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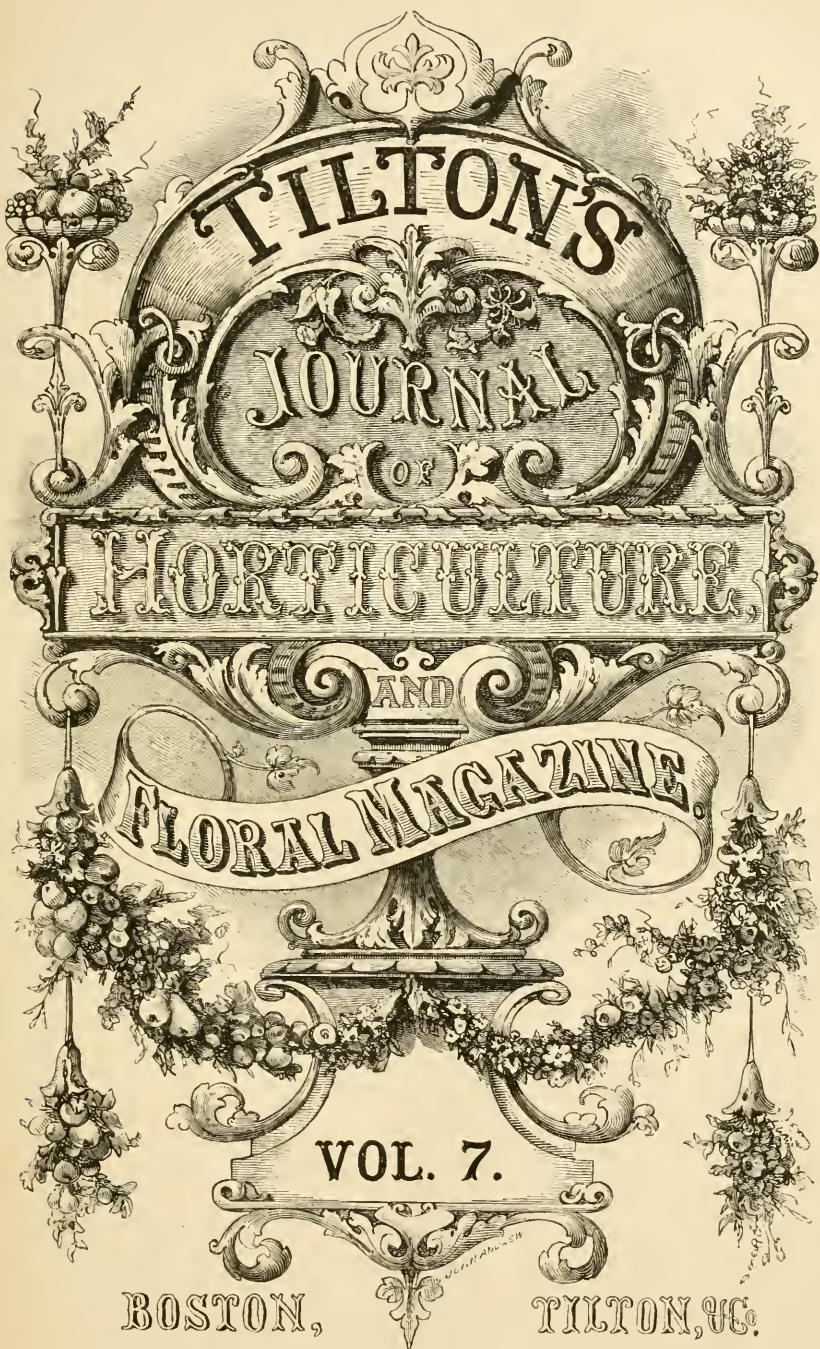


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JANUARY.

FALL AND SPRING PLANTING.

By WILLIAM SAUNDERS, Department of Agriculture, Washington, D. C.

IN the earlier stages of every art, our knowledge is necessarily confined to particulars. Observation and experience discover and develop facts, from which are derived certain fixed principles of action; fixed, because they are dependent upon the universal and unchangeable laws of nature. Practice based upon empiricism is constantly subjected to mistakes and failures. Industry is baffled and hopes are defeated by numerous contingencies, arising from causes incident to every process of art, with which the routine practitioner may be unable to cope, but which present no obstacle to ultimate success, when occurring in the practice of those whose actions are governed by a knowledge of principles.

In no department of art will this apply with greater force than in that of horticulture. We may seldom look through the pages of any of the numerous publications devoted to the interests of the cultivator, without perceiving many discrepancies, contradictory assertions, question-

able reasonings, and erroneous conclusions; all of which, when closely scrutinized, bear evidence of a defective knowledge of the principles of vegetable physiology.

Rules for practice are promulgated as if they were of universal, instead of being only of special, application. The difficulty of establishing practical rules, that would be universal in their nature, or uniformly successful, arises in part from the varied action of the agents of vegetation, and the almost infinite degrees of their individual modifications under varied circumstances, such as are dependent upon soils and climates, moisture and aridity, heat and cold. No rules can be given that will be of equal force or application in every case; the practice perfectly adapted to one soil and situation would be altogether unsuited to another if differently circumstanced. One thing, however, is certain — that all successful practice is based upon the laws or principles that govern vegetable growth; and all successful results, no matter how contradictory their origin may appear to be, are capable of being referred to the same unvarying principles, could we but trace their progress through all stages of development.

In view, therefore, of the many apparently conflicting opinions which must necessarily be given in the enunciation of merely practical rules (and which may be either right or wrong, according to existing peculiarities), it becomes a question of some importance, and one well worthy of serious consideration by all who are interested in the welfare and efficiency of horticultural literature, whether more real progress in the spread of useful knowledge would not follow the promulgation of principles only, thus enabling every person to deduce a practice suited to the conditions by which he is surrounded, instead of publishing the thousand and one minute routine details of as many individuals, all varied as to certain peculiarities of time, place, and season; at the same time producing precisely the same, or very similar results.

It is time that horticulture should be treated more as an exact science than it hitherto has been. Surely we are not to be forever debating about whether orchards should be cultivated or not; whether fall or spring planting of trees is best; whether we should prune in summer,

or in winter, or not at all; whether strawberries fruit better with or without disturbing the runners during summer; whether deep culture is better than shallow, &c.—questions that are constantly being discussed, without any apparent progress towards reaching definite or conclusive results. It is well known that the observation and experience of centuries have collected sufficient facts to establish principles of action with reference to any and all of these questions; it is true that there are very many points in vegetable physiology that are still subjects of argument and inquiry; but these need not preclude the recognition of those that are plainly and familiarly established.

We might illustrate these remarks by reference to the principles governing the transplanting of trees.

It must have been a frequent observation that deciduous trees planted in spring oftentimes push into growth, leaves are formed, and all the indications of favorable results are apparent, when a few bright days, with dry atmosphere, will rapidly and completely destroy them. On the other hand, it is equally a familiar observation, that trees removed immediately after completion of growth will form an extensive system of root fibres in a few weeks, without any indication of growth by buds, or extension of branch. These are simply observed facts; and the principles involved in producing them are easily traced, and of ready application.

These results are mainly due to the relative heat of the atmosphere and the soil. In propagating plants by slips or cuttings, the most essential point of success depends upon placing the shoot in heated soil, at the same time that the surrounding atmosphere is kept at a comparatively low temperature; these conditions tend to excite growth of roots, without exciting the growth of leaves. A newly-removed tree is very much in the condition of a cutting; the more the roots have been mutilated during the operation of removal, the nearer does it approach to the condition of a rootless cutting; consequently the more closely the tree is placed under those conditions known to be most favorable for increasing root growth, the more likely is the tree to flourish. Of course it is not practicable, by artificial means, to warm the soil of an intended orchard site, similar to what may be

accomplished in a small bed for rose cuttings; neither is it necessary, since Nature provides these conditions for us at a certain season, and as it is of limited duration, we must act promptly if we would avail ourselves of her assistance.

This season occurs during the month of October, between the parallels of 37° and 41° north latitude. (North of the latter the season will be somewhat earlier, and south of the former proportionably later.) At this period, the soil, at twelve inches below the surface, will average ten degrees warmer than the atmosphere, forming a natural hotbed specially adapted to the growth of roots, while the gradually decreasing atmospheric temperature of the waning year prevents any incitement to growth by external buds.

Looking at the relative conditions of the soil and the air during the spring months, we shall find that they are nearly reversed: the soil is now cold; it slowly accumulates heat, while the atmosphere rapidly gains in rise of temperature: a tree planted at this time is excited into leaf, the increase of root growth is retarded, every expansion of foliage increases the surface of evaporation, and speedily exhausts the moisture of the plant, and as soon as the demand for moisture becomes greater than the supply, the plant dies; it is dried up in the most effectual manner. Hence the absolute necessity of heading back spring-planted trees, so as to lessen the amount of foliage and consequent evaporating surface. If evaporation could be entirely prevented, there would be but little necessity for pruning at transplanting; and the operation is always more successfully accomplished in a moist than it is in an arid climate.

The principles being understood, the practical details and expedients of culture necessary in carrying them out will readily be suggested. In the case of fall planting, the principal object is, to retain as long as possible the heat in the soil. Water can be kept from cooling it by mounding the earth from the stem of the plant, and mulching with some loose non-conducting material. In spring planting, the great desideratum is, to induce heat into the cold soil by exposure to the sun; pressing it firmly, and avoiding mulching until the summer's suns render it necessary, as a preventive of injury from droughts.

It will thus be evident that, to be specially successful, fall planting must be performed at the earliest moment after completion of growth. The best results have been reached by removing as soon as the foliage indicates change of color, taking the precaution to strip the leaves from the plant. In removing large trees this is the most successful of all modes, as is fully corroborated by the experience of many years. Theoretically, it is apparent that the fall-planted tree has great advantages over its spring-planted neighbor; but it may be doubted if any one not familiar with the subject could imagine so great a difference as occurs in reality.

Whether fall or spring is the best time to plant, does not admit of any argument, so far as the principle is concerned; the question can only arise as a matter of personal convenience, and therefore of no public interest whatever, so far as concerns the laws of growth.

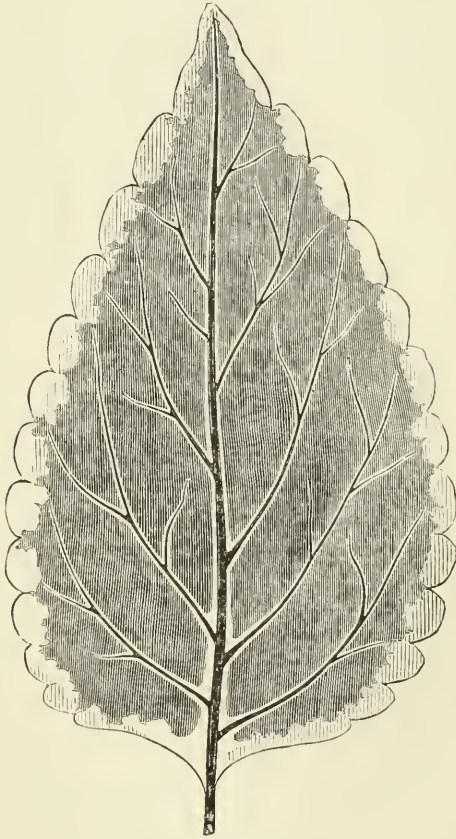
Nov. 19, 1869.

THE NEW GOLDEN COLEUS OF 1869.

By PETER HENDERSON, Bergen City, N. J.

WHEN it was announced to us through the English journals, two years ago, that such an enormous price (£400) had been paid for a dozen varieties of new Hybrid Coleus, we were all expectation to behold the wonderful plants to which such value had been attached. But, as in too many cases, we found that the price paid was no criterion of merit, and that when they were received on this side of the Atlantic, we failed to discover anything novel or wonderful about them: they were of but little value for bedding purposes, our hot July and August suns utterly destroying what little distinction of marking there was in the different varieties, so that no particular difference could be seen in the dozen varieties, and all looking dingy enough. But they have well redeemed themselves by the issue of the new Golden Coleus of this year, which, in my opinion, surpasses all ornamental leaved plants of that character in cultivation, not even excepting the beautiful

and well-known *Coleus Verschaffeltii*, to which, in grouping in the conservatory, their rich golden tint forms a striking and agreeable contrast. To be sure we have not yet tested their bedding qualities in summer, as they were received from England only in September; but, from what experience we have had with that color of leaf. — golden



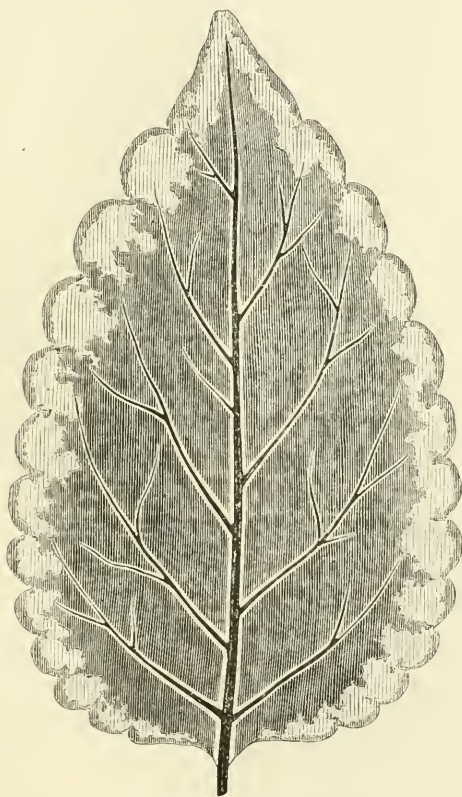
COLEUS SETTING SUN.

bronze, — there is but little doubt of their retaining their color during our summer weather.

