruit may be produced, and perhaps better in flavor than three-fourths of the fruit offered in our markets in a half-ripe or stale condition.

Among other interesting features of the exhibition, we noticed some very fair specimens of *Cotton Plants*; one from a field of 250 acres, raised by Buckley Bros., of Hope-ton, Merced County. From the appearance of the plant exhibited and from the information given us by Mr. Buckley, we should judge that their enterprise is a very successful one.

Another fine plant was exhibited by the California Cotton Growers' and Manufacturers' Association, and was raised on their extensive farm in Bakersfield, Kern County, from Dixon seed, planted May 21, 1871, which gives also conclusive evidence of the

success of this company in making cotton-raising practicable and profitable.

Mr. Sevin Vincent entered a very fine and large assortment of *California-grown Seeds*, of his own production, and received the first prize.

Mr. L. A. Gould, of Santa Clara, exhibited an excellent collection of *Dessicated Fruit*, which he introduces as a new process of drying fruits, retaining its natural flavor remarkably well. He received the first prize for California dried fruits.

California Wines were entered by the United Anaheim Wine Growers' Association, and by Geo. West, of Stockton.

The former obtained the first prize for *California White Wine*, and a Diploma for the best *Red Wine*.

George West received the first prize for *California Port Wine*.

Dr. J. Strentzel, of Martinez, received a Diploma for a fine Exhibit of *Oranges* and *Lemons* grown on his farm.

The display of *Preserved* and *Artificial Flowers* was very remarkable, and probably the best ever made on the Pacific Coast; although the Horticultural Society offered no premiums for anything of this kind.

The following special awards have been made for Preserved and Artificial Flowers:

First prize for *Preserved Flowers*, to Mrs. A. O. Cook. First prize for *Artificial Flowers*, to Mrs. Cotter. Special premium for *Water Lilies in Wax*, to Miss Bessie M. Harrold. A Diploma for *Autumnal Foliage*, exhibited by Mrs. A. O. Cook; and to the same lady, also, a Diploma for *Wax Flowers*.

Miss Romanse had some very creditable *Paintings of Flowers* and *Fruits* on exhibition, and was awarded a Diploma.

As we have already stated, the Exhibition was a success, and in many respects better than the one of 1871, although in the way of arrangement the Society had a much greater latitude last year. Grass-plots and Lawns, which could not be had this year, formed a most attractive feature of the preceding Exhibition. On the other hand, the Hall this

year was so judiciously decorated and ornamented, that the general effect was much more pleasing to the eye. The imitation of the palm-tree as a centre-piece, was a noteworthy attempt to create effect; but the mechanical execution of the attempt was open to severe criticism. The Grottoes were well arranged, and credit is due to the designers. The Towers, we presume, were intended as a portion of the Rock-work; but the idea was but crudely carried out, as they were not in harmony.

As a whole, we may congratulate the Society on its successful consummation of so large and praiseworthy an undertaking, in which it was so well and materially assisted by the Horticultural Hall Association.

Financially, we claim for the Society a complete success. Young and without means to speak of, destitute of resources, the Exhibition resulted in an acknowledged triumph. We do not know exactly what the financial condition is, but we are authorized to say, that the net proceeds were over \$1,200. Many and costly fixtures had to be prepared, which will be useful for future Exhibitions, and the expense for the proposed Spring Exhibition will be comparatively very light.

The public showed a remarkable degree of gratified appreciation. The visitors to the Fair were, almost exclusively, of the very best class of our population. During the Exhibition, many encouraging letters were received by the officers of the Society, with many kindly words of encouragement; and as the efforts of the Society are, or should be, directed less to money-making than to the creating of taste and obtaining a fair appreciation of its efforts to foster Horticulture, the Exhibition of 1872 must be considered as one it may well be proud of.

One of the most popular and pleasing features was, the distribution of small plants among the children who visited the Fair. The little ones were delighted with the privilege of going to the tables—covered with hundreds of plants—and selecting for themselves. Their happiness was plainly visible;

and this fact suggested to us that the rising generation will in time show a fair appreciation of the fascinating pleasures of Floriculture.

The Exhibition was kept open entirely too long; it is next to impossible to keep up a

good show of perishable articles for three weeks and a half. To continue a Horticultural Exhibition for nine days, is all that can reasonably be expected; and we hope that the Horticultural Society will act wiser in this respect in the future.

PREMIUMS AWARDED AT THE HORTICULTURAL EXHIBITION.

Class I.—Plants.

Largest and best collection of Flowering Plants in Bloom, to F. Lüdemann & Co.....	\$50 00
Second largest and best collection of Flowering Plants in Bloom, to E. L. Reimer.....	30 00
Third largest and best collection of Flowering Plants in Bloom, to Miller & Sievers....	15 00
Collection of Evergreens indigenous to Australia to E. L. Reimer.....	20 00
Largest and best collection of Coniferæ, native and foreign, to E. L. Reimer.....	40 00
Best and largest collection of Greenhouse and Conservatory Plants, to E. L. Reimer....	30 00
Second best and largest collection of Greenhouse and Conservatory Plants, to F. Lüdemann & Co.....	15 00
Best and largest collection of Bedding Plants, to E. L. Reimer.....	15 00
Best and largest collection of Hardy Ornamental Foliage Plants, to E. L. Reimer.....	20 00
Second best and largest collection of Hardy Ornamental Foliage Plants, to F. Lüdemann & Co.....	10 00
Best and largest collection of Tender Ornamental Foliage Plants, to Th. Brown of Woodward's Gardens.....	20 00
Second best collection of Tender Ornamental Foliage Plants, to F. Lüdemann & Co....	10 00
Best and largest collection of Bulbous Rooted Plants, to Miller & Sievers.....	10 00
Second best collection of Bulbous Rooted Plants, to F. Lüdemann & Co.....	5 00
Best and largest collection of Tropical Plants, Th. Brown of Woodward's Gardens.....	25 00
Best and largest collection of Climbing Plants, to E. L. Reimer.....	15 00
Second best collection of Climbing Plants, to F. Lüdemann & Co.....	10 00
Best and largest collection of New and Rare Plants, to Miller & Sievers.....	30 00
Second best collection of New and Rare Plants, to F. Lüdemann & Co.....	20 00
Best and largest collection of Plants for Hanging Baskets and Rockwork, to E. L. Reimer,	10 00
Best and largest collection of Ferns, to Miller & Sievers.....	20 00
Second best collection of Ferns, to E. Meyer.....	10 00
Best and largest collection of Roses, in pots, to E. L. Reimer.....	30 00
Second best collection of Roses, in pots, not less than twenty varieties, to F. Lüdemann & Co,	20 00
Best collection of Coleus, to F. Lüdemann & Co.....	10 00
Second best collection of Coleus, to Miller & Sievers.....	5 00
Best and largest collection of Fuchsias, to F. Lüdemann & Co.....	30 00
Second best collection of Fuchsias, to E. L. Reimer.....	20 00
Third best collection of Fuchsias, to Miller & Sievers.....	10 00
Best and largest collection of Double Geraniums, to F. Lüdemann & Co.....	20 00
Second best collection of Double Geraniums, to E. L. Reimer.....	10 00
Best and largest collection of Variegated Leaf Geraniums, to E. L. Reimer.....	20 00
Second best collection of Variegated Leaf Geraniums, to F. Lüdemann & Co.....	10 00
Best and largest collection of Zonale Geraniums, to E. L. Reimer.....	10 00
Second best collection of Zonale Geraniums, to Miller & Sievers.....	5 00
Best and largest collection of Flowering Begonias, to F. Lüdemann & Co.....	10 00
Second best collection of Flowering Begonias, to Miller & Sievers.....	5 00
Best and largest collection of Variegated Leaf Begonias, to E. Meyer.....	10 00
Best and largest collection of Auriculas and Primulas, to Miller & Sievers.....	10 00
Best collection of Pansies, to Miller & Sievers.....	10 00
Second best collection of Pansies, to F. Lüdemann & Co.....	5 00
Best and largest collection of Verbenas, to Miller & Sievers.....	10 00

Second best collection of Verbenas, to E. Meyer.....	5 00
Best and largest collection of Pinks, to F. Lüdemann & Co.....	10 00
Best and largest collection of Petunias, to Miller & Sievers.....	10 00
Best and largest collection of Cactus, to Miller & Sievers.....	10 00
Second best collection of Cactus, to E. Meyer.....	5 00
Best collection of Plants, in 3 inch pots, to E. L. Reimer.....	10 00
Best collection of best grown Plants, not less than 25 varieties, to E. L. Reimer.....	20 00
Second best collection of same, not less than 10 varieties, to E Meyer.....	10 00
Best collection of Plants indigenous to California, to Miller & Sievers.....	25 00

Class II.—Miscellaneous.

Best arranged Pair of Rustic Hanging Baskets, to E. L. Reimer.....	15 00
Best arranged Pair of Wire Hanging Baskets, to E. L. Reimer.....	10 00
Best arranged Wire Flowerstand, to E. Meyer.....	10 00
Best Miniature Garden, to Reimer & Meyer.....	75 00
Second best Miniature Garden, to Miller & Sievers.....	40 00
Best Exhibition of Wirework for Flower Culture, to G. H. Gruenhagen & Co.....	Diploma.
Best Exhibit of Rustic Work, to S. S. Tonnar.....	20 00
Best Design for a Suburban Garden, to F. A. Miller.....	20 00
Second best Design for a Suburban Garden, to C. W. Mohr.....	10 00
Best arranged Fern Case, to E. Meyer.....	20 00
Best Rockery, to Reimer and Meyer.....	50 00
Best collection of Coniferæ Cones, to C. Stephens.....	10 00

Class III.—Cut-Flowers.

Best and largest Display of Cut-flowers, to F. Lüdemann & Co.....	15 00
Second best Display of Cut-flowers, to E. L. Reimer.....	10 00
Best collection of Gladiolus, to Miller & Sievers.....	10 00
Best collection of Roses, to E. L. Reimer.....	10 00
Second best collection of Roses, to Miller & Sievers.....	6 00
Third best collection of Roses, to F. Lüdemann & Co.....	3 00
Best collection of Pansies, to Miller & Sievers.....	3 00
Second best collection of Pansies, to F. Lüdemann & Co.....	1 00
Best collection of Dahlias, to E. A. Upton.....	15 00
Second best collection of Dahlias, to N. Malmgren.....	5 00
Best collection of Phloxes, to F. Lüdemann & Co.....	5 00
Best collection of Hollyhocks, to F. Lüdemann & Co.....	Diploma.

Class IV.—Fruits.

Best and largest collection of Fruits, to Z. W. Moore,.....	50 00
Best and largest collection of Apples, to A. S. Greenlaw, of Sacramento.....	20 00
Best 12 varieties of Apples, to John Rock, of San Jose.....	10 00
Best and largest collection of Pears, to R. B. Woodward, of Napa.....	20 00
Best 12 varieties of Pears, to John Rock, of San Jose.....	10 00
Best and largest collection of Plums, to John Rock.....	10 00
Best collection of Nectarines, to John Rock.....	5 00
Best collection of Prunes, to John Rock.....	5 00
Best collection of Quinces, to John Rock.....	5 00
Best and largest collection of Foreign Grapes, to W. B. & G. West, of Stockton.....	20 00
Second best collection of Foreign Grapes, to Carrington, of Florin.....	10 00
Best 10 varieties of Wine Grapes, to W. B. & G. West.....	10 00
Best 6 varieties of Table Grapes, to R. B. Woodward.....	5 00

Class V.—Bouquets.

Best 2 Baskets of Flowers, to A. Duhem with Miller & Sievers.....	15 00
Best Pyramid Bouquet, to E. L. Reimer.....	5 00
Best 2 Round Bouquets, to W. Robertson.....	5 00
Best 4 Table Bouquets, to W. Robertson.....	10 00

Best 2 Wedding Bouquets, to A. Duhem, with Miller & Sievers.....	6 00
Best Funeral Wreath, to W. Robertson.....	10 00
Second best Funeral Wreath, to E Meyer.....	5 00
Best Cross, to W. Robertson.....	10 00
Second best Cross, E. Meyer.....	5 00
Best Floral Decoration, to A. Duhem, with Miller & Sievers.....	Special Premium.

Additional Premiums.

Best and largest exhibit of California grown Seed, to Sevin Vincent, of San Francisco...	10 00
Best and largest exhibit of California dried fruits, to L. A. Gould, of Santa Clara.....	10 00
Best California White Wine, to United Anaheim Wine Growers' Association.....	25 00
Best California Red Wine, to United Anaheim Wine Growers' Association.....	Diploma.
Best California Port Wine, to Geo. West, of Stockton.....	Diploma.
Oranges and Lemons, to Dr. J. Strentzel, of Martinez.....	Diploma.
Preserved Flowers, to Mrs. A. O. Cook.....	10 00
Best specimen of Ferns, to Th. Brown, of Woodward's Gardens.....	Diploma.
Artificial Flowers, to Mrs. Cotter.....	5 00
Wax Fruit, to Mrs. Cotter.....	Diploma.
Water Lilies of Wax, to Miss Bessie M. Harrold.....	5 00
Paintings of Fruit, to Miss Romanse.....	Diploma.
Rustic Work, to M. Hill, of Napa.....	Diploma.
Autumnal Foliage, to Mrs. A. O. Cook.....	Diploma.
Wax Flowers, to Mrs. A. O. Cook.....	Diploma.

THE PRINCIPLE OF IRRIGATION.

Remarks of Mr. Thomas Meehan before the Colorado Farmers' Club, at Greeley, August, 1871.

We extract from the *Gardener's Monthly*, for August, 1872, the following valuable remarks on Irrigation, by the talented editor of that magazine, considering them especially worthy the perusal of many of our readers.

“In the East some people say that your system of irrigation is a humbug, but it has often been my privilege to defend this system, and to say, as I do to-night, that so far as the very best results are considered, agriculture by irrigation is capable of producing better results than any other. I came here, therefore, rather prejudiced in its favor, and instead of expressing surprise, as some do at your great results, will say you have not yet come up to what the system is capable of, for this system is so excellent that you hold in perfect control all the elements of plant nutrition and growth; these are, namely, heat, air, light, and water. In the East we have all these it is true, but unfortunately

in our seeding time there is often too much water; corn-planting is delayed for weeks by cold rains; and oats, instead of being sown in March, frequently remain out of ground until May, when, if a hot season follow we have but half a crop. In short, we are famous in the East for mildews, moulds and rusts, and various diseases, most of which are due to too much water in the soil at one time or another during the growth of plants. Here you have light, air, and heat as we have, and you have water with the valuable addition of having the water under complete control. You can give the crops the water just as they need it, and cut it off the moment they have had enough; and, gentlemen, I am not surprised that you equal us in your agricultural productions. It would be to your shame if you did not, and I shall expect you to excel in what you now show us. Few persons have an idea of the great value of holding well in hand the great powers of nature, and especially this one of water. It has been my fortune to be interested during my life in horticulture as well as agriculture, to work in the garden as well as on the farm, and it is well known that the garden will at

any time, excel the farm in the value of its productions. In fruit culture, for instance, we build a vinery, and produce grapes under glass far superior to any which the most noted vignerons of this country or Europe can raise in the open air—so of other fruits and vegetables. The peach, pine-apple, cucumbers, or salad—all attest the superiority of this kind of culture over the productions of the field—and why? Chiefly because we have all the conditions of success under complete control, and especially this of water.

“But I would say to you that the common assertion that water is the food of plants, is to be received with some qualification. Water is rather an enemy than a friend, when given as water. We find water in plants, but it is drawn into their system rather in the state of vapor than as water. Indeed it is watery vapor which the roots of plants feed on, and not water. I make bold to say that very few crops, except such as rice, that live in water, would stand to have all their roots entirely submerged for twelve hours in water and not suffer. In fact, and it is a curious subject for those interested in philosophy to study, only those plants which need little water in their structure, grow in water. If you cut across a bulrush, or any other like plant, you will find its structure made up of dry pith, or otherwise dry and hollow, while if you take a milkweed, cactus, or other of the weeds which grow about you on these dry hills, and cut them across, you will find the moisture flowing freely. So we come to the conclusion that it is in open, porous soil, aided by the gases of the atmosphere, that the roots of plants are able to take up, in the state of vapor, the moisture they contain.

“You will thus see in your system of irrigation your danger will be that the roots will get too much water. Instead of planting, and then pouring the water on, it will be a wiser policy to prepare the soil deeply to hold moisture in the shape of vapor; introduce the water before planting, then plant after this well-prepared soil has become moderately dry.

“I have said that the roots of plants suffer if for twelve hours they are entirely submerged in water. This is even more true of trees than of other plants, and perhaps more so of grape-vines than of any other woody thing. We find by practical observation that this fruit does best on the driest hills, where the soil is so arid that corn-stalks will dry to shavings, here the vine flourishes; and the driest seasons have always proved the best grape years.

“But, ladies and gentlemen, I am reminded by this matter of water in the soil, that I have been asked to say a few words to you about evaporation. Of course, you know that all the water taken into a plant's system by the roots does not stay there, but is as rapidly given off into the atmosphere, and that the dryer the atmosphere the more is given off. This evaporation takes place from every portion of the plant, from the branches and the twigs, as well as from the green leaves, and in winter as well as summer. Indeed, it is in proportion to the extent of surface exposed. There is more moisture lost by a tree in winter than in summer. You know how it is, gentlemen, or if not, these ladies, accustomed to the laundry, can tell you that washed linen will dry much faster by a cold, dry wind in winter, than under an average summer sun, and you will thus see the great advantage of sheltering your farms and gardens from the scorching effects of wintery winds.

“You can, by looking at nature around you see the great value of shelter from winds. While exploring these mountains to the back of you, I find a large variety of rare coniferous trees which we in the East give high prices to possess. I found that wherever these were growing in sheltered valleys, or warm, cosy cañons, these noble specimens were clothed with foliage from summit to the ground: but on the hills, exposed to the bleak winds of winter, rich as they were, they seldom reached half the size of those in the other places. But you may say, how can there be evaporation in winter, when the

trees are at rest? If the moisture escapes from the branches how is it restored by the roots? Now the roots are collecting moisture all through the winter season. It makes no difference how frozen the soil may be, the little rootlets thaw the hard clod just about them and take up the watery vapor, by their own internal heat, and thus supply the needed material for waste through the branches.

"I may, perhaps, offer a few suggestions as to the kind of trees to plant. Everything depends on getting them rapidly down into the sub-soil, where the roots can be away from the drying influences of the atmosphere, Nature offers some hints. Only those plants grow here now which have the power of throwing their roots deeply down. I notice that in the mountains the prevailing deciduous tree is the oak, and the whole oak family are proverbial for the depth of their roots. Your oak is not a large growing tree, but botanically it is nearly allied to the English oak of Europe, and I am quite sure that this English oak would do remarkably well in this country. It is, moreover, a rapid grower, and I have seen it make five feet in one year. In all you choose I would take, therefore, the deep tap-rooted sorts—even in the matter of hedging-plants, I would do this. I noticed to-day that you are growing the osage-orange, but I should think the honeylocust has a much deeper rooting tendency, and would be a better plant for this purpose.

"Again, ladies and gentlemen, I would say, you need not stop to defend your irrigating system of agriculture. It is the system which best holds in control the elements of success. Have a care to keep your soil filled, not with water, but with watery vapor, and guard your crops from evaporation by planting shelter belts, and not even these beautiful specimens of cereals and vegetables, which you have on this platform to show us, will satisfy you—for you will excel your best expectations."—*Gardener's Monthly*.

THE first Annual Exhibition of the Napa and Solano District Agricultural Society will commence October 8th.

ON THE ECONOMIC VALUE
OF CERTAIN
AUSTRALIAN FOREST TREES,
And their Cultivation in California.

BY ROBERT E. C. STEARNS.

[Continued from page 272 of last number.]

The many valuable properties of the Eucalyptus attracted the attention of the French Government several years ago. A specimen in the Jardin d'Acclimatation at Algiers, excited the admiration of the Emperor while on a visit to that place, and upon measuring the tree it was found, according to the Paris *Moniteur*, to have made "a height of thirty feet and a diameter of six inches in two years." Since that time it has been extensively cultivated in Algiers, and of late it has been stated that it "is making rapid progress in the south of France, Spain and Corsica, especially on account of its alleged virtues as a remedy for fever. It furnishes a peculiar extractive matter, or alkaloid, called Eucalyptine, said by some to be as excellent a remedy against fever as quinine.

"In Spain its efficacy in cases of intermittent and marsh fevers has gained for it the name of 'Fever Tree.' It is a powerful tonic and diffusible stimulant, performs remarkable cures in cases of chronic catarrh and dyspepsia, is an excellent antiseptic application for wounds, and tans the skins of dead animals, giving the fragrance of Russia leather. The tree prefers a marshy soil, in which it grows to a great height very rapidly. It dries the earth under it by evaporation from its leaves, and shelters it from the sun, thus preventing the generation of marsh miasm."*

Of the medicinal properties of *E. globulus* we have additional testimony in a recent number of the Practitioner,† where Dr. M. C. Maclean relates the results of his experiments on patients in the Hospital Wards at Netley, England. He says, in connection with certain cases of chest aneurisms and cardiac

* Harper's Magazine, of March, 1872; Scientific Record, page 630.

† No. XLI, p. 268, Nov., 1871.

asthma, "With the exception, perhaps, of the subcutaneous injection of morphia, I know no remedy so efficacious in allaying pain, restoring dyspnoea, calming irritation, and procuring sleep in such cases, as to be compared to *E. globulus*." He also refers to the use in Germany of a tincture made of the leaf, which "has been used successfully in two-drachm doses in the treatment of intermittent fevers." It appears that it is not only used medicinally in form of a tincture, but also that cigars are made from the leaves, and its palliative influence obtained by smoking.

"German physicians, as appears from medical journals, have found a tincture of the leaves of the *Eucalyptus globulus*, or Australian gum-tree, to be a remedy for intermittent fever. Dr. Lorimer gave it to fifty-three patients, of whom forty-three were completely cured. In five others there was a relapse, owing to a failure in the supply of the tincture. In eleven of the cases quinine had been used without effect, and nine of these were cured by the *Eucalyptus*."*

Other species of the Eucalypti, of great value and well worthy of consideration, are recommended by Dr. Mueller.

E. amygdalina, Labill, which is sometimes met with 400 feet in height; one specimen in the Dandenong ranges measured 480 feet, † surpassing in altitude the gigantic Sequoias of our own State; the wood of this species is said to be well adapted for "shingles, rails, housebuilding, for the kelson and planking of ships, and other purposes;" in rapidity of growth it equals *E. Globulus*, but is not so easily satisfied with any soil.

E. diversicolor, F. v. Mueller, a native of S. W. Australia, sometimes reaching 400 feet in height, with a proportionate growth of stem. The timber is excellent, and young trees are reported as doing well even "in dry exposed localities in Melbourne." It is regarded by

Dr. Mueller as a valuable shade tree for avenues, as it makes a dense growth.

The *Eucalyptus citriodora*, Hooker, a native of Queensland, "combines with the ordinary qualities of many Eucalypts the advantage of yielding from its leaves a rather large supply of volatile oil of excellent lemon-like fragrance."

M. gomphocephala, Candolle, grows to a height of "fifty feet, wood close-grained, hard and not rending."

Eucalyptus marginata, Smith. "The Jarrah or mahogany tree of S. W. Australia, famed for its indestructible wood, which is attacked neither by Chelura nor Teredo nor Termites, and therefore so much sought for jetties and other structures exposed to seawater, also for underground work, and largely exported for railway sleepers. Vessels built of this timber have been enabled to do away with copper-plating. It is very strong, of a close grain and a slightly oily and resinous nature; it works well, makes a fine finish, and is by shipbuilders here considered superior to either Oak, Teak or indeed any other wood." The tree does not grow as rapidly as the Blue Gum in the neighborhood of Melbourne, but Dr. Mueller expresses the opinion that it would make a rapid growth in a more favorable locality.

The *E. rostrata*, Schlecht, the Red Gum of Victoria, is a very valuable species for the "extraordinary endurance of the wood underground, and for this reason highly valued for fence-posts, piles and railway sleepers; for the latter it will last a dozen years, and if well selected much longer. It is also extensively used by shipbuilders, for mainstem, sternpost, innerpost, deadwood, floor timbers, futtocks, transoms, knightheads, hawsepieces, cant, stern, quarter and fashion timber, bottom planks, breasthooks and riders, windlass, bowrails, etc. It should be steamed before it is worked for planking. Next to the Jarrah from W. Australia," this is the best wood for resisting the attacks of seaworms and white ants. This species reaches a hundred feet in height, which is

* Annual Record of Science and Industry, 1871, page 586.

† Trans. and Pro. of the Royal Society of Victoria, Part I, Vol. VIII, p. ix.

also the height of the next and last of the *Eucalypti* referred to herein, viz: *E. sideroxyloides*, *Cunn.*, which produces a wood of great strength and hardness, and desirable for carpenters, shipbuilders, and wagon-makers, being suitable for wheels, treenails, belaying pins, and is considered the strongest wood in the colony; also valuable for railway sleepers, underground work in mines, etc.

The wood of the Gums is "so soft at first as to render the felling, splitting, and sawing up of the tree, when green, a very easy process, but when thoroughly dry becoming as hard as oak."*

THE PLANTING OF TREES ON PRIVATE PROPERTY.

From the Report of the Royal Commission of Victoria, Australia, on Foreign Industries and Forests.

For the promotion of this object the same idea, which has lately been carried out in New Zealand, seems to have suggested itself to some of your correspondents, namely, the granting of land in proportion to the extent successfully planted with exotic or native trees. The several proposals amount to this, that land certificates be offered to every owner of five, ten, twenty, thirty, or more acres of healthy growing trees, planted out three, or four, or five years, as may be deemed fit, the proportion of land to be so offered varying with the fancy of the writer. Some propose acre for acre; others, more liberal or better acquainted with the cost of planting, would give five acres of bush land for every acre planted. Premiums of other sorts are also named, including prizes offered by agricultural societies; but these last would scarcely suffice for inducement to plant, unless the ordinary amounts of such prizes are greatly increased. One suggestion is, that the young trees should be raised at forest nurseries, under the care either of local boards or the Inspector of Forests, and that money premi-

ums should be offered to the successful growers of certain numbers of these for five or seven years. The raising of such trees at public nurseries seems to be a favorite idea—these to be either given away or sold at cost price. It is stated that many owners of land, who can not afford to pay the prices asked by nurserymen, would plant and take care of trees, if they could obtain them at a low rate; and this view of the case is put in different forms. Some would not only have the trees given away, but they require, in addition, full instructions for planting and tending them, together with particulars as to the future value of the sorts recommended, at different periods of their growth. Others more reasonably ask that information of this kind be first distributed through the country, and that the young trees be in due time distributed, at cost price, to all such as may require them. Others, again, ask for information and a free distribution of the seeds of such trees as it may be desirable to grow, whether native or exotic. It is pointed out that the cost of collecting seeds here is not much, and as these are so highly valued in other countries—France, for instance—that we could obtain cheaply all the seeds we would require to import by establishing a system of exchange. But this would have to be conducted through a Government department, or entirely trustworthy agents. Then, as many farmers, who can not afford to buy them, would like to have young trees to plant out for shelter, it is suggested that persons farming their own land might have a certain number of trees from the forest nurseries, in proportion to every acre cultivated. One idea is, that owners of land by the side of wide roads should be allowed to fence in a certain width of the land reserved for the road, if they would undertake to plant this. And as to the roads generally, it is suggested by many of your correspondents, that the local managing bodies, whether councils or forest boards, should be compelled to plant trees along them every year, the numbers so planted to be in proportion to their revenue

* Baird's Dict. Nat. Hist., p. 235.

from forests or other sources, the distance of the trees apart to be regulated by some general rules. Common suggestions are, also, that plantations of anything over an acre in extent should be exempt from rates or charges of any kind, and that trees planted by selectors should be liberally estimated, when valuing their improvements. The bulk of the recommendations are, however, to the effect that young trees of useful kinds should be raised in large quantities in forest nurseries, by competent men in the service of the State, or of local boards; these to be afterward planted out according to the mode experiment may prove most desirable. If owners of land would not buy them, they might be given away; or, as was done in France once with mulberries, even a premium might be offered for successfully growing the sorts most valuable to the country. But the necessity for not sending out the young trees until they have attained to a good size is strongly insisted on. The sending out of young trees of considerable size to distant localities is not only too expensive, but in many respects an impossibility, especially as regards the evergreen sorts. Hence the necessity for local nurseries.