Our importation embraced some dozen sorts; but the following named we find most beautiful and distinct: —

Albert Victor. — Bronze red, stained with spots of purplish rose, with margin of the leaf, to the depth of one quarter of an inch, of clear golden yellow.

Her Majesty. — Ground color golden bronze, shaded with carmine, with margin of the leaf yellow.



COLEUS PRINCESS ROYAL.

Setting Sun. — Deep golden bronze, tinted crimson, leaf-margin clearly defined with straw color.

Princess Royal. — Ground color bronze, tinged with carmine, stained with crimson spots; margin deep yellow.

November 26, 1869.

OUR PEAR CULTURE ALL QUACKERY.

By C. M. HOVEY, Ex-President of the Massachusetts Horticultural Society.

AFTER reading about all that has been written upon the pear for the last century ; after personally inspecting the extensive pear gardens of the Luxembourg in Paris, and of the Horticultural Society of London : after familiarizing ourselves with what has been accomplished in pear growing in the present century, — of the labors of Van Mons and Knight, of Bivort and Gregoire ; after comparing the numerous varieties of to-day with those of only thirty years ago ; and after devoting a good portion of our own life to pear culture, — we had begun to think, and really believed, that we had made some advance in our own time in the profitable production of this delicious fruit. We recollected when only the St. Michael, the St. Germain, the Chaumontelle, the Jargonelle, the Black Worcester, and a few others, were all the sorts actually found in our markets, or even known to our cultivators ; and when we compared the present with those days, and thought of the Fulton, the Swan's Orange, the Lawrence, the Heathcot, the Bloodgood, the Dearborn's Seedling, the Howell, the Tyson, the Brandywine, the Washington, the Adams, the Pratt, the Tea, the Abbott, the Hovey, the Clapp's Favorite, the Mount Vernon, the Sheldon, the Goodale, and many more, all brought to notice in less than a single generation, we were convinced that something had been achieved, somebody had labored successfully, in our own country, to say nothing of such pears as the Bartlett, the Beurré d'Anjou, the Duchesse, the Doyenné du Comice, the Louise Bonne, the Marie Louise, and a host of others, introduced from abroad.

We repeat, that with these impressions we had indulged in the belief that we had made great progress in pear culture. To fill our markets with the Bartlett in place of the Jargonelle, the Louise Bonne in place of the St. Michael, the Beurré d'Anjou in place of the Bergamot, and the Lawrence in place of the Chaumontelle, was something to be proud of, while we were repaid in a generous and remunerating sum for our skill. But it appears we were once more in error ; that all our fancied

knowledge was nothing gained from facts or based on scientific principles, but mere empiricism. What Sir T. A. Knight said, what Van Mons accomplished, what Mr. R. Thompson systematized, what Decaisne published, what Leroy compiled, what Mr. Rivers wrote, what Mr. Manning did, what Mr. Downing promulgated, go for nought. A wiser than either of these now tells us, in the language of the old nursery rhyme. —

“ * * * * Get out! You're all a set of quacks.”

That this is so must be fact, without doubt, for the oracle of the Gardeners, established for their especial benefit, tells us so. What more can be said? Hear him.

“ The public idea of pear culture for profit has been an utter failure ; that the knowledge and skill which has directed it to this day is merely empirical, having no foundation in science and no success in practice to recommend it ; and that we have the whole subject to begin anew, and the hard lesson to learn over again.”

This is a settler. King Canute never did better. Deep, indeed, must be the disappointment of such men as Colonel Wilder, P. Barry, Charles Downing, and many others, after a whole life devoted to the improvement, cultivation, and introduction of pears, to be told by such an oracle that this supposed skill is “ merely empiricism.” A late distinguished horticulturist carried on all his culture of the grape, during the latter years of his life, under the influence of his father's spirit : and when our good friends whom we have just named shall have shuffled off this mortal coil, undoubtedly other cultivators will seek to base their practice upon the reputation and success of their spirits. We trust, however, after the wise sayings of the Gardeners' oracle, that their empiricism will be exposed, and that they will not be allowed to dictate anything, until they shall have “ begun anew, and learned the hard lesson” of their life over again.

Can it be? Is it true that all our pear cultivators are mere pretenders, quacks, and charlatans? for that is the meaning of the language. Did Colonel Wilder consider, when he was lecturing before the students of Yale on pear culture, that he was a mere quack in the business?

or, when he addressed the students of Amherst, that he was a mere charlatan? Could our friend Mr. Vick be such a goose as to employ such a mere pretender as Mr. Barry to give us advice on pear growing? and shall we class Mr. Charles Downing, the author of the recent *Encyclopædia of fruit*, as one who depends on experience without knowledge or art? and where shall we place Dr. Warder, Mr. Field, and Mr. Elliott, who have undertaken to enlighten us on pear growing? Truly we are advancing backwards, according to the dictum of the editor of the *Gardeners' Monthly*. Mr. Knight was considered a respectable member of the Royal Philosophical Society, and has the credit of some science in his culture of fruits; but now, with nearly half a century of accumulated knowledge added to what he wrote and practised, we are farther off than ever — all empirical, all humbug.

What Dr. Houghton writes about pear culture we can deal with squarely, because, though erroneous as we believe him to be in his statements, he is a cultivator of some experience, and his essay is open to criticism and discussion. It is only unfortunate that he should have fallen into the hands of so enlightened a commentator. Dr. Houghton based his essay upon his own experience, and upon very casual observation; and we do not find that he made any assertion in regard to the want of skill of those who had preceded him, or that he denounced anybody as pretenders or charlatans: on the contrary, he states that "at Boston, where pear culture has been pursued with much zeal for forty years or more, a good degree of success has been achieved." He probably intended his essay to go for what it was worth, and he must regret that what there was valuable in it should have been marred by interpolations of the editor upon a subject of which he was pretty tolerably ignorant.

We had intended to take up Dr. Houghton's essay and point out what we consider some of its errors. But to do this in detail would require too much space. The editor of this Magazine has already given us his views, and we, therefore, only allude to some of the more prominent mistakes in Dr. Houghton's paper. As we understand the doctor, he wished it to be known that fine pears cannot be obtained

upon standard trees grown in *grass*—a favorite theory of the editor of the Monthly, and one which he has urged as likely to make pears as plenty as “huckleberries.” Dr. Houghton says,—

“It is the fashion to praise standard trees as the only kind which can be depended upon to produce constant crops of fine fruit; when the fact is, that the finest fruit has not been produced on standard trees, and that crops of good marketable fruit cannot be obtained from such trees for any length of time, with any degree of certainty. On standard trees, even in the best condition, scarcely half of any crop is marketable at one dollar per bushel, and not over one quarter of any crop is suited to first-class fruit stores.”

Where, we would ask the doctor, is it the fashion to praise standard trees as the only kind which can be depended upon? Certainly, for a period of thirty-four years, during which time we have chronicled the progress of pear growing, we never heard of any such statement by any intelligent cultivator. It may have been the fashion in Philadelphia, where we never saw many fine pears: certainly nowhere else. But, again, what does the doctor mean by standard? An orchard tree, or merely one grown on the pear stock, whether dwarf or tall? If the latter, then he has made a gross error when he says that not half the crop is marketable at one dollar the bushel. If he had had the most casual observation of our own trees, or asked for any records of the crop, he would never have made such a statement. It so happens that we have the results of our own pear culture in black and white, made for our own satisfaction, and never intended for publication; but it so completely refutes the doctor's statement, that we have been at the pains to give the figures. Of course they are for the latitude of Boston, where there is no lack of the finest pears.

Our pear orchard is composed of standards chiefly, say sixteen hundred out of two thousand trees, mostly planted from 1842 to 1850, and now twenty to thirty years old. They have had no pruning for three years, no manuring of any consequence, stand thickly together, and have received very little care. Here is the entire crop for eight years, in kinds and bushels, and the product in dollars and cents:—

Our Pear Culture all Quackery.

1862,	1128½	bushels, in	151	sorts,	\$1,682.30.
1863,	403	"	76	"	1,363.65.
1864,	632½	"	105	"	2,547.79.
1865,	711	"	94	"	2,861.57.
1866,	728½	"	101	"	2,923.50.
1867,	744	"	70	"	2,726.50.
1868,	531½	"	75	"	2,207.00.
1869, about	700	"	about 70	"	about 2,400.00.

1862 was the great pear year, when the best Bartletts sold for \$1.50 per bushel; and the present year, 1869, four hundred bushels of pears were picked up after the gale of September 8, which greatly reduced the value of the crop, and we say about \$2,400.00, as we have yet of Le Curé, Hovey, Lawrence, Glout Morceau, and other sorts, about one hundred bushels on hand.

Here are the exact figures, and Dr. Houghton, if he wishes, can see the exact quantity of every variety sold, and the exact price for every bushel, the exact number of bushels of every variety named, the average price per bushel of each kind, and the average prices for the whole: just the exact number of poor pears, which are classed in our schedule as MIXED sorts. Every reader can do his own figuring; we make the *average* price for the entire crop, which includes *every* pear produced, except decayed, or so small as to be of no account; anything as large as the smallest Seckel being sold. We make the average price — leaving out the great pear year of 1862 — \$3.70 per bushel.

We now leave out of the calculation the MIXED pears; of them we had, in

1862,	226	bushels, which brought	\$158.93.
1863,	125	" " "	269.07.
1864,	214	" " "	419.72.
1865,	179	" " "	447.75.
1866,	177½	" " "	450.50.
1867,	185½	" " "	366.50.
1868,	142½	" " "	343.00.
1869, say	150	" " "	say 340.00.

Leaving out the great pear year of 1862 again, the following is the result: —

Seven crops, 1863 to 1869, brought as follows: —

Whole crop,	4,505½ bushels,	\$17,040.01
Mixed or poor pears,	1,173½ “	2,641.54

3,332 bushels good pears brought \$14,398.47

Which is an average of \$4.32 per bushel.

Is Dr. Houghton convinced? 1173½ bushels of poor pears did bring about \$2.50 per bushel, and the balance \$4.32 per bushel.

Now, as to the truth of that other statement, that “no orchards in the United States can produce twenty-five dozen specimen pears except Bartlett and Seckel, without completely stripping the crop of all its good fruit.” First we must settle what is a specimen. If we take those of the Pennsylvania Horticultural Society exhibitions as a sample, then our whole crop are specimens; but if we take the Massachusetts Horticultural Society, the case is quite different. Yet we offer the following to show that *we*, at least, had more than that number.

Sheldon in 1862, 14½ bushels.	Sheldon in 1866, 20½ bushels.
“ 1863, 22 “	“ 1867, 10 “
“ 1864, 10 “	“ 1868, 14 “
“ 1865, 14½ “	“ 1869, 25 “

Of Swan’s Orange, Bartlett, Urbaniste, Abbott, Beurré Langlier, Lawrence, Boston, Louise Bonne, Le Curé, Merriam, and Doyenné Boussock, our crop varies from twenty to one hundred bushels each.

After all, the doctor was pretty safe in his statement, for we venture to assert, that besides the Bartlett, Seckel, Duchesse, and Louise Bonne, no cultivator in the United States, out of the vicinity of Boston, could produce twenty-five dozen good specimens, or poor ones either. We regret that Dr. Houghton did not tell us the owner’s name of the “most celebrated orchard in America,” whose crop of fine fruit of all varieties was exhausted after sending away twelve or fifteen dozen pears. It must have been celebrated for something besides its fruit.

Once more as to the production of specimens, according to Dr. Houghton’s ideas, for they are undoubtedly high, and the profit in producing them.

Given a good healthy standard tree, capable of producing two bushels, — for many of ours bear five to ten, — what is the result in dollars and cents? Two bushels of pears, at our average prices, at \$3.70 (good and poor), is \$7.40. Now pick off twenty-five per cent., and the prod-

uct — besides the labor, which is something, to climb a tree twenty or thirty feet in height, as most of our trees are — will be one and a half bushels, which must bring \$4.30 per bushel; a little less than ours sold for after deducting the poor. Again, to get fine specimens, the crop must be farther reduced by gathering another twenty-five per cent., which will leave one bushel; this must be sold for \$7.40, besides the labor of thinning. We shall still find many inferior specimens in the bushel; and to come up to the doctor's standard, at least twenty-five per cent. more must be picked off, thus leaving the cost of the *half* bushel of real specimen pears \$7.40 — a price at which they could not be sold only by the *dozen*, and *very few* at that.

Again, and we must bring our article to a close. Dr. Houghton asks a question, and answers it, Yankee-like, himself; undoubtedly to his satisfaction, for he says, —

“Now what are the difficulties of pear culture at Boston? I answer, the trees are frequently injured or killed by the severity of the winters, and the blossoms are frequently destroyed by late spring frosts.”

We ask, Where did the doctor get this novel information? and shall leave him to answer it. During thirty years we never had a tree injured by the winter except in 1857, when they suffered just as much in Philadelphia, and in the same time we never lost a single pear by late spring or any other frosts. We have no blight nor any fungus, except on the St. Michael and one or two other pears; the crop is uniform and certain, as our table above shows; and the pear is less liable to casualties than any other fruit we produce.

Leaving the doctor to pursue his raid on the *grass* cultivators, who must be *green*, we ought to ask the indulgence of our readers for taking up so much of their time.

LUFFA PLANT.

By "ALPHA."

THE writer is a constant reader of the *Gardeners' Monthly*, and always welcomes its advent, and peruses its varied and useful articles with interest.

In the October number occurs an amusing communication by L. B., on the subject of the *Cacoon vine*, which deserves some comment, especially as the editor has allowed it to pass without remarks, which he is so prone to make.

The author, with a grand flourish, parades his profound research and industrious efforts to inform himself by consulting many dictionaries, all to no purpose; in one only could he find the name "*Cacoon* — a name for the seeds of the *Entada gigalobium*, which are used for making purses, scent-bottles, &c." If such articles are meant to be made of the material under discussion it is a great mistake. The seeds of the *Entada* are of a large size, heart-shaped, one and a half inches in diameter, and three fourths of an inch thick in the centre, very firm in texture, and of a dark, shining color, darker than the horse-chestnut; they grow in bean-shaped pods, more than twelve inches long, and two inches wide, of a thick coriaceous substance. The outer case of this seed is a beautiful polished shell.

If L. B., instead of consulting commercial and literary dictionaries, had turned his attention to the more appropriate botanical work, London's *Encyclopædia of Plants*, at page 808, he would have been rewarded by the discovery of its proper name — *Momordica Luffa*, Egyptian, E. Indies. Had he prosecuted his search farther, he would have found the plant figured in Rumphius's *Herbarium Amboinense*, vol. v., plate 147. Philip Miller adds, as synonymes, *Luffa ægyptiaca*, *L. arabum*. Grisebach, in *Flora of the British West India Islands*, page 286, under the *Cucurbitaceæ*, remarks among the uses for which this tribe is cultivated, "that the shells of the towel gourd or strainer vine, and others, are for domestic purposes." And of the fruit of the *L. acutangula*, that "it is of the size of a cucumber, at

length having a framework of reticulated fibres." This latter is a distinct species from the Egyptian; the fruit is of a different shape, being narrowed towards a point at both ends. This is also figured in Rumphius.

Both species, no doubt, are cultivated at Nassau.

Grisebach mentions that the Sequa seed, or *cocoon* antidote, is from the *Fenitlea cordifolia*, of the same family of plants; but the fruit is globose. The name *cocoon* may have originated from this.

L. B.'s remarks lead one to infer that this fibrous structure of a cucurbitacea — the "Guinea Sponge" — is of recent introduction, and a rarity; which cannot be the case, for Rumphius figured it in 1747, and Loudon records its introduction to be in 1739.

A friend of mine brought from the West Indies, more than forty years ago, many specimens of this spongy material, mostly of larger size than L. B.'s "precious" one, also beautiful baskets, &c., constructed of it. I have met with it not unfrequently since, and have had it in family use; it is a good bathing sponge.

[A description of this plant and its fruit may be found in this Journal, vol. iv., p. 346, under the name of Bonnet Gourd. — Ed.]

DOWNING'S SEEDLING GOOSEBERRY.

By GEORGE W. CAMPBELL, Delaware, Ohio.

THIS really fine variety was originated, many years ago, by the well-known pomologist Charles Downing, Esq., of Newburg, New York, and is, I think, deserving of a more extended reputation than it seems to possess. In quality and size it compares favorably with the large English varieties, but, unlike them, is apparently as free from mildew as the Houghton, or American Seedling. In size it averages from three fourths to over an inch in diameter; berries round, or slightly

oblong; color pale green, stripes nearly white; skin thin, semi-transparent, covered with thin, white bloom; flesh tender, sweet, and rich;



DOWNING'S SEEDLING GOOSEBERRY.

quality very good, if not best. The bush is a strong grower, upright but spreading habit. I regard it as worthy of extensive cultivation.

FRUITS FOR MARKET ORCHARDS IN THE WEST.

By W. C. FLAGG, Alton, Ill.

FOR the benefit of new beginners, who seek wisdom in the very diverse recommendations of a multitude of counsellors, I submit the following, for our region of the West:—

APPLES. I would, as a general rule, plant the apple. It is a standard fruit, being now a necessary article of food, rather than a luxury, and in its winter varieties is not a perishable commodity—a fact which makes it a much safer investment than small fruits. For a market orchard I would recommend, from present knowledge,—

200 Sops of Wine,	200 Jonathan,
100 Kirkbridge White,	400 Pryor's Red,
100 Keswick Codlin,	200 Ben Davis,
200 Chenango Strawberry,	400 Wine Sap,
100 Hawthornden,	400 Newtown Pippin,
200 Porter,	400 Rawle's Janet,
200 Maiden's Blush,	200 Gilpin.

Sops of Wine is hardy and prolific; and the fruit, though only good, is fine colored, and endures transportation well. Kirkbridge White, which I suppose to be a seedling of Keswick Codlin, resembles that variety strongly in growth, shape, and early bearing of the tree, and in the shape, fairness, and color of the fruit, but is rather smaller, earlier, and a good deal better eating apple. Keswick Codlin is valuable in its productiveness of good cooking apples, that are nearly always smooth and free from defects. The tree, though reputed hardy, does not seem to suit our locality so well as its relative, Kirkbridge White. Chenango Strawberry is in size, color, and quality, one of the finest summer apples I have yet seen tried here; and the tree looks strong and healthy. Hawthornden is an early and "immense" bearer of good cooking apples. Porter, now thoroughly tried, is, in tree and fruit, one of the best and most profitable summer apples. Maiden's Blush, though not so hardy as a young tree, nor so invariably fair as the Porter, is, from its fine color, size, and good qualities, as a cooking

and eating apple, a popular and salable fruit. Jonathan ripens here as a fall apple; but, as the tree is vigorous and productive, and the fruit brilliant and high flavored, it sells well. Pryor's Red is one of the most vigorous and enduring of our orchard trees, and has fruit of very superior quality and uniform fairness. It is not very productive, which is its only fault in my eyes. Ben Davis has a strong, vigorous tree, and bears good crops of beautiful and fair fruit. Its quality is not so good as could be desired, but it sells better than many superior apples. Wine Sap has rather an ugly, though productive, tree; but its fruit is fair, high-colored, and very good. This year its foliage has failed, and it has little fruit; but, unless this should continue, the variety will remain one of our favorites. Newtown Pippin has a tree of sufficient vigor and long life, and on our soil is productive; but the fruit is not so fair as desirable on our older trees. Taking its very fine quality into consideration, however, I shall continue to grow it for market. Rawle's Janet has proved my most profitable market apple, of varieties thoroughly tried. The tree is rather short-lived, but very productive; the fruit generally fair and very good. It cracks in wet seasons, and rots a good deal from bearing its fruit so much in clusters. Gilpin, as our best keeping apple, and a productive variety, we must grow, though the tree is short-lived, and the fruit only third rate. It is to be hoped that a more desirable apple may replace it.

PEARS. The following, from rather insufficient experience and observation, is the best list of pears for market that I can make at present for this region:—

100 Doyenné d'Été,	100 Beurré d'Anjou,
100 Bloodgood,	100 Beurré Bosc,
400 Bartlett,	100 Onondaga,
100 Belle Lucrative,	100 Howell,
200 Seckel,	200 Lawrence,
100 Louise Bonne of Jersey,	100 Glout Morceau,
200 Duchesse d'Angoulême,	100 Easter Beurré.

Doyenné d'Été is here, as elsewhere, the best early pear I have seen, and this year brought better prices than any pear I know of. Blood-

good ought to succeed it; but it is not appreciated in its plain dress. It is too unassuming for this age of gilt and electro-plating. Bartlett - I supposed planted in excess here in the West, but the prices of the present productive season seemed to show that I was mistaken. Belle Lucrative, though the tree blights, and the fruit has not sufficient color, is very good and very productive. Seckel, though like

"Robert of Lincoln's Quaker wife,
Quiet and pretty, with plain brown wings,"

as befits a Philadelphia pear, is too well established in popular favor not to be a marketable sort, in spite of its small size and brown exterior; and the tree is one of the finest. Louise Bonne of Jersey is productive, and the fruit handsome, and should be grown to some extent. Duchesse d'Angoulême seems to me the only pear desirable as a dwarf. It is productive, and, being big, suits the popular taste. Beurré d'Anjou, so far as I have seen and heard from it, seems one of the best in tree and fruit. Beurré Bosc, though not so generally tried, finds a pretty general appreciation. Onondaga, though not so healthy in tree as I desire, is productive and large. Howell has a fine tree and beautiful fruit. Lawrence has an excellent tree, and the fruit, though not large and showy enough, is very pretty and excellent, and will make its way. Glout Morceau is the best pear proven to be a fair keeping pear in my observation, and I put it down, in spite of a great propensity to blight. Easter Beurré, though not so well tested, has ripened well in some cases. It blights a good deal, but its quality is excellent, and we have a season long enough here to mature it properly, which I am informed is not the case so far south as New Haven, Connecticut.

PEACHES. Of the varieties tried here I would recommend the following:—

100 Hale's Early,	400 Stump-the-World,
400 Troth's Early, or Haine's Early,	400 Late Red Rareripe,
400 Large Early York,	200 Smock,
400 Oldmixon Free,	200 Heath Cling.

Hale's Early, though it rots badly, is worth fighting for. The tree is vigorous, the buds pre-eminently hardy, the fruit very abundant, beautiful, and, for an early peach, good. It needs good ventilation, on high ground, by wide planting, and pruning to a high trunk; by thinning of the fruits that touch one another, the catching of the curculio, and the picking off of the rotting peaches. With these two latter precautions it was ripened by Judge Brown of Villa Ridge, near Cairo, in this wet and unfavorable season. Troth's Early, or its near relative, Haine's Early, is a peach of few faults, and many good qualities. The tree is vigorous and productive, the fruit very red and beautiful. Large Early York is larger and higher flavored, but the fruit is not quite so fair. It ripens in immediate succession. Between Large Early York and Oldmixon Free there is a gap in the succession; but the Crawford's Early and Yellow Rareripec, which are used to fill, or partially fill it, have tender buds, and are unproductive. Oldmixon has large and finely colored fruit, and produces well. Stump-the-World is hardly so high-colored, but the tree is very productive, and the fruit quite uniform in size. Late Red Rareripec, which comes in the season of Late Crawford, is more desirable than that variety, in being more hardy. It is large, high-colored, and good. Smock, like other yellow and reniform sorts, is not quite so hardy as some, though large, handsome, and salable, when it comes. Heathn Cling, though a reniform variety, is quite hardy, and its fruit is very fine in quality, though often not fair, as it mildews and cracks, and, in a wet autumn, rots.

In choosing market fruits we have to look at many considerations that the amateur scorns; such as high color, large size, productiveness, carrying well, and the like. Until the mass of consumers are as familiar with the names and qualities of fruit as the producer, they will judge fruit by the eye, and purchase with little regard to quality, or difficulty of production; and will not pay the difference of the cost between a Ben Davis and a Newtown Pippin. Many, indeed, cannot afford to do so, and naturally prefer a tolerable apple, pear, or other fruit, within the reach of their means, to an excellent variety, which they cannot purchase.

I have heard some very sharp debates, in our horticultural societies,

on the question, Whether fruit-growers should grow the best fruit, or that from which they could realize the most profit; but have never known the question very satisfactorily settled. It is easy to see, however, that the law of supply and demand will mainly settle it; and that the education of the people in the knowledge of what are the best fruits, and the most cheaply grown, will bring producer and consumer into accord, and make them both of a right mind in this matter.

October, 1869.

HOUGHTON'S SEEDLING GOOSEBERRY.