THE BRAZIL NUT.—(*Bertholletia excelsa*).

The *Revue Horticole* says the fruit of the *Bertholletia excelsa* is commonly called "Monkey's Pot," which name is also given to the *Lecythis ollaria*. This arises from the fact, that its form suggests that idea, and because the monkeys eagerly devour the seeds contained within it, drawing them out through an opening at the top of the fruit, which they enlarge, if necessary. The fruit, which seldom reaches us entire, is surrounded by a kind of green shell, at the bottom of which is an exceedingly hard woody covering, enclosing a number of irregularly triangular seeds not unlike a slice of melon cut away a little on one end. These seeds are shut up in a woody, wrinkled, brown coat, which though rather thin, is very tough. When fresh they

are good to eat, having a flavor somewhat like that of the hazelnut or walnut; but as they become old the decomposition of the large amount of oil they contain causes them to taste rancid.

According to Humboldt and Bonpland the fruit is about the size of a child's head, being from three to five inches in diameter. Some are oval-shaped, and others rounded but depressed above and below. The fruit consists of a woody capsule, valveless, covered with a thick, fleshy rind, which shows slight traces of four or five rounded angles that it had in its ovarian state. The lid at the top is very small, and unlike that of the fruit of the *Lecythis*, falls inside the capsule instead of outside. When the fruit is ripe, and the partitions of the cells are gone, there appear sixteen to twenty bony, wrinkled, kidney-shaped seeds, a little flattened on the inside. The kernel consists of a fleshy, whitish, inseparable, homogeneous substance.

In December, 1821, "I saw the *Bertholletia* flowering at Cayenne. This was the second time it had flowered, but no fruit arose therefrom, which was most likely due to the youth of the plant, although it was then twelve years old and forty feet in height. There are but few homes in Cayenne which have not some of these trees. The fruit which I have examined and drawn came from Brazil. The Portuguese of Para send yearly a large quantity of the seeds of the *Bertholletia* to Cayenne under the name of Touka, and this name has been also given to the trees which have sprung from them. These seeds are sold at the Cayenne market. As long as they are fresh they are equally as good as our sweet Almonds, but they turn rancid very quickly." These fruits, which are called also Brazil Chestnuts, and to which the natives give the name of "Invia," furnish a very large amount of oil for burning.

This is what M. Bonpland has to say about it:—"We have been very fortunate, M. Humboldt and I, in finding some of these kernels during our voyage upon the Orinoco. For three months we lived only on some bad

chocolate, on rice cooked in water, always without butter and often without salt, until at last we got a large number of the fresh fruit of the *Bertholletia*. It was in June, and the Indians had just made a harvest of them. These kernels are of a most exquisite flavor, especially when they are fresh. The tree came originally from Brazil, but it is also to be found in Spanish America, where it forms forests upon the banks of the Orinoco."

Moore's Rural New Yorker.

Editorial Portfolio.

We have to apologize to our subscribers for the delay in the publication of our magazine this month, as well as for the omission of Fairs, Favors Received, New Plants, etc., Monthly Work, Fruit Market Report, etc., etc. We can only offer in extenuation, that the late Horticultural Exhibition in this city, and the preparation of our report of it, engrossed so much of our time and attention that the delay, though much regretted by us, was unavoidable.

FAVORS RECEIVED.

Premium List of the Kansas City Industrial Exposition and Agricultural Fair, to be held in Kansas City, Missouri, September 23d.

List of Premiums to be awarded by the Sonoma and Marin District Agricultural Society, to be held at Petaluma, from September 9th to September 14th, 1872.

We acknowledge the receipt of a Complimentary Ticket, to the Fair of the Bay District Agricultural Association, at the Agricultural Park, San Francisco.

Thanks to the President and Secretary of the San Joaquin Valley Agricultural Society for a Complimentary Ticket to their exhibition.

We have received the Report of the Commissioner of Agriculture for the year 1871,

of which we will speak hereafter. It is finely illustrated, and worthy of careful perusal.

We are indebted to the officers of the Contra Costa County Agricultural Society for a Complimentary Ticket to their Twelfth Annual Fair.

We have received, in pamphlet form, the proceedings of the Annual Convention of the South Carolina Agricultural and Mechanical Society; also the Premium List of said Society for their Fourth Annual Fair, to be held in Columbia, S. C.

Our thanks to Baron von Mueller, Director of the Botanical Gardens of Melbourne, Australia, for his valuable pamphlet entitled "Select Plants (exclusive of Timber Trees) eligible for Victorian Industrial Culture."

We are under obligation to Carmany & Co. for the October number of *The Overland Monthly*—altogether an excellent number. We read with interest the very acceptable article on the "Colorado River;" also "Japanese Wrecks in American Waters." "Hawaiian Fun-Beams" is amusing; other articles are good. Although enthusiastic admirers of *poetry*, 'tis irksome unless good; this installment of "Isles of the Amazons" is more attractive than the first. Remarks on Current Literature and the Arts are to the point.

We have received a neat volume entitled "Window Gardening," which is devoted especially to *The Culture of Flowers* and Ornamental Plants for indoor use and parlor decorations. Edited by Henry T. Williams, the well known writer on Horticulture. We can highly recommend this valuable publication to all who love flowers and floral decorations. Mr. Williams says in his preface to the above work: "The taste for Window Gardening, and the plant decoration of apartments, is becoming almost universal; scarcely a cottage or villa but has its attempts, whether simple or elaborate, to decorate the windows, the porch, and the balcony with some few

flower-pots or climbing vines; it is a sign of healthy sentiment, for the presence of flowers always aids in the development of refinement and an elevated taste." We fully indorse this. The "Window Gardening" is finely illustrated, and many practical ideas may be derived from it. The price for the work is only \$1.50, and it can be obtained of the publisher, Henry T. Williams, New York, or we will furnish it to parties who desire it, at the same rate.

OUR EXCHANGE TABLE.

The following valuable additions have been made to our Exchange Table:

The Western Planter, devoted to the interests of the Farmer, Mechanic, and Merchant. Published weekly by R. H. Stone & Co., Kansas City, Mo.; price, \$1.50 per annum.

The Science of Health, for September, contains much practical matter and useful information. Published by Samuel R. Wells, New York; price, \$2.00 per annum.

For Everybody is one of our welcome visitors; it is a finely illustrated family paper, published monthly by Henry H. Sage, Buffalo, N. Y.; price, \$2.00 per annum.

The Western Ruralist, a monthly publication, devoted to the interests of the Rural Districts of the West. Published by F. C. Wood & Co., St. Louis; subscription, 1.00 per year.

Western Agriculturist, a neatly illustrated monthly, devoted to Agriculture, Horticulture, and Household Reading. Published by T. Butterworth, Quincy, Ill.; subscription price, \$1.00 per annum.

Whitaker's Milwaukee Monthly, for September, is as interesting as ever; many able contributions make it a cheap and valuable monthly for the family. Published by T. J. Gilmore, of Milwaukee.

The Southern Agriculturist, a monthly, devoted to the Farm, the Garden, the Orchard, and the Stock-yard; to Manufacturing and

the Mechanical Arts; published by Thomas J. Key, Louisville, Ky.; terms, \$2.00 per year;

The North American Bee Journal, a monthly periodical, devoted to Bee Culture, has just now appeared for the first time, and is of very neat appearance; price, \$2.00 per annum. Address "North American Bee Journal," Franklin, Simpson Co., Kentucky.

Turf, Field, and Farm, a weekly review of the Turf, the Field, and Aquatic Sports; it also takes cognizance of Agriculture, Art, Literature, Chess, Natural History, etc., published by the "Turf, Field, and Farm Association," 37 Park Row, N. Y.; subscription price, \$5.00 per annum.

American Working People, designed as a first-class journal for workmen and their families, containing valuable reading matter of the most instructive and entertaining character. Published monthly by the Iron World Publishing Co., Pittsburgh; price, \$1.50 per year.

The Ladies' Floral Cabinet and Pictorial Home Companion, a handsome illustrated journal, devoted to the culture of flowers for outdoor and indoor decoration, and to historical home literature; subscription, 75 cents per annum. Published monthly by H. T. Williams, New York.

CATALOGUES RECEIVED.

Wholesale Catalogue of Trees, Plants, etc., for sale by Mahlon Moon, Morrisville, Pa.

Wholesale Price List of Bryant's Nurseries, Princeton, Illinois.

Semi-Annual Trade List of Heike's Nurseries. Dayton, Ohio.

Gould Bros. Wholesale Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, etc. Rochester, N. Y.

Catalogue with Illustrations of Rustic Work manufactured and for sale by James King, of New Haven, Conn.

Vick's Illustrated Catalogue of Hardy Bulbs, by James Vick, Rochester, New York.

Briggs Bros. Illustrated and Descriptive Catalogue of Hardy Bulbous Flowering Plants. Rochester, N. Y.

Hooper, Brother & Thomas, Cherry Hill Nurseries, Westchester, Pa. Semi-Annual Trade List for Autumn, 1872.

Trade List for Fall of 1872, of Fruit Trees, Seedlings, etc., for sale by A. & J. Hammond, Geneva, New York.

Wholesale Catalogue of the Mount Hope Nurseries, Rochester, New York, Ellwanger & Barry, Proprietors.

Wholesale Trade List of Fruit and Ornamental Trees by Sears, Henry & Co., Geneva, New York.

Catalogue of Choice Flower and Vegetable Seeds, for sale by Henry A. Dreer, Philadelphia, Pennsylvania.

Germantown Nurseries, Philadelphia, Thos. Meehan, Proprietor. Wholesale Price List (for the Fall of 1872) of Rare, Ornamental and Fruit Trees, and Tree Seeds.

Descriptive and Illustrated Catalogue of Bulbous Flower Roots, etc., for sale by Ellwanger & Barry, Mount Hope Nurseries, Rochester, New York.

Descriptive Catalogue of Plants for the Greenhouse, Conservatory and open ground, for sale by Ellwanger & Barry, Mount Hope Nurseries, Rochester, New York.

Descriptive Catalogue of Ornamental Trees, Shrubs, Roses and Flowering Plants, for sale by Ellwanger & Barry, Mount Hope Nurseries, Rochester, New York.

BIG WORK.—A gardener in the employ of Peter Henderson, a well-known florist in the East, will pot 5,000 to 7,000 cuttings in a day of ten hours. One of his old foremen has planted as high as 10,000 cabbage and lettuce plants in a day, while the work of an ordinary man is but 2,000 to 6,000.

Editorial Cleanings.

STAKES AND SUPPORTS FOR THE GARDEN.—A correspondent informs the *Technologist* that he has now in his possession stakes for flowers and shrubs which have been in use for over nine years, and their points are yet perfectly sound. "I take, he says, common coal tar and bring it to a boiling point in a kettle some ten to twelve inches deep; I then place the lower part of the stake in the boiling tar, immersing it as deeply as the pot will allow. After remaining therein about ten minutes, I take it out, allowing the surplus tar to drain off, and roll the tared portion in clean sharp sand, covering every part of the tar. After they have become perfectly dry, I give them another coat of tar, completely covering the sanded part." He keeps the upper parts well painted.

FLOWERS AS DISINFECTANTS.—Prof. Mantegazza has discovered that ozone is developed by certain odorous flowers. A writer in *Nature* states that most of the strong smelling vegetable essences, such as mint, cloves, lavender, lemon and cherry laurel, develop a very large quantity of ozone when in contact with atmospheric oxygen in light. Flowers, destitute of perfume, do not develop it, and generally, the amount of ozone seems to be in proportion to the strength of the perfume emanated. Prof. Mantegazza recommends that, in marshy districts, and in places infested with noxious exhalations, strong-smelling flowers should be planted around the house, in order that the ozone emitted from them may exert its powerful oxidizing influence. So pleasant a plan for making a malarious district salubrious only requires to be known to be put in practice.

REMEDY FOR SLUGS.—An application of slacked lime will generally cause slugs to disappear, but will not kill them. If, however, lime is slacked on the spot and applied hot, it is certain destruction to them. We have not tried it, but we are assured that it is a successful remedy.

SCALE INSECTS ON TREES.—Dr. Wm. P. Gibbons, of Alameda, delivered a very interesting lecture before the Oakland Farming, Horticultural and Industrial Club, some time since, on the subject of scale insects on trees. The Doctor exhibited a drawing, many times enlarged, of one species of scale insects which is making sad havoc with the fruit trees in this vicinity. It is somewhat of the shape of a half pea, and varies in size from the size of a half pea down. When lifted from the tree with a knife, it appears like a hollow case filled with a downy substance. They have antennæ, generally with ten joints and three legs on each side. Outside of the antennæ there are fourteen spires encircling the body, which, he at first believed, were used for breathing, as the insect has no mouth. Each foot, or rather termination of the leg, has three bristles, which adapt themselves to any surface and urge the insect along. In reply to a member of the Club, the Doctor said a strong solution of caustic potash was an unfailing remedy for their extermination.—*Alameda Encinal.*

THE CHAMPION TREE PLANTER OF NEBRASKA. J. D. Smith, who lives four miles west of Lincoln, has the championship for tree planting on "Arbor Day." He planted at the rate of one tree per second, for nearly ten hours. The result was 33,550 forest trees. To Mr. Smith must be awarded the medal. It can not be possible, that another man in Nebraska outnumbered the immense forest of Mr. Smith. If there is, let him advise us of the fact, and we will gladly publish it to the world, giving proper credit and applause. Thus far, Mr. J. D. Smith is the champion tree planter of Nebraska's "Arbor Day." So says the *Nebraska Herald.*

BEAUTIFY THE FARM.—You can so beautify your premises that travelers will have to love it as they pass, study the points that attract, and carry in their minds ever after, the recollection that it was a home of outward beauty,

made so by the presence of inward taste and happiness. But to your own mind will come the greater good. Life will be the brighter and happier to you. Your children will grow up to love the home you have rendered so attractive to them, and its beauties will ever act as educating influences for good upon their minds and hearts. The dull routine of hard labor will be relieved by the rational enjoyments which come from the surroundings, whenever brought under their silent power, and you will grow into purer life and a nobler manhood in consequence.—*Maine Farmer.*

INFLUENCE OF VARIOUSLY COLORED LIGHT ON VEGETATION.—As the result of a series of experiments upon the influence of variously colored light upon vegetation, Dr. Bert has arrived at the following conclusions: 1. That green light is almost as fatal to vegetation as darkness. 2. That red light is very detrimental to plants, though in a less degree than green light. 3. That though yellow light is far less detrimental than the preceding, it is more injurious than blue light. 4. That all the colors taken singly are injurious to plants, and that their union in the proportion to form white light is necessary for healthy growth.

The author has examined the transmitted light from the leaves of various plants, and finds that there is a slight difference in the rays which different leaves absorb and utilize; and this, he believes, explains the fact that certain plants flourish in the shade of trees, while others will scarcely exist; in the former case it is supposed that the rays required by the plant are not absorbed by the leaves of the trees, but in the latter they are.—*Monthly Report of the Department of Agriculture.*

POTTING ORCHIDS.—Henderson says, that the best material he ever found for potting Orchids, was a very fibrous kind of turf found in a dry part of a fresh water swamp, and mixed with *sphagnum* and charcoal.

THE CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

VOL. II.

OCTOBER, 1872.

No. 11.

MARANTA.

At our late Horticultural and Floral Fair, the various specimens of Marantas attracted universal admiration ; and as ornamental foliage plants, they have few if any superiors. As this class of plants seems to thrive well in our climate, under ordinary treatment, we would urge their cultivation, wherever a space in the window or in the conservatory will permit.

We believe the Marantas are all natives of tropical America ; but they are cultivated in the East and West Indies for the starch contained in the roots, or tubers. The arrowroot of America is the product of Marantas ; which term, according to the "Treasury of Botany," is derived from the fact, that the native Indians used the roots of these plants as an application to wounds inflicted by poisoned arrows. The starch is extracted from the tubers when about a year old.

But as our readers doubtless care less for the utility of the Marantas than for their exquisite foliage, we will give a few hints for their proper cultivation as decorative plants. They are fond of a moist atmosphere, and therefore thrive best in a greenhouse or conservatory, where this can be produced without much inconvenience ; yet, we believe our San Francisco atmosphere retains sufficient moisture to insure a good and healthy growth of the Marantas, wherever they can be

protected from the cold and chilly winds. A moderately-warm situation ; frequent airing, if cultivated in the open window ; careful removal of dust and impurities from the foliage by a soft sponge, and frequent watering, are essential points for the successful growth of the Marantas. There are many varieties, of course, which require artificial heat ; but we know a number of excellent varieties which will thrive well under ordinary treatment.

As a proper soil, we would recommend equal parts of leaf-mold, peat, and sand ; in the absence of peat, our black loam, which is so abundant here, will answer the purpose.

We see frequent mistakes made, by giving too large pots. This is wrong ; comparatively small pots, and good drainage, are preferable. During winter, it is advisable to water them less, and allow the plants to rest. If they are watered too much during our rainy seasons, the roots are apt to decay ; a sure indication of such decay is, the rolling up of the ends of the leaves.

Marantas are propagated by division of the roots. This must be done in the spring of the year, unless they are cultivated in proper greenhouses, when it may be done almost at any season. If no artificial heat can be had for the divided plants, they are apt to decay before they have time to establish themselves.

The following varieties are desirable, and

will do quite well under ordinary treatment :

Maranta zebrina—leaves oval-shaped, one to two feet long, when well developed ; above, shining velvet, with broad light and dark green stripes ; below, of a purple-violet color. This is one of the oldest, and also one of the handsomest ; a native of Brazil.

M. bicolor—leaves or stems green above, with whitish spots ; purple velvet below. This is also a very fine *Maranta*, and of easy culture, but slower in growth than the former ; also a native of Brazil.

M. lineata rosea (*M. ornata*), is a very good variety, but, we think, not so easy of culture as the above-named varieties. Leaves shining green, striped rose-and-white ; but, unless proper treatment is given (including artificial heat and moist atmosphere), the rose-colored stripes are apt to run out.

M. Warscewiczii is of the very best. Leaves oblong ; above, velvety green, striped light and dark green, and flamed yellowish green ; below, of a brownish, velvety red. This, also, requires a warmer situation than the first-named varieties ; but will do well under ordinary treatment in the greenhouse, during the warmer season of the year.

M. eximia, *M. amabilis*, and *M. sanguinea*, are all very desirable varieties.

The most of the above-named varieties may now be purchased of florists in this city, at reasonable prices. Every year new and fine varieties are introduced, and are sold in the east, and in Europe, at high prices.

PRESERVING CUCUMBERS.—The Cucumbers are washed, placed in a barrel in layers with herbs, such as Fennel, Parsley, Tarragon, Onions and Rose Leaves intermixed. Sometimes Allspice or long Pepper is added. When the barrel is nearly full, a solution of salt (one pound to 123 litres of boiling water) is poured, when cold, into the barrel through a small hole in the top, which is afterwards tightly corked. The barrels are kept in a cellar or in a house, and when required for use the Cucumbers are sliced and sent to the table.—*Revue Horticole.*

SELECT PLANTS

(Exclusive of Timber Trees) readily eligible for Victorian Industrial Culture, with Indications of their Native Countries and some of their Uses—an Enumeration Offered

BY BARON FRED. VON MUELLER.

[Continued from page 297 of last number.]

ANACYCLUS PYRETHRUM, *Candolle*.—Countries near the Mediterranean sea. The root is used medicinally.

ANDROPOGON AVENACEUS, *Michaux*. (*Sorghum avenaceum*, *Chapman*.)—North and Central America. This tall, perennial grass lives in dry, sandy soil, and should here be tried for growth of fodder.

ANDROPOGON BICOLOR, *Roxburgh*.—Warmer parts of Asia. One of the annual tall Sorghums. It ripens its seeds in three or four months from the time of sowing, the produce in good soil being often upwards of one hundredfold. It is a wholesome grain.

ANDROPOGON CALAMUS, *Royle*.—Central India. The Sweet Calamus of the ancients. From this species the Gingergrass-oil of Nemaour is distilled, an article much used in perfumery.

ANDROPOGON CERNUUS, *Roxb*. (*Sorghum cernuum*, *Willd.*)—One of the Guinea Corns. India, where it is much cultivated ; and so also in other tropical countries. It is perennial, and forms the "staff of life of the mountaineers" beyond Bengal. It reaches a height of 15 feet, with leaves over 3 feet long. The thick stems are rooting at the lower joints, and cattle are very fond of them. The grain is white. The specific limits of the various Sorghums are not well ascertained.

ANDROPOGON CITRATUS, *Candolle*.—The Lemon Grass of India. It yields an essential oil for perfumery ; besides, it is occasionally used for tea. This applies as well to *Andropogon Nardus*, L., and some allied grasses.

ANDROPOGON HALEPPENSIS, *Sibthorp*. South Europe, Orient. A rich perennial grass, cultivated often under the name of Cuba Grass.

ANDROPOGON IVARANCUSA, *Roxb*.—One of

the fragrant grasses of North India, much used like *A. Shœnanthus*.

ANDROPOGON MARTINI, *Roxb.* (*A. flexuosus*, *Nees.*)—On the mountains of India. The fragrant Citronella Oil is distilled in Ceylon and elsewhere from the leaves of this species. General Martin observed, that cattle are voraciously fond of this grass; but it imparts its fragrance to meat and milk.

ANDROPOGON MURICATUS, *Retz.*—India. A Swamp-grass, with delightfully fragrant roots.

ANDROPOGON NUTANS, *L.* (*Sorghum nutans*, *Gray.*)—North America. A tall, nutritious, perennial grass, content with dry and barren soil.

ANDROPOGON SACCHARATUS, *Roxb.* (*Sorghum saccharatum*, *Pers.*)—Tropical Asia. The Broom-Corn. A tall annual species, splendid as a fodder grass. From the saccharine juice sugar is obtainable. A sample of such, prepared from plants of the Melbourne Botanic Garden, was shown at the Exhibition of 1862. This Sorghum also furnishes material for a well-known kind of brooms. A variety, or a closely-allied species, yields the Caffir Corn (*A. Caffrorum*, *Kunth*). The plant can be advantageously utilized for preparing treacle. For this purpose, the sap is expressed at the time of flowering, and simply evaporated; the yield is about 100 gallons to the acre. In 1860, nearly seven millions of gallons of sorghum treacle were produced in the United States.

ANDROPOGON SHœNANTHUS, *L.*—Deserts of Arabia. A scented grass, allied to the Indian oil-yielding Andropogons. A similar species occurs in arid places of the interior of North Australia.

ANDROPOGON SORGHUM, *Brotero.* (*Sorghum vulgare*, *Persoon.*)—The large Indian Millet or Guinea Corn, or the Durra. Warmer parts of Asia. A tall annual plant. The grains can be converted into bread, porridge, and other preparations of food. It is a very prolific corn, and to us particularly valuable for green fodder. Many others of the numerous species of Andropogon, from both hemispheres, deserve our attention.

ANEMONE PULSATILLA, *L.*—Europe and Northern Asia. On limestone soil. This pretty perennial herb is of some medicinal importance.

ANONA CHERIMOLIA, *Miller.*—Tropical and sub-tropical South America. This shrub or tree might be tried in the frostless lower valleys of East Gipps Land, where humidity and rich soil will also prove favorable to its growth. It yields the Cherimoyer fruit. The flowers are very fragrant.

ANTHEMIS NOBILIS, *L.*—The true Camomile. Middle and South Europe, North Africa. A well-known medicinal plant, here frequently used as edgings for garden plots. Flowers in their normal state are preferable, for medicinal use, to those in which the ray-flowers are produced in increased numbers. They contain a peculiar volatile oil, and in addition two acids similar to Angelica and Valeriana acid.

ANTHEMIS TINCTORIA, *L.*—Middle and South Europe, Orient. An annual herb. The flowers contain a yellow dye.

ANTHISTIRIA CILIATA, *L. fil.* (*Anthistiria Australis*, *R. Brown.*)—The well-known Kangaroo Grass, not confined to Australia, but stretching through Southern Asia also, and through the whole of Africa. It is mentioned here, because its growth should be encouraged by every means. There are several species of Anthistiria deserving introduction and naturalization in our colony.

ANTHOXANTHUM ODORATUM, *L.*—The Scented Vernal Grass. Europe, North and Middle Asia, North Africa. A perennial, not of great value as a fattening grass, yet always desired for the flavor which it imparts to hay. Perhaps, for this purpose, the scented Andropogons might serve here also. On deep and moist soils it attains its greatest perfection. It is much used for mixing among permanent grasses on pastures, where it will continue long in season. It would live well in our Alps. The lamellar-crystalline Cumarin is the principle on which the odor of Anthoxanthemum depends.

APIOS TUBEROSA, *Moench.*—North America.

A climber, with somewhat milky juice. The mealy tubers are edible.

APIUM GRAVEOLENS, L.—The Celery. Europe, North Africa, North and Middle Asia. It is here merely inserted with a view of pointing out, that it might be readily naturalized on our sea shores.

APIUM PROSTRATUM, La Billardiere.—The Australian Celery. Extra-tropical Australia, New Zealand, extra-tropical South America. This also can be utilized as a culinary vegetable.

APOCYNUM CANNABINUM, L.—On river banks in North America. This is recorded among plants yielding a textile fibre.

ARACHIS HYPOGAEA, L.—The Earth-nut, Peanut, or Ground-nut. Brazil. The seeds of this annual herb are consumed in a roasted state, or used for pressing from them a palatable oil. The plant is a very productive one, and yields a very quick return. It ranks also as a valuable fodder herb. A light, somewhat calcareous soil is best fitted for its growth. On such soil, 50 bushels may be obtained from the acre.

ARCHANGELICA OFFICINALIS, Hoffmann.—Arctic zone and mountain regions of Europe. The stalks are used for confectionery; the roots are of medicinal use. Only in our Alps would this herb fully establish its value. The root is biennial, and used in the distillation of some cordials.

ARCTOSTAPHYLOS UVA URSI, Sprengel.—Alpine and Arctic Europe, North Asia and North America. A medicinal small shrub, which here could best be reared in the heath-moors of our Alpine regions.

ARGANIA SIDEROXYLON, Roem. and Schult. The Argan-tree. Western Barbary, on dry hills. Its growth is here found to be slow; but it is a tree of longevity. Though comparatively low in stature, its foliage occasionally spreads to a circumference of 220 feet. It sends out suckers from the roots. The fruits serve as food for cattle in Morocco; but here the kernels would be more likely to be utilized, by pressing the oil from them.

ARISTOLOCHIA SERPENTARIA, L.—The Snake-

root of North America. The root of this trailing herb is valuable in medicine; it contains a peculiar volatile oil. Several other *Aristolochiæ* deserve culture for medicinal purposes; for instance—*Aristolochia ovalifolia* (Guaco), and *A. anguicida*, from the mountains of Central America, should they prove hardy.

ARNICA MONTANA, L.—Colder parts of Europe. This pretty herb is perennial, and of medicinal value. It is eligible for our sub-alpine regions. The active principles are: arnicin, volatile oil, cupron and capryl acid.

ARRACACHA XANTHORRHIZA, Bancroft.—Mountain regions of Central America. An umbelliferous herb. The roots are nutritious and palatable. There are yellow, purple and pale varieties.

ARTEMISIA ABSINTHIUM, L.—The Wormwood. Europe, North and Middle Asia, and North Africa. A perennial herb, valuable as a tonic and anthelmintic. Several other species of *Artemisia* deserve cultivation for medicinal purposes. Active principles: Absinthin, an oily substance, indurating to a crystalline mass; a volatile oil peculiar to the species.

ARTEMISIA DRACUNCULUS, L.—The Tarragon, or Estragon. North Asia. A perennial herb used as a condiment. Its flavor rests on two volatile oils, one of them peculiar to the plant.

ARUNDINARIA FALCATA, Nees.—Nepaul. One of the hardiest kinds of the Bamboo tribe. It rises to the height of 20 feet, the canes attaining a diameter of 4 inches.

ARUNDINARIA MACROSPERMA, Michaux.—Southern States of North America, particularly on the Mississippi. This bamboo-like reed forms there the cane-brakes. It requires to be replanted after flowering, in the course of years. Height, 20 feet.

ARUNDO DONAX, L.—The tall evergreen lasting Bamboo-reed of South Europe and North Africa. It is one of the most important plants of its class for quickly producing a peculiar scenic effect in picturesque plantations; also, for intercepting at once the view of unsightly objects, and for giving early

shelter. The canes can be used for fishing-rods.

ARUNDO PLINIANA, *Turr.*—On the Mediterranean and Adriatic Seas. A smaller plant than *A. Donax*, with more slender stems and narrower leaves, but similarly evergreen, and resembling the *Donax* reed also in its roots.

ARUNDO SACCHAROIDES, *F. v. M.* (*Gynerium saccharoides*, *Humboldt.*)—Northern part of South America. This species is here not yet introduced; but it is likely to prove hardy. Like the following, it is conspicuously magnificent:

ARUNDO SELLOWIANA, *Schultes.* (*Arundo dioica*, *Spreng.* non *Louriero.* *Gynerium argenteum*, *Nees.*)—The Pampas Grass of Uruguay, Paraguay and the La Plata States. A grand autumnal flowering reed, with gorgeous feathery panicles. As an industrial plant it deserves here a place, because paper can be prepared from its leaves.

CINERARIA.

We are surprised that the *Cineraria* is not more extensively cultivated than it is in California, and more particularly in San Francisco and similar climates of the State. It certainly thrives most admirably in this locality—first, as a greenhouse or window plant; and, secondly, as a bedding-plant, in protected situations. Under glass, *Cinerarias* may be had in full bloom at any time from December to June; while they will continue to bloom in the open air, if not exposed to strong winds or frost, from early spring until midsummer. They produce an abundance of flowers, rich in color, and of all shades, except yellow, (the *Cineraria maritima* excepted, which we do not include in this article). The flowers retain their beauty for some time, and are most desirable for bouquets and floral decorations.

In order to have them in bloom as early as December, the seed should be sown in July, and the plants, at this time, should be far enough advanced to be shifted into five-inch pots. Seed may also be sown

now, and plants may thus be raised to flower in the months of March, April, and June. For those of our readers who wish to raise them from seed, we would say, purchase a package of seed from a responsible seedsman; plant in a shallow box, filled with light and sandy leaf-mold, (if this cannot be had, light loam, mixed with a small quantity of old rotten manure and sand, will answer); put just sufficient earth over the seed to cover lightly, press down the earth gently with a smooth piece of wood, and sprinkle lightly with a fine sprinkler; then cover with a pane of glass (if you have no greenhouse), and place in a warm and sheltered situation; if you have a greenhouse, place the box close under glass. In twelve to fourteen days, the young plants will make their appearance; if they come up too thickly, it will be necessary to thin them out, as the *Cinerarias* should be allowed all the room possible, in order to obtain bushy and well-furnished plants. Florists, who generally raise them in large quantities, transplant them as soon as they have made three or four leaves. This can be done by planting them in boxes about two inches apart, or in two-inch pots. After transplanting, water well, and keep them in a shady situation for two or three days; then place them close under glass, give plenty of sun and moisture, and they will advance in growth wonderfully. In about a month after this, they should be transplanted into three-inch pots, and kept, as before, close under glass. Plant-lice are apt to trouble the *Cinerarias* a great deal; it will therefore be advisable to smoke the house frequently, or to wash the leaves with tobacco-water. As soon as the roots show themselves plentifully around the ball of earth (which can be noticed by turning the plant gently out of the pot), they should be shifted again into four or five inch pots. The soil to be given now should consist of one-third loam, one-third old rotten manure, and one-third leaf-mold and sand. They may be permitted to flower in five-inch pots, yet the plants will be more vigorous, and produce a much larger quantity

of perfect flowers, if shifted into six-inch pots; this, however, must be done before they begin to show their flower-stalks. Keep them close under glass; give a warm situation and plenty of moisture; keep clear from insects, and your success will be all you can desire. Once a week, a weak solution of guano in water, before the flowering-season has begun, will aid very materially in obtaining vigorous flower-stalks. While in bloom, they should be watered once a day. When the plants have ceased to flower, cut off the flower-stalks, turn the plants out of the pots, and transplant in the border, in a more protected place, where they will develop new flower-stalks, and continue to bloom for several months.

After the flowering-season is over, the plants may be removed from the pots, divided into as many plants as will have roots attached to them, and replanted into smaller pots. These divided plants, if treated in the same manner as seedlings, will make good plants again, and flower in the following autumn. We prefer, however, to raise our plants from seed every year; as we succeed always in raising better plants from seed than we can by dividing the old roots. Sometimes it may be desirable to retain a certain variety or color, which we particularly admire. In this case, of course, it will be necessary to cultivate young plants by division of the parent plant.

All the *Cinerarias* now cultivated as florists' flowers have originated from *Cineraria cruenta*, a native of Teneriffe, we believe; but there is now so little resemblance between this original species and our cultivated varieties, that it can hardly be recognized.

How to DESTROY ANTS.—Fill small vials two-thirds with water, and add sweet-oil to float on the water to within half an inch of the top. Plunge these upright in the ground, leaving only half an inch standing out, near the nest, or the run of the ants. Every ant will come for a sip, and go home to die.

ON THE ECONOMIC VALUE
OF CERTAIN
AUSTRALIAN FOREST TREES,
And their Cultivation in California.
BY ROBERT E. C. STEARNS.

[Continued from page 315 of last number.]

When we consider the fact of the great number of farms in California that are nearly or quite destitute of wood, and the great and continuous expense entailed by our system of fencing, the importance to the farmer of dedicating a portion of his land to the cultivation of forest trees, from which he can obtain fuel and fencing materials, is too palpable to admit of debate. The comparatively small expense and labor with which the cultivation of a few acres for the purposes I have named is attended, its absolute feasibility and practicability, with the beneficial results that would flow therefrom, should commend itself at once to every farmer; as a few acres of timber land, for economic purposes, would add much more than the cost to the cash value of a farm. The boundaries of a farm should be marked by a row or rows of trees, thus defining its limits by living monuments, and greatly adding to its beauty; from these rows, as the trees advance in growth and age, some wood could be cut, and, where the farm is of considerable size, enough in the way of trimmings or prunings to supply the fuel of the house. In the treeless areas of the southern part of the State, the varieties of *Acacia* before named would prove an important aid in assisting, by their protection, the planting of other species of timber; as they are easily taken care of, and will stand excessive drouth. They would also be useful, as is our Monterey Cypress, (*Cupressus macrocarpa*) for belts to break the force of the winds in exposed places; and it is to be hoped that, before many years, timber belts for this purpose will be common wherever the coast winds prevail, as a protection to orchards and vineyards.

We have many trees well adapted for timber, or wind-breaks; and while calling the

attention of landowners and others to the exotic forms before mentioned, and their special qualities as enumerated in Dr. Mueller's excellent paper, I do not wish to be understood as making an unfavorable comparison against indigenous species, as for some of the purposes mentioned they will answer equally well.

It must be remembered, however, that our forests are unfortunately deficient in many of the hard woods much used in the arts, and which we are now compelled to import from localities more favored in this respect. The aggregate amount annually sent out of the State for the purchase of this material could, by proper foresight and enterprise, in a few years be retained within our own borders, and here expended in establishing new industries pertaining to the very material, the manufacture of which, in other portions of the Union, employs large communities to whose support we are now contributing.

As in Germany, to anticipate a future need, our own *Sequoia sempervirens*, or Redwood tree, is extensively cultivated; so here, by the cultivation of the Australian Eucalypti, we can in a few years supply a positive want, and reap the advantages above indicated.

Since the reading of the foregoing paper, I have had many questions asked me by persons not present at the meeting of the Academy; and as an answer to said inquiries, and to various propositions, I add the following:

Some objection has been made to the Acacias and Eucalypts, by persons who have planted them for shade or ornamental purposes in the neighborhood of San Francisco, for the reason, as alleged, that they do not withstand the winds. So far as the observations of myself and others who have investigated the matter extend, it is really surprising that so few are prostrated. The fault is not with the trees, but the purchaser;—as trees of from four to six feet in height are sold at a low price, they are bought by parties who require only a few, in preference to smaller trees, as they make a greater immediate show. As most of the growth of the trees

as usually purchased, after having attained a height of six inches, has been made in the pot or box in which they are sold by the dealers, it will readily be perceived that the tap-root, which in a natural state descends, is diverted from a perpendicular to a rotary direction, analogous to a spiral spring, and is also crossed and recrossed on itself—with the liability as it increases in size to strangle the tree, by one portion of this root making a short turn or twist upon another part of the same, or by being wound about and restricted by the lateral roots. It is therefore apparent that the better policy would be, even where only a few trees are wanted (and this remark applies with equal pertinence to all trees), that, other things being equal, such as comely shape and healthy condition, the younger and smaller trees are really cheaper at the same price than the larger, and can generally be obtained for much less. For forest culture, the smaller trees are indispensable to success.

Again, it is frequently the case that the lower branches are trimmed off to a mischievous extent, which also is a mistake; for where a tree has sufficient space to grow in, but little trimming is necessary; and it is a false taste which seeks to improve (?) upon nature by depriving a tree of its normal physiognomy and distinctive character by carving it into grotesque or inappropriate shapes—it is simply mutilation, and is certain to result in the premature decay and death of the victim. The flattening of the head by certain aboriginal tribes, and the distorted feet of the fashionable Chinese ladies, are further and pertinent illustrations of analogous hideous violations of natural form.

INVIGORATING HOUSE-PLANTS.—House-plants ought to be stimulated gently once or twice a week. Rain-water, so refreshing to summer flowers, always contains ammonia, which also abounds in all liquid manures. If you take an ounce of pulverized carbonate of ammonia, and dissolve it in one gallon of water, it will make spring-water even more stimulating to your plants than rain-water.

THE GREAT AQUARIUM, BRIGHTON, ENG.

About a year ago, we gave a brief account of the new Crystal Palace Aquarium, at Sydenham, near London, then just opened. This summer, we have had the pleasure of visiting it, and found it one of the most attractive features of the attractive exhibition in that wondrous "home of glass." A walk through the rooms occupied by the immense tanks, filled with manifold forms of marine life, was like a visit to the very depths of the sea. It was easy to imagine that one had gone down in a diving-bell, and was taking a quiet stroll through old Neptune's dominions, noting the manners and customs of the inhabitants of that strange region, where Agassiz is very much at home, but most of us as little so as "a fish out of water."

But a yet grander aquarium has just been opened at Brighton, with appropriate ceremonies and festivities. The building erected for it is elegant as well as commodious, and is an ornament to the "queen of English watering-places," as the city has well been called. From the entrance-hall of the aquarium one looks down a long vista of well-proportioned columns and pointed arches, for several hundred feet, ending with a rockery and fernery, with a charming cascade, which falls quite naturally in appearance from rock to rock, running away between rocks and ferns in a narrow stream, hereafter to be stocked with trout and other fish. The columns are of polished granite, and serpentine alternately, the capitals being carved designs in Bath stone of fish, marine birds, and wreaths of seaweed beautifully wrought, the capitals of the pillars in the cross corridor representing the twelve signs of the zodiac. The arches are faced with Bath stone ribbing, and are of parti-colored brickwork, the pavement being of encaustic tiles. On either hand, down the main corridor, are the tanks, which are of unusual size, the largest being 120 feet long, and are laid out in rock-work, assimilated in its forms as near to nature as possible.

The tanks at present contain various species of fish, amongst them bass, mullet, gurnards, atherine, dog-fish (several species), turbot, soles, plaice, wrasse of different kinds, cod, whiting-pout, rock-whiting, sticklebacks (the three-spined and the fifteen-spined), and the pipe-fish. These will hardly live in an aquarium for any length of time, owing to the difficulty of feeding; but as they abound on the south coast, their places can constantly be supplied. Among the crustaceans are the common lobster, the spiny lobster (generally known as the craw or cray fish), and various species of crabs, including the spider and the hermit crab. Of fresh-water fish only a few species, as chub, tench, etc., have been put into the tanks, but the number will soon be increased. The stocking of a large aquarium is necessarily a work of time. A fish is a wild animal naturally, and has to be tamed to his tank; and some species are so difficult to tame that they must be captured very young, and kept until they have grown to the proper size for exhibition. Six months or more must elapse before the collection can be considered complete.

On the day when the aquarium was opened, Mr. Frank Buckland brought an alligator, some four feet long, as a contribution to the "show." It was a lively creature, and about as much as one man could handle. Among the other curiosities were some fine specimens of the hawk-billed turtle, and two large log-headed turtles.

At the end of the first range of tanks is a cross corridor, where the open tanks for anemones are situated. Beyond this, again, runs on one side another range of smaller tanks, intended for fresh-water fish, and novel acquisitions from abroad. On the other side is continued the conservatory and the rockery before noticed—a delicious and cool retreat in the heat of summer. The roof of the aquarium makes a delightful open-air promenade, at one end of which is a reading room; and there is also a restaurant and refreshment room, which will be a great convenience to visitors who spend time enough in

the building to make a thorough inspection of the exhibition. Here, as at the Crystal Palace, the South Kensington Museum, and many other English "show places," you can spend a whole day, if you choose, taking your dinner or lunch on the premises.

Another aquarium, of large size, has been opened, or is soon to be opened, at Naples. The building measures 100 by 70 feet, with a height of 40 feet. The lower part is devoted to tanks, more than fifty in number, and ranging in size from about three feet square up to 32 feet by 10 feet; all being furnished with a continuous current of sea water. Above, there is to be a library-room to hold 25,000 volumes; a large laboratory, with some 30 tanks; smaller laboratories, rooms for collections, etc.—*Boston Journal of Chemistry*.

OLIVE CULTURE IN CALIFORNIA.

Olive culture, it is anticipated, will prove to be a lucrative business in the county of Santa Barbara, and elsewhere on the southern coast of California. The labor required in its cultivation, compared to that demanded by ordinary field and garden farming, is trifling. The tree, at five years of age, returns a slight recompense for care; and at seven an orchard should afford an average yield of about twenty gallons of berries to a tree. If there are seventy trees to an acre, there should be obtained from it one thousand four hundred gallons of berries. From twenty gallons of berries may be extracted three gallons of oil; and, if properly manufactured, olive oil will command \$4 to \$5 a gallon, at wholesale. Thus an average yield of olives, derived from an orchard covering one acre of land, will produce about \$800 worth of oil. After deducting the entire cost of production and manufacture, a net profit may be anticipated of at least \$2 per gallon; and thus one acre, containing seventy trees, yielding an average of twenty gallons of berries, or the equivalent of three gallons of oil each, will afford a surplus above all expenses of about \$400 a year.

Olive-culture is so simple, that any one of ordinary intelligence may engage in it. Its results are such, that any one may find it profitable. As a business, it offers the advantage that it may be carried on at the home; and that a man of culture may engage in it, and yet find intervals for other objects and more varied themes. I speak here merely with reference to olive culture. The process of manufacturing the oil is an entirely different business, and belongs separate and apart from the cultivation of the olive. In time, it will not be expected, as now, that each grower shall be manufacturer also. As soon as the supply of olives in a neighborhood is sufficient to warrant the erection of suitable machinery for expressing the oil, every requisite for the purpose will be at hand. The olive-grower's labors for the season will end with the deposit of his berries at the oil manufactory; and, according to the custom of the olive districts of Europe, one-half the oil from his berries will subsequently be returned to him, ready for use and for market.—*Overland*.

CANNED FRUITS.—The impression prevails among those who use the fruits freely, which are put up in tin cans, that they are injured thereby, and this impression is, in many cases, correct. We have long contended that all preserved fruits and vegetables should be stored in glass, and that no metal of any kind should be brought in contact with them. All fruits contain more or less of vegetable acids, and others that are highly corrosive are often formed by fermentation, and the metallic vessels are considerably acted upon. Tin cans are held together by solder, an alloy into which lead enters largely. This metal is easily corroded by vegetable acids, and poisonous salts are formed. Undoubtedly many persons are greatly injured by eating Tomatoes, Peaches, etc., which have been placed in tin cans, and we advise all our friends, who contemplate putting up fruits the present summer, to use glass jars for the purpose.—*Boston Journal of Chemistry*.

CALIFORNIA WINES.

The following paper was read by Major J. B. Snyder, before the Grape Growers' Association of Napa and Sonoma, at its session of July 13th :

We have observed an article, stating that many of our largest wine-growers and wine-makers are in the Atlantic States looking for a market for their wines ; and that the principal objection Eastern dealers and consumers set up against our wines is, that they are too strong in alcohol. Also, that our wines contain all the way from fifteen to twenty per cent. of alcohol, and that the cheap and popular French and German wines contain from eight to ten per cent. It is stated that the German Rhenish wine used among the real and constant wine-drinkers of the Atlantic States, contains only seven per cent. of alcohol.

The statement as regards the strength of California wines does not apply to the counties north and bordering on the Bay of San Francisco. The alcoholic strength of European wines, given by Professor Brande, and taken from "Redding on Wines," which is considered good statistical authority, is as follows :

	Pr Ct. of Alcohol.
Burgundy, average of four samples	14.37
" lowest of the four	11.95
" highest of the four	16.60
Champagne, four samples	12.61
" still	13.80
" Mousseaux	12.80
Cote Rotie	12.32
Frontignan	12.70
Red Hermitage	12.32
Sauterne	14.22
White Hermitage	17.43
Vin de Grape	13.94
" second sample	12.80
Claret, lowest of several samples	12.91
Hockheimer	14.37
"	13.00
" old	8.88
Rudesheimer	12.22

The average temperature of Sonoma Valley is about the same as that of the Burgundy District, and, therefore, should give the same

proportion of sugar ; and in France it is well known that they require twenty-four per cent. of saccharine matter to make a good wine that would yield, if thoroughly fermented, twelve per cent. of pure alcohol.

It will be found on inspection that the average strength of our wines is not above those of Europe : say, twelve per cent. on the average.

The following assays of wines made in Sonoma Valley were made by myself from samples furnished me by the parties whose names stand opposite the percentage of strength :

White, Craig, vintage of 1867, foreign	14.4
" " 1870, mission	13.4
" Dressel & Gundlach 1861,	14.1
" " 1870,	13.3
" " 1862,	12.5
" " 1867,	13.6
" J. R. Snyder 1865, mission	12.5
" " 1866, " "	12.6
" " 1867, " "	13.3
" " 1868, " "	12.8
" A. F. Haraszthy, 1871, foreign	11.5
" " 1870, " "	12.6
Red, Buena Vista, 1866, " "	16.5
White, " 1866,	13.1
" " 1871,	11.5
Red " 1871,	12.6
White, H. Winkle, 1869, mission	13.2
" " 1871, " "	12.5
" L. Goss, 1871, Zinfindal	12.8

To reduce the strength of the wine, it has been suggested that an addition of a small quantity of water be made to the wine prior to fermentation. This has been tried, and found to detract from the wine those fine qualities that Nature alone can impart. It would be better to gather the grapes before they get too ripe and contain an excess of sugar by being left too long on the vines until a portion of the watery substance has evaporated. If water must be added to reduce the strength, it would be better to add it when the wine is used at the table. The French generally add a portion of water to their red wines at the table, more particularly to claret.

The bad effect said to be produced by the use of California wines is in consequence of

their newness. All wines that have not age, as soon as introduced into the stomach, commence a fermentation; and if persons would place the wines they purchase in an atmosphere of the same temperature as the stomach, the results would be apparent. California will never have any reputation for good wines, as a wine-producing country, until we have more capital in the business, and the wine is kept until it has age and becomes wholesome.

Under the present system we will have no better reputation in ten years from this than we have now; and, as for talking about a competition with foreign wines, it is simply nonsense under such circumstances. All persons of sense know that new wines are unwholesome, and where there is one gallon of wine fit to go into a man's stomach, furnished to consumers, there are hundreds that are not so. We speak in no disparagement of the wine interests of California; it is presumed they do all they can, and it is to their interest, as well as that of the producer, to establish a high reputation for our wines, which reputation our wines do not have in the Atlantic States.

We have been told by persons who have traveled extensively in the East, that there are no wines offered to the purchaser such as they drank at the cellars in California. This is constantly repeated by all visitors that come into the valley of Sonoma; and it is presumable, that the same state of affairs exists elsewhere in the State.

It is a very easy matter to give statistics to substantiate what we say—for every gallon of wine, passed out of the valley of Sonoma, can be accounted for, and traced to the consumer.

The encouragement which should be given to this branch of industry by the wealthy classes of California, has never yet been perceptible to the producer. We have been informed that one gentleman alone has forty thousand dollars' worth of foreign wines in his cellar, and not one bottle of California wine among the stock; and California wine

is never seen on his table. Others of the wealthy classes think any thing weaker than brandy is only fit for invalids. And still you will find all these persons asking for money for railroads, to bring immigration and business—setting forth in glowing terms the richness of our lands and the salubrity of our climate, and their adaptation to the growth of all kinds of productions. They have lands for sale and houses to rent, but no use for our domestic products—the very source of the real wealth of California. It is true that manufactures have been encouraged to some extent, but, nevertheless, the balance of trade is against us, and has been for years.

The Government, too, has taken the same part, and given the iron work of the United States Branch Mint to parties in the Atlantic States, when it should have gone into the hands of our home artisans.

These are subjects that cannot be too often agitated by the grape-growers and wine-makers of the State, and, if they understand their own business and interests, they will agitate these subjects, and agitate them violently. We strongly urge them to look into all the various departments of their business channels, not only at home but abroad: wherever the wine goes, there is your business.

Let there be no lukewarmness about the matter. We have not been working enough abroad; we have not obtained that information from abroad relative to the business that is of great importance to us. It is true that some of our members have gone on a tour through the eastern and western States, and have written back their experience about the wine interests there; and it will not be long before we are better posted as to our interests than we are now.

I hope that some of our members will turn their attention to the matter of statistics from the East, as well as those at home. We have had but very few reports as regards statistics, although we have a standing committee on that subject.

I have thought proper to make this statement to the association about the strength of our wines, as an erroneous impression has gone abroad that our wines are too strong.

There is another matter that I wish to speak of: It is as well for the grape-growers and wine-makers to know that they have a fight to make against the foreign importers of wine; and we have to make the same fight against our countrymen, who encourage the foreign article and exclude the native product. This is an up-hill business, and the hotter the fire and the heavier the blow, the better the steel. A thing that is not worth fighting for is not worth having; so, gentlemen, take off your coats, and develop your muscle for the contest.

FLORICULTURE IN THE WEST.

In an "Essay on Flowers," to the Illinois State Horticultural Society, by Mrs. E. S. Hull, the writer says: The increasing fondness for and attention to the beautiful, visible about our country homes, is a pleasing and hopeful indication. Hopeful, because it shows our people are taking time to enjoy something of this bright world of ours, instead of seeming to consider, and almost making, it a valley of humiliation and incessant toil. Time was when most men appeared to regard "the West" as a temporary sojourn, in which they were to make fortunes, and then return to the old home, toward the rising sun, to spend and to enjoy; but, I think, the gold they acquired was, to many, the true Lotus-flower, which the ancients tell us, if once tasted of, caused forgetfulness of former country, and love for the one where they were. Those who came to stay awhile, found the land "pleasant to dwell in." The cabin gave way to the more substantial dwelling. Year by year new comforts were added. The necessary potato patch, generally in front of the house, expanded into a vegetable garden. From time to time the good wife appropriated small portions of this for her hollyhocks

and lilacs. By and by new flowers were planted, and the beautiful encroached so rapidly on the useful, that the latter was finally banished to the rear, where, instead of receiving less, it received more attention than formerly, that all things might be in keeping. And now the family have a flower garden! A small thing, you will say, perhaps. Will never contribute to the support of the family, says the practical man. Possibly not in dollars and cents, but man does not live by bread alone; a little "pleasure" is needed sometimes to revive weary, drooping nature; and who shall number the many innocent joys our garden shall afford? Not a garden made classical with statues and rare works of art, delighting by its secluded walks, cool grottoes, or sparkling fountains; but simple and unpretending in its character, and narrow in its area; still, it has its sweet and not transient pleasures; and many days of gloom, and hours of monotonous toil, will be relieved by pleasant reveries on the flowers that have been, and fond anticipations of those to come.

INDELIBLE INK FOR ZINC LABELS.—In answer to a correspondent desiring information on this point, the *Gardeners' Monthly* says: "The best thing we know of is, first, to let the (Zinc) label oxidize a little by dipping it in water for a day or two before using, and then write with a common lead pencil. We have seen labels in use for twelve years so written, as 'black as ink,' and with all the appearance of lasting for half a century."

REMEDY FOR SLUGS.—Gas-tar water diluted to the color of weak coffee, I have found to be the best preventive to the ravages of slugs on all garden-crops, and also an excellent manure. Apply it by night from an ordinary watering-pot, and half the slugs will be killed, and the rest much weakened. A second dose, after the interval of a week, is generally sufficient to banish them.—*G. T. H. of the Gardeners' Chronicle.*

FOREST - TREE CULTURE.

BY GEORGE VASEY.

Unquestionably one of the most important questions engaging the attention of the American people is that of forest culture. The demands of our rapidly growing country have for many years so drawn upon the resources of our native forests, which, at one time, seemed inexhaustible, that we must now contemplate their early extirpation, and address ourselves to the task of conserving what forests we have remaining, and providing new sources of supply.