THIS was the first introduced of the American gooseberries, which have almost superseded the English varieties in our gardens, being, unlike the latter, entirely free from mildew. It is one of the best flavored of the American varieties, and well worthy of cultivation, though its habit of growth is not as good as that of some others. The best way of managing it is, to take a young plant grown from a cutting, with all but two or three of the upper eyes removed, and drive a durable stake by it, to which the leading shoot should be carefully tied. Every summer one or two tiers of branches, which will take a drooping position, should be grown from the main stem. In this way it may be carried to the height of five or six feet, forming a beautiful pyramid, than which there will be few objects in the fruit garden more attractive. Being very productive, a few such plants will give an ample supply for a large family. With a little thinning and shortening of the wood early in spring, taking care to remove the old wood, and retain such as is young and vigorous, the plants will last a long time, and the fruit will be much finer than when left unpruned. Or, if preferred, the slender, flexible shoots of this variety may easily be trained to a trellis, and for this method a partially shaded place will be quite as good as one exposed to the full rays of the sun.

REMARKS UPON THE CAMPANULA, OR BELL-FLOWER.

PART I.

By JOSEPH BRECK, Ex-President of the Massachusetts Horticultural Society.

CAMPANULA, from *campana*, "a bell," the shape of the flower. This genus embraces a large number of species, most of them ornamental, and suitable for the flower-border. They are mostly hardy perennials, with a few annuals and biennials.

One of the finest annuals is *Campanula Loreyi* (Lorey's Bell-Flower), named by Pollini in compliment to Dr. Lorey, who originally discovered the plant on Mount Baldo, in the Veronese. It has been since observed in other parts of Italy. The plant was introduced into England in 1825. It is a hardy annual of easy culture, thriving in almost any kind of soil, and ripening its seeds freely in the open border, where the plant may be occasionally left to sow itself, as is practised with many other annuals, such as *Silene*, *Delphinium*, &c. Grown in patches, or as an edging to flower-borders, it is highly ornamental, from its dwarf and slender habit, and large, expanded blossoms of a deep-blue color or pure white, two inches in diameter, which continue to be produced in succession throughout the summer and autumn months. A dwarf plant nine inches high.

Campanula speculum (Venus's Looking-Glass). This is another annual species, of a dwarf, spreading habit, about six inches high, with white or blue flowers, produced in succession through the season. The specific name, *speculum*, is so called because the corolla in its form resembles a little round and elegant mirror (*speculum*); whence in English it is called Venus's Looking-Glass. It is desirable only in large collections, as the flowers are diminutive in size, however elegant it may be in structure, or fine in color. There are so many ornamental plants of much richer appearance, that it is hardly worth its room in a small collection of plants in a limited space.

I am acquainted with only one more annual species in this class; although there are others named by botanists, which, as they have not been introduced to florists, are not probably worthy of a place in the flower-garden.

Campanula pentagonia (Five-angled Campanula). This is a hardy an-

nual, of dwarf habit, with blue or purple flowers ; not much cultivated ; height, a foot ; introduced from Turkey.

Campanula media (Canterbury Bell). This species, in all its varieties, is very ornamental, and should find a place in every flower-garden border. It is one of the oldest of our ornamental plants, cultivated and highly esteemed from Gerarde's time down to the present ; and how long before that time, no one knows. It is a plant of the easiest culture, with large bell-shaped flowers, double and single, of blue, rose or red, purple, and pure white flowers. Like other biennials, it may be sown where it is to remain, any time in June or July, or sown in the spring for transplanting, which I think is the best, as they can be distributed in groups or singly to better advantage about the borders. There is no flower in the garden which makes so grand an appearance, when grown in perfection in rich ground, as the Canterbury Bell. A plant with a stem three or four feet high, with numerous branches loaded with its graceful drooping bells, is a beautiful sight. To have plants in perfection, they should have ample space, — at least two or three feet apart. It is best to have the plants secured to a neat colored stake ; for, when loaded with flowers, a high wind would endanger them if not thus protected.

I am not an admirer of some of the double varieties of flowers, and of the double Canterbury Bell in particular : it may be likened to a nest of tubs or boxes, the outer corolla, or bell, being filled up with smaller bells. It is more curious than beautiful. It is not like double flowers of the Rose or Camellia family, and many others, which are much improved in the double state.

Campanula pyramidalis (Pyramidal Bell-Flower). This is more a hardy biennial than perennial ; for although the plants will continue a number of years in the open ground with protection, yet, as plants from the old roots lose their vigor, they must be renewed by cuttings, after blooming, or raised from seed, like other biennials, to have it in perfection. The plant is more suitable for the conservatory or greenhouse than for out-door culture. It has succeeded well with me from seed sown under glass in March, and transplanted into the flower-garden border in June. It sends up a stem with ordinary cultivation four or five feet high the second season, giving a succession of flowers from July to October ; but, as the hot summer sun is

injurious to the flowers, it cannot, therefore, be grown to such perfection in the garden as in pots, where it can be shaded from the sun if necessary. Two plants were exhibited at the Horticultural Rooms a few years since, cul-



CAMPANULA LOREYI.

tivated in pots, which were from nine to ten feet high — complete pyramids, crowded with their rich azure-blue flowers — from the base to the top of the spire. In no place was the diameter of the pyramid much over a foot.

They were magnificent specimens. One variety has white flowers. Plants from seed sown in the spring should be taken up and potted in October, if for the greenhouse. This and many other species of campanula have fleshy roots, and are readily propagated from cuttings of the root. A writer says, "The roots should be taken up as soon as they have done flowering, and cut into as many pieces as plants are wanted. Fill a medium-sized pot half full of mould, then put in five or six pieces; and afterwards fill the pot with mould, and then place them in the greenhouse. If some of the larger pieces of the root are selected, and placed upon any slight heat, they will bloom finely the following spring, the plants making their appearance through the mould in two or three weeks; but if placed in the greenhouse or frame without heat, and potted in the spring, they will not bloom until the spring following. The best plants, undoubtedly, are those raised from seed." Another writer says, "This plant, when grown to a degree of vigor of which it is capable, by a rich soil, and plenty of pot-room, with one or more shiftings into larger as required, I find to grow nine feet high, with numerous subordinate spikes, and, during some months at the end of summer, to make one of the most showy plants in cultivation. When grown in pots, it forms one of the most ornamental plants for the greenhouse-room, or to be placed in a vase on the lawn or in the flower-garden, or if grown in the open border in a deep and rich soil: it merits a place in all. I have found, that, by placing one of the blue-flowering kinds in a shady place in the greenhouse or room, the flowers become paler, and of a most beautiful French lilac-color, most strikingly handsome." This campanula was formerly a great favorite in England; but its popularity has long since passed away, to give place to other more fashionable flowers, which have, in their turn, also been succeeded by other rivals more beautiful. But, in Holland, it is said that the pyramidal bell-flower is still in fashion with that old-fashioned people.

HOW SHALL WE PLANT AND PRUNE OUR VINEYARDS?

By F. B. SEELYE, Rushville, N. Y.

I READ the article by E. F. Underhill, in the November number of your Magazine, with much interest, and believe it is calculated to do good. It seems to me that we have been following, in part at least, European methods of planting, pruning, and training quite long enough, and should now begin to strike out for ourselves. Of course there are certain general principles in vineyard culture which apply everywhere; but our native vine seems to share in some of our national characteristics, and is crying for more room.

I know it is difficult in horticulture, as in everything else, to get out of the beaten track, and to unlearn that which we have learned amiss; and this difficulty is not lessened by the fact that Nature, with her conservative powers, is always busy, ready to assist us whenever we take a step in the right direction, and silently, but constantly, repairing damages when we blunder; thus seeming to indorse error, and, to the careless observer, making of a lie the truth. Plants, like men, have a wonderful power of resisting bad treatment, and this makes me hopeful of the future in vineyard culture. The impression left upon the mind of the reader of Mr. Underhill's article, that planting at such extreme distances and high training are the general practice at Naples, is, I think, an erroneous one; as the majority of vineyards there are planted at the distances common at Hammondsport and in this locality, viz., eight feet each way, or eight by ten.

Some ten or twelve years since, three small vineyards of the Isabella were planted in Vine Valley at a distance of fifteen feet each way, and since they came into bearing have uniformly given good crops of superior fruit, the vines being entirely free from disease up to this time. Four years ago, when the attention of vineyardists was directed to this place, and planting commenced on a larger scale, that was thought an unnecessary waste of ground, and eight by eight feet was the distance generally chosen, except in a few instances, where more room was

given to the Isabella. Our own Isabellas were planted eight by ten, that is, eight feet between the rows and ten feet in the line of trellis. On about half of that vineyard, where the soil is richest, I am satisfied they will soon need more room; and the same is true of our Delaware vineyard — in fact they are already crowding each other; and here let me say, that on good soil (and the Delaware will not do well on any other) it is by no means the feeble vine it has been represented, but a vigorous grower.

When Mr. Underhill says, "The distance to be observed in planting vines along the line of the trellis must depend upon the richness of the soil," he has got the whole thing in a sentence. Mr. Byington's vineyard, to which he calls especial attention, is at the bottom of the valley, on alluvial soil, many feet in depth, containing gravel enough to make it retain heat and render its drainage perfect, and fertile enough to grow anything. *His* Delawares, six years old, it is true, fill a trellis seven feet high, and his vines are sixteen feet apart; but his neighbors, two or three hundred yards distant, who are cultivating vines upon the arid hill-sides, can do no such thing, and do not attempt it. With regard to his method of pruning, while he has not as yet made many converts in his own locality even, he has succeeded in growing large crops of fine-looking fruit; and should he continue to do so for a series of years, with vines remaining healthful, he will not need to argue that it is the proper treatment for *his* vines and other vineyards similarly situated. I examined his vineyard carefully but a few days previous to Mr. Underhill's visit, and my own estimate was, that his vines had from thirty to seventy pounds of fruit each, so that I am not at all surprised at the average of fifty pounds per vine reported; but bear in mind that this vineyard is on ground exceptional in its good qualities of great fertility, perfect drainage, and exposure to intense heat.

The practical difficulty which occurred to me in reference to this peculiar method of pruning was this: how are you to renew the wood of your vine without doing the very thing he deprecates and is seeking to avoid? i. e., cutting off such large portions of it as must necessarily disturb the normal balance of root and vine. I do not see how it is to be avoided. On the other hand, I am thoroughly convinced

that the attempt to dwarf the vine by too close planting, and the terrible mutilating it is yearly subjected to, has been one of the principal causes of the wide-spread disease which affects the native vine; and, other things being equal, just in proportion as this has been practised in any locality, will you find them mourning over the loss of crops and diseased vineyards. In the Crooked Lake region, as some of their best known cultivators have repeatedly assured me, they attributed their success in ripening the Catawba to excessive pruning, adding to that summer pruning; but Nature has rebelled at last, and this year, as Judge Larrowe reported at the New York State Grape Fair, their crop was almost an entire failure from rot.

Mr. Byington goes to the other extreme, and boldly sets at defiance all former ideas of pruning, even in the matter of removing laterals, allowing them all to grow; to quote his own vigorous English — “I would kick a man out of my vineyard who should come in and commence removing laterals.” Now, in this conflict of opinions I suspect that we shall find in the old proverb, “*in medias res veritas*,” a solution of the difficulty, and that our safer course lies between the extremes. This season we tried the experiment on our Delaware vineyard of removing the laterals from about one third of the vines with this result: the fruit on those vines was later in ripening, and the foliage not so healthful as on the balance of the vineyard; so marked, indeed, was the effect, that it was easy to tell from quite a distance, by the difference in color of foliage, just where the experiment was discontinued. We have been taught that the Delaware, of all our native varieties, would best endure severe pruning; and this idea has undoubtedly originated in part from the fact that its first or lower buds, unlike many other varieties, are always fruitful, and consequently we do not fail of fruit with close pruning. The above experiment, however, with others, has convinced me that this is very far from the truth, and that in reality its delicate foliage will not permit of rough handling so well as many other varieties.

With my past experience to guide me, I would, first, plant the stronger growing varieties, as Isabella, Concord, Diana, &c., twelve to fifteen feet apart in the trellis, with a space of nine feet between, and never

carry the vine higher than six feet at most from the ground. If you carry your trellis to the height of six and a half or seven feet, you must increase the distance between the rows; otherwise the ground will be too much shaded, and ripening of fruit retarded from lack of heat; besides, at that height the labor of securing the vine to the top wire is much harder, and women and children cannot do it at all.

Second. On the Delaware leave laterals; on other varieties *pinch* them back just so far on the shoot as you wish to save it for fruit next year, *and no farther*; beyond that let them grow at will.

Third. Except this, no summer pruning whatever. Let the shoots grow, fastening them to the top of the trellis backwards and forwards, thus forming an arbor over the fruit below; and experience in various places has proved this to be one of the best protections against mildew. So far as I know, to Mr. Saunders, of Washington, belongs the credit of first testing this and publishing the result.

Fourth. As to time of pruning, I would in this latitude prefer spring pruning for Isabellas, Dianas, and all rank-growing varieties whose wood is liable to winterkill. Would prune Delaware, Catawba, and all varieties short-jointed and hardy, in the fall, always leaving a redundancy of wood, as it is very easy to remove an excess of fruit or superfluous shoots; and, finally, let every vineyardist study and observe intelligently the habits of different varieties, their needs, and adaptation to particular soils and localities. In this way only shall we be able to help each other, and avoid the costly mistakes of the past.