Much has been written on this subject, but so difficult is it for us to realize the bearing of remote evils, that, comparatively, very few farmers, or land-owners, have yet seriously engaged in the work of replenishing their woodlands. The arguments for this work are strong and numerous, and have been cogently presented by many writers. Many facts have been observed, which appear to show that the presence of forests has much to do with the climate and rain-fall of a country; thus, it is said that the extreme dryness of Spain is due to the absence of trees; that many districts in France have been materially injured by denudation; that Palestine and many other parts of Asia and southern Africa, which, in ancient times, were the granaries of the world, are now deserts, or infertile regions, in consequence of the loss of their forests. It is also stated that a beneficial change in climate and rain-fall has, in several instances, followed the introduction of trees and plantations in regions that were formerly destitute of them. Thus it is said that in lower Egypt, where anciently rain never fell, the introduction and cultivation of extensive plantations have been attended with the fall of a good deal of rain, so that showers are no rarity even at Cairo. It is also affirmed that, in New England and other wooded sections, the cleaning up of forests, and cultivation of the soil, have had the effect of causing the drying up of many springs and small streams.

There are some who doubt the correctness of these conclusions, with respect to the climatic influences of forests, but, as these influences must be of very gradual operation, and require observations over a long series of years, the question may be considered open for future inquiry.

But, leaving that question out of view, there remain abundant reasons to stimulate every land-holder in our vast prairie regions, to give practical attention to the subject.

Trees are wanted for their fruit, for their shade and protection from winds, for ornament, for fuel, for use in building, fencing, and the mechanical arts. Some trees are adapted to one of these purposes, and some to another.

The earliest tree-want, which is appreciated by farmers in a new country, is the want of fruit-trees. Even this practical and personal need too often fails to stimulate the farmer to immediate action toward the formation of an orchard. But it is not with reference to the cultivation of fruit-trees that we now design to write.

What kind of forest-trees shall we cultivate? is a question often asked, toward the solution of which we propose to offer a few thoughts: In an open prairie region there is an immediate and urgent want of trees for shelter and wind-breaks. Both man and the domestic animals instinctively seek the grateful shade of trees during the intense heat of summer, and as instinctively seek their shelter from the fierce winds of winter. The intelligent farmer also knows that it is a question of positive economy—as the absence of suitable shelter must be represented by an increased consumption of food and fuel. Often, too, he finds that without some suitable wind-breaks he is unable successfully to cultivate the best varieties of fruit-trees. He wishes to secure these advantages of shade and shelter at the earliest possible period, and, hence, he inquires for rapidly growing trees for cultivation. The great cost of fencing on the prairie, leads him to seek some suitable tree, or shrub, for the growth of

hedges. It is true that many experiments in this direction have been attended with failure, but we should not be deterred from continuing our experiments, until a suitable hedge-plant is found for every section of country. If the Osage orange fails, let us try the honey-locust, or some of our native thorn-bushes, crab-apples, wild plums, viburnums, or other shrubs, or trees, until we meet with success.

The production of wood for fuel and for mechanical uses is an object which, however desirable, has seemed so remote in prospect, that it has been almost universally neglected. But even this neglect is, to a great extent, based upon too general and vague views as to the slowness of tree-growth.

There are several species of trees which, with proper cultivation, will acquire a circumference, at the trunk, of eight to ten inches, in five years' growth; and a few acres of such trees would soon furnish a constant supply of desirable fuel to farmers, who have to haul, at great expense of time and labor, a distance of from five to ten miles. Most of the rapidly growing trees produce soft wood, which is not much esteemed for fuel; but, for summer use, when properly prepared, it must be equal, if not superior, to the corn-cobs, which are extensively used for fuel in the Western States. Many western farmers have cultivated their prairie lands for twenty years, and have hauled their fuel from a distance, when, during that time, cottonwood-trees of two feet diameter, white maple of eighteen inches, box-elder of twenty inches, and butternut of eighteen inches, might have grown upon their own lands with a little labor and care.

The planting and cultivation of hard-wood trees suitable for building purposes and use in the mechanical arts, is one which has been almost wholly neglected in this country. It is a work which is too commonly regarded as being wholly for the benefit of posterity; and we are slow to realize that we have any duties in that direction. But the necessity of entering upon this work is ap-

parent, for it is not difficult to contemplate the period when our natural forests shall have disappeared under the enormous demands which the progress of our country makes upon them.

HORTICULTURAL HALL, PHILADELPHIA.

This magnificent building, 75 by 200 feet, with 50 feet ceiling, was built by the Pennsylvania Horticultural Society in 1867, at a cost of about \$200,000. The annual displays of the Society, held in this hall, have never been surpassed for beauty of the decorations and the extent of the collections of fruits, flowers and vegetables. The meeting of the American Pomological Society was held here in September, 1869, the display of fruits comprising over 5,000 dishes. This hall, although admirably adapted for these displays, was found to be not well suited for lectures or concerts, owing to its immense size, which caused a difficulty of being heard. The Board of Directors therefore decided to remodel the interior, by putting in a new floor on a level with the galleries, thereby reducing the height of the ceiling to about 36 feet, and adding another room of the same size as the main hall. This has been divided into commodious dressing-rooms for ladies and gentlemen, with a hall 15 feet wide, and a banqueting-room capable of seating 800 persons; or it can be used as a lecture-room, a small stage having been raised on the west end. The alteration will add very much to the accommodation of the society for holding their display, as the upper saloon can be devoted to fruits and flowers, while the lower saloon will be admirably adapted for the vegetable display.

The alteration being now in progress will prevent the usual display being held in September; but it is expected that the hall will be finished in time to hold an exhibition in October. It is also proposed to fresco the walls and ceiling, and to light the main hall by means of artificial "sun-lights," placed in the ceiling. These embellishments, with

curtains to the windows, and comfortable cushioned seats, will render it one of the finest concert-halls and lecture-rooms in the country; while for balls, it is not surpassed in conveniences by any other ball-room in existence. These additions will doubtless render it a popular place of resort, and thereby add very largely to its receipts.—*Journal of the Farm.*

ORNAMENTAL GARDENING.

The following is an extract from a lecture before a meeting of the Horticultural Society of Victoria, by Mr. Wilson:

“Ornamental gardening, in common with other refined arts and sciences, is necessarily dependent on wealth and opulence, and, as in a young country these usually have to be gained before enjoyed, ornamental gardening in Victoria may be said, as yet, to be in its infancy. But as both public and private gardens are becoming rapidly established, it becomes imperatively our duty, both as horticulturists and as members of this society, to educate the taste, and disseminate the true principles to be followed in carrying out the higher branches of horticulture. Heretofore, this society has done an immense amount of good, in the proving, classifying, naming, and exhibiting of a large variety of fruits. Now, I think that as these evening meetings have been successfully inaugurated, we could not better devote our time than to an occasional discussion on the different branches of floriculture and ornamental gardening, and if I make a few comments on the subject, it is chiefly with the object of drawing out some of the older and abler members than myself, of whom I know there are many among the members present.

“A good gardener must be essentially a man of taste, not only as regards the tasting of apples, pears, and other fruits, but in the arranging his flowers, planting his shrubs; and, in fact, everything that he does must be tastefully done. In laying out a garden, he must always have an eye to the future, always

bear in mind that in time to come what he does will either redound to his honor or discredit. Mistakes made in the arranging and planting a new garden are not easily remedied years after, when the effects become noticeable. The different views from a private residence must always receive important consideration in planting the garden, and of course the arranging must be so conducted that in after years, when the trees and shrubs grow up, these views, at least the best points of them, will not be blocked out. On the other hand, any ugly buildings, or other unsightly objects, must be hidden from view as soon as possible by the planting of quick-growing subjects in front of them.

“Straight and narrow walks should always be avoided. As broad sweeping gravel walks give importance to a garden of even moderate dimensions, these should gracefully curve at angles so as never to turn sharply, and never to present a long line of gravel to the eye. A green, well-kept grass lawn is indispensable to a good garden; a lawn, if of moderate size, should never be in one square or round block, but should be cut into gentle angles by the graceful walks. These angles should be planted with clumps of trees or shrubs, according to the requirements of the situation, so that at every turn the eye rests upon a change in the scene—a rustic-stone built rockery, a fresh bed of flowers, an arbor, a vase, a statue, a fountain, or any rustic adornment that prevents monotony, and gives a zest to the enjoyment of the promenade.”

“Fountains, with a small pond or basin containing fishes, are most beautiful ornaments for a garden, especially when situated in some quiet nook on the lawn, with an artistic little arbor or summer-house close by, covered with ornamental climbers which lend a delicious fragrance to the surrounding atmosphere on a summer's eve. I remember in a garden where I once lived in England, on the lawn, in a very secluded, quiet spot, stood a little arbor covered with clematis and honeysuckle twining together. It was but a small arbor, but the very insignificant

aspect of it attracted every visitor's attention, and excited their curiosity. On looking in at the little rustic doorway, the eye fell on a full-size statue of a young female, with one finger upraised in mute enjoyment to listen. Involuntarily the visitor would do so, when the gentle murmuring of a little fountain close by fell on the ear; this was bringing Nature and art in harmony, a point of considerable importance where these subjects are used as garden ornaments. Where busts and statues are extensively employed as ornaments for gardens, whether public or private, more taste should be exercised in their arrangement than is displayed in some of the public gardens of Melbourne; I consider it is highly objectionable that these should be placed at intervals all along the sides of the walks, so that the eye can rest on a whole avenue of statues at the same time. In gardens this should be specially avoided if possible; not more than one, or at most two, should be visible at the same time, and they should be so placed that they meet the eye suddenly on coming round a curve in the path, or behind a clump of shrubs or trees which prevent the object being seen until you come close to it, which then creates at once a pleasurable surprise. Diversified beauties, all conducing to natural harmony, are the elements of a good garden. The view from the windows or balcony of the residence must be a radius of changing beauty; there must be an entire absence of sameness; the flower-beds must be varied and intermingled in coloring with the natural green lawn as a ground work; the clumps of flowering shrubs must be contrasted with the dark green of the non-flowering coniferæ, and the small-leaved subjects must be interspersed with subjects which have larger foliage. The whole scene must be one of graceful and natural combinations.

"I wish also to say a few words respecting landscape gardening—the planting of trees for the purpose of beautifying the distant scenery. Now, it is a recognized fact that the dark-foliaged members of the coniferæ,

and other evergreen trees, are the most beautiful and natural contrasts to the eucalypti and other native trees, and they are extensively planted in consequence; but it is possible this may be overdone, and it is our duty to warn planters against making their scenery simply a pine forest. There are many who admire the beautiful tints of scarlet, purple, and bronze displayed by the foliage of many deciduous trees in the autumn, and I think that such subjects as the scarlet oak, purple beech, silver poplar, and many others which have been proved to thrive in the colony, should be planted in intermediate groups, with the dark-foliaged evergreens. Artificial lakes skirted with weeping willows are no doubt very beautiful, but the situation would also suit many of the varieties of ash, and other noble trees, whose majestic growth and grandeur of foliage in the summer, would present pleasing contrasts, and lend a charm to the scenery.

"Let us bear in mind, gentlemen, when planting, that we are planting the germs of horticultural beauty, accounts of which will in years hence be published and criticised, according to their ornamental merits; and according to the same will our merits as ornamental gardeners be estimated. I hope, therefore, other members will follow up the subject, so that in 1972, when the records of early gardening in the colony shall be published, many will be the triumphs recorded in honor of the Horticultural Society of Victoria."—*Melbourne Times*.

EXPERIMENTAL STATIONS.—The system of agricultural experimental stations is rapidly extending in Italy. In consequence of information obtained and circulated by the minister of agriculture, respecting the experimental stations in Germany, seven new stations have been established on the German model. These are located at Undine, Modena, Milan, Lodi, Padua, Florence, and Turin.

THIRTY-TWO thousand seeds were once counted in the head of a poppy.

CUT FLOWERS.

It is a trite observation that this would be a very dull world without flowers, and yet when we see how little people in general estimate the great boon, we may be pardoned for again citing it. There are thousands of houses about which no plant ever blooms, and thousands of homes in which a flower never enters, which might be made as cheerful as the world without, and at no great cost either. We who love flowers know the pleasure they bring, and we feel that they who have no regard for them miss some of the best delights of life. They do not know their loss it is true. The children in the blind asylums express great pity for those who are dumb, with but little reflection on their own loss; while the dumb can not understand how the poor blind children live. But we who are whole, know the depth of the great privations they both endure, and ever desire that they would be even as we are. And so in the love of flowers and of flower culture; there are none of us but desire that all should be partakers of what we ourselves enjoy.

There are, it is true, both men and women who think flowers afford them no particular pleasure, but we find that in their daily avocations an original stratum of floral love crops out above the surface. Mr. Cash, when fixing up his office, is very likely to select a carpet which has some leafy or floral design, in preference to one of bars or crosses; and in the choice of an inkstand or paper-holder, a bronze rose or polished acorn will generally carry the day against the dull square article. He may be satisfied on the score of economy, for business is business you know, with a plainly printed heading to his note paper; but if he is thriving, it is a rare chance if his name and special products are not engraved within a delicately outlined foliaceous scroll. As for the ladies—let artificial flowers and Dolly Varden styles tell the tale for them. Even those excellent people who feel it a duty to bear testimony against

the frivolities of fashion, and thus curb their disposition to indulge in weaknesses of more worldly inclined people, yet have their innate love for flowers developed in moss-covered baskets, paintings of flowers, or beautiful designs formed of gorgeously tinted autumn leaves. Yes, the whole world is fond of flowers. No one need be ashamed to avow his taste. Every lover of his race must be pleased with any advance in public sympathy for them.

As society is constituted now, it is an expensive business to grow flowers on an extensive scale. The price of labor is so high, and constantly increasing, that gardening is much more of a luxury than it has been. But as the labor and care increases, society adapts itself to the change, and instead of growing the flowers buys them cut from the florists, or hires the plants for decorative purposes.

Those of our readers who live in what in a social sense we may call the country, have little idea of the growing immensity of the cut-flower trade in the large cities. While it is believed that gardening as a fine art, or even the mere cultivation of flowers as a luxury, has not kept up in ratio with the increase of population, the mere florist's trade—that which furnishes plants and flowers for temporary ornament and decoration—has probably doubled within the last ten years. Not only do florists grow flowers of their own in great quantities for baskets and bouquets, but many away from the immediate circle of the cities find it profitable to grow flowers to sell again to those who put them up; and even private gardens frequently contribute to supply the demand. Indeed the tendency of this division between the one who grows the flowers and the one who sells, is continually growing greater. Land in the city is high and taxes heavy. Flowers are light and travel easily by rail or wagon, and thus can be raised to better advantage away from the expenses of a large town. The principal flowers grown for this purpose are Roses and Camellias; but Heliotropes, Violets, and many

other popular flowers come into good use. These leading sorts are sold at a price per hundred flowers—Camellias in their best time wholesaling at about \$20 per hundred, and Roses at about half this rate. As a general thing Camellias are raised in pots or tubs, but Roses are most generally grown in the natural ground under a glass-house erected for the purpose. A Rose-house on this principle is a very pretty sight in the winter season—not quite as gay perhaps as its rival, the Camellia, but with a fragrance which, if plants have sensation as some wise folk tell us, the Camellia doubtless envies. Many Roses do not flower freely under glass in winter unless the houses are very tight, nor unless they have some age. For general purposes, Saffrano, Bon'Silene, Luxembourg, Isabella Sprunt, Arch Duke Charles, and Hermosa are popular, flowering young and freely where there is room, good light, and a year or two of age. Lamarque and Marshal Niel are great Rose-house favorites.

As we have said, we are glad to see the increasing taste for cut flowers. In this part of the world no dinner table is complete without a bouquet; no parlor well furnished without its little plate or basket of cut flowers. The churches of almost all denominations are decorated every Sunday with flowers or living plants; and without flora in some shape, no company is regarded as complete. We are glad of these signs of the times. As the world could not be made without flowers, we who are of the world should make the best use we can of them. No one was ever the worse for them; while in sickness and in health they have delighted thousands, and in death, likewise, they have afforded friends and relatives many a consoling thought.—*Gardener's Monthly*.

ENGLISH SPARROWS IN AUSTRALIA.—It appears from complaints received by the Royal Horticultural Society that fruit crops in Australia have been seriously injured by the English sparrows imported into that country.

ORCHID CULTURE.

[Continued from page 270 of number 9.]

Phalœnopsis Grandiflora.—Although this article refers specially to the grandiflora variety, I shall include *Phalœnopsis* generally, the same treatment being required for all the genus. These magnificent orchideæ are among orchids what the diamond is in a collection of precious stones, and no collection is complete without at least a specimen; but as they are all natives of the hot, moist, shady woods of Java, Borneo, and adjacent islands, they require a high temperature at all seasons of the year, and being created without any pseudo bulbs to store up moisture, require to keep moist all the year.

These plants have always been scarce and comparatively high priced, from the difficulty of importing them alive and the slowness with which they increase, for they do not throw off extra shoots like most Orchideæ, but occasionally form a young plant on the old flower-stem; for which reason, and also that some of the varieties flower several times from the same stem, it should not be cut away when the flowers fade; but the flowers are the most lasting of any Orchid grown. On strong, healthy plants they frequently last from three to six months in perfection. The flowers are large, pure white, and from the light, airy look the plant is frequently called the moth plant. These plants have been scarce and dear, in fact increasing in price until recently there have been some successful importations; previous to this there had been but few imported alive for about twenty-five years. As an example of the price, the late Duke of Devonshire paid one hundred guineas for the first small plant sent to Chatsworth. *P. amabilis* is much like the above, but smaller in all its parts, and is pink instead of yellow in centre of lip.

P. Schilleriana is a magnificent variety with beautiful variegated foliage and splendid mauve colored flowers, edged with white. Our plant had a spike with three dozen flow-

ers this year; but it has been exhibited in Europe with over one hundred flowers. This is a very scarce and expensive plant. I saw a small specimen sold at auction in New York for eighty-five dollars, and the few who possess specimens in this country do not care to part with them at any price. There are several other species, but more are smaller flowered than the above named species, and their great rarity makes them difficult to obtain.

As regards culture, these plants are very easily grown. If fastened on a bare block of wood the roots will cling to it and exist on the moisture in the air; in this case it will require damping several times a day in summer, and at least once a day in winter. This is the safest plan for amateurs to grow it, for after once established it will not suffer so readily from bad watering, but in no case should it get very dry, or the leaves shrivel and drop off. I grow some in baskets, some on blocks and shallow frames, or pots with drainage filled above the top of pot, and a little live sphagnum moss as a surfacing, to grow these plants well. The temperature of the house should *never* be below 65 deg. on coldest nights of winter, and then it is best to suspend the plant in the warmest part free from draughts. In this country we generally have bright sun in the coldest weather, so that 75 deg. or 80 deg. in winter does no harm by day; while 80 deg. by night and 90 to 100 deg. by day, with air saturated with moisture, is required in summer with direct rays of sun.

In conclusion, *Phalœnopsis* flowers are excellent for bouquets, and for decorating ladies' hair they are unequalled, and with care will last more than one evening. — *Gardener's Monthly.*

IN SANTA BARBARA, side by side, grow the olive, almond, walnut, orange, lemon, fig, pomegranate, apple, peach, plum, pear, grape and strawberries.

WHITE velvet wheat yields forty bushels to the acre in Oregon.

CULTURE OF THE CAMELLIA.

Several of our subscribers being anxious to know concisely the proper means to cultivate this really handsome and altogether aristocratic plant, we append the following jottings. In Victoria the camellia, with proper attention, succeeds admirably; at the same time it is absolutely necessary that it should obtain a well-drained and sheltered situation, protected if possible from the north winds and excessive solar heat. The ground must be well-drained, adding liberally fibrous turf, or peaty loam, for the camellia delights in pure vegetable matter; in fact, the more densely set with fine fibre, even though it assumes the appearance of a mass of thick fibrous matter, so much the better. This kind of loam must be incorporated with the ordinary garden soil thoroughly, and with no niggardly hand, if handsome healthy specimens are wished for. If you find any of your plants in an unhealthy state, at once examine the roots; should the soil be found bad or sour, at once remove it, and apply loam as before described, and then leave them alone; do not interfere with them again, although they for some time may not look all you could wish, for the camellia is a plant; although hardy, that does not like interference. On preparing soil for the camellia various opinions have been entertained. The loam used by nurserymen, and that used by private gardeners ought to be two very different compositions. The nurseryman looks to bulk of plant and increase of young wood, while on the other hand the gardener's object is to increase the proportion of blossoms. The soil above recommended must be well mixed and broken with the spade, never resorting to the detestable practice of sifting, which carries away and abstracts the decomposing fibrous matter, in reality the principal support of the plants. Through the dry seasons it is absolutely necessary to give copious waterings, and at this season (autumn), weekly supplies of clear liquid manure will enhance their blooming, and cause renewed vigor. It is a

good plan to sink two or three flower pots underground, near the plants, which can be kept filled with water; these will constantly keep moisture at the roots. To secure fine blooms, disbudding will have to be resorted to, some varieties requiring this attention much more than others. It is quite sufficient to leave one good bud on each shoot, never more than two. The earlier the camellia makes its growth in the season, the earlier will it bloom. You cannot hurry them in this respect.

As regards pot-grown camellias, we frequently hear complaints of the buds failing. This generally arises from checks, such as, at times, over-watering, and at others under-watering, the want of timely and judicious potting, and very frequently from too much coddling. Those amateurs not thoroughly understanding the business of repotting, thinning, etc., would do well to seek the aid of an experienced gardener to perform such-like matters, for these charming evergreen shrubs are certainly deserving of every care, and they will well repay you for it. As a winter-flowering plant, and for the decoration of residences, both inside and out, they have no compeers. The varieties now cultivated in this colony are both numerous and good—sufficiently large for all purposes, their shining dark green foliage and splendid white and red flowers being deservedly popular. Considerable attention is necessary during their period of blooming, most particularly so with large plants, which should have their decaying flowers picked off regularly, otherwise the appearance and effect of the plants are greatly marred. The foliage, too, will need a thorough cleaning previous to the blooms expanding, and then it becomes difficult to conceive anything more beautiful than a fine healthy plant of a double camellia.—*Exchange*.

A FLORIST of Long Island has seventy acres of flowers, twenty of which are entirely devoted to gladioli. There are also ten acres of Japan lilies, and five acres of tube roses.

Editorial Portfolio.

FISH CULTURE AS COMPARED IN IMPORTANCE WITH AGRICULTURE.—Such is the text of a very able speech which we have just read, and which was delivered in the House of Representatives, Washington, in May last, by the Hon. R. B. Roosevelt, of New York.

The subject is one of supreme interest to the whole civilized world—to the people of this continent especially; and to us the denizens of this Pacific coast particularly, as it is evident that in the future our broad valleys and rolling plains will be densely peopled with a race tracing their origin to the outpourings of the crowded populations of overflowing European nationalities, and whose requirements will tax its productiveness to the fullest extent. It is incumbent on the citizens of this country to be prepared to the height of their ability, for this inevitable accession to the population, both in food as well as in timber for fuel and manufacturing purposes.

It is an undoubted fact that vast tracts of land in the old world once densely teeming with high-fed, wealthy, and luxurious populations, were immensely productive of all the necessaries of life, corn, wine, oil—they were indeed lands literally “flowing with milk and honey;” we need hardly say, we allude among others to Syria, Assyria, Babylonia, Egypt, etc. What are they now with but little exception, but arid deserts devoid of timber; the soil, exhausted by over production, reduced to sand; the rivers and lakes in many instances dry or sadly diminished; the populations which once dominated all the other portions of the then known world, reduced in nearly every instance to a few miserable, straggling, half-starved wanderers; the result of recklessness in overtaxing the soil and not at the same time seeking to replenish and renew? Such must be the successive fate of all large centres of population, unless vigorous, determined, liberal-minded, and enlightened systems are adopted to reinvigorate the soil, renew the timber and

economize the water supply. We have our warning on this continent in the fact, that on those portions of it which have been unceasingly cropped, the produce is not nearly so heavy as it used to be.

The only reason why China, doubtless dating as far back as the empires we have named, still feeds her dense and immense population, is that she has from time immemorial carefully and intelligently studied the feeding of her people, and provided for their future supply. Agriculture there is honorable, and her most solemn holiday is on the commencement of the agricultural year, when the Emperor with much pomp and ceremony, and attended by his highest nobles, puts his hand to the plow and turns the first furrow. There, also, timber culture is diligently pursued; everything available for food is utilized, and all matters useful as manure carefully saved and intelligently applied. In all her immense rivers and lakes fish-culture has for centuries been most successfully followed, and has contributed largely to the feeding of her people.

Agriculture has at all times, from the very earliest dates, been a most important occupation. The Bible says Cain was a tiller of the ground, a farmer in fact—possibly the first one (not a very estimable progenitor, and scarcely desirable as a patron saint); for Adam doubtless was a gardener, a few vegetables and fruits sufficing for his small family, and there being no inducement to cultivate for the market.

Through the whole history of man, and in every country, in proportion as civilization advanced do we find from the earliest known records down to the most recent publications of the present day, that the cultivation of the soil has been of paramount importance, from the necessity of providing a reliable supply of food for the people in general, and more particularly for the vast masses of population congregated in cities. Thus we find that in all ages, and particularly in the last and present centuries, to combat with the continuously increasing, ceaseless, and im-

perative demand for food, the most strenuous exertions have been made, by the most careful, diligent, and discriminating experiments on the comparative nutritive qualities and ratio of productiveness of all available vegetable substances—the most efficient and economical mode of raising crops and of increasing their fruitfulness—the most stimulating manures and their comparative action on various plants, with the best and most economical mode of applying them.* And the most diligent care has been taken in collecting, preserving, preparing for use, and utilizing them, and vessels have for a long period been and are still being dispatched to all parts of the world to obtain or dispose of cargoes of guano (and like substances), one of the most powerful stimulants known.

The various implements for culture have also received the untiring attention of science aided by vigilant experience and mechanical ingenuity; and the rude contorted limb of a tree which served in the early ages to imperfectly scratch the ground, has, through a long series of ingenious modifications, given place to the ponderous but powerful and efficient steam plow. All other agricultural tools and appliances have in like manner been modified and improved. The drainage of the land—the rotation of crops—irrigation, both on small and on very extended plans, has been perseveringly and intelligently pursued—and quite recently subsurface irrigation has been introduced.

Equal to these have been the labors and anxieties of those whose province it has been to provide animal food. Equally enlightened, diligent, and patient investigations have been made as to the comparative nourishing qualities of the various kinds of flesh, etc.; the best breeds and classes of animals, etc.; the best modes of feeding and general management of them—all to increase the supply of food—and equally careful and diligent have been the investigations as to the

* To these and like matters, such men as Liebig have enthusiastically devoted their attention.

best, most economical, and healthful mode of preparing it for consumption.

But while thus the vegetable world has been ransacked for edibles, which have been cultivated where practicable into productiveness and nutritive qualities far beyond anticipation; while the beasts of the field and the fowls of the air have also been rendered subservient to this universal demand for food, and have been almost changed in their natures to appease the ravenous appetite of mankind, the cultivation of fish (save in China) has been neglected; not that they have been spared—on the contrary, in many parts of the world, from the rivers and lakes the indigenous species have been all but exterminated; and even from many lines of sea-coast, so determined, persistent, and extensive has been the war waged, that many species of migratory fish have been driven off, or appear in much diminished numbers.

The implements of destruction have been made most efficient, but no effort has been used, till very recently, to protect. For, be it remembered, wherever these fish approach the coasts and enter the rivers, it is to propagate their species—to deposit their eggs; and whenever one of these fish is captured, it is at the sacrifice of probably thousands of young ones. Still, as it is the only opportunity of taking many species, and they are amazingly prolific, the capture is justifiable; but not such barbarous, wasteful, wholesale destruction as occurs when, in consequence of immense shoals approaching some shores, the opportunity arrives of taking enormously more than can be utilized for food, and, consequently, millions are carted away and used as manure. This ignorant, thoughtless, and tiger-like waste is mostly attributable to the low grade of the people engaged in the fisheries of all countries, as contradistinguished from the agricultural and stock-raising classes, amongst whom, in most parts of the world, are found intelligent and influential men, who bear much influence, which is used beneficially, in their own sections of society.

Legislatures in every land should seek to

remedy this evil, which is fearfully widespread, and affects not only the shore fish, but those frequenting and inhabiting the rivers and lakes; and it is in this interest that Mr. Roosevelt speaks; and he seeks not only to protect, but to replenish the waters. He shows, most clearly, how easily the depleted streams may be repopulated with teeming millions, even exceeding their former abundance; and that, by careful selection and adaptation of species, various delicious and nutritive varieties may be made to abound where they were previously unknown. He shows how comparatively inexpensive are the necessary operations, when contrasted with the costly efforts of the agriculturist and grazer to supply the people—how immense the return per acre of surface. And we all know how nutritious and brain-invigorating is that species of food; and that all ichthophagous classes of society are notoriously robust, healthy, and prolific.

It is incumbent on every government, whether general or local, to exert itself in this behalf—to aid liberally where any fish-cultural institution exists, and to inaugurate where such is not the case. There is an Acclimatizing Society in this city, which has used considerable exertions to propagate various species of trout and other fish, and has met with gratifying success; but we fear that it does not meet with the encouragement it deserves. It should not only have assistance from local officials, but should receive State aid—due care being taken that it does not dwindle into a mere matter of dollars and cents.

We regret that we have not space, in the present number, to extract largely from Mr. Roosevelt's speech; but will endeavor to find room in our next.

THE CRANBERRY CROP IN NEW JERSEY AND MASSACHUSETTS.—The cranberry crop of New Jersey is reported much below an average, and that of Cape Cod, Massachusetts, almost a total failure, a large proportion of the vines having been killed last winter, and the remainder greatly ravaged by worms.

HOW TO GROW THE VIOLET.

A bouquet of violets is at all times acceptable; their simple beauty, and their odoriferous perfume, making them always charming companions. They will grow in almost any good garden soil, the most suitable compost being a fibrous loam; the border situated in a shady position, but not too damp. Select healthy off-shoots from old plants, and place three of these together to form one; put them in the prepared bed 10 in. by 12 in. apart, attending to them as regards watering, if the weather prove dry. Care must be used in protecting them against slugs, which in many gardens prove very injurious during the winter months, more especially in those situations inclined to be damp. In fact, too much moisture is to be avoided during the winter season, if a plentiful supply of blooms is wished for.

Some of the plants may be potted in a similar loam, providing plenty of drainage; these can be transferred to the conservatory or drawing-room when in bloom, lending a charm during the dull winter months. The potted plants should be plunged in a shady border, until required; otherwise they may become too dry, from the effects of the strong south winds. When cut-flowers only are required, it is best to have them in beds, as they bloom more profusely, and continue longer in flower. With a little attention they are easily managed, and will well repay you for the care bestowed upon them. They will express their gratitude either in the handsome drawing-room or the parlor of the most simple lodgings, by the general sweetness of their demeanor. How far more beautiful are they than any of the most elaborate works of art, for which numbers desert these and other works of nature! What tender tones, what plaintive heart music, what hopes and fears have been sighed over a bunch of violets! how often have they acted the part of the sweet messenger, and called to recollection those wanderings through bowery lanes and shady walks in England's lovely

spring-time! We see no reason why a fondness of flowers should not be developed contemporaneously, or why, in childhood and boyhood, and throughout manhood too, the sense of sight and smell should minister only, so far as gardening is concerned, to the gratification of our tongues and throats, and cease to co-operate with the heart and brain. Why should not the love of the beautiful, which is innate in every exile from England, be encouraged by our instructors with as much care and attention as music and dancing?—*Exchange*.

BANANA CULTURE.

The banana is in such high favor with many Californians, that they demand its steady importation from Honolulu and Panama. The branches, containing large clusters of the fruit, are cut off while it is still green, so that it may be transported in a good state of preservation. It ripens with the stem detached from the parent tree, but is not, of course, so delicious as when plucked ripe from the stem on which it grows. There is some doubt, too, about its being entirely healthful when ripened artificially. Several attempts have been made to cultivate the fruit in this State, not always, however, with the best of success. The opinion prevails, that there are localities where, if proper care were bestowed on the trees, they could be cultivated with excellent results. In San Diego, Mr. Louis Meinzer has given some attention to the matter; and the *Union* of that place speaks of his efforts encouragingly. His plan is, to cover the trees while in bloom or in seasons of frost. One of his trees has borne fruit, which is expected to mature in a few days. Concerning this tree, the *Union* says:

“It does not enjoy the benefits of the morning sun, being completely shaded by the house near which it stands; and in the afternoon it only receives the rays of the sun for about two hours, large fig-trees growing near it obscuring it during the remainder of the

time. Mr. Meinzer thinks, that if the tree does so well under such unfavorable circumstances, those which he planted a year later, and which are so situated as to receive the sun both morning and afternoon, will be sure to thrive and bear."

Messrs. Asher, Horton, and Wilcox, of the same place, have planted banana bulbs, and feel confident they will mature. Mr. Horton has a tree in his garden that is expected to bear next year. It is said to be very thrifty, and, from its vigorous appearance, it would seem that it was perfectly at home. A bulb planted in the San Diego Court-house yard is also flourishing, which leads the *Union* to assert, that the doubt whether the banana can be grown in the open air in Southern California will soon be solved by these experiments; and for this reason, if for no other, the persons who have taken an interest in the growth of the tree deserve commendation.—*Morning Call*.

WORK FOR THE MONTH.

The dry season of California is nearly over, and we may now at any time expect our regular installment of rain; it is most important that the rainy season should not take us by surprise.

While little can be done in our orchards and vineyards beyond the gathering, marketing, and storing of fruits, ornamental trees and shrubs, and flowering plants should receive considerable attention. We would advise at the present time to entirely dispense with irrigation of plants, trees, and lawns; the young growth should have time to harden; proper pruning should be done in all cases as early as possible. In this climate, trees and shrubs are apt to make immense growth, and will expand in one season out of all shape and beyond our control. Evergreens in particular should be balanced, the superfluous growth cut away, and the trees supported by proper stakes, so as to enable them to withstand our strong winds. In most cases, trees are planted too thickly

and without due reference to a future growth and development; this is erroneous except where planted for grouping, and this should only be effected on the large and extensive grounds of country residences. Whenever it is apparent that trees stand in too close proximity to one another, one or the other should be removed; and where flowering plants are overshadowed by trees, it is inevitable that one must give way to the other; in some cases, this action can be modified by the removal or cutting back of some of the branches so as to permit a free circulation of air, and exposure to the rays of the sun at least for a few hours during the day; but it more frequently occurs that we can not suggest any other remedy than the removal of the trees or the abandonment of the flowering plants in their vicinity. We have, as a general rule, too many trees in our gardens, and when we take into consideration how rapidly and effectually they exhaust the soil, it can not surprise any one that the smaller plants suffer severely from want of nourishment.

Roses should now be pruned very closely; deciduous shrubs, such as *Lilacs*, *Snowballs*, *Mock Oranges*, *Spiræas*, *Deutzias*, etc., must be trimmed with care. Ignorant gardeners frequently cut away the wood which should produce the flowers, and we have frequently heard the complaint that some of the above-named shrubs have not produced any flowers for many years; and that the owners were determined to throw them away on that account. When we explained matters to them, and a more sensible mode of treatment was adopted, an abundant season of flowers generally followed.

Dahlias and *Gladiolus* may now be taken up and stored, after exposing the roots to the sun for a day or two, in a dry and airy place. *Hyacinths* may also be taken up and kept out of the ground for a few weeks, or until the time comes for replanting. *Tulips*, *Narcissus*, *Lilies*, *Pæonies*, and *Snowdrops* should remain in the ground undisturbed; but the ground surrounding them should be trenched carefully, so as not to injure the

bulbs, and they should have a good manuring or top-dressing. *Violets*, *Pinks*, and other herbaceous plants should receive some manure, and the soil should be worked carefully around them.

Green-houses and conservatories must have a thorough overhauling, and care must be taken that the glass-roofs are made tight. When artificial heat is not applied during winter, it is advisable to water sparingly, and to give a great deal of fresh air; this will prevent too much growth of tender shoots, which are apt to perish during our cloudy and chilly winter days. This is particularly the case with all tender ornamental foliage plants, such as *Coleus*, *Marantas*, *Begonias*, etc.

Very little attention has, so far, been paid here to the proper heating of green-houses. Although artificial heat is not required for *Heliotropes*, *Geraniums*, *Camellias*, etc., yet it is certain that the more tender Warm-house plants, including the very desirable, tender, ornamental foliage plants, must receive artificial heat if they are expected to vegetate luxuriantly. If kept dry and in small pots, most of the so-called Warm-house plants may be wintered without actual loss, yet we frequently hear of total losses of *Coleus*, *Clerodendron*, variegated *Dracoenas*, *Marantas*, and the like. We certainly do not require such formidable heating appliances as are necessary in the East and in Europe, but it is very desirable that this matter should be properly discussed among our professional men.

Flowering Bulbs are now coming into the market. To those who are fond of *Hyacinths* and *Narcissus* in bloom at Christmas time, we would give a kindly advice to purchase a few bulbs and to plant them without delay in pots or boxes for the window. They are cheap—every one can afford to have a few; they are of easy culture and give general satisfaction.

A FEW drops of glycerine added to a pint of any writing fluid, changes it at once into copying ink.

BAY DISTRICT HORTICULTURAL SOCIETY.

Regular meeting, Saturday, October 26th, 1872.

The meeting was well attended. After the reading of the minutes of the previous meeting, the Secretary handed in his report of the Exhibition accounts.

The total receipts of the society, including the appropriation from the State, were \$5165.25, and the total disbursements were \$3557.55; making a net gain of \$1607.70. The receipts of the Exhibition itself were, according to prior arrangement, the property of the Horticultural Hall Association, and cannot be charged to the account of the Horticultural Society; it is therefore impossible for the Secretary to give the total receipts of the Exhibition, in connection with this report.

The Report was referred to the Trustees of the Horticultural Society.

A communication was received from the Agent of the United Anaheim Wine Growers' Association, donating the amount of premium awarded to said association, to the Horticultural Society.

The thanks of the Society were expressed to the U. A. Wine Growers' Association.

Dr. A. Kellogg was elected a life member of the society.

Nominations for the officers of the society for the ensuing year being in order, the following members were nominated:

For President, Dr. A. Kellogg and Eug. A. Upton.

For Vice-President, C. Stephens and C. Schuman.

For Secretary, Prof. H. N. Bolander and F. A. Miller.

For Treasurer, Hugo Herst and J. Weisenborn.

For Trustees, Wm. Robinson, R. Michelson, J. H. Sievers, and Th. Brown.

At the suggestion of the Secretary, it was proposed to discuss the time and the place for a Spring Exhibition at the next regular meeting.

Prof. Bolander called the attention of the society to the practicability of underground irrigation by clay pipes. We have no space,

in this number, to give the discussion on the subject in full.

Dr. Behr made some remarks on destructive insects, a full report of which we will insert in our next.

Mr. Wolleb suggested, as an excellent remedy for mildew on roses, etc., a solution of carbohc soap and water, applied by sprinkling.

Space and time will not permit us to give a detailed report.

AGRICULTURAL COLLEGE OF CALIFORNIA.

On the 8th of October the corner-stone of the Agricultural College of the University of California was laid at Berkeley, Alameda County. The ceremonies were conducted by Bishop Kip, Dr. Stebbins, and the officers of the Board of Regents.

OUR EXCHANGE TABLE.

Several new and valuable exchanges have been added to our already numerous list.

The *Rural Alabamian* is a very neatly gotten-up Monthly, devoted to Agriculture, Horticulture, and improved Industry of the South. It is published by C. C. Langdon & Co., Mobile, Ala. Subscription price, \$2 per annum.

Wood's Household Magazine, valuable for the family circle, for its instructive and entertaining reading matter. Published monthly by S. S. Wood & Co., Newburgh, N. Y. Price \$1 per year.

The *Western Planter* is a weekly journal, devoted to Agriculture, Horticulture, Stock-raising, and Home Reading. Published by R. H. Stone & Co., Kansas City, Missouri. Price, \$1.50 per annum.

Young Folks' Rural, a Rural and Literary monthly journal for young people of country and city, deserves patronage. It is published by H. N. F. Lewis (of the *Western Rural*, Chicago, Illinois. Subscription, \$1.50 per year.

FAVORS RECEIVED.

We are indebted to Hon. Robert B. Roosevelt, of New York, for his very valuable speech, delivered in the House of Representatives at Washington, on Fish Culture compared in importance with Agriculture.

We owe thanks to the West Tennessee Agricultural and Mechanical Association for a Complimentary Ticket to their Second Annual Fair to be held October 22d to 26th, 1872; we have also received the Premium-list, Rules and Regulations, etc., of the Exhibition.

CATALOGUES RECEIVED.

John Saul's *Descriptive Catalogue* of Dutch Bulbs and other bulbous flower roots, Washington, D. C.

Wholesale Catalogue of Fruit, Evergreen, and Ornamental Trees, Shrubs, Plants, etc., for 1872-73; for sale by John Saul, Washington, D. C.

Catalogue of select California Flowers and Tree Seeds, Bulbs, and Plants, native Ferns, Australian Tree and Shrub Seeds, etc.; for sale by Miller & Sievers, 27 Post Street, San Francisco.

Catalogue of Stove and Green-house Plants, including Orchids, Palms, Ferns, etc.; for sale by Geo. Such, South Amboy, N. J.

Nursery Trade Catalogue of the Genesee Valley Nurseries. Frost & Co., Proprietors, Rochester, N. Y.

Wholesale Price List of Fruits and Ornamental Trees for sale by H. E. Hooker & Brothers, Rochester, N. Y.

Wholesale Price List of the Fairport Nurseries, Fairport, Monroe County, N. Y.

Dreer's Descriptive Catalogue of Bulbs and other flower roots, with directions how to manage. Address: Henry A. Dreer, Philadelphia, Pa.

Wholesale Catalogue of R. B. Parsons & Co., Broadway, Flushing Village, Queen's County, N. Y.

General Trade List of Nursery Stock, Seeds, and Bulbs, by Wood & Hall, Geneva, N. Y.

Special Trade List of Supplies for Nurserymen, Seedsmen, and Florists, by Wood & Hall, Geneva, N. Y.

New Evergreens offered for the first time by T. C. Maxwell & Bro., Geneva, N. Y.

Trade List for the fall of 1872, by S. B. Vreeland, Greenville, Hudson Co., N. J.

Catalogue and Price List of Small Fruits grown and for sale by James N. Veazey, Covedale, Hamilton County, Ohio.

NEW AND RARE PLANTS.

ALOCASIA MARSHALLII.—A remarkably fine new Aroid, related to and much in the way of *A. Jenningsii*, but differing in having a broad gray band down the centre of the leaf. The leaves are ovate, peltate, attached to erect green stalks, the blades standing almost vertical; while the color is a bright green, marked between the principal veins with broad, wedge-shaped leaves of blackish purple. The addition of the silvery band adds very greatly to their beauty. It was imported from India.

CROTON GRANDE.—A fine, bold-habited and free growing stove plant, having oblong-ovate leaves eight inches long, and nearly half as much in width, and with a stout foot-stalk varying from one inch to two and a half inches in length. These leaves are, in the young state, of a rich deep green, with a yellowish rib and scattered yellow spots, the stalks being pale-colored at the base and apex, where they are also thickened. As the plants gain maturity, they become more distinctly veined and spotted with yellow. The present is remarkable among the *Crotons* or *Codiæums* for its vigorous and bold character, having, in fact, very much the aspect of a *Ficus*. It is one of the many forms of *Codiæum variegatum* which have come from the South Sea Islands.

DRACENA SPLENDENS.—A remarkably dis-

tinged ornamental stove plant, of dwarf and compact but free-growing habit, densely furnished with short oblong acute recurved leaves, about nine inches long and four inches broad, arranged in a spiral manner, and having winged foot-stalks. The color is a deep bronzy green, breaking out in the young growth into bright rosy carmine, the petiole and base of the leaves margined with the same color. The brighter coloring appears sometimes in stripes, and sometimes occupies the whole surface; while the recurved character of the densely-set foliage gives the plant a flat, almost table-like head. It has been imported from the South-Sea Islands. It was awarded a first-class certificate by the Floral Committee of the Royal Horticultural Society.

ECHEVERIA ABYSSINICA.—This fine greenhouse succulent, of branching, shrubby habit, was brought from Abyssinia by Major Leveson, at the time of the Abyssinian war. The plant has much the habit of some of the large-leaved shrubby *Sempervivums*; but being described by my correspondent as bearing red flowers, it has been doubtfully referred to *Echeveria*, with which it sufficiently accords in habit. The stems are as thick as one's finger, and terminate in flattened rosulate heads of spatulate acute leaves, three to four inches long, of a pale glossy-green color, and finely ciliated at the margin. The plants form a branched conical mass a foot and a half high, and as much through; and will be a welcome addition amongst succulents.

BEGONIA CARMINATA.—An elegant tuberous-rooted hybrid of the "*Boliviensis*" group. The leaves are stained with a coppery brown tint between the veins; while the flowers are large, of a pretty, delicate salmon hue tinged with rose, the males having four oblong segments upwards of an inch long, and the females five petals of a smaller size. The plants come into flower while quite dwarf, and continue blooming in the most profuse manner.

NEW CLEMATIS.—*Albert Victor*: Extra fine shape, each flower having eight petals, deep lavender color, with brown ribs down the centre of each petal, the ribs changing to white, or nearly so, as the flower expands. Very free flowering, and of a superb, thick, velvety texture.

Lady Londesborough.—Very fine shape, each flower having eight petals; color, a delicate silver-gray, with white stripe down the centre of each petal; a pink stain at the base of the stamens gives it a pretty appearance. Good substance and very free-flowering. Constitution very robust.

Miss Bateman.—Good shape, each flower composed of eight petals; color pure white, with distinct band of glaucous cream-color down the centre of each petal. Very free, and altogether a magnificent plant.

REPORT ON THE FRUIT MARKET.

The Autumn fruits are now in full supply, and in quality are very superior.

Apples are plentiful, large in size, brilliant in their coloring, full in their distinctive flavors, and numerous in their varieties.

The Pears are also abundant, delicious to the taste, and beautifully colored; we especially note the *Beurre Clairgeau*, *Orange Bergamot*, *Easter Beurre*, *White Doyenne*, and a few *Bartletts*; some few are just making their appearance—the *Glout Morceau*, for instance.

Grapes are also in great abundance and very fine; we especially notice *Muscat of Alexandria*, *Flaming Tokay*, *Rose of Peru*, *Isabella*, etc.

A few Plums, Strawberries, and Figs are still to be seen.

There is a very good assortment and supply of Vegetables in Market and of excellent quality; Asparagus has made its appearance, Egg and Oyster Plants are abundant, and Gumbo, Green Peas, and several varieties of Beans still in full supply.

Correspondence.

PLANTING TREES.

We have just received from I. N. Hoag, the Secretary of the State Board of Agriculture, the following copy of "An Act to encourage the Planting and Cultivation of Shade and Fruit Trees upon the Public Lands and Highways of this State;" approved March 30th, 1868; with the request that we draw public attention to it. We fully estimate its importance, and only regret that it came to hand so late, that we had barely time to provide for its insertion in the present number; but will endeavor to advocate the subject in our next.

SECTION 1. The Board of Supervisors of any county of this State, by an order of such Board, to be passed at a regular meeting of such Board, and to be entered in the minutes thereof, may authorize the planting and cultivation of shade and fruit trees, by persons owning lands in such county, upon the public roads and highways adjacent to such lands.

SEC. 2. The Board of Supervisors may, by order, entered upon their minutes, designate the roads or highways upon which such trees may be planted, so describing such road, by reference to places and boundaries, that the same may be readily ascertained. They shall also, in such order, direct the species of trees to be so planted, their age when planted, their distance from each other, and their position with reference to the traveled road, and also all such other rules and regulations as they shall deem proper to secure the proper planting, growth and protection of such trees, and to prevent their obstructing the travel upon such road.

SEC. 3. Whenever any person shall plant, upon any public road, in front of land owned by him, shade or fruit trees, in accordance with the provisions of this act, and also of such rules as the Board of Supervisors may prescribe hereunder, such person so planting such trees shall file with the Board of Super-

visors of such county a written statement, setting forth therein the road or places upon which such trees are planted, the number and species of trees thus planted, and the time of planting.

SEC. 4. Four years from and after the date of planting such trees and giving the notice as provided in section third, the person planting such trees, or his legal representative, may present to the Board of Supervisors of such county his statement in writing, verified by the oath of such applicant, setting forth therein the number and species of trees originally planted, when and by whom planted or caused to be planted, and the number then living and in a thrifty condition; and for any wilful misstatement contained in such report the party making the same may be prosecuted for the crime of perjury.

SEC. 5. Upon filing such verified statement, the Board of Supervisors of such county shall allow to the party making the same the sum of one dollar for each and every tree so planted and growing thriftily, the same, to be audited and paid out of the General Fund of such county as other claims are allowed, audited, and paid.

SEC. 6. Nothing contained in this Act shall be construed to apply to any trees planted before the passage of this Act, unless planted and cultivated as required by the orders of the Boards of Supervisors.

SEC. 7. This Act shall take effect from and after its passage.

Editorial Gleanings.

EUCALYPTUS GLOBULUS.—This Australian plant, or rather tree, known by the common name of Blue Gum, has been introduced into some of the Southern States and appears to be well adapted to the climate. The whole plant—leaves, bark, wood, and root—is pervaded by a peculiar aromatic, bitter principle, and a pungent volatile oil has been distilled from the leaves. To this oil the name of "eucalyptol" has been given. The leaves

and bark of this tree have attained a high reputation among the natives of Australia for the cure of malarious diseases. Lately we observe that Doctor Coleman, resident physician at the United States Marine Hospital at San Francisco, California, has used it in the treatment of fevers with marked success. He administered it in the form of a fluid extract, prepared by his directions. Coming from this source, the statement may be regarded as altogether reliable. Dr. Coleman treated five cases of remittent fever, nineteen of chills and fever, and nine of typhoid fever with the fluid extract of eucalyptus, and reports satisfactory results in every case. He treated a number of other diseases with this remedy, where it appeared to be indicated, and the result was various, curing many cases and improving most. The active principle is said to possess great power in preventing confervoid growths in fluids. In this it much resembles quinine, for which it is proposed as a substitute.—*Agricultural Report.*

CANADA EGG PLUMS.—We have three hundred trees, of the leading popular market sorts, from which we are receiving very satisfactory returns. We have thirty trees of the "Canada Egg," a new variety, set twelve feet apart, occupying one-tenth of an acre. From these thirty trees we have marketed two bushels per tree—sixty bushels—from which we realized four dollars per bushel net—\$240, or at the rate of \$2,400 per acre net. We esteem the Canada Egg an exceedingly valuable acquisition to our list of early market plums. It originated in Canada, and was introduced here (Michigan) about ten years ago, and has since been cultivated with great success. The trees are hardy, vigorous and healthy, regular annual bearers. Fruit large, roundish and very showy; color, a beautiful reddish purple, overspread with a thick coat of delicate bloom; stone very small, flesh tender, juicy, rich and excellent. Uses—dessert, market, canning and cooking. Season very early—two weeks in advance of any other good market variety. It remains in use a

long time, bears handling and transportation well, and is valuable on that account. As an early, hardy, productive and profitable plum for the market and family orchard, we consider this variety superior to any other with which we are acquainted.—“*N. P. H., Moore's Rural New Yorker.*”

SEA ANEMONES—SPECIMENS IN THE CRYSTAL PALACE AQUARIUM.—Of sea anemones there are in the Crystal Palace Aquarium twenty-one species, all alive and doing well. Of these the largest is the *Tealia crassicornia*, or thick-horned anemone, which, owing to its great size, sometimes ten inches across, when fully expanded, permits its interior to be easily examined. The smallest in the aquarium is never more than one-tenth of an inch in diameter at its greatest stretch. Although to the uninstructed and unobservant eye these anemones appear to belong to the vegetable rather than to the animal kingdom, looking like specimens of weed or fungus, only two, they being coral, out of the twenty-one specimens in the Crystal Palace Aquarium, are absolutely non-locomotive, being fixed immovably during the whole period of their existence to a hard base. All the others have the power of locomotion, accomplished in a snail-like manner, in various degrees, one of them, the plumrose anemone, having been known to travel from three to six inches in twenty-four hours. The anemones are carnivorous, and are fed with the flesh of the mussel, which is cut into small pieces, and being handed to them by an attendant with a pair of wooden tongs, is grasped by the tentacles, and by them conveyed to the mouth in the centre of the topmost disc, which, gaping open, receives it and passes it into the stomach. The high state of health of this collection of anemones is shown by the facts that they are almost all nearly constantly open, even by day, this being the normal condition of anemones in the sea, where they are seldom closed, save when in the act of taking food, or when stranded. In the Crystal Palace, indeed, they are quite as

much expanded by day as by night, though, with but one exception (*anthea*) they are nocturnal. As the process of seeing them and the other animals feed is very popular, especially with the visitors on Saturday afternoon, it has been found necessary to make Sunday a *jour maigre*, or absolute starvation day, in order to keep them in health. A curious proof of the need of an aquarium such as this, as a means of instruction, is to be found in the fact that most English people of all classes refuse to recognize water creatures as “animals.” They may be fish, shellfish, or anything but animals, as of course they are.—*All the Year Round.*

VICTORIA, TEXAS.—The California clover is doing finely. It is at present about sixteen inches high. The burs or seed-pods are produced at every joint, the joints being about one and a half inches apart. At each of these there springs up a flower-stalk half an inch in length, terminating in a cluster of small yellow flowers, from four to six in number, from which the burs are formed. These runners or stems grow to three or four feet in length, putting out laterals, jointed like the main stock, and filled with seed-pods which cover the surface of the ground from one to three inches deep, and of which both fowls and animals are exceedingly fond.

CALIFORNIA CHESTNUTS.—We have been shown a chestnut of the Italian variety, of California growth, of surprising dimensions. The circumference of the specimen exhibited is fully three inches. This chestnut was raised by Mr. Henry Ginina, in Sonoma City. This gentleman planted a chestnut orchard from the seeds seven years ago, which has flourished finely, and is now bearing liberally of fruit of the general size and character above described. Doubtless chestnut trees would do equally well in most other of the valley lands of the State, and their cultivation is at least worthy a trial.—*Morning Call.*

THE

CALIFORNIA HORTICULTURIST

AND FLORAL MAGAZINE.

Vol. II.

NOVEMBER, 1872.

No. 12.

EPACRIS.

It is surprising that this beautiful ever-green flowering shrub is not more extensively cultivated on this coast, when it is fair to presume that the plants would do well in our climate; at least fully as well as the *Ericas*, which they resemble.

We rarely meet with a specimen of *Epacris* in this State, and strange to say, there are, as far as we know, but few of them to be seen in the East. We understand that their propagation meets with considerable difficulties, which are not easily overcome. In years gone by, we cultivated them successfully, and we will endeavor to explain what we know about them :

The *Epacris*es are natives of Australia, and are often mistaken for *Ericas*, which, as we have stated before, they much resemble. Florists, however, were not satisfied with the various species, as they were discovered in their native country, although they are most beautiful, and a great number of Hybrids have been produced within the last 20 years, which have much increased the appreciation of this valuable class of plants. There seems to be no difficulty in the propagation and cultivation of the *Epacris* in Europe, and there should be still less here, as most of the New Holland plants are hardy in this country, and adapt themselves readily to our climate.