As regards the saccharine quality of grapes grown upon vines planted fifteen feet or more apart, our experience here shows no difference *when grown upon the same quality of soil*. Excessive richness of soil, producing rank growth of vine and great quantity of fruit, is incompatible with high saccharine quality; the experience of centuries has settled this.

On the 25th of October last the Vine Valley Grape Growers' Association held a meeting for the purpose of testing grapes grown in the valley and vicinity. Invitations were extended to our neighboring vignerons, but the entries were limited to grapes grown in the valley, no fruit being present from other localities. L. M. Ferris, Esq., of

Poughkeepsie, and A. D. Vorce, Esq., of Farmington, Conn., were with the writer appointed a committee to make the test. In each case two pounds of fruit were taken, and, after thorough mashing and pressing, the must was strained. The following is a summary of the test; and although the season has been unfavorable to the last degree for the development of sugar in the grape, the figures compare favorably, I believe, with any public test previously made in the State. The instrument used was the ordinary must scale of Oechsle.

<i>Isabella.</i>				
A. A. Smith,	Vine Valley,	picked	Oct. 15,	80.
Green & Mosher,	" "	" "	" 20,	82.
Nichols, Seelye, & Co.,	" "	" "	" 10,	85.
Ganundawah Grape Co.,	" "	" "	" 25,	84.
A. Bassett,	" "	" "	" 23,	81.
<i>Catawba.</i>				
Green & Mosher,	" "	" "	" 14,	87.
Vine Valley Grape Co.,	" "	" "	" 7,	87.
Perry Brothers,	" "	" "	" 20,	90.
<i>Delaware.</i>				
A. A. Smith,	" "	" "	" 1,	105.
Perry Brothers,	" "	" "	" 25,	105.
Nichols, Seelye, & Co.,	" "	" "	Sept. 25,	107.
<i>Dianas.</i>				
Nichols, Seelye, & Co.,	" "	" "	Oct. 18,	90.
A. A. Smith,	" "	" "	" 23,	89.
<i>Concord.</i>				
A. A. Smith,	" "	" "	" 1,	80.
Nichols, Seelye, & Co.,	" "	" "	Sept. 25,	85.*
<i>Jonas.</i>				
Perry Brothers,	" "	" "	Oct. 6,	97.*

Two points in connection with this test may be worth especial mention, namely: The highest figure in every instance was made by grapes grown in vineyards having the greatest altitude; and exposure, varying from south-east to nearly west, made no observable difference. The soil of the valley is a calcareous loam, with porous subsoil, in some places inclining to clay, having an abundance of both flat and round stone mixed with it. General exposure south-east and south, except at

* Tested at New York State Grape Fair, at Canandaigua, October 6.

the foot of the valley nearest the lake, where it is south-west. The season has been the most unfavorable one known in many years — extremely wet and cold; notwithstanding, the crop, mainly Isabellas and Catawbas, was perfectly ripened, and *all* ripened. The vines have been uniformly healthy in foliage and fruit, not a cluster of rotted fruit in the whole valley. A soil containing lime in abundance, with perfect natural drainage, and an equable degree of moisture in the atmosphere, from our proximity to the lake, may account in great part for this perfect immunity from disease during a season which has been noted for it nearly everywhere else; the added fact that not a vineyardist in the valley practises summer pruning has, I think, contributed to the result. Our greatest trouble now is, amidst the war of varieties going on, *which* to plant, of which, perhaps, something another time.

RUSHVILLE, November 30, 1869.

DEWING'S EARLY TURNIP BEET.

By C. N. BRACKETT, Newton, Mass.

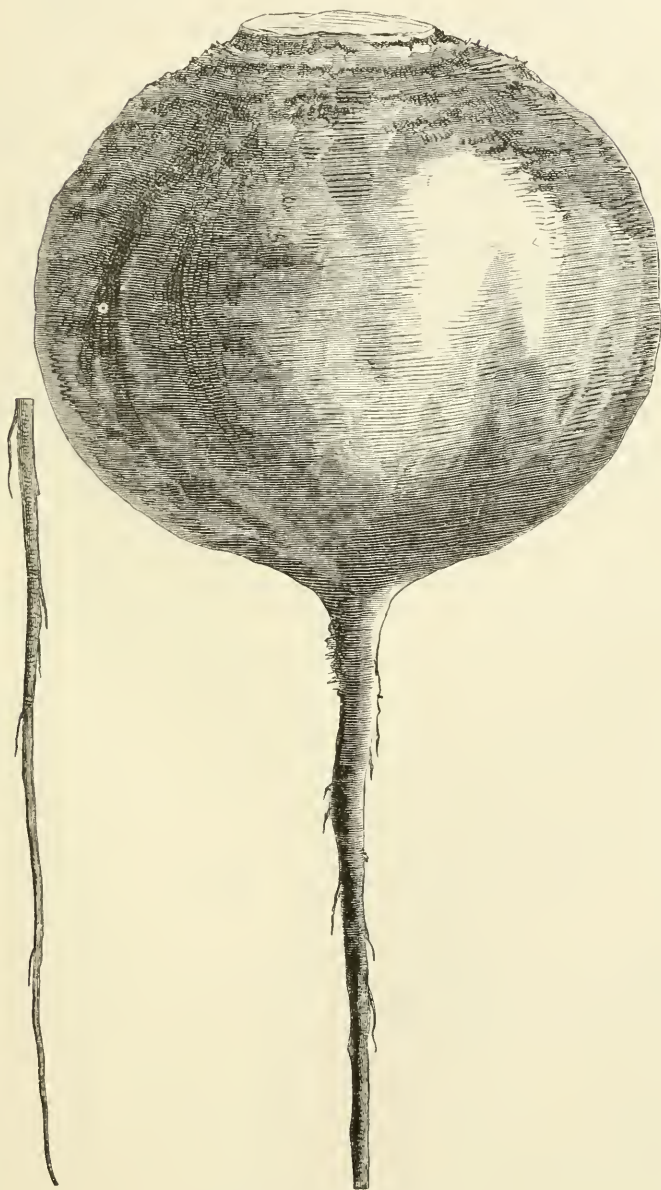
THIS is a new and very superior blood beet, recently introduced, and bears the name of the originator, Mr. Dewing, of Chelsea, Mass.

Like the Hatch beet, figured in the September number of this Journal, it was probably obtained by selection. Owing to its many desirable qualities as an early market beet, it soon became a favorite variety with market gardeners about Boston, and is at the present time a leading sort with them.

Some large growers prefer the Hatch beet for their first sowing, contending that this variety will make a beet large enough for bunching, several days earlier in the season than the Dewing, if sown at the same time, while they give the latter variety the preference, as the most profitable kind to grow for winter use to sell by the barrel.

The roots are of a fine globular shape, uniformly smooth, with a long and slender tap-root. Skin dark purplish-black; flesh deep blood-red; very fine grained, tender, and sugary. Leaves erect, of medium size; leaf-stems blood-red. We have grown this variety, and also the Hatch beet, under the same circumstances, and find but little differ-

ence as regards earliness, — there being two or three days in favor of



DEWING'S EARLY TURNIP BEET.

the latter. Both varieties are of excellent quality for the table.

NEW VEGETABLES OF 1869. — No. IV.

By FEARING BURR, Hingham, Mass.

Evergreen-podded Bean. — The seeds of this new variety were received from the Pacific coast; but further than this no particulars can be given with regard to its history. The name has evidently been supplied since its introduction, and of course should be considered as only local.

The plant is a vigorous grower, attaining the height with much of the general character of the common Case-knife. The pods are quite peculiar in form, and would be readily recognized. They are about eight inches long, nearly half an inch in diameter, round, thick, and fleshy, and singularly hooked or curved at the lower extremity. Very slender, and of a pale green at first, they grow rapidly, changing as they mature to a greenish-white, and contain on the average about seven medium-sized, strongly kidney-shaped, pale drab beans.

Judging from the trial of a single season, the variety is healthy and perfectly hardy, and though not early, the crop would probably fully ripen in any portion of New England or the Northern States.

Like many other sorts, the seeds, whether green or ripe, are of little value for the table. As a string-bean, however, we consider it one of the most promising of the kinds we have recently tested. The yield is abundant and long-continued; and the pods, from their good size, peculiar form, and crisp, tender texture, are not only desirable for stringing, but for the purpose of pickling must prove equal, if not superior, to those of any variety now in cultivation. It certainly appears to be an acquisition, and is recommended for trial.

The sample of seeds was kindly furnished by Messrs. Curtis & Cobb, seedsmen of Boston, Mass.



CRITIQUE ON THE DECEMBER NUMBER. — *Seedling Potatoes.* — In the raising of seedling potatoes, Mr. Campbell will find no rival ; he may be assured of that. Six pounds of tubers from a single seed planted the past spring, including thirty specimens, two thirds of which were of marketable size, is a measure of success most extraordinary. Nothing in my own experience, or that has ever come under my observation, affords any parallel. There certainly appears to be something in this line of the Early Rose not hitherto attained in potato culture. Successive experiments seem to confirm the fact that there is a degree of native health and vigor, or some latent property, in the “ stock ” peculiarly favorable to the development of productiveness, and to the light, floury quality so desirable in this vegetable. Mr. Campbell’s seedlings I regard as highly valuable, though the future alone must determine their real merits. From such a beginning, however, the best results may reasonably be inferred.

Hardy Rhododendrons and their Culture. — The rhododendron is, to my eye, the most magnificent of all our flowering shrubs ; and I do not see how any man who has ever beheld a fine mass, or even a single good specimen in bloom, can think otherwise. But it has had the drawback of being supposed to be tender and difficult of culture, requiring expensive preparation of the soil. What a blessing, then, to learn from Mr. Parsons that there are varieties which are perfectly hardy, and will thrive in any good garden soil ! And yet I cannot help asking whether his experience at New York is adapted to Boston, and points still farther north, though it is most devoutly to be wished that it may prove to be. Twelve rhododendrons, hardy beyond question, growing as surely and as freely as a willow, wherever a lilac will, — who is there that would not have them ?

Mr. Parsons's incidental strictures on the style of horticultural writers are, if possible, even more valuable than what he says on his main subject, and the calmness and force with which they are stated, not less than the source from which they come, one would think must cause them to be respected.

California Fruit. — I have been informed, by a somewhat extensive grower of fruit in California, that the apple tree flourishes there with a rare degree of health and vigor. The foliage is developed in almost spotless perfection, and one can scarcely realize the amount of growth made in a single season. The fruit also attains a size and degree of external perfection unsurpassed by that from any other State. With regard to quality, however, there is a marked degree of inferiority. Nothing of the aroma, and very little of the rich, sprightly flavor, common to the apples of the Middle and Eastern States, is found in those produced in California; and apples from Oregon, though more or less insipid and flavorless, are uniformly preferred to those of home production.

One instance related of the extraordinary growth of trees is that of a row about *half a mile in length*, of the Northern Spy apple, which, in point of growth, vigor, and health, was unexampled; such as we have no conception of in the older States, and such as, if they could be produced here, would cause people to flock together to see them. In a word, they were absolutely perfect in every point but one. The owner came, year after year, seeking fruit, and finding none. The whole row never produced any fruit at all, and the owner finally gave orders to cut them down.

Grape-growing in Virginia. — I wish we might hear oftener from such men as Mr. Robey about fruit culture in a region which certainly has immense advantages over the more northern climates, where grape culture has been most extensive; and I wish we might hear about floriculture, too. No matter if it is but experimental tell us all about your successes and failures, too. They are waking up to a knowledge of the adaptation of the soil and climate of Virginia to the vine, and Mr. Robey's article is a most excellent contribution to the assistance of beginners there. And if I am not greatly mistaken, there are indications that we shall receive from Virginia before many years such supplies of pears, for quantity and quality, as will make sleepy pomologists (if there are any such) open their eyes pretty wide.

Poppies and Marigolds. — O, *si sic omnia*, Mr. Rand. If you would only tell us always of our old friends that we are never weary of hearing about, and that we have seen growing in our gardens ever since we were as tall as the flowers themselves, — if you would only tell us how to get the best seeds, and produce the best plants, and the finest flowers, — we could willingly forego all the stove plants that ever were written about. Yet I suppose that if I could afford to raise stove plants I should do it; and so you must consider those who can, but do not forget that they are few in number compared with those who must depend on the hardy garden flowers like poppies and marigolds. It is true that to many — I think to most — the odor of the marigold is disagreeable; but it is only given off when the plant is bruised, and it must be confessed that one would not wish to cultivate the poppy for its fragrance; but there is nothing more gorgeous in the flower bed, and nothing richer than the velvety brown and gold of the French marigolds.