The *Epacris* may be raised either from cuttings or from seed. The best wood for cuttings are the small lateral branches not yet hardened, and which may be taken off during autumn and the winter months. Prepare shallow boxes by partly filling them with fibrous peat, cover these with $\frac{1}{4}$ to $\frac{1}{2}$ inch clean sand, and plant in them the short cuttings. Cover the boxes with glass or place them close under the roof sashes of the warmhouse. One difficulty arises in the watering, which should be applied from below; but as many of our professional gardeners are not prepared for this method, the cuttings should be well watered and shaded after planting, so that frequent watering may not be imperative. After the cuttings are rooted, plant the young plants single in 2-inch pots, filled with well worked up fibrous peat mixed with a small portion of clean sand; plant firmly, with efficient drainage. During summer, the *Epacris* should be placed in the open air in a sheltered location, not too much exposed to the hot sun. Care, however, should be taken in watering, as too much moisture is dangerous. The atmosphere, nevertheless, should be a moist one. We consider that the atmosphere of our coast is sufficiently moist, although in the dry air of a room they would certainly suffer.

The propagation from seed is simple, but as the seed should be sown immediately after the ripening, it is not surprising that most of

the seed sent to this country, after a long voyage, is not in as good condition as it should be, and generally fails to germinate. As our communication with Australia is now much more convenient and quicker, we may yet have seed from there in good condition. Prepare boxes in the same manner as directed for the cuttings, but cover with much less sand, say $\frac{1}{8}$ of an inch; sow the seed without covering, and be extremely careful in watering. If moisture can be applied from below, it will be preferable; if applied from above, it should be done by a very fine spray or by a moistened cloth.

The *Epacris*, which are natives of Australia, are:

Epacris pulchella, *E. rigida* and *E. microphylla*, the leaves of which are small and the flowers white.

E. grandiflora, with heart shaped leaves, flowers of a brilliant reddish purple at the base, and pure white at the apex.

E. impressa, *E. ruscifolia* and *E. tomentosa*, flowers of a deep rose-color.

E. nivea and *E. paludosa* have the leaves narrow, lanceolate and sharp-pointed, flowers pure white.

Some of the most desirable and conspicuous Hybrids are:

E. eclipse, *E. coccinea*, *E. delicata*, *E. alba odorata*, *E. hyacinthiflora*, *Princess - Royal*, etc.

We hope that our florists and nurserymen will exert themselves to introduce this beautiful class of plants, which has so far been badly neglected; and we have no doubt that we have even amateurs among us, who will avail themselves of the first opportunity to procure some of the varieties for their already numerous collections.

Some of our people can appreciate novelties of this kind, but we can not expect to excite their curiosity in these things, if we do not continually strive to add to our collections those plants which are most desirable and worthy.

SELECT PLANTS

(Exclusive of Timber Trees) readily eligible for Victorian Industrial Culture, with Indications of their Native Countries and some of their Uses—an Enumeration Offered

BY BARON FRED. VON MUELLER.

[Continued from page 325 of last number.]

ASPARAGUS OFFICINALIS, *L.*—Europe, North Africa, North Asia. The well-known Asparagus plant, which, if naturalized on our coast, would aid in binding the sand. The foliage contains Inosit-Sugar; the shoots contain Asparagin.

ASTRAGALUS CEPHALONICUS, *Fisher.* (*A. aristatus*, *Sibthorp.*)—Cephalonia. A small shrub, yielding a good tragacanth; and so probably, also, the true *A. aristatus* of *Heritier* is producing it.

ASTRAGALUS CRETICUS, *La Marck.*—Candia and Greece. A small bush, exuding the ordinary vermicular Tragacanth. The pale is preferable to the brown sort.

ASTRAGALUS GUMMIFER, *La Billard.*—Syria and Persia. This shrub also yields a good Tragacanth.

ASTRAGALUS STRABILIFERUS, *Royle.* Asiatic Turkey. The brown Tragacanth is collected from this species.

ASTRAGALUS VERUS, *Olivier.* Asiatic Turkey and Persia.—This shrub furnishes the Takalor or Smyrna Tragacanth, or it is derived from an allied species.

ATRIplex HORTENSIS, *L.*—North and Middle Asia. The Arroche. An annual Spinach plant.

ATROPA BELLADONNA, *L.*—The Deadly Nightshade. South and Middle Europe and Western Asia. A most important perennial medicinal herb. The highly powerful Atropin is derived from it, besides another alkaloid, the Belladonnin.

AVENA FATUA, *L.*—Wild Oat. Europe, North Africa, North and Middle Asia, eastward as far as Japan. The experiments of Professor Buckman indicate that our ordinary Culture-Oat (*Avena sativa*, *L.*) is descended from this plant.

AVENA FLAVESCENS, *L.* (*Trisetum flavescens*,

Beauv.)—Yellowish Oat Grass. Europe, North Africa, Middle and North Asia, eastward as far as Japan. One of the best of perennial meadow-grasses, living on dry soil; fitted also for our Alps.

AVENA PRATENSIS, L.—Meadow Oat Grass. Europe, North Asia. It thrives well on dry, clayey soil; it produces a sweet fodder, but not in so great proportion as several other less nutritious grasses. It is perennial, and well adapted for our snowy mountains, where it would readily establish itself, even on heathy moors.

AVENA PUBESCENS, L.—Downy Oat-Grass. Europe, North and Middle Asia. A sweet perennial grass, requiring dry but good soil, containing lime. It is nutritious and prolific. Several good Oat grasses are peculiar to North America and other parts of the globe. Their relative value as fodder-grasses is in many cases not exactly known, nor does the limit assigned to this little treatise allow of their being enumerated on this occasion.

BACTRIS GASIPES, Humboldt. (*Guilielma speciosa, Mart.*)—The Peach Palm of the Amazon River, ascending to the warm-temperate regions of the Andes. Stems clustered, attaining a height of 90 feet. Dr. Spruce describes the large bunches of fruits as possessing a thick, firm, and mealy pericarp, which, when cooked, has a flavor between Potato and Chestnut, but superior to either. To us, however, this palm would be mainly an object of grandeur. It is likely to endure our clime in the fern-tree gullies.

BAMBUSA ARUNDINACEA, Roxb.—The Thorny Bamboo of India. It requires rich, moist soil, and delights on river banks. It is of less height than *Bambusa vulgaris*; it also sends up from the root numerous stems, but with bending branches, thorny at the joints. The seeds of this and some other Bamboos are useful as food for fowls.

BAMBUSA ATTENUATA, Thwaites.—The Hardy Bamboo of Ceylon, there growing on the mountains at elevations between 4,000 to 6,000 feet. It attains a height of 25 feet.

BAMBUSA ELEGANTISSIMA, Hasskarl.—Java, on

mountains about 4,000 feet high. Very tall and exceedingly slender; the upper branches pendulous. A hardy species.

BAMBUSA MONADELPHA. (*Dendrocalamus monadelphus, Thwaites.*)—Ceylon, on mountains from 4,000 to 6,000 feet high. A dwarf but handsome Bamboo, reaching only a height of 12 feet.

BAMBUSA SPINOSA, Roxb.—Bengal. A Bamboo of considerable height. The central cavity of the canes is of less width than in most other species, thus the strength for many technic purposes is increased.

BAMBUSA STRICTA, Roxb. (*Dendrocalamus strictus, Nees.*)—India, particularly Bengal. Grows on drier ground than *B. arundinacea*. It is also smaller, and quite straight. Its strength and solidity renders it fit for many select technic purposes.

BAMBUSA VERTICILLATA, Blumè.—The Whorled Bamboo of Java.

BAMBUSA VULGARIS, Wendland.—The large unarmed Bamboo of Bengal. It attains a height of 70 feet, and stems may attain even a length of 40 feet in one season, though the growth is slower in our clime. It has proved to be capable of resisting the occasional night frost of the lowlands of Victoria. It is the best for building Bamboo-Houses. Immersion in water for some time renders the cane still firmer. To the series of large thornless Bamboos belong also *Bambusa Tulda* and *Bambusa Balcooa* of India, and *Bambusa Thouarsii* from Madagascar and Bourbon. These Bamboos are much used for various kinds of furniture, mats, implements and other articles. There are many other kinds of Bamboo eligible among the species from China, Japan, India, tropical America, and perhaps tropical Africa. One occurs in Arnhem's Land.

BAROSMA SERRATIFOLIA, Willd. South Africa. This shrub supplies the medicinal Bucco-leaves. *B. crenulata, Hook.* (*Diosma crenulata, L.*) is only a variety of this species. Active principles—A peculiar volatile oil, a peculiar resin, and a crystalline substance called Diosmin.

BETA VULGARIS, L.*—The Beet or Mangold Root. Middle and South Europe, Middle Asia, North Africa. This well-known perennial or biennial herb ought to engage the general and extensive attention of our farming population. The herb is most valuable as a palatable and nutritious spinach; the root is of importance not only as a culinary vegetable, but, as well known, also for its content of sugar, fit to be crystallized. That of Beet, indeed, is now almost exclusively consumed in Russia, Germany, Austria, France, Sweden, and Belgium; and these countries not only produce the Beet Sugar, but also export it largely to the neighboring States. The white Sicilian Beet is mainly used for salads, spinach and soups. The thick-ribbed variety serves like Asparagus or Seakale, dressed like Rhubarb. Cereal soil, particularly such as is fit for Barley, is generally adapted also for the culture of Beet. The rearing of the root, and the manufacture of the sugar, can be studied from manifold works; one has been compiled by Mr. N. Levy, of this city. A deeply stirred, drained soil, rich in lime, brings the saccharine variety of Beet to the greatest perfection. The Imperial Beet yields from 12 to 20 per cent. sugar. The Castelnauerry, the Magdeburg, the Siberian Whiterib and the Vilmorin Beet are other varieties rich in sugar. About 5 lbs. of seeds are required for an acre. In rotation of crops, the Beet takes its place best between Barley and Oats. In Middle Europe the yield averages 14 tons of Sugar Beet to the acre, and as many hundred weight of raw sugar. The mercantile value of the root, at our distilleries, ranges from 20s. to 30s per ton. In our clime, the Beet harvest can be extended over a far longer time of the year than in Middle Europe. The extraction of the sap is effected generally by hydraulic pressure. The juice is purified with lime and animal coal. Excess of lime is removed by carbonic acid, and the purified and decolorized juice is evaporated in vacuum pans, with a view to preventing the extensive conversion of the crystallizable sugar into

treacle. The production of Beet sugar needs far less labor than that of cane sugar, and the harvest is obtained in so short a time as eight months. Beet has shown itself subject neither to alarming diseases nor to extensive attacks of insects. Beet is grown in extra-tropical zones like ours, while the sugar-cane is a plant confined to tropical and subtropical latitudes. Beet culture, by directly or indirectly restoring the refuse, ameliorates the soil to such an extent, that in some parts of Germany, land so utilized has risen to four-fold its former value. Beet, furthermore, affords one of the most fattening stable fodders; and thus again an ample supply of manure. In Middle Europe now about one-sixth of all the arable land is devoted to Beet, yet the produce of cereals has not become reduced, while the rearing of fattened cattle has increased. Notwithstanding a heavy tax on the Beet-sugar factories in Europe, the industry has proved prosperous, and assumes greater and greater dimensions. In 1865, the sugar consumption of Europe amounted to 31,676,407 cwt., one-third of which had been locally supplied by the Beet, from over one thousand beet-sugar factories. Treacle obtained from beet is distilled for alcohol. For establishing remunerative factories on a large and paying scale, it has been suggested that farmers' companies might be formed. For ascertaining the percentage of sugar in Beet, saccharometers are used. In Germany, some scientific periodicals are exclusively devoted to the fostering of this industry.

CULTIVATION OF CINCHONA IN BENGAL.—The cultivation of cinchona trees in the district of Sikkin, Bengal, which was started in 1862 by Dr. T. Anderson, is said to be very profitable, and in this district there were under cultivation in March, 1871, the following species: 1,233,715 trees of *cinchona succi rubra*; 440,000 trees of *cinchona officinaris*; 33,400 trees of *cinchona calisaya*; beside 480,000 young plants of *cinchona succi rubra* in the nursery, which had been raised from the seed. The annual yield is about three hundred pounds of bark per acre.

ON THE ECONOMIC VALUE
OF CERTAIN
AUSTRALIAN FOREST TREES,
And their Cultivation in California.

BY ROBERT E. C. STEARNS.

[Concluded from last number.]

In compliance with my request to Dr. Arthur B. Stout, of this city, for a relation of his experience with the Eucalyptus in connection with his medical practice, I have received the following :

MR. STEARNS :

Dear Sir :—In response to your invitation, I am happy to contribute to your important article on the culture and uses of the Eucalyptus in California, my experience of the medical properties of that valuable plant. The Eucalyptus is not less precious for its medicinal virtues than it is ornamental in arboriculture and useful in the arts. Several months ago, incited by information derived from the *Practitioner* and other sources of knowledge, I collected and dried the leaves. The agreeable empyreumatic oil of the leaves, in evaporating, diffused a balmy odor through the house. I therefore considered that as this oil, as well as the catechu gum and kino, and the cajeput oil, are all similar hydrocarbons, their qualities must resemble the creosote, pyroligneous and carbolic acids in their disinfectant and hygienic properties. I have no doubt that Eucalyptus has these properties in a milder or weaker degree, only differing in being accompanied with an agreeable perfume, wanting to creosote and carbolic acid. As a purifier therefore of the musty atmosphere and unpleasant emanations in basements and cellars, I have recommended the scattering of the dried leaves in such places. The powder of the dried leaves scattered in trunks and among clothes will no doubt be as useful and more agreeable than tobacco or camphor to prevent the growth of moths or other insects. Its chief value is, however, as a sedative and antiseptic in asthma and throat diseases, nasal catarrhs, and

affections of the mucous membranes. To utilize these properties I had a concentrated tincture with alcohol at 95° prepared by Messrs. Steele & Co., and also contrived an inhaler with which to introduce the vapor of the essential oil to the throat and lungs. I can testify to the excellent effect of this mode of medication. The paroxysms of chronic asthma are relieved and shortened, and acute attacks are quickly allayed. The inhaler is a simple instrument made of tin. It is a cup of a capacity of four fluid ounces; the lid, attached by a hinge, has a tube from the centre about three inches high, bent near the end at a right angle, and terminated with a mouth-piece like that of a speaking trumpet. The cup is on legs so that a spirit lamp may be placed underneath, and has a wooden handle to move it about when heated. Put two ounces of boiling water, (four tablespoonfuls) in the cup; add one tablespoonful of the tincture; and inhale the vapor, while the fluid is kept gently boiling with the spirit lamp. Again, I had prepared cigarettes with the coarsely powdered leaves. These produce a decidedly anodyne and antispasmodic effect. An agreeable syrup may also be prepared, useful in infantile maladies.

There can be little doubt but that the oil of Eucalyptus, and Eucalyptine when it can be procured, will be available remedies against malarious diseases of all types, and that the presence of the trees, cultivated in gardens, contribute to sanify the atmosphere from those emanations which give origin to epidemic diseases. That the parasitic insects which infest other plants do not relish the Eucalyptus is evident from the general cleanliness of the leaves, and the fact that the hydro-carbon oils are fatal to animal life. The balmy perfume, therefore, that exhales from them must have an influence in destroying the parasites which frequent shrubs growing in their vicinity, tending to diminish if not suppress them.

In corroboration of the advantages to be obtained by the cultivation of this Myrtacea,

may be shown the efforts made during the last fifteen years to acclimate it in Europe and elsewhere. Ramel has succeeded admirably in introducing this tree in Provence (France), in Spain, Italy, the islands of the Mediterranean sea, and in Algeria. It appears in the botanical gardens of Germany (Munich); and in Vienna, Austria, an apothecary, Lamalsh, has raised 3,000 specimens from seeds. From these he has prepared tinctures and oils for medical purposes.

See annual report of Wiggen and Husemann of progress in Pharmacy, etc., Göttingen, 1871.

By the assiduity of Dr. Pigne-Dupuytren, this tree has been carefully cultivated in the garden of the French Hospital of the Mutual Benevolent Association. So, that institution enjoys already the benefit of the tree hygienically, and has its supply of leaves for tinctures and syrups. The leaves steeped in boiling water are also used as a ptisane or beverage.

However obnoxious to parasites in general this tree may be, it appears it nevertheless has its own species in the *Psylla Eucalypti*. This insect is an Hemipteron, and appears on the *Eu. dumosa*. It deposits a species of manna, called in Australia *Lerp* or *Laap*. It is a white substance, 53.1 per cent. of sugar syrup and 46.9 per cent. of a special modification of starch. This is prized by the inhabitants as a Manna; and is greatly sought for by the bees, who convert it into honey. Dobson (entomology) describes it as the cup-like coverings of the *Psyllidæ*, but Wittstein mentions six varieties of *Psylla*, and that one species produces a colored *Lerp* handsomer than the white, but as a deposit beneath the cup-like shields of the insect.

See same annual, before mentioned, Göttingen, 1870.

If this insect derives his *Lerp* from the aromatic and balmy oil of the *Eucalyptus*, and furnishes an agreeable aliment for the inhabitants, and a *Mt. Hymettus*-like honey stuff for the bees, certainly the busy little

insect manufacturer, parasite as he is, may be freely pardoned.

Very respectfully yours,

A. B. STOUT, M. D.

From experiments recently made upon myself, I find that small doses, 3 ij to 3 iij, of the infusion of the leaves (of young trees) drank when cold, quiet the nerves and induce sleep; quite likely, in ordinary cases of wakefulness, a pillow stuffed with the leaves would produce the same result. My friend, Dr. Kellogg, has prescribed the infusion in dyspepsia, and reports favorably. In addition to the many valuable properties of the Blue Gum, herein recited, I have no doubt but camphor in considerable quantity can be obtained from it.

COBCEA SCANDENS VARIEGATA. — This is one of the most lovely climbing plants which has recently been introduced. It is of very easy culture and vigorous and graceful habit, while its abundant flowers and very elegantly variegated foliage render it very conspicuous. Its leaves are beautifully edged with a wide margin of creamy white, turning to a delicate canary color; and the ends of the young shoots, with their airy tendrils, are of a reddish purple, changing to various shades of green; and it retains its distinctive colors under the dryest and hottest of our summers. Its flowers are of a deep purple, and shaped like a tiny cup, and are profusely scattered over the vine, adding greatly to its beauty. It is very well adapted to out-door culture, and will climb upon strings very rapidly, often growing over forty feet in one season. It is very tender; will be cut down by the first frost, but can then be potted and brought in-doors, where it will soon start from the root, and twine its graceful branches all about the window casements.

The *Cobcea* is a native of Mexico, and grows well in any garden soil; for pot culture it loves leaf mould, two parts to one part of garden soil.—*Floral Cabinet*.

IRRIGATION IN THE MALAY ARCHIPELAGO.—We clip the following from *Wallace's Malay Archipelago*, regarding irrigation in Lombock, and at the east of Java :

Soon after passing Mataram, the country began gradually to rise in gentle undulations, swelling occasionally into low hills toward the mountainous tracts. It was now that I first obtained an adequate idea of one of the most wonderful systems of cultivation in the world, equaling all that is related of Chinese industry, and, as far as I know, surpassing, in the labor that has been bestowed upon it, any tract of equal extent in the most civilized countries of Europe.

In this remote and little-known island, from which all Europeans (except a few traders at the port) are jealously excluded, many hundreds of square miles of irregular, undulating country have been so skillfully terraced and leveled, and so permeated by artificial channels, that any portion can be irrigated or dried at pleasure.

According as the slope of the ground is more or less rapid, each terraced plot consists, in some places, of many acres; in others, of only a few square yards.

We saw them in every state of cultivation—some in stubble, some being plowed; some with rice crops, in various stages of growth. Here were luxuriant patches of tobacco; there cucumbers, potatoes, yams, beans, or Indian corn varied the scene.

In some places, the ditches were dry; in others, little streams crossed our road, and were distributed over lands about to be sown or planted. The banks, which bordered every terrace, rose regularly in horizontal lines above each other, sometimes surrounding an abrupt knoll and looking like a fortification, or sweeping round some hollow, and forming, on a gigantic scale, the seats of an amphitheatre.

Every brook and rivulet has been diverted from its bed, and instead of flowing along the lowest ground, were to be found crossing our road half way up an ascent, yet bordered by ancient trees and moss-grown stones, so

as to have all the appearance of a natural channel, bearing testimony to the remote period at which the work had been done.

As we advanced further into the country, the scenery was diversified by abrupt, rocky hills, steep ravines, and by clumps of bamboos and palm-trees, near houses and villages; while, in the distance, the fine range of mountains, of which Lombock peak, 8,000 feet high, is the culminating point, formed a fit background to a view scarcely to be surpassed either in human interest or picturesque beauty.

PRESERVATION OF APPLES.—“I cover the floor of my cellar with hurdles, two in thickness, and on this I put a little straw, upon which the apples are placed without further care or attention, except removing all that appear to be faulty as I place them in the cellar, and I think it is unnecessary to use any particular care in this respect. I have at present 110 bushels of apples thus heaped up in a small cellar; two or three times a week I give a good wetting with fresh water, as much as I think will wet the whole of them. This water drains off through the straw and hurdles into a well. In this way my apples keep well until the time I usually dispose of them; the best to make me a good return after Christmas.

“At present, the apples look as firm as if just gathered; and understand that during the last ten years they have always kept as well and fresh as now. How much less troublesome and easy of application, for keeping large quantities of fruit, than storing them away in dry sand on shelves, or in boxes, or in any other of the ways that are highly recommended.”—*Gardener's Chronicle*.

Roasted coffee is now believed to be one of the most powerful of deodorizers, actually destroying noxious animal and vegetable effluvia. Experiments which have been recently made with it have proved most satisfactory. This is a simple, safe disinfectant, and convenient to be obtained.—*Floral Cabinet*.

TRANSACTIONS
OF THE
BAY DISTRICT HORTICULTURAL SOCIETY
OF CALIFORNIA, FOR 1873.

[We give such portions of the Report of the Bay District Horticultural Society as have not been previously published in the CALIFORNIA HORTICULTURIST.—Ed.]

To the Honorable the State Board of Agriculture of the State of California.

GENTLEMEN:—In compliance with the requisitions of the law, appropriating sundry moneys to the various Agricultural and Horticultural Societies of California, we, the Directors of the Bay District Horticultural Society of California, herewith present to your honorable body a report of the transactions of that Society, consisting of the List of Officers and Members, the Constitution and By-Laws, Proceedings, as far as they are of public interest, Essays and Lectures delivered at the meetings of the Society, Items of Interest concerning the Horticultural Exhibition of 1872, and a Statement of Accounts.

The Bay District Horticultural Society of California was organized in October, 1870, for the purpose of promoting the interests of Horticulture generally; and although its progress has been slow, the Society has steadily increased in strength and usefulness.

The members who have taken the most active interest in the Society are almost exclusively residents of San Francisco and its immediate vicinity. This accounts for the fact that more attention has been paid at the meetings of the Society to Floriculture, Arboriculture, and the beautifying of residences and public grounds, than to Horticulture in its broader bearings; the above designated section being less adapted to the raising of fruits and other horticultural products than the rural districts.

However, horticulturists in all parts of the State begin to appreciate the importance of our Society, and there are evident indications that many more will join us, and that this Society will represent not only the horticultural interests of the District, but also aid in promoting those of the State, in all the various details.

Our Horticultural Exhibitions, which have been arranged to take place semi-annually, will be accompanied by meetings of horticulturists from the different rural districts, for the purpose of discussion, and to devise measures for the better development of our horticultural interests, and of those industries which are connected with them.

The Society being as yet young and inexperienced, cannot be expected to have accomplished so much as would be desirable; but the will of its members is earnest, and their efforts have been largely stimulated by the generous appropriation from the State.

In presenting this report, we are aware of many imperfections; these we hope will be viewed with leniency by your honorable body.

Very respectfully,

H. N. BOLANDER,
C. STEPHENS,
F. A. MILLER,
WM. MEYER,
E. L. REIMER,
F. LUDEMANN,
CHAS. SCHUMANN,

Directors Bay District Horticultural Society of California.

SAN FRANCISCO, November 20, 1872.

LIST OF OFFICERS AND MEMBERS
OF THE
BAY DISTRICT HORTICULTURAL SOCIETY, OF CALIFORNIA.

President—H. N. BOLANDER,.....San Francisco.
Vice-President—C. STEPHENS,San Francisco.
Secretary—F. A. MILLER,San Francisco.
Treasurer—WM. MEYER,.....San Francisco.

Trustees,

H. N. BOLANDER,	E. L. REIMER,
C. STEPHENS,	F. LUDEMANN,
F. A. MILLER,	CHAS. SCHUMANN.
WM. MEYER,	

Regular Members.

H. N. Bolander,	San Francisco.
E. L. Reimer,	San Francisco.
F. A. Hering,	San Francisco.
F. Ludemann,	San Francisco.
R. Michelson,	San Francisco.
C. Schuman,	San Francisco.
Wm. Meyer,	San Francisco.
F. A. Miller,	San Francisco.
J. Forrer,	San Francisco.
C. H. Hoffman,	San Francisco.
W. F. Norcross,	San Francisco.
A. J. Saulman,	San Francisco.
John Wieland,	San Francisco.
A. Steiger,	San José.
J. B. Scotchler,	San Francisco.
H. Balzer,	San Francisco.
T. B. Lewis,	San Francisco.
J. H. Sievers,	San Francisco.
P. J. Ford,	San Lorenzo.
Warren B. Ewer,	San Francisco.
E. Mayrisch,	San Francisco.
Edgar Briggs,	San Francisco.
Ludwig Doeltz,	San Francisco.
Sevin Vincent,	Brooklyn.
John Rock,	San José.
William Robertson,	San Francisco.

Wm. Dose,	San Francisco.
R. D. Reed,	Sonoma.
W. J. Adams,	Menlo Park.
G. M. Miller,	San Francisco.
E. Meyer,	San Francisco.
Ed. Wolléb,	San Francisco.
Th. McEvoy,	San Francisco.
Eugene A. Upton,	San Francisco.
J. M. Thompson,	Napa.
Jacob Seitz,	San Francisco.
Theo. Brown,	San Francisco.
L. H. D. Lange,	Red Bluffs.
— Herrmann,	San Francisco.
J. M. Asher,	San Diego.
Richard Linke,	San Francisco.
Wm. Meeks,	San Lorenzo.
Geo. Boreham,	Nicasio.
A. Thomas,	Santa Rosa.
Hugo Horst,	San Francisco.
F. Weisenborn,	San Francisco.
Chas. Mohr,	Vallejo.
Chas. Barnard,	San Francisco.
R. B. Woodward,	San Francisco.
C. Stephens,	San Francisco.
Gustave Mahe,	San Francisco.
E. J. Hooper,	San Francisco.
S. Tonnar,	San Jose.
F. Bibend,	San Francisco.
A. L. Bancroft,	San Francisco.
Julius Spenter,	San Francisco.
W. B. West,	Stockton.
J. Lempke,	San Francisco.
A. Kellogg,	San Francisco.

Honorary Members.

Baron F. Von Mueller, Director of the Botanical Gardens at Melbourne,	Australia.
H. T. Williams,	New York.
Marshal P. Wilder,	Dorchester, Mass.
Chas. Downing,	Newburgh, N. Y.
P. Barry,	Rochester, N. Y.
M. Ellwanger,	Rochester, N. Y.
Dr. C. C. Parry,	Washington, D. C.
Hon. Horace Capron,	Japan.
James Lick,	San Jose.
W. H. Treen,	Melbourne, Aust'ia.
Col. Warren,	San Francisco.

THE SECRETARY'S REPORT.

To the Officers and Members of the Bay District Horticultural Society of California.

GENTLEMEN :—For the second time it has become my duty to present the annual report of the proceedings and of the state of affairs of our Society. In the performance of this task, I am encouraged by the fact that our Society has been constantly gaining strength, and is already recognized by the public as an established institution, calculated to promote the interest of Horticulture in general, and more particularly Floriculture and Arboriculture.

USES OF HORTICULTURAL SOCIETIES.

Frequently the question is asked, "What are the uses and benefits of Horticultural Societies?" With the same propriety it may be asked, what are the uses of Art Associations, Scientific Associations, Academies, and Mechanics' Institutes? and yet no intelligent mind doubts the great importance of all these institutions.

A Horticultural Society is a necessary institution for California, where new products are continually presented, and new industries are established every year. Our climate differs from that of other countries, our soil is different, and our seasons form a very striking contrast with those of other localities of the same latitude. Within our own State, the climate varies to such extent that we may raise with equal success the banana, the apple, the grape, cotton, ramie, tea, potatoes, and rice. And, again, our homes may be surrounded with trees, shrubs and flowers from every country; while the pine and oak thrive admirably, the palm, the acacia, the pampas-grass, develop their flowers in the midst of our winters.

While it is an acknowledged fact that California can produce all these, there appears to be a great lack of knowledge as to the proper treatment of those plants, trees, and seeds, which have only recently been introduced, and as to the most practical method of making these products pay. To remedy this evil, a Horticultural Society is necessary, to obtain and disseminate the proper information, and to encourage by all means at its disposal the raising of such products as are likely to create new and permanent industries.

But the province of a Horticultural Society is not confined to the encouragement of such productions as will furnish our markets with fruits and vegetables, and supply our manufacturing establishments with raw material; one of its leading objects is undoubtedly to create taste, and a love for adorning the surroundings of our homes, of our public grounds, and of our roads and highways. Improvements of this kind are undoubted indications of a happy progress and prosperity; and in this particular the people of California are in much need of encouragement, which can not be better supplied than by our Horticultural Society. That our Society has succeeded in effecting some good in this direction there can not be any doubt; but it is equally true that far more remains to be done, which is only possible by a united effort on the part of our practical men. The leading features of a Horticultural Society are its exhibitions of the products of the country. In the development of a new country, exhibitions of this kind are essential. A comparison of products is presented which stimulates the producer to excel his neighbor; to the consumer is demonstrated the difference between the old California Mission grape and the Black Hamburg; between the sunflower, and the rose, and the camellia; between the manufactured wines (so called) and the pure juice of the grape. To visitors from abroad is given an opportunity to judge of the wealth and resources of the country, and encouragement to them and their friends to settle among us.

Thus we would demonstrate that a Horticultural Society is an important institution, and that with proper exertions it must be beneficial to the State.

THE SOCIETY'S LIBRARY AND READING-ROOM.

In order to furnish the members and friends of the Society with information derived from all parts of the country, as well as from abroad, a Reading-room has been established, and at the present time over twenty-five Horticultural, Agricultural and Scientific periodical publications are filed for the use of those who seek information. Four of the journals are published in California, nineteen in other States of the Union, one in England, and one in Australia.

The Library contains at this time about two hundred volumes, including very excellent works on botany, landscape gardening, and practical treatises on all the leading industries of the country. It is desirable that some additions be made to the Library at an early period.

MEETINGS OF THE SOCIETY.

The regular monthly meetings have not been as well attended as would have been desirable, which is partly attributable to lack of spare time, and also to some indifference. The hard work of the Society has rested upon a few members, and I hope most sincerely that in the future all the members will take a more lively interest in the proceedings, and lighten the work of the few, who have at a great sacrifice of time done the work for all. Thanks to the few faithful ones, who were always willing to co-operate, and to do more than their share of the onerous work.

FOREST CULTURE.

The Society has used its best endeavors to promote and encourage Forest Culture, and has been instrumental in bringing the matter before the Legislature, resulting in the passage of a law for the encouragement of forest and timber tree culture, which, however, did not receive the signature of the Governor. The Society is strongly in favor of some system of forest culture in this State, and will in due time co-operate with the State Board of Agriculture, if acceptable, in advocating some measure which will bring about the desired end.

THE EXHIBITION.

With the generous aid granted by the Legislature of California, the Society has arranged to hold two exhibitions annually for two years. Without this aid, it would have been impossible, as the Society, being young, could not command the necessary funds.

The Fall Exhibition of 1872 was a success, financially as well as otherwise; but the enormous expense of fitting up a suitable hall required considerable engineering on the part of the Directors, and the greatest care and economy will be necessary to keep it from financial embarrassment.

The most brilliant features of the Exhibition were:—1. The display of *variegated foliage plants*, both hardy and tender; the improvements in this class of plants have been most wonderful within the last few years throughout the civilized world. The specimens exhibited were generally well grown, and were enthusiastically admired.

2. *Flowering plants*, both hardy and tender, were also well represented; and although the season preceding the exhibition was very unfavorable to the development of flowers, the display was very creditable, and with the exception of roses, was superior to the exhibition of 1871.

3. *Plants indigenous to California* were not so numerous as was anticipated; however, it is important that their cultivation has been encouraged by the Society, as numerous

varieties of trees, shrubs and flowering plants, all growing wild within our State, well deserve extensive cultivation.

The display of *ornamental and useful timber trees* was very numerous and excellent. Not less than three hundred and fifty varieties of coniferous trees were placed on exhibition, including many of our natives. Of Australian evergreens, there were also about two hundred and fifty varieties represented; certainly, as far as our information serves us, the most extensive collection on record.

New and rare plants always form very important and interesting features in an exhibition of this kind, where many things present themselves which have hitherto been known to very few. The introduction of new plants of any kind, useful or ornamental, should be encouraged to the fullest extent; and I hope that our next exhibition will show superior and more numerous collections of this kind.

The exhibit of *fruits* was not so grand as we were entitled to expect on an occasion of this kind, in the metropolis of the Pacific coast. Very few of our pomologists partook in the exhibition, yet the display made by the few friends of the Society was really excellent, and much better than that of former years. Fruit growers, no doubt, will soon learn that it is to their advantage to make a good display of fruit, when the bulk of their product is expected to find a market. The time has past where the people will purchase fruits without inquiring where they come from, what their good qualities are, etc., and certainly by receiving the different varieties of fruit placed side by side, they are enabled to judge which are the most desirable. In order to have the people understand that there is a difference between one variety and another, we must educate them to that knowledge, by placing before them the different varieties.

The best exhibits of fruits were made from Sacramento, San José, Stockton and Napa.

Some very good exhibits were made of California grown seeds, of California cotton, California vines, oranges, lemons, coniferæ cones, and preserved flowers.

There was a general complaint toward the close of the exhibition, that it had been kept open too long, *i. e.* from August the 22d, to September 15th. There is no doubt that the complaints were well founded. A Horticultural Exhibition is almost entirely made up of perishable articles, and it is only at an immense sacrifice that a good appearance can be preserved. Flowers will fade away under the effects of gas and dust and an insufficiency of light and ventilation; fruits will decay and lose much in their appearance, plants and trees will suffer to an extent which, in many cases, results in total losses. We think a Horticultural Exhibition should be limited to nine days. Of course, the result will be, that the receipts at the door will be much less, but exhibitors will not suffer so much, and more of them will be found who are willing to contribute to an exhibition which is not calculated to bring a heavy loss of stock upon them.

I deem it proper to say a few words at this time, in regard to the San Francisco Horticultural Hall Association, the connections of which with the Horticultural Society are not generally understood.

For some time past, the members of the Horticultural Society have seen the necessity of procuring a suitable hall for their exhibitions. The means of the Society being very limited, the proposition was only a practicable one if taken hold of by those individual members of the Society who were both able and willing to obtain a hall, provided the Society would co-operate as much as possible, and also provided that the profits accruing from such hall should be divided amongst the actual share-holders. A Horticultural Hall Association was consequently formed, independent of the Horticultural Society, consisting, however, of members of the Society; a hall was then purchased and fitted up, the Horticultural Society taking stock of the Hall Association to the amount of \$1,480.

Both Associations are carried on independent of each other; but the expense of fitting up the hall for the exhibition being very great, a special agreement was made, that the Hall Association, for and in consideration of 1,500 dollars, paid to the Horticultural Society, should be entitled to the net proceeds of the first two weeks of the exhibition, which was in reality the best arrangement which the Horticultural Society could make.

With a gratified appreciation of the confidence which has always been shown to me by the members of the Society, in my many active duties, I hope that the day will not be far distant, when "THE BAY DISTRICT HORTICULTURAL SOCIETY" of California, will be one of the permanent and foremost institutions of the Pacific Coast, and by its strength and influence will make itself felt in the development of the horticultural resources of California.

STATEMENT OF THE RECEIPTS AND EXPENDITURES OF THE AUTUMN EXHIBITION OF 1872.

Dr.	Cr.
To Cash received for Warrant from the State of California, for \$2,000—less discount of 10 per cent.	\$1,800 00
To Cash from Horticultural Hall Association, as per agreement, and in consideration of receipts at the door during the first two weeks of the Exhibition	1,500 00
To Cash Receipts at door during third week of Exhibition	1,264 75
	<hr/>
	\$4,564 75
	<hr/>
To Balance*	\$944 45
	<hr/>
	\$4,564 75
	<hr/>
By Lumber and Carpenter's Work	\$286 25
By Labor	115 50
By Cartage and Express Charges	24 00
By Insurance	47 85
By Manager of Exhibition	200 00
By Printing	52 50
By Wirework	61 00
By Police	9 00
By Muslin for Decorating	51 80
By Envelopes, Stamps, etc.	19 00
By Loan of Dishes	5 25
By Watering Pots	3 00
By Incidentals	46 90
By Rent of Hall for third week of Exhibition	480 00
By Doorkeepers and Ticket Office	70 00
By Gasfitter	12 50
By Music (third week)	495 00
By Advertising (third week)	69 75
By Sundry Expenses	37 00
By Premiums paid, as per list	1,534 00
By Balance	944 45
	<hr/>
	\$4,564 75

*This Balance, with the appropriation from the State for the year 1873, will be applied to paying the premiums which may be awarded at the Spring and Autumn Exhibitions of 1873, to which fund the Society proposes to add such amount as the means at its disposal will permit.

GENERAL ACCOUNT OF RECEIPTS AND EXPENDITURES OF THE BAY DISTRICT HORTICULTURAL SOCIETY

FOR 1872.

<p>Dr.</p> <p>To Balance in hands of Treasurer from 1871..... \$ 25 80</p> <p>To Receipts for the year 1872, as subscriptions from members..... 421 45</p> <p>To Balance transferred from Exhibition Fund..... 944 45</p> <hr/> <p>To Balance on hand.....</p>	<p>Cr.</p> <p>By Furniture and Fixtures..... \$58 25</p> <p>By Rent of Room..... 123 00</p> <p>By Subscription to Horticultural and Agricultural Papers..... 90 00</p> <p>By Printing..... 28 00</p> <p>By Books for Library..... 97 25</p> <p>By Traveling Expenses..... 134 00</p> <p>By Commission on the collection of monthly dues, etc. 94 30</p> <p>By Incidentals..... 91 50</p> <p>By Balance..... 675 40</p> <hr/> <p>\$1,391 70</p>
--	--

\$1,391 70

\$675 40

Respectfully,
F. A. MILLER,

Secretary Bay District Horticultural Society, of California.

ESSAYS AND LECTURES.

OBSERVATIONS AND SUGGESTIONS RELATIVE TO CALIFORNIA ROOTS
AND BULBS.

BY DR. A. KELLOGG.

To illustrate by example, let us "consider the *lilies* how they grow." First, premising that observations made by respective inquirers in varied climates, soils, localities, etc., will ever leave ample room for diversities of opinion, and practical adaptation of principles. With this general proviso, we submit the following remarks:

In a climate like ours, clearly discriminated by a wet and long dry season, we find these bulbs located say about six to ten inches deep; the vital fibres, or true roots, shoot downwards ten inches to a foot below this point, in search of food and moisture; thus radiating from the leading germinal end of mostly oblong scaly bulbs—the respectively dormant fibres that have "closed in" serving as stays, etc. Is it not evident, then, that such bulbs require a flower-pot at least eighteen inches deep? Hence, ordinary pots must be *utterly useless*, or worse—cramping or inadequate to meet the primary natural indications. Let any one take an improvised five gallon kerosene or alcohol tin can, or the like, which is good enough, not to say the best, cut out one end and nail narrow slats around the upper margin to add symmetry, avoid unsightly dents, and for convenience in handling; and if one slat is dressed, paint the name, to avoid annoyance of displaced labels; paint rudely inside and out, to preserve; punch say at least three large holes in the bottom; plant, as in nature, in any good soil well composted, and set your can, keg or crock in a shallow pan of water. You will soon have the pleasure of seeing a stout stem, of the size of your thumb, rising up and "rejoicing as a strong man to run a race," and flowering gorgeously. Let it generally be observed here, once for all, that in California *underground* irrigation, or water supply from beneath, is the requisite rule or law to be observed, especially in their advanced stage of growth. Many California plants are not only injured but killed outright by spraying beneath our California sun. To illustrate these principles, let us take a few other examples, to show that if a plant spends its vital force searching for requisite food or moisture; or, if the law of supply be reversed, efforts baulked, or attained at too great an expenditure, little or nothing else can be accomplished. *Abronia arenaria*, as the specific name indicates, grows in sand. If found on deep sand-drifts of the bay shore of San Francisco, or inland, it shoots down a stout fusiform root of indefinite length, but often poor and puny is the top, that creeps not far from the crown, with perhaps few flowers and little fruit. But mulch a moist, black, brackish, cracky soil, with only six or eight inches of sand, and it will go down to, or a little into it, spread abroad its forked subdivisions and fibres, almost or quite horizontally; the crown-sprouts now run riotously, mantling the sand with vines, full of pink flowers in fruitful umbels unnumbered. Often one spray of water *above* will kill it entirely; or, the root remaining, it will sometimes come up and flourish again if surface irrigation is neglected, even *two years* afterwards. A similar short horizontal spread of root is seen with *alfalfa*, on tulle or lands fairly shaking and rocking with a peaty carpet; and so of a thousand roots, otherwise exceedingly deep, and prone to delve. The legitimate practical inferences we leave to the good sense of every enlightened stock-raiser, farmer and cultivator. Let us return, then, and review the *rationale* involved relative to bulbs, and also consider other facts, and, if possible, answer such queries as cast a shadow over the path of inquiry.

There are not only tides in the ocean, but in the earth, air, ethers, and the seasons as they roll, as well as "in the affairs of men"—a season of harvest, resting and repose. Anon, the rippling rain tides bear away the raw material and soluble salts from above; but when the return spring tides begin fairly to set in—say from about the last of May, or in June—when, for all intents and purposes, the rains have ceased. Then, prompted by the Divine Law of just reciprocity, the tidal waves return, laden with winter's wealth, commingled and fitted for the varied uses of plants that people the earth.

The *import* of all this is, that henceforth the commercial current should be *towards* and

not from the hungry and thirsty mouths, or radicle spongioles; otherwise, they perish or pine, with feeble struggling, or sickly efforts to maintain a precarious existence.

Florists are apt to complain that many of our bulbs ere they bloom lose one essential beauty of plants, viz., their *radicle leaves*, which, they say, "dry up, and leave the stems looking naked and bare." Where this is the charmed law and order of development, it is better some than the barren fig-tree's fate; and I suppose we must submit. But let us lift our eyes to their history a moment, and see if light arise. They are frequently found upon exposed hills and slopes, rocks, etc., descending down dry and very hot valleys, into debris and alluvial bottoms, where sand or loam with *underground moisture* abounds. The very same plants are seen to rejoice best where they find some shade and shelter; otherwise, they bespeak a struggle for existence, *i. e.*, their leaves prematurely or naturally dry up early to save exhaustion. In half shades, along high banks and slopes, contiguous to creeks, with adequate subsoil moisture, we see *Cyclobothra alba*, with long and beautiful glaucous leaves, say an inch and a half wide, eighteen inches to two feet in length accompanying the flowers, ten to twenty in number; the golden *C. pulchella* and most others tolerate more sun and drought, with their companions the manzanita (*Arctostaphylos glauca*), oaks, etc., near whose shades it is wont to linger; but its best forms love rich, rocky, half shady drains—leaf and flower companions to the close. Witness *Seubertia laxa*, two to four feet high; the same *Dichelostemas* and *Brodiceas*, ten to fifty flowers, and green leaves in similar grace and completeness of beauty. The list might be extended beyond the reader's patience; what we desire to say and impress is, that the same plants exposed are barely one quarter as large, and no green leaves at all, or at best a poor apology; and so of numberless others.

What is the lesson the facts teach? Surely that the gardener and florist should imitate their very level best; and it is by no means difficult to exceed the highest standard. Our plants are not likely to be exceptions in the main to general experience. Besides, it would be folly to fold one's hands at the very first failure—if plants excite our pity or give great care and solicitude, the cost is too great for the pleasure returned. With what delight, on the contrary, do we behold one joyously filling up the full measure of its glory! If these general suggestions be true, says the objector, "why do so many rot by moisture?"

That is a pertinent question; but, first, how do we proceed? In the loose soils where we usually place them, are they as well protected as in their native matrix? The soil then must need be packed or tramped firmly and uniformly, as one would pack a mold in the foundry; or even more so in soils of no great interstitial absorption.

It is the life-struggles with difficulties that bring out the best qualities of the man—the fruits and flowers, roots and bulbs, born of the Great Mother. Resistance above, reacts below, gives spread, depth and vigor in the direction of least resistance, at this juvenile stage of life; young plants, like children, especially "Young America," require to be kept back a little. A precocity that mimics mature display in the glare of the world, is ever the sure harbinger of premature exhaustion and decay. The root—the strong foundation—is of first consideration in all structural building, and should be well laid, cherished and preserved. We do not say it should be founded upon some suitable rock, but we sometimes think so; radiated heat and graduated temperature, sweetness of drainage, and it would seem reasonable, that in due time some resistance from below also, were all requisites of high culture. May not the florist, in his undue solicitude, be also to blame, and by some shortcoming fail, or from excess undo by overdoing? Suppose he flood too continuously between loose scales, adding excessive heat withal, ought not he to expect just the result urged? Now, we seldom see in Nature bulbs sheltered by shrubs, rocks, logs, bark, leaves, etc.; or in very compact soils rotten at the tips of the scales, and hence a lure to maggots and grubs; nor often in such sandy and gravelly soils as readily absorb, drain and disperse this excess of top moisture. We appeal to the observations by careful collectors. Let us then copy the best conditions, and we feel assured the result will confirm our rather hasty hints.

In conclusion, we dare not presume even a tithe has been noted—in short, only what may be considered peculiar to climatic conditions and observations here is thought necessary. Erudite and complex recipes relative to proper mixtures of soils, and common management may well be left to the knowledge and judgment of those who believe in them. With such a wealth of sunlight and heat above as falls to the lot of California, and no lack of the commercial medium moisture below, I see no reason why we may not allow Nature, un-

der human hands, to grow her fragrant white Lady Washington lily six or seven feet high, with ten to thirty or more flowers, just as we see it wild. *L. Bloomerianum*, too, is a perfect giant among lilies, when at its best—a right super-royal display—the Divine Teacher himself being judge. Nor why *L. superbum* in a southern bog should be eight feet high, with the best part of a hundred flowers, as we have seen it there, and still the marvelous beauty is ever new as we retrospect. Even our little orange *L. parvum*, I found at the Sierra summit over five feet high and fifty flowers—*carefully counted*—but the plant was sheltered and shaded by an old emigrant water-tank stilted up, now dry and long ago abandoned, but its roots found a fair supply of *water from beneath*.

THE INSECTS OF CALIFORNIA.

BY DR. H. H. BEHR.

There is a pervading opinion in this country, that our cereals as well as garden fruits are nearly exempt from the ravages of insects injurious to vegetation. To a certain extent and for the present this supposition might hold good, and for good reasons. California is a new country that never before had either agriculture or horticulture of any amount, and the plants that now are cultivated are all foreign, the soil to none of them being native of California.

So it is clear that the exemption from insect ravages is not a happy peculiarity of California, as it has been represented by some learned gentleman, but a transient state common to countries where extensive cultivation is of recent date, and refers to plants not indigenous to the soil.

There is a law in the economy of nature which, perhaps, may be called "the balance of power," for it is antagonistic to the preponderance of any particular species, tending to the extirpation of others. In the animal kingdom it is chiefly this law that sends epidemics to decimate certain species, when by predominant multiplication they threaten to supercede the others; in the vegetable kingdom it is chiefly by the existence of certain insect parasites on certain plants which are multiplied in the same proportion in which, by a one sided cultivation, the plants, on which they feed, attain an undue preponderance.

Now, these insect species will sometimes immigrate with a new cultivation, and others being indigenous and feeding on certain plants will adapt themselves to the introduced plant and prefer it to the native one, on which they formerly fed.

Starting from this point of view, it will, perhaps, be of some interest to watch the ravages of some insect larva on vegetables, not indigenous to our soil.

1. *Carpocapsa pomana*, L. A. maggot that feeds, in Europe, inside of apples, which fruit is disfigured by its ravages; this species evidently is introduced, and till now has proven harmless, as its rarity prevents disfiguration to any extent. The first specimen of this little moth, I received from Dr. Cooper, well known for his valuable work on *California birds*. Since then, I caught only one other specimen, two years since.

This little moth passes through many generations during two years, and only from fall to winter the caterpillar feeds in the fruit. From spring till fall, it is found in decaying wood, underneath the bark of apple trees; and here is the weak point of the species. We can check their progress by not allowing any sick fruit tree to remain in our gardens, for in doing so, we cut off the means of their larva sustenance for at least two generations, during which, it feeds on the decaying wood of the sick and superannuated trees.

2. *Cidaria Epilobii*, (Behr). This neatly marked Geometra was, in former time, a great rarity, when its caterpillar fed only on the different species of *Epilobium*, but since the *Fuchsias* have made their appearance in our gardens, this *Cidaria* left the native plant and fancied the exotic in such a way, that they really became troublesome to our cultivators.

This is an interesting circumstance, as it affords another proof of the close affinity of *Epilobium* and *Fuchsia* (proved besides by the larva of *Deilephila Lineata*), and too by the larva adopting the colors of the petioles of the species of *Fuchsia* on which it feeds, so that in some species the larva keeps green, and others showing a red dorsal stripe, mimicking the same coloration in some of the *Fuchsia* varieties.

3. *Tetracis* sp. The caterpillar of this undescribed geometra, is very commonly found in gardens, where it chiefly affects rose leaves, ivy and most of all the New Zealand varieties. As I never found this caterpillar anywhere else but in gardens and on cultivated shrubbery, I suspect the insect exotic, and introduced together with some ornamental shrubbery. Nevertheless, it is possible that, like the *Cidaria Epilobii*, it may be a native of California, and only has adapted itself to the above named plants.

The caterpillar lies in spun up leaves, by which circumstance it disfigures the shrub which it inhabits considerably. It transforms between spun up leaves into a white chrysalis, (a very rare coloration in the group) and differs sufficiently from other species of *Tetracis*, to constitute, perhaps, even the type of a new genus intermediate between *Uraptega* and *Tetracis*.

As to remedies against the *Cidaria* and *Tetracis* larva, I would recommend protection to insectivorous birds that may breed in the garden, as they are known to destroy a great number of geometrida larvæ, commonly called cankerworms.

OUR FORESTS.

BY EZRA S. CARR, PROF. OF AGRICULTURE, ETC., UNIVERSITY OF CALIFORNIA.

At a recent meeting of the Oakland Farmers' Club, Hon. J. W. Dwinelle read an admirable paper, embodying his observations on tree planting, during an extended tour in Europe. His remarks have a direct bearing upon the question of the hour, viz: how shall we plant our streets, and the borders of our farms, in the most permanently useful and economical manner. And he also gave us much information concerning the success of the work of rehabilitating the wastes created by a rude and selfish civilization. It is civilization of a certain sort which is rapidly disforested this country, and unfitting it for the purposes of agriculture.

In Europe, trees are planted on worn-out lands, to renew them. A gentleman, in Germany, told Mr. Dwinelle that his family owned large plantations of trees. The oldest of them had been planted about 25 years, the last would be ripe for use at 125 years old, yielding three per cent. per year, on the investment, which is the usual rate for secure loans. The science of forestry, as illustrated in older countries, shows that it is quite possible for man to make reparation for the injury he has done to the wild beauty of nature. But all such work is trifling in importance and results, when compared with that which we are called to do in preservation of our noble forests, the source of almost boundless wealth to future generations.

Twenty years ago the amount of timber consumed in England, was estimated at \$115,000,000, equal to the whole value of our foreign imports, at that time, and of this, \$80,000,000 was *home grown*. Oak plantations, at the common rate of forty trees to the acre, averaged \$2,200 per acre in value. During the last twenty years, if we turn our attention to our own country, we shall find that the price of wood has quadrupled between the Atlantic and the Mississippi, a region once covered with immense forests. Nearly all the most valuable varieties for manufacturing purposes are exhausted, and the present supply is derived from the northern States of the interior, at a half dozen different points, where the work of destruction is going on with amazing rapidity. At points remote from transportation a frightful waste annually goes on by the girdling of the trees. The report of the Commissioner on Agriculture for 1868, sets down the available timber lands in the portion of the country above alluded to, as 100,000,000 acres. The sawed and planed lumber in the States east of the Mississippi, in 1860, amounted to 450,000,000 cubic feet, while that consumed in fencing, buildings, manufactures, and cord wood, increased this "yield" for the year to 6,000,000,000 cubic feet. Taking the timber tracts together, good and bad, the average is not more than 6,000 solid feet to the acre, or in other words, the necessities of the population, east of the Mississippi, required the destruction of 1,000,000 acres of woodland, for that year. During the previous ten years the increase of cleared land amounted to 28,428,551 acres. Allowing three-sevenths of this to have been prairie

or other lands destitute of wood, we have an annual clearing of 2,000,000 acres. *The increase of population and their increasing wants, would consume in less than fifty years every acre of forest in all that wide region.*

Between the Mississippi and the Sierra Nevada, we have no considerable forests, and already the planting of these has begun to attract the attention of the great body of agriculturists in Kansas and Nebraska. More trees, both fruit and timber, have been planted in these young States than in any other part of the Union. Further west, there is scarcely timber enough to supply the wants of mining enterprises alone, until we reach the forests of the Pacific coast. The word "*inexhaustible*" has so often been applied to them, that only a careful examination of commercial and other statistics, may seem to justify the warnings which scientific men in California and elsewhere, have been giving for the last few years. The public lands in California, Oregon and Washington, have been so far trespassed upon, that the strong arm of the National Government is needed to save them from spoliation.