More of Canker-worms.—Would, Mr. Editor, that there might be an end of them. That the young larvæ are quite tender, I believe, is generally admitted; but is the prevailing idea correct that this insect, in its perfect state, is sensitive to cold, and easily destroyed by frost? With me, a large proportion of the canker-worms are early risers, and generally ascend the tree before the closing up of the ground, in autumn, though I find them at intervals, whenever the weather is open and pleasant, throughout the whole winter. They may be crushed, and thus somewhat reduced, by the late ploughing recommended by your correspondent; but so far as regards their suppression at this stage of growth through the agency of cold or frost, I am somewhat sceptical. Further than this, I am satisfied that, even with the faithful use of all known preventives, we shall be able to do scarcely more than to carry on a sort of inefficient running fight on the defensive. Providence and the elements aside, the canker-worm will prove itself king. This is shown in all its past history, and it is being confirmed to-day. That it has been moving steadily on during the last fifteen or twenty years, bidding defiance to every means an enlightened age could devise for its extirpation, is undeniable.

The following fact may afford some encouragement to such of your readers as may be interested in this subject. In 1788 the canker-worm prevailed throughout most of New England. In many localities not a green leaf was spared to the orchards, and the crop of apples was entirely destroyed. Of the many preventives recommended at the time, the following, from the old Massachusetts Magazine of 1789, will serve as a specimen: "Early in spring (in the month of March) fasten round the trunk of the tree a strip of sheepskin of about three inches in width, dressed with the wool on. This will so entangle the worms as that they cannot reach the limb of the tree." Signed, "A Citizen of Boston." Applied *in spring*, of course the remedy availed nothing, and at present is found to furnish a very partial protection even if applied in autumn. I am unable to give the time of duration, but their extermination was sudden and complete. Early in June there "came a frost, a killing frost," and in a single night the work of annihilation was finished. The canker-worm was not.

A Distinction without a Difference.—Mr. Parkman's unpretending article may well save a good many dollars to florists, as well as a good deal of disappointment, and we are glad to see a man who has courage to expose such deceptions, and we hope he will continue the good work.

The Walter Grape.—Why cannot we oftener have a good, honest, unexaggerated engraving of a new fruit, instead of the nurseryman's cuts of specimens which may have existed, but which, unfortunately, nobody but the proprietor ever happened to see? The Journal which, like yours, Mr. Editor, makes it a rule to give none but original engravings from actual specimens, must certainly receive the support of all who wish an impartial account of a new fruit, and are not satisfied with the partisan accounts of those whose interest it is to sell them.

Russian Apples.—Well, I had no idea, and I do not think many others had until they were brought together, that we were indebted to the Russian Bear for so many apples. It is no strange thing that these varieties should succeed so

well in the north ; but to my mind it *is* remarkable that they are so well adapted to the south. Mr. Manning remarks that the Tetofsky succeeds admirably as dwarfs, and he might have said the same of the Red Astrachan, and Duchess of Oldenburg and Alexander.

The Fruits and Fruit Trees of America. — Your notice, Mr. Editor, of this admirable work is excellent. The criticisms are just, but you certainly have not praised it too highly — I think not highly enough. When a man who hears a fruit mentioned that he is not familiar with, finds himself involuntarily turning to this encyclopædia, and seldom closing it in disappointment, he does not need much more to convince him that such a work stands at the top of the list, and to lead him to honor the name of the brothers to whose labors he is indebted.

THE HADLEY OR KIRTLAND PEAR. — We have received from Mr. E. Montague, of Hadley, Mass., a communication, prompted by the note on this variety in our November number, which we immediately referred to R. M., and which we give below with his comments. He says, —

“ I am very glad that my note on the Hadley or Kirtland pear has brought out so interesting a communication from Mr. Montague, though it unsettles a question which has long puzzled me, and which I supposed, at last, satisfactorily solved.

“ The only mention of the Hadley pear in print, that I know of, is the following, from the Horticultural Register and Gardener's Magazine, edited by Thomas G. Fessenden and Joseph Breck ; Boston, 1836, vol. ii. p. 72. ‘ I found the Hadley pear — the original tree, I think — growing in the garden of a Mr. Montague, at Hadley. It is a fine melting pear, moderate size, covered with yellow russet, not much extended by grafting in that neighborhood. I could not ascertain whether it is the same with the Capsheaf, as is suggested as probable in the New American Orchardist of Mr. Kenrick. Perhaps the description I have given of it will enable those acquainted with the Capsheaf to determine. *M. S.*

“ ‘ BERLIN, CONN., December 24, 1835.’

“ The mention of the Hadley by Mr. Kenrick is, in 1835, under the Capsheaf, as a supposed synonyme ; but it is wholly distinct, and was entirely omitted in a later edition. Before writing the paragraph in your November number, I called on Mr. Breck, and asked him if he knew the writer of the paragraph signed ‘ M. C. ; ’ but he did not ; and there I was obliged to cease my efforts to trace the history of the Hadley, though I should have been very glad to examine it more fully had I known then, as I do now, where to look. I also wrote to Dr. Kirtland, stating the facts as far as known to me, and received a reply, which I now send you.

“ Of the identity of the Hadley and Kirtland, whatever their origin, I think there can be no doubt, as I have them both grafted into one tree, and with the most careful comparison, I have been unable to detect any difference, though after learning what I have as to their origin, I shall, of course, make another careful examination.

“ I confess that I am unable to account for the double origin of this pear, and the suggestions of Dr. Kirtland and Mr. Montague are hardly admissible, the former being contradicted by the early date at which the Hadley was known ; and Dr. Kirtland's well-known pomological skill forbids the idea that he could have been deceived in regard to the original tree of the Kirtland, while the supposition that he would knowingly have sent out an old variety under his name as new, is not for a moment to be entertained. Under these circumstances I can only suggest that you should publish both Dr. Kirtland's and Mr. Montague's letters, that your readers may form their own opinion of the matter.”

The following are the letters of Dr. Kirtland and Mr. Montague : —

“ EAST ROCKPORT P. O., OHIO, April 26, 1869.

“ DEAR SIR : The history of the Kirtland is briefly this : In the year 1818 I resided in the town of Durham, Conn. My brother, Henry T. Kirtland, a resident of Poland, Ohio, visited me at my residence in the autumn of that year, and while there collected the seeds of a peck of Seckel pears, presented me by the late George Hoadley, Esq. These seeds my brother brought to Ohio at the close of that season, and sowed them in his garden in Poland.

“ In the year 1823 I removed to Ohio, and located in the last-named village, and found that perhaps two dozen of young pear trees had been produced from those seeds. Under good cultivation, in new soil, some of them had attained to the height of five and six feet. One half of these trees were presented me by my brother, and were very carefully transferred to my own grounds, and as carefully cultivated by my own hands. Several of them produced a few fruits in the course of the next two or three years ; and the fruit of one, now known as the Kirtland, was at once recognized as delicious and valuable, and far superior to that of any other of these seedlings, most of which were subsequently employed as stocks ; but no graft or inculcate was ever inserted on this favorite tree.

“ Its reputation rapidly extended in that locality, and scions were freely distributed to numerous applicants. The public soon designated it as the ‘ Kirtland Pear ’ — a seedling produced by Henry P. Kirtland, though the tree was now growing in the grounds of Dr. J. P. Kirtland. I sent some specimens of the fruit to the first State Fair of New York, at Buffalo ; but they did not arrive until the last day of the fair, and too late for entry among the fruits. David Thomas sent me word that ‘ it was one of the best pears he had ever eaten.’

“ At a subsequent New York State Fair, held perhaps at Syracuse, I again forwarded specimens, together with a drawing, and description of its origin. The sketch, description, &c., appeared in one of the New York reports.

“ The original tree died some twenty years since.

“ Second-hand rumors and statements on any subject are very unreliable ; but after having seen with my own eyes the development of this pear from its very embryo, and cultivating, cherishing, and introducing it to public notice, I can say, as did Le Baune, in his introduction to The Campaign in Russia, ‘ *I write that which I have seen.*’

“ There can be no mistake in regard to the origin of the Kirtland pear.

“ I know nothing of the Hadley pear. The following hint may, perhaps, solve the mystery which involves the subject : —

“ Between the years 1823 and 1830, a Mr. Hunt, proprietor of the town of Huntsburg, Geauga County, Ohio, a citizen of, I think, Northampton, Mass., spent several days with me at my residence in Poland, and about the period this pear was attracting its earliest notice. He was an intelligent amateur pomologist, and while on his visits was ardently engaged in searching for new and valuable fruits in the numerous seedling orchards then fruiting in this new country. I well recollect, at one of his departures, one half of his portmanteau was stuffed with his clothing, and the other was equally filled and balanced with scions and cuttings thus collected, and destined for New England.

“ That he took cuttings from my young pear tree I cannot recollect ; but as he was making seedling fruits a speciality, and the reputation of the Kirtland was very high in that locality at that period, it is reasonable to suppose that he secured a supply, from which the Hadley tree (*as a root graft*) may have sprung.

“ This fruit is of little value when left to ripen on the tree, but picked early, and matured in doors, it becomes one of the most delicious.

“ With great respect yours, J. P. Kirtland.”

“ BELCHERTOWN, MASS., November, 22, 1869.

“ MESSRS. EDITORS : I notice in the November number of your Journal a communication from R. M. concerning the ‘ Kirtland and Hadley Pears,’ which

needs some criticising. But I will first give you a brief history of the Hadley pear, and let your readers decide whether it is wise for R. M. to give judgment in a case with so much decision, having heard only one side of the question. The Hadley pear came from seed planted by my father, Jedediah Montague, when a boy. He was born in the year 1766, and probably planted that seed about the year 1780, and it probably bore fruit some years before the commencement of the present century, and has seldom, if ever, failed to bear some every year since, but a full crop only alternate years. The tree is still standing on the spot where it originated, within a few feet of the house in which I was born, and where I spent the first twenty-two years of my life — from 1805 to 1827.

“My first recollections of the tree are, that it was a large, fruitful tree. I recollect very distinctly gentlemen coming from Northampton and other places to get scions from that tree to send to their friends at the West. One — I think it was Mr. Hunt, from Northampton — wished to send some to a friend in Ohio. This was some years before my father's death, which was in the year 1824. Scions were also sent to many of the other States, and I have been told that it was called the ‘Hadley Pear’ almost universally, though in some places it was called the ‘Montague Pear.’ This tree was measured by one of those gentlemen who came for scions, I think about the year 1820, and it then measured forty feet in height, and the circumference, four feet from the ground, I think was over six feet, but I am not certain. I saw the tree a few weeks ago. It is about the same in height, with, perhaps, a somewhat larger trunk than it had fifty years ago. It shows some marks of old age, but still bears a good crop of good fruit. A valuable old tree. It has probably produced, during the seventy-five years it has been in bearing, nearly one thousand dollars' worth of fruit. My brother received thirty dollars for what he sold from one crop, besides having a good supply for his family and friends. The above facts can be corroborated by any one who will visit Hadley, examine the tree, and ask the inhabitants, old or young.

“With this statement of facts, I will now submit the case to your readers as jurors, and R. M. as judge, to say whether there is not, after all, some ground to doubt ‘that the supposed seedling tree in Hadley sprang from grafts of the Kirtland which Mr. Hunt brought to the adjoining town of Northampton.’ Or is it not more reasonable to suppose that the Kirtland pear sprang from scions which Mr. Hunt, of Northampton, sent to Dr. Kirtland, of Ohio, some years before the time when R. M. says the Kirtland pear first began to attract notice, and that Dr. Kirtland, finding they were a valuable pear, propagated them, and sent them out bearing his name?
E. Montague.”

HORTICULTURAL SPECIALTIES. — As the science of horticulture widens its domain, it becomes more and more beyond the grasp of any one man; and such is the tendency of every branch of human knowledge and skill in our day, and, however much this is to be regretted, it is unavoidable. There are some persons who find their ground unusually suited to certain plants; others seem to have a kind of intuitive skill or knack in cultivating certain plants: and all such persons will find their interest in making specialties of the plants which succeed best with them, if they do not give their attention wholly to them. Many nursery-men now devote themselves wholly to small fruits; and we should not be surprised to see the nursery business so far subdivided, that some growers should confine themselves to one species of fruit, such as apples alone, or pears alone, or even to a single variety. Let a nursery-man who has a piece of ground favorable to the growth of the Bartlett Pear, for instance, cultivate that variety, and nothing else, and he would, undoubtedly, be able to sell better trees of that kind at less prices than other growers, and with absolute certainty of genuineness.