There are millions of acres in California worthless for any purpose but the growth of timber, which are being rapidly transformed, by private owners, into wastes where no water is, great patches of desolation, uncheered by the ripple of mountain streams, but torn by the anger of devastating mountain torrents.

Forests are the mothers of rivers, the great regulators of the distribution of moisture; the economic questions involved in their preservation, involve those of climate and population. The soil in many places has been made by the trees, which grew upon it, and the permanent agricultural prosperity of a country, must depend upon the proportion of its territory kept entirely in forests, or equivalent plantations.

The lower or meaner purpose of the vegetable world, as Schlieden says, is doubtless to serve the material requirements of individual men, and societies; its loftier uses are seen in the regulation of physical processes, which concern whole countries, regions and generations. These are among the greatest questions with which the scientist and the legislator have now to deal. The popular intelligence of the country is manifestly unequal to it, for the laws of vegetable meteorology are as yet little understood, and no time is to be lost, if, in our selfish grasp for immediate profits and advantage, we are rapidly unfitting the land for the occupation of a developed and spiritualized civilization. How we are to set about this work of protecting our forests and preserving the true equilibrium between the animal and vegetable inhabitants of this part of the planet, will be made the subject of future communications.

SAN LORENZO, ALAMEDA CO.

[READ BEFORE THE HORTICULTURAL SOCIETY.]

San Lorenzo is a small town or village, with possibly a population of not more than one hundred; it has a schoolhouse and Post office, two hotels or boarding houses, one large store, and a blacksmith's shop, perhaps the most extensive in the county, under the special supervision of Mr. Henry Smyth. The first objects that attract the traveller's attention in passing through this beautiful valley are the many extensive fruit orchards, producing nearly every variety of fruit. But I will leave these fine orchards at rest as they are at present, and speak of ornamental trees and shrubs. It is gratifying to all who have any regard for horticulture, to know that nearly all the intelligent farmers in this locality have more or less trees planted for shade and shelter and the beautifying of their homes, while all are convinced of the necessity for planting more every year. So much has been said on the subject of planting trees, and the many benefits to be derived from so doing, that one would think there could be no more room for further suggestions.

Nevertheless, the majority of the people are indolent and heedless regarding this grand branch of industry; we must therefore reiterate the subject, and try to assert the good of having a few trees on every farm. Would that every farmer in this country could be induced to see and appreciate, as I do, the many advantages to be derived and the comfort that would be afforded to their stock, both in winter and in summer, by having a row of Monterey

cypress, pines, eucalypti, or acacias round his farm. What a pretty boundary line any of those trees would make, and what comfort it would afford to the animals that roam within its limits. In some large and rather elevated fields here, there are a few oak trees remaining, and under these can be seen the cattle and horses sheltering during the summer, they having no other comfort or protection from the cold westerly winds and the burning hot sun but these few native oaks which nature has provided. By this every intelligent man must perceive the benefit to be derived from having some trees on his land. In this country there can be no excuse, blessed as we are with such a temperate climate, and possessing soil which is noted for its fertility and productiveness, and where almost every variety of trees will grow and thrive better than in any other part of the world. My experience here during the period of one year and nine months, has enabled me to report how many of the ornamental trees and shrubs grow and prosper in this locality. In April, 1871, I had occasion to plant a variety of evergreen trees and shrubs, such as Monterey Cypress, Pines, Blue Gums, Acacias in variety, Melaleucas in variety, Pittosporums in variety, Lauristinus and many other trees and shrubs, which I will not wait to particularize; all these have done well. During the summer of 1871, I watered them all once a week; last summer I gave no water whatever. I have not lost a tree or shrub; they have all made splendid growth. The Gum trees when planted were 3 feet high; they are now 25 feet, the trunks on an average measuring 6 inches in diameter. The Monterey Cypress were very small, not more than $2\frac{1}{2}$ feet high; they are now from 12 to 15 feet, well developed, and pretty ornamental trees. Some of the Acacias are also very fast growing trees. *A. Latifolia*, *A. Mollissima* and *A. Floribunda* are fine strong growing varieties, and make fine ornamental trees in a few years, they are also well adapted for the roadside or for planting around farms, as they grow so rapidly. Some people complain that they are straggling growing trees, and hard to be taken care of. In my opinion this is wrong. I believe, there have not been any trees introduced into this country which to the present time do better or grow more bushy by discreetly using the knife while young; it is true, as in all other work, there must be some little science and judgment used in pruning, as the inexperienced may mutilate if not kill many trees. By the above statement it may be seen that the Blue Gum has made a growth of 20 feet during one year and seven months; and the M. Cypress, from 10 to 12 feet.

Until recently it was the opinion of many, that trees would not grow unless watered during the summer months; now it is considered an established fact, that nearly all the trees and shrubs which have been introduced here, will grow well under ordinary treatment during the first year; and these can be purchased at any of the San Francisco nurseries, at from 25 to 30 dollars per hundred, according to size: therefore there should be no time lost after the first rains have fallen, in planting out trees and shrubs, and also a few flowering plants. These will make your home happy and comfortable. By all means, I would recommend planting as early as possible; by so doing, the plants will commence to grow by the first dawn of spring, and will have a good start before the dry season sets in, and by keeping the ground hoed frequently during the summer, they will need no other care.

P. J. FORD.

VEGETATION IN THE TROPICS.—The Panama *Star and Herald* gives a striking illustration of the vigor and rapidity of vegetation in the tropics, by referring to the bushes and trees growing in the ruins of the burned Aspinwall Hotel, at Panama. It is scarcely more than two years since this conflagration took place, and yet there are now growing within the walls trees at least thirty feet in height. They belong to what are called trumpet trees (*genus Cecropia*), and the branches are said to be crowding out of the highest doors

and windows, so as to render it probable that in their further growth they will throw down the walls with which they are interlaced.

A correspondent of the *Country Gentleman* has four horses that contracted the habit of crib-biting. He painted the woodwork of the stable with crude petroleum, and was amused by the grimaces of the animals over the smell and taste, but rejoiced that in this case it effected a cure.

Editorial Portfolio.

With the present number we close the Second Volume of the CALIFORNIA HORTICULTURIST AND FLORAL MAGAZINE. It is proper that we should say something on this occasion of our experience in the past, as well as of our prospects in the future.

When we undertook the publication of the CALIFORNIA HORTICULTURIST we were fully aware of the many difficulties which were to be anticipated in any new enterprise, but which would undoubtedly make themselves more seriously felt in an undertaking the nature of which was of a special character, and therefore could only expect a limited support.

We felt satisfied of the necessity for a publication of this kind, and we were willing to give it a fair portion of our time; we were also content if the actual expense of printing and issuing the HORTICULTURIST could be covered by subscriptions and other revenues appertaining to a publication of this character. We were further aware of the fact that we could not expect to make the enterprise as useful and instructive as was desirable, unless we could induce some of our practical men in all parts of the country to devote a small portion of their time to communications and essays which would render our Monthly a medium for exchange of opinions on the various branches of Horticulture. We regret to say that our Horticultural men have somewhat disappointed us in our hope for this co-operation; they have, to a great extent, failed to do their part in this work, and thus withheld that aid which would have been a tower of strength to the cause. Our own special business engagement peremptorily demands our attention during business hours, and consequently the publication of the CALIFORNIA HORTICULTURIST has engrossed an unfair portion of the balance of our time, and we were often compelled to delay the day of publication. Had our practical men spared but a small portion of their time for an occasional contribution, we should have

been relieved of many annoyances, been marvelously encouraged, and they would have made our periodical far more interesting and general in its contents.

It is not reasonable to suppose that any one or two can furnish all the required information, knowledge, and experience which is commonly to be expected in a publication of this kind, but we were placed under the imperative necessity of filling our columns.

We, of course, do not wish it to be understood that we have received no assistance; on the contrary we cordially acknowledge the receipt of some most acceptable contributions, for which we tender our sincere thanks, and entreat a continuance as promised.

The enterprising firm of Messrs. J. H. Carmany & Co., Publishers, having assumed the proprietorship of the CALIFORNIA HORTICULTURIST, and as it will in the future be published from their establishment in company with the *Overland Monthly*, etc., we contemplate a successful future for it, and we feel that we are justified in this anticipation from the increasing interest evinced in Floriculture, etc., by the public in general, and from renewed assurances of sympathy and promises of material aid, both in subscriptions and literary contributions from many sources; and we desire to impress on our readers, even if in so doing we lay ourselves open to a charge of iteration, that the purposes of this periodical are to collect and disseminate as large an amount as possible of valuable information on all subjects relating to Horticulture, Floriculture, etc., with particular reference to the peculiarities both in climate and soil of this Coast; collecting as far as possible the discriminating experience of intelligent practical men in all the branches of the profession—recording their observations when they give us the opportunity, and condensing for the service of our numerous amateur friends the results of years of patient investigation by our practical gardeners.

We shall report on the proceedings, as far as they are of general interest, of the *Bay District Horticultural Society*, and other kin-

dred Societies of this Coast, and give extracts from any noteworthy papers read before them. And we shall make it a point to record all available information on our native plants, shrubs, and trees; thus providing reading matter of interest both to the denizens of this Coast as well as to Eastern and foreign readers; while we shall carefully report on all "New and rare plants," etc., with such information regarding them as is attainable, for the service of our home friends.

We are permitted to announce that the following gentlemen have intimated their willingness to assist as

CONTRIBUTING EDITORS:

Prof. D. C. GILMAN, President University of California.

Prof. H. N. BOLANDER, State Superintendent of Public Instruction.

Dr. E. S. CARR, Professor of Agriculture and Horticulture, University of California.

Dr. A. KELLOGG, President Bay District Horticultural Society.

Dr. H. H. BEHR.

Dr. A. B. STOUT.

Mr. F. A. MILLER.

And as we have many other promises of assistance from able pens, we feel confident that the Magazine for 1873 will be full of interest and well worthy of support.

BUDDING FRUIT TREES.

WHAT OUR AUSTRALIAN FRIENDS THINK OF IT. Budding occupies less time than grafting: it is performed at a pleasanter season for light work, and a season in which gardeners are not nearly so busy as they are in spring time; and another advantage is, that those which fail can be grafted the following spring, and should the grafts take, the whole will grow up together uniformly. In this operation no great care is necessary in securing the exact contact of similar parts, and a free channel for the transmission of the roots of the bud between the bark and the wood of

the stock; for, from the very nature of the operation of budding, this must of necessity be insured. The bark of the bud readily coheres with the wood of the stock, and secures the bud itself from all accident or injury. Precautions must, of course, be taken that the bud which is employed be fully formed; the habit of constantly operating with delicacy will enable either amateur or gardener to succeed with a certainty. As regards the pear, large numbers are worked entirely on the seedling pear stock by our chief Victorian nurserymen. But the following varieties named have been proved by Messrs. T. Lang and Co., as well adapted to grow for fruit on the quince stock in Ballarat and similar cool climates, viz., Bergamot d'Esperen, Beurre d'Aremberg, Josephine de Malines, Louise Bonne de Jersey, Triomphe de Jodoigne, Winter Nelis, Brown Beurré, Beurré Diel, Comte d'Flandre, Comte de Lamy, Glout Morceau, Surpasse Crasanne, and Urbaniste. The above mentioned kinds are all very suitable for the quince stock; doubtless others will yet be proven as also succeeding well, but at the present time these are the only varieties we can ourselves vouch for. With reference to plums, the French nurserymen have long considered that the best of all stocks for plums, peaches, and apricots was the Julien stock, otherwise "St. Julien." This stock was imported into Victoria some years ago, by Messrs. Land & Co., and it has since been found a most excellent stock for plums, in fact, much superior to the common seedling plum stock. The roots of this variety are something wonderful, being a complete mass of fibres, so much so, that in removing the trees, the time occupied over the "Julien" is more than double that of any other variety, which is caused by the great quantity of splendid fibrous roots. This stock has been greatly used for budding the best dessert kinds of plums. The Muscle plum is also largely used as a stock, and particularly for those kinds which may be classed as prunes, or damsons, including the following amongst them: Prince Engelbert,

French prune, Shropshire damson, Vermont damson, American damson, Diamond, Mitchellson's Felleberg, and others of a like class. The adoption of these stocks for the different varieties has proved very satisfactory, the peculiar virtues of these two varieties of stocks being very different.

As regards apricots, we find that Mr. Rivers' experience causes him to state that the Moorpark apricot does especially well on the Muscle plum, while the peach apricot, its French congener, will not do upon it successfully. Mr. W. Wardle, the translator of M. du Breuil's famous work on fruit trees, advocates the use of the Muscle and Brussels plum as stock for apricots, but gives the preference to the former, and as Mr. Wardle was a professional grower of repute, his opinions are of value. George Lindley states, the apricot is budded upon several sorts of stock—the Muscle and the common plum, the Brussels, and the Brompton stock; but this pomologist prefers the Muscle and common plum, condemning the Brompton as a stock. It has been observed in many orchards in this colony, that the plum as a stock appears to be more hardy than any other stock, and the trees appear to be much longer lived. According to Le Bon Jardinies, the St. Julien is recommended as the best stock, therefore, without doubt, the three best stocks to depend upon for the apricot are the common stock, the Muscle, and the St. Julien. At the same time, by some growers the pear plum is regarded with favor as a stock for apricots. With reference to the nectarine, Messrs. Lang and Co. use sometimes the common plum stock; but they have also proved that on the St. Julien and the Muscle they succeed admirably. Mr. W. Wardle recommends the St. Julien, the Muscle, and the pear plum, the first and last mentioned more particularly, for the delicate varieties of nectarines, but he prefers the Muscle for general use.

Bon Jardinies recommends the St. Julien as the best stock for the peach. Mr. Wardle also follows suit; he moreover recommends

the Muscle as a stock for the peach in England. George Lindley strongly recommends the Muscle plum and the pear plum. Mr. Thomas Rivers is also an advocate for the Muscle for certain varieties. The St. Julien and Muscle are principally used by Messrs. Lang & Co., being found very suitable. The plants distributed in various parts of the colony appear to be more hardy than those on the almond, which has been largely used as a stock. In many instances the trees have succeeded better than those worked upon seedling peaches, which latter system has not been at present so commonly resorted to as the working upon the almond. There can be little doubt but that in the cool localities, the plum will be the best stock; especially seeing it is so much valued in the South of France, it should be valuable for the colony generally. With regard to cherries, the best stocks are seedlings from the wild cherry, for which seedlings from the cultivated are frequently, but improperly, substituted. The Mazzard also makes an excellent stock, while when dwarf trees are required, the Mahalel is the sort used.—*Melbourne Times*.

FAVORS RECEIVED.

Address of Dr. H. Latham, of Laramie City, W. T., delivered at the State Fair of Nebraska, in September last, and published by the State Board of Agriculture, of Nebraska.

Address by the United States Centennial Commission, consisting of the following gentlemen: John C. Adams, J. Fletcher Williams, Richard C. McCormick, Joseph R. Hawley, Lewis W. Smith.

Proceedings of the National Agricultural Congress, held at St. Louis, Missouri, May 27th to 30th, 1872.

We have received the Report of the Commissioner of Agriculture, for the year 1872. The transactions of the department are received, and will give general satisfaction. The Commissioner also urges that Congress should take immediate action for the pro-

tection of the yet existing forests, and for replanting.

The *Flower Garden* is a quarterly magazine of floral progress; published by Messrs. C. L. Allen & Co., Brooklyn, N. Y. It contains many valuable articles on floriculture. Price \$1.00 per annum, which entitles also to seeds or bulbs to an equal amount. The magazine is accompanied by their catalogue of seeds, bulbs and plants, from which selections can be made.

CATALOGUES RECEIVED.

Vick's Illustrated Floral Guide, for 1873. For a number of years past, Mr. Vick has succeeded in pleasing his customers and the friends of Floriculture with his most beautifully illustrated catalogue, full of practical knowledge and instruction. The *Guide* for 1873, is superior in neatness and completeness to any of the former publications, and as Mr. Vick proposes to publish it hereafter quarterly, we do not know of anything more useful and instructive, in regard to floriculture and the vegetable garden, than his *Floral Guide*, which is furnished at 25 cents per issue, or at \$1.00 per year; and even this small charge is refunded in seeds to customers, who order seeds to the amount of one dollar.

From F. K. Phoenix, of the Bloomington Nursery, Bloomington, Illinois, we have received the following catalogues:

Descriptive Catalogue of Hyacinths, Tulips and Flowering Plants.

Catalogue of Fruit and Ornamental Trees, plants, bulbs, etc.

Wholesale Price List of Fruit and Ornamental Trees and Plants.

Phoenix's Floral Guide, Garden Directory, and Descriptive Catalogue of Greenhouse, garden and bedding plants.

A famous rose tree in the island of Ceylon is 80 feet in circumference and 15 feet high. It has been known to bear 200 roses in full bloom at one time.

NEW AND RARE PLANTS.

Woodwardia radicans, although a native of California, is rarely met with in our floral establishments, or among the private collections of ferns. The *Garden* says: Among the many kinds of ferns cultivated in our gardens, few are more ornamental than the *Woodwardias*, and of these, *Woodwardia radicans* is one of the handsomest. It is well adapted for conservatory decoration, especially as a centre piece for a vase, on account of the broad, graceful, arched manner in which the fronds grow, and in baskets or on projecting peaks of rockwork it is also equally pleasing.

The *Woodwardia radicans* grows spontaneously in moist places in the gulches of our mountains, and should be extensively cultivated.

Clematis—*James Gould Variety*.—Our florists have not yet formed the acquaintance of this beautiful variety. The *Rural New Yorker* describes it thus: "The color is a very light shade of purple, or what may be termed white with a purplish tint."

Editorial Gleanings.

REMARKS ON THE CULTURE OF CELERY.

A few remarks on some of the principal points connected with the cultivation and management of this much-esteemed vegetable will not be out of place at this season, when the majority of plants are under a course of preparation for future use. An important matter in the cultivation of this plant, is to keep the plants constantly in a free-growing state, in order to guard against all tendency to run to seed, which is more often induced by some serious check during growth than by any other cause, for although celery is a hardy biennial plant, and would not under ordinary natural conditions flower until the second year, under a course of somewhat artificial treatment it is started into growth much sooner than would be the case in a

state of nature, and when this is the case, like many other biennials, there is a tendency to flower in the autumn, which can be only counteracted by a very liberal treatment, both as regards space for development, and copious supplies of liquid food.

In this colony celery is a plant that will repay a cultivator for extra care and attention bestowed upon it. It is at all times a marketable commodity, the supply being seldom sufficient for the demand. One matter that seldom receives that attention so requisite, is due care in the management of seedlings. The great object of pricking out the seedlings is to obtain strong and sturdy plants, with plenty of good fibrous roots, for which purpose, where only a superior article is tolerated, they must have ample space for development when pricked out previous to transplanting. During February and March, the main crops, as a rule, are usually planted out into trenches from the seed beds. The white varieties are generally the most delicate for salads, and the red sorts best adapted for cooking purposes. The soil in which celery delights is a rich moist vegetable mould. In transplanting, choose short, sturdy, strong plants, having them carefully lifted from the seed bed. The trenches for the plant should be made 1 ft. to 18 in. wide, and well trenched two spades deep at least, mixing with the soil in this operation a good dressing of well-decayed manure. After completing this, give your trench a thorough watering.

It is also very important to observe that the manure should be thoroughly decomposed. No half-decayed matter will produce good celery, there being too much bulk for fattening matter, and it soon becomes exhausted. The rich mud which settles at the bottom of waterholes, or pools impregnated with the drainage of stock-yards, will bring celery to great perfection; very probably on account of the saline matter contained therein. This should be thoroughly incorporated with the soil, when it will be in a condition to be taken up at once by the plants. After well-watering the trench, as previously ad-

vised, carefully plant the strongest and best plants in a single row (if fine sticks are wished for) along the bottom of the trench at intervals of six inches. Continue regular and thorough waterings until the plants take good root, and show renewed and strong growth, and become a deep green color. As the plants in the trenches advance in growth to about 9 in. in height, the earthing or moulding up of the plants can commence, being cautious to place the mould around them at first with care, not on any account allowing the earth to fall into the heart or centre of the plants. Repeat the mouldings up once a fortnight, until they are moulded or landed 12 in. to 24 in., in order to blanch them for a considerable length. Another method sometimes used for blanching, in lieu of moulding up, is the plan of tying round each plant with brown paper as they advance, which acts in a similar manner as moulding up so far as securing a delicate blanch; the operation requires less work, and is much cleaner.

When practicable, an occasional watering with liquid manure will be found of immense advantage; the addition of a handful of salt in the liquid manure will prove, at all times, beneficial, and materially add to the weight of the crop. If extra fine crops are wished for, it is a good plan to insert in a slanting direction through the soil moulded up around the plants a round drain pipe or tile, through which the liquid manure, etc., can be poured, thereby securing its reaching the roots, for in our dry seasons much of it otherwise given never arrives at them, and thus the anticipated benefits are not attained.

In arranging your celery trenches in the garden, the convenience for watering should always be taken into consideration, the principal object being to arrange matters so that this most important operation can be carried on with the least possible expenditure of labor. If this watering were only a casual matter, it would not be of so much consequence, but as it requires to be constantly followed up, it becomes a serious question in

busy times, especially in those gardens which have none too much labor at command.—*Melbourne Times.*

PINCHING AND PRUNING.—I have noticed that a large proportion of persons who cultivate both house and border plants, seem never to have had their attention called to the advantages, both as to taste and thrifty culture, of checking growth and concentrating vigor by pinching and pruning. Hence, in nearly all private collections we see tall, spindling plants, stretching to the tops of the windows, shutting out the view of the sky and the landscape, and appropriating more than their share of the light, showing unsightly stalks destitute of green leaves, and giving little bloom. Had they been properly pruned, they would be low down out of the way where the light would fall like a blessing on their heads, and instead of one or two, they would show a mass of growing ends with massive verdure and clustering bloom, concealing, measurably, both the soil and the pots containing it. One is reminded by this mode of culture, of the fabled nine-headed hydra, whose heads Hercules cut off, when in place of each head cut off, two new ones grew out. The more heads, the more verdure and bloom. To be sure, in such case the plant is longer in coming to the flowering, but there is ample compensation for the waiting. Not all plants can be pruned. The cultivator must needs get acquainted with the nature of each plant under his hands.

Chrysanthemums are much improved by nipping the growing ends twice before it is time for the buds to set. If, instead of two stalks running up to flower for Thanksgiving, we get for the first nipping, four stalks, and for the second eight, one can readily see the advantage gained even though we wait for the flowers until Christmas. If these plants are well fed, however, nipping will not probably much retard bloom. Salvias, too, are made much more compact and symmetrical by judicious nipping, and so are lantanas, fuchsias, heliotropes, geraniums, roses, cole-

uses, verbenas and the like. The oleander should always be kept headed in, and will bear the severest pruning.—*Health Journal.*

THE ROSE ON THE LAWN.—An English journal recommends the culture of the rose on the lawn and pleasure grounds as a standard: "Few persons are aware of the magnitude to which the rose may be grown, or the splendid effect it can be made to produce on a lawn or pleasaue ground; yet with a sufficiently strong stem, and a system of careful and patient training, there can be no reasonable doubt but that the standard roses could be grown to the size and form of the ordinary examples of the Weeping Ash, having the branches all produced from the top of a single stem, and flowing downward on all sides—a very ornamental object for a lawn. It may also be observed that the construction of a comfortable seat round its stem would form a cool and fragrant retreat during the hot days of summer."—*Floral Cabinet.*

FARFUGIUM LIGATUM VARIEGATUM.—This is a hardy herbaceous plant, imported from Japan; and it possesses highly ornamental foliage with most peculiar markings of yellowish white, making it a very beautiful bedding-out plant during the whole summer. It belongs to the same family as the Dandelion, and its blossoms resemble those of that plant, and are borne on stalks from eighteen inches to two feet in height.

The chief beauty of the Farfugium is seen in the distinct variegation of the dark green leaves, spotted and margined so curiously; for although the flowers are abundant, they are not remarkably lovely.

This plant has borne several designations—such as *Adenastyles Japonica*, *Ligularia Kæmpferi*, *Tussilago Japonica*, *Farfugium grande*, and spotted Lily.

Its blossoms appear in the months of October and November.

It requires a rich soil of peat or leaf mould mixed with sandy loam, and kept very moist. It propagates itself from the roots, like most

herbaceous perennials, and would make a desirable addition to a bed of variegated-leaved plants.—*Floral Cabinet*.

ROSE CUTTINGS.—European horticulturists have lately adopted a mode of making rose cuttings root with more certainty, by bending the shoot and inserting both ends into the ground, leaving a single bud covered at the middle, and on the surface of the ground. The cuttings are about ten inches long, and are bent over a stick laid flat on the ground, holes being dug on each side of the stick for the reception of the ends of the shoot. The roots form only at the lower end of the shoot, but the other end being buried, prevents evaporation and drying up. A correspondent of the *London Garden* states that he has tried this along with the old mode, and while the weaker cuttings of the latter have shown symptoms of drying and failure, all the former have grown vigorously.—*Western Rural*.

STONE COAL FOR PLANTS.—A writer in the *Revue Horticole*, states that he purchased a very fine rosebush, full of buds, and, after anxiously waiting their maturing, was greatly disappointed, when this took place, to find the flowers small, insignificant in appearance and of a dull, faded color. Incited by the suggestion of a friend, he then tried the experiment of filling in the top of the pot around the bush, to the depth of half an inch, with finely pulverized stone coal. In the course of a few days he was astonished to see the roses assume a beautiful red hue, as brilliant and lively as he could desire.

ANTIDOTE FOR POISONOUS HERBS.—A standing antidote for poison by ivy, etc., is to take a handful of quick lime, dissolve in water, let it stand half an hour, and then paint the poisoned parts with it. Three or four applications will never fail to cure the most aggravated cases. Poison from bees, hornets, spider bites, etc., is instantly arrested by the application of equal parts of common salt and carbonate of soda, well rubbed in on the place bitten or stung.

STEAM-CULTIVATION IN SCOTLAND.—There is evidence of great improvement in the agriculture of the north of Scotland; and it appears to have been promoted by reducing the size of home farms to smaller and more manageable dimensions, few of them now exceeding 200 acres, by a judicious system of rotation of crops and a more liberal use of manure; and by steam cultivation. It is claimed that the introduction of the steam plow has been the chief agent of the great changes which have been produced in the direction of profitable husbandry. A larger breadth of land has been brought into cultivation, and immense tracts of waste land, hitherto covered with heath, have been reclaimed and rendered capable of producing good crops of cereals, vegetables, and grasses. Thousands of acres of moss, and heavy clay, and hill-side lands, which could not be reached by ordinary methods of culture, after being trenched and drained have been brought by the steam plow and harrow into a cultivable state. Where neither men nor horses could be employed, the steam plow has been made to tear through everything. To avoid the risk of the breakage of gear in rough land, where the plow is liable to come against boulder stones and old tree-roots, a plow with a revolving coulter has been introduced—that is, a coulter which will cut its way smoothly until it reaches a root or stone, when it will pass over it with a rotary motion.—*Monthly Report of Department of Agriculture*.

OPIUM-POPPY IN FRANCE.—The cultivation of the opium poppy in France is steadily increasing. It now occupies 50,000 acres, of the value of 45,000,000 francs, yielding opium to the value of 2,000,000 francs a year. Different samples of opium, raised in various parts of Europe, are said to have yielded from 8 to 13 per cent. of morphine.

Large, late and luscious strawberries were gathered a few days ago on the ranch of Robert Swan, seven miles from Napa.