FRUIT IN CALIFORNIA. — I have seen such sights to-day as can be seen nowhere on the continent outside of California. What I remember of the trip through this San José valley is — Fruit. One of the San Francisco money kings has a horse barn down here that cost as much as a first-class New England high school house does : it is of the things we are all taken to see. Another has a private residence that is like a prince's palace for size and picturesqueness, and elegance of finishing and furnishing ; hospitable and generous to the stranger as no prince's palace could be, unless he were of American blood and fellowship. There are libraries and private picture galleries : their doors open at the nod of an eastern tourist. There are parks, and hills, and groves, and lawns, and flower-gardens, and hothouses : every gate swings on its hinges at your faintest desire. There are wide reaches of magnificent live oaks ; summits commanding such treasures for the eye as the Tempter might have offered ; wild cañons set in enchanting mountain scenery. Of all this wonderful panorama — barns, and houses, and gardens, and meadows, and flowers, and slopes, and valleys, and crests, and forests — one takes a hasty sight. Bits of it I have sketched, but the whole wide picture lies faint and unreal in my memory. For what I saw was — Fruit.

It is not easy to exaggerate in speaking of California fruit. One of the first places I visit in a new city is its market : go into the market and see what is raised, then into the bookstore to see what is read : now you are prepared to say in which one of three or four great classes your new community belongs. San Francisco has one of the finest markets in the Union. I went down there the first Saturday evening after we reached this coast. There was such a show of fruit as no county fair or city horticultural exhibition in Massachusetts ever made ; and yet I was told, over and over again, " Market isn't very good this evening." Since that night I have been eager to get into the fruit country — eager, and yet dreadfully afraid that I should find it a disappointment.

This superb valley is a vast fruit orchard. Not that it is wholly given up to orcharding, for there are many large farms, but that in a drive of twenty miles one can see three or four times as much fruit as in any other similar drive. There are acres and acres of pears, and apples, and peaches, and plums, and grapes, and nectarines, and figs, and blackberries, and strawberries. The orchards are open to anybody, and I have been driven through miles and miles of avenues bordered with heavily-laden trees. Every man was more than willing to give me all the fruit I could eat and carry away. Acres of ground are almost covered with pears and apples, that must rot or wither, because there is no one to buy them, and the cellars and chambers are already filled. Let me see : in one gentleman's grounds I found English walnuts, sweet and bitter almonds, two varieties of figs, an acre of blackberries, more than an acre of strawberries, half a dozen each of peaches and plums, an abundance of nectarines, ripening bananas, limes and oranges, seven or eight varieties of grapes, as many more of pears, and more than I could number of apples. He said he was not doing much in fruit — nor was he ; and yet a hundred bushels was rotting under his trees. There are places out here in Santa Clara from which a train of cars can be

loaded daily with strawberries, and others from which a great ship's cargo of pears could be taken.

Travel where you will in California, and you get an abundance of fruit. The apples are large in size, and beautiful for color, but they lack the flavor of our eastern apples. Some peculiarity of soil or climate cheats them of that last grace common to all Massachusetts orchards. The Californians do not like to admit the fact, but my testimony is that of every visitor from the east — California apples are dry and insipid. But when you come to grapes, and pears, and plums, there this State may challenge the world. Her peaches are no better than we get from Delaware and New Jersey, and her berries are of no sweeter delicacy than those we find at home. Her wonderful advantage is, that she has such a variety and such a quantity of fruit: she commands almost every product of the torrid and temperate zones, and she counts her thousands of bushels to every ten of any Eastern or Middle State. She gives her visitors fresh fruit at every meal of every day in the year; she produces it with the least possible labor, and no apparent drain upon her soil; year in and year out she buds, and blossoms, and ripens, and asks little aid but that of the air and the sun. The opulent merchant loads the plate of his guest with fruit; it is so abundant and cheap that the little hotels of the mining villages in the mountains serve the traveller without stint. You get your hat full of grapes for ten cents; your driver helps himself and his passengers from the orchards on his route; when you pay for your dinner you are asked to take a couple of pears for refreshment as you ride along. The stranger looking through the city market is invited to help himself to whatever fruit he wants to eat. This is California fruit: you find it everywhere — peaches red and velvety, pears with the color of gold, grapes of green, and purple, and amethyst splendor.

This is the San José valley — the fruit orchard of San Francisco. The section for oranges and lemons is farther down the coast, and the Los Angeles country is the great wine-making region. But San José is close at hand. The eastern visitor will make a mistake if he omits giving two or three days to the valley. If he can continue his stay long enough for one or two rides over the Coast Range, that will be a sensible thing. But he comes into this valley for fruit and orchards, adding thereto whatever he may for time and inclination.

Correspondent of the Boston Daily Advertiser.

SAN JOSE, CAL., October, 1869.

HISTORY OF THE CONCORD GRAPE. — The editor of the Grape Culturist is quite mistaken in supposing that the original vine of the Concord, grown by Mr. Bull, is not more than fifteen years old. A brief history of its origin is given in a note from Mr. Bull, dated January, 1854, and published in Hovey's Magazine, vol. xx. p. 65. Mr. Bull says that about ten years previous to that time he began to raise seedlings from our native grapes. The Concord was one of these seedlings of the second generation, and first fruited in 1850. The first ripe bunch of the season was exhibited at the Massachusetts Horticultural Society's Room on the 3d of September, 1853. At the annual exhibition of the same society, in 1854, thirty fine clusters were exhibited, as we well remember; and the same season we afterwards received specimens from Mr. Bull.

To the Editor of Tilton's Journal of Horticulture.

GRAPES AT VINELAND. — The last season was unusually favorable to grapes in this section — dry, warm, and breezy throughout. I believe that exposed situations are here the best for grapes. In my own vineyard, on high ground, nearly all varieties have escaped injury from mildew, while I have seen in lower and more sheltered places whole fields of Concords bare of foliage. Probably nine tenths of the vines in this settlement are of this variety, but a much better grape is sadly needed. Hartford Prolific generally loses so many leaves as to ripen no earlier than Concord. Agawam is pronounced here to be superior to well-ripened Ionas; entirely healthy and productive; ripens with the Concord; a very beautiful and promising variety. Wilder healthy; a good and handsome grape. Cottage, healthy and vigorous, not fruited. Una the same. Eumelan mildews considerably. Walter the same. This variety seems to be a vigorous grower, but, like the Delaware, the leaf "fails to stand the pressure." One old variety deserves special mention. The fruit of the Clinton raised in Vineland is sugary, very spicy, and rich. Double the size of the Clinton as it is here, and you shall receive our everlasting thanks.

F. M. B.

FUMIGATING GREENHOUSES. — Some years ago, while in charge of the Cambridge Botanical Gardens, I experienced considerable difficulty with the old-fashioned iron pot in producing smoke of sufficient volume to destroy the common aphide, or green fly. The houses being roomy and very high, the smoking of them was a slow and tedious process, and something more effectual was needed: so I ordered another pot to be made, similar to a cylinder stove, of sheet-iron, about two feet and a half high, and ten inches in diameter, with a small sliding-door at the base for a draft. To use it, put a handful of shavings at the bottom, then fill it nearly full with tobacco (we use stems), rather loose at first, and set fire to the shavings through the door. Should the tobacco burn too rapidly, the door may be partially closed, and the tobacco pressed down with a stick of wood. A few minutes will suffice to fill up the largest greenhouse with a dense smoke, when the furnace may be taken out to smoke other houses if needed. That little apparatus is now generally used by gardeners around Boston, all agreeing in calling it superior to any other in use, being so very prompt, simple, and effectual.

Denys Zirngiebel.

THE PEACH CROP OF 1869. — During the late peach season, the Philadelphia, Wilmington, and Baltimore Railroad carried from Delaware and Maryland two million one hundred and fifteen thousand five hundred baskets of peaches. Of this immense quantity, two million twenty-one thousand four hundred and seventy-four baskets were shipped to Jersey City for New York and New England, and the rest, ninety-four thousand and twenty-six baskets, remained in Philadelphia. There were seven stations that sent to market more than one hundred thousand baskets each.

CRANBERRIES are so abundant in Wisconsin that they sell for two dollars per bushel.

PAPAWS were abundant the last season in Western Missouri.

FRUIT-GROWING IN CALIFORNIA. — We had the pleasure of a short call from Mr. L. A. Gould of Santa Clara, Cal., who is one of the largest fruit growers in that State; having this year raised twelve hundred bushels of Vicar-of-Winkfield pears alone. He had shipped a car-load of grapes and pears to Chicago, a part of which were forwarded to Boston; but finds the high freight-tariff an obstacle to the profitable shipment of fruit to the East. Mr. Gould packs his pears in close boxes, first wrapping each one separately in paper; and the grapes in boxes open for ventilation, pressing them in while packing as firmly as possible without breaking the skins; filling the boxes about an inch above the top, and then pressing down the cover. Both pears and grapes arrived in perfect order.

Strawberries are gathered in California from April to January; Mr. Gould having sent to market a considerable quantity on New-Year's Day. The varieties which succeed best with him are Longworth's Prolific and Jucunda. Wilson is also planted, and does well; but the flavor is no better there than here.

We have tasted some of the Vicar of Winkfields grown in California, which ripened in October. They were of fine size, yellow, and fine flavored, equal to the best of those grown here; though we saw none with the red cheek which commonly marks the finest-flavored Eastern specimens.

THE WESTERN TRIUMPH BLACKBERRY. — This is a chance seedling, found upon the open prairie in Lake County, Ill., in 1853, by Mr. Biddell of Muskegan, Ill., and by him removed to his garden, where it has since that time proved hardy and very productive, not being injured when Kittatiny and New Rochelle have been killed.

The fruit is medium to large, very abundant, roundish, elongated, obtuse in form; granules coarse, large, apparently firm, yet very rich and sweet; carrying well, and without any harshness of core, or acidity, so peculiar to New Rochelle, Wilson, &c.

The leaf is very broad and thick, irregularly and rather coarsely serrated; spines abundant, stiff, and strong.

Mr. D. G. Smith of Waukegan writes, that the plants, so far, have been grown in poor clay soil; and he thinks the fruit not, therefore, as large as it would be were it grown in richer and better soil. The fruit is certainly one of the sweetest of all blackberries. — *Rural New-Yorker*.

CABBAGES IN PHILADELPHIA. — A Philadelphia reporter lately counted at a single market in that city, the arrivals for one day, eighty-two large country-wagons, containing, in all, about fifty thousand heads of cabbage. It was all taken up quickly at a good price. Cabbages are never in excess in Philadelphia, it is said. Of peaches and grapes they sometimes get an over-supply; of the raw material for manufacturing sauer-kraut, never.

CALIFORNIA GRAPES. — One Chicago fruit dealer received during the first week in October ten tons of California grapes, which arrived in good condition, and were sold at lower prices than those raised in the Central States.

KENTUCKY STATE POMOLOGICAL SOCIETY. — The annual meeting of this Society was held at Bowling Green, October 20, the president, Lawrence Young, in the chair, and the most enterprising farmers and lovers of fruit culture in the State were present. There were exhibited one hundred and twenty plates of apples of sixty varieties, ten plates of pears of nine varieties, fourteen varieties of grapes, three of peaches, and one of quinces, with three elegant bouquets, and many other flowers. The fruit of all descriptions seemed to be in a remarkably nice and healthy condition, with very few exceptions. Among the fruits was a large variety of new seedlings.

The following list of fruits was recommended for general cultivation : —

Summer Apples. — Early Harvest, Red Astrachan, Jersey Sweet, Carolina Red June, American Summer Pearmain.

Fall Apples. — Maiden's Blush, Frankfort Queen, Pennsylvania Redstreak, Porter, Lady Finger, Roxbury Russet.

Winter Apples. — Lady Finger, Rome Beauty, Wine Sop, Rawle's Janet, Hall's Seedling, Lady Apple, Howe's Crab, Moore's Sweet, Limber Twig, Ben Davis (or New York Pippin incorrectly).

Pears, Standard. — Bartlett, Flemish Beauty, Madeleine, White Doyenne, Buffum, Glout Morceau, Seckel, Belle Lucrative, Tyson, Swan's Orange (astringent), Doyenne Boussock, Julienne, Osband's Summer, Lawrence, Doyenne d'Eté.

Dwarfs on Quince. — Osband's Summer, Duchesse d'Angoulême, Glout Morceau, Tyson, Louise Bonne of Jersey, Buffum, Lawrence, Seckel, Beurré Giffard.

Peaches. — Early Tillotson, Catherine, Brevoort's Morris, White Heath, George IV., Early Newington, Heath Free, La Grange, Van Zandt's Superb, Ha'z's Early, Columbia, Ward's Late Free, Grand Admirable, Grosse Mignonne, Red Rareripe, Tippecanoe, Smock's Late Free, Crawford's Late, Hopkinsville Free, Cole's Early, Oldmixon Free.

Grapes. — Delaware, Catawba, Concord, Norton's Virginia, Ives's Seedling, Hartford Prolific, Diana (on poor soils).

Apples recommended for further Trial in certain Localities. — These were popular varieties, but owing to several years' failure, except in elevated localities, were struck from the list. Pryor's Red, Milam, Little Romanite, Yellow Bellflower, Striped Winter Pearmain, Rambo.

Apples recommended as promising well. — King of Tompkins County, Davidson's Sweet, Primate, Ferris, Beeler's Crab, Gravenstein, Pumpkin Sweet, Maxcy, Winter Cheese, Shockley, Boyd, Carson's, Lansinberg, Early Joe, White Sugar, Junaluskee, Chenango Strawberry, Benoni, Lemon, Father Abram, Joy, Smith's Cider, Red Crab, Sops of Wine, Jonathan, Transcendent Crab, Red Horse, Hutcheson, Summer King, Mary Womack, Norton's Melon.

The officers for the ensuing year are, President, Lawrence Young, Louisville; Vice Presidents, Samuel Haycraft, Elizabethtown, J. L. Downer, Fairview, A. D. Webb, Bowling Green; Corresponding Secretary, Dr. L. Stallard, Bowling Green; Recording Secretary, Isaac T. Woodson, Woodsonville; Treasurer, Joseph I. Younglove, Bowling Green.

The next annual meeting will be held at Bowling Green on the last Tuesday in September, 1870.

THE GRAPE EXHIBITION AT CANANDAIGUA. — The annual Fall Exhibition of the New York State Grape Growers' Association, which was held at Canandaigua, October 5 and 6, was a success, although the display of grapes and wine fell far short of the exhibition of last year. The exhibition was held in a spacious canvas pavilion capable of holding three thousand persons; but a small portion of its capacity was taxed during the exhibition. The extremely unfavorable season of 1869, for grapes, kept away many well-known growers who are usually among the leading contributors to such occasions. Others, from sections which in ordinary seasons are prolific in grapes, came nearly or quite empty-handed, with the dismal report of rot, defoliation, and unripeness in their vineyards. Fully one third of the display of grapes came from Vine Valley, the somewhat famous little dell on the east shore of Canandaigua Lake. Naples, lying at the head of the same lake, contributed a large share of the fruit on exhibition. The railroad embargo at the east, caused by the recent severe storms, detained the exhibitors from the Hudson River region until the second day of the Fair. Considering all things, the display was very excellent, and established the fact that so varied is our State in topographical and climatic features, that in any year there will be a sufficient quantity of grapes produced in some sections of its area to redeem the crop from failure.

Among the exhibitors from Vine Valley were, A. C. Younglove, Nichols & Seelye, Hezekiah Green, Alexander Bassett, Albert Ayers, C. H. Perry, and Levi Fountain. Each one of the exhibitors had some peculiar point of excellence. The most notable features of Mr. Younglove's collection were Ionas and Delawares of unusual size of berry and weight of cluster. Some of his Delawares were nearly equal to Catawbas in size. Of Ionas, in his collection, some specimens, which were produced on garden soil at the base of the hills, were very large, and the bunches heavy, while others, which grew on another hill-side, were of lighter cluster, but superior in flavor. His Catawbas were remarkably fine.

The collection of the Ganundawah Grape Company, in charge of Albert Ayers, embraced a fine display of grapes of standard varieties.

Naples was ably represented by Hon. E. B. Pottle, J. W. Watkins, N. B. Reed, Geo. Reese, Dr. J. W. Clark, S. W. Kimber, M. Eichberger, and A. J. Byington. The latter exhibited grapes on canes, of Iona, Delaware, and Isabella, which attracted general interest, from the fact that he is an enthusiastic devotee of the unusual system of pruning which has been recently brought before the public by articles in various papers, from the pen of E. L. Underhill. The collection of Mr. S. W. Kimber embraced an unusually fine display of Rebeccas, which variety, he reports, is a constant and free bearer with him. His location is on a very dry, well-drained, gravelly subsoil.

Hon. E. G. Lapham had the only collection present of foreign grapes grown under glass.

O. S. Redout, of Middlesex, exhibited some remarkably large and fine clusters of Isabellas on plates and canes. The collection of R. B. Shaw, of Canandaigua, consisted of about twenty different varieties, including some fine clusters of Creveling.

C. L. Hoag, of Lockport, exhibited about twenty different varieties, among which were six of Rogers's Hybrids. Mr. J. H. Babcock, also of Lockport, had a fine show of Salems, the culture of which he has gone into extensively, having purchased all the surplus wood and plants from the thirty-acre vineyard of Salems belonging to the Harris community at Brocton.

Of new varieties, the ones which attracted the most attention were the Eumelan, brought by Hasbrouck & Bushnell, and the Walter, by Ferris & Caywood. Stephen Underhill, of Croton Point, exhibited his new Croton and Senasqua grapes. During the second day, Mr. L. P. Noble, of Fayetteville, appeared with the new hybrid Onondaga, which was not entered for exhibition, as it had failed to ripen this year. We forbear any criticism or description of the new varieties. They have their history yet to make, and in course of time will take their proper places with cultivators. An exhibition at a public fair affords but very superficial means for forming a decided opinion of the practical worth of a new variety. The Walter, Eumelan, and Croton all took first premiums. The Martha failed to put in an appearance.

The display of American wines was limited, only three or four exhibitors being present. The largest and best collection was from Ryckman, Day, & Co., Brocton. Morrow, Chamberlain & Co. exhibited California wines. It is of very questionable propriety to admit wines produced from grapes which are not hardy in this State, to competition in an exhibition of a local character. Still, our own native wines have nothing to lose by the competition.

At eleven o'clock on Wednesday, the address was delivered by Dr. Warder, of Cincinnati. It was an exposition of the grape plant, and was rather elementary in its character, and, doubtless, highly interesting to those who were unfamiliar with the alphabet of grape culture.

The various committees to award premiums were appointed on Wednesday, and proceeded promptly to the discharge of their delicate duties. All reported during the afternoon, except those on the varieties of American wines, and that on class five, including the best seedling, and the best and largest display of grapes. When the exhibition broke up and the company dispersed, the committees named were still out.

Among the decisions of committees of general interest were the following:—
Grapes for Table.—Best red, Iona; best black, Eumelan; best white, Croton.

Grapes for Wine.—Best black, Clinton; best red, Iona; best white, Rebecca.

Grape Boxes.—Best square wooden, Fairchild Brothers; best round wooden, Fessenden & Sons; 2d best do, C. S. Brace; best paper, P. S. Vandeburgh.
Country Gentleman.

WISCONSIN HORTICULTURAL SOCIETY.—I wish to call attention to this Society, and its annual meeting at Madison the first Tuesday in February, 1870, thus early, for several reasons.

First, we do not want any one to say he did not have a timely notice.

Second, we want everybody to know that there is a Wisconsin State Horticultural

tural Society, and that its members, and all interested in fruit growing, either as a luxury or profession, are invited to be present and participate in its discussions, or at least to add their mite by way of encouragement in their presence.

Third, we want all who have raised any fruit, and still have it on hand, to have this timely notice, that they may have some of their fruit still further kept, and send or bring such samples as will add a share of interest to the occasion.

Fourth, we would like to have every editor, in the State at least, keep before the people the time and place of meeting, and that these meetings have always proved of great interest to those participating.

Fifth, in the every-day practical life of the orchardist there are constantly occurring difficulties. He asks himself why this or why that. To answer these is the business of this Society; and to aid in bringing before the public the greatest amount of practical information, we would like to have any one, and all, send to the undersigned such questions as they would like to have information upon. Let them come from all parts of the State. For instance, some one wishes information upon some single variety of grape, no matter what sort; another, what three sorts are best; still another, giving his exposure, aspect, soil, and latitude; what apples will succeed best; and a "reliable nurseryman" is very anxious to know how to rid the country of tree peddlers.

These are but a sample of the numerous questions which are constantly arising, coming from all quarters, embracing insects, preparation of the soil, time and mode of planting, after-culture, &c. — an ample field for the child to puzzle the scholar in; but never mind that. Write out your horticultural desires ever so rudely, and send them to me. They shall have attention; and as you thus add the oil to the lamp, light will be had therefrom, and practical knowledge will shine forth.

O. S. Willey, Secretary State Horticultural Society.

NOTES AND GLEANINGS FROM FOREIGN EXCHANGES.

PRIMULA PEDEMONTANA. — We have to thank the Messrs. Backhouse & Son, of York, for the opportunity of illustrating the beautiful Alpine Primrose, which forms the subject of this note; and which was introduced by them from the Graian Alps of Piedmont.

The plants form a close rosette of obovate, sinuately-toothed leaves, from among which rise the flower-scapes to the height of from five to six inches, bearing clusters of about seven or eight flowers, of a pleasing bright purplish or magenta rose, sometimes with a white or pale-colored ring around the throat.



PRIMULA PEDEMONTANA.

and measuring an inch across the limb of the corolla, the lobes of which are obcordate. These flowers are produced in spring.

We learn from Mr. Backhouse, who has closely studied this race of plants, that the alliance of *P. pedemontana* is with *P. viscosa* and *P. integrifolia*, from both of which, however, it conspicuously differs. "It is easy of cultivation in a mixture of loam and peat, interspersed with bits of stone."

M., in Florist and Pomologist.

IS THE POTATO DISEASE HEREDITARY?—I planted, in 1865, some pink kidney potatoes of a late-keeping kind, called here Yorkshire Kidneys. They produce much haum, and are a little given to disease. The crop was diseased. I selected from the diseased potatoes twelve of the very worst,—so bad, so rotten, as scarcely to have any vitality,—and planted them, in March, 1866, on a piece of poor ground without any manure. The result was seventy-one potatoes quite sound, and fifteen diseased. In 1867 I planted the diseased potatoes and a few sound ones, sufficient to make a long row: the result was scarcely any disease at all. In 1868 I planted two rows, taking all the diseased and small potatoes: the result was a good crop and no disease.

To-day (April 21) I have looked over the potatoes left, about half a bushel, and cannot find a trace of disease.—*Cor. Jour. Hort.*

FIG CULTURE IN FRANCE.—Figs and fig culture seem to be exciting more attention in this country than formerly, and it is well that they do so, for no fruit can be more wholesome or delicious than these, when fully grown and well ripened. The pot cultivation of the fig tree, as practised so successfully at Chiswick, has already occupied some space in the “*Florist and Pomologist*,” and we now propose to glean from Mr. Robinson’s recent book* some particulars of fig culture as carried on in France, according to the system of M. Dubreuil.

In our own southern counties, e. g., at Arundel, Shoreham, and the Isle of Thanet, the fig succeeds well as a standard tree. It is not, however, in this form that it is most successfully treated around Paris, for the frosts are severe enough to leave it little chance of escaping destruction. The plan adopted to protect the trees and fruit is to collect the branches into three or four bundles, and in this form to bury them in a trench beneath little banks or ridges of earth, the crown of the root being also protected in a similar way. Such a plan might very well be adopted in favorable localities in England. The plan admits of being carried out on sloping ground, with a very slight modification; and in this way our railway embankments having a southern exposure might, in many instances, be utilized.

In our climate, as in that of France, the fig, as is well known, produces at the latter part of the season incipient fruit, which form the first crop of the following year; while in spring it produces other fruit, which get matured by the end of summer in very favorable seasons only. The former, called the first crop, or, by the French, *figues fleurs*, are the most important, and it is these which the French system of culture is intended to secure; while the others, the second crop, or *figues d’automne*, are seldom of much importance, and are hence, for the most part, unheeded.

The fig trees are planted at five or six yards apart, in lines four yards apart, the holes being of considerable size, and filled with well-manured soil. Layers are used, and the roots are planted rather deep, the surface of the hole being at

* *The Parks, Gardens, and Promenades of Paris, Described and Considered in Relation to the Wants of our own Cities, and of Public and Private Gardens.* By W. Robinson, F. L. S. With upwards of Four Hundred Illustrations. London: Murray. A comprehensive and highly suggestive account of French gardening, especially in respect to those features which bear more intimately on our own practice. It should occupy a place in every garden library.

least a foot below the general level. During two summers the plants are allowed to grow unmolested, and in winter the branches are covered with earth to the thickness of a foot, as a protection from frost, in the manner described below. In the third spring after planting, the tree is cut at six inches or eight inches from

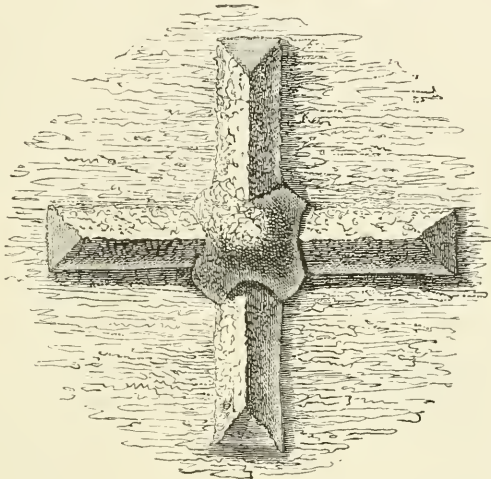


FIG. 1.

the ground, to induce young shoots, which are to form the principal branches of the tree. These grow on during summer, and in autumn are covered up with earth. A dry day is chosen, when the soil is friable. All weeds and leaves, as well as the half-grown autumn figs,—indeed, all matters tending to induce decay,—are removed, and the branches are divided into four equal bundles, which are tied together with string. A trench is then dug for each bundle, which is covered

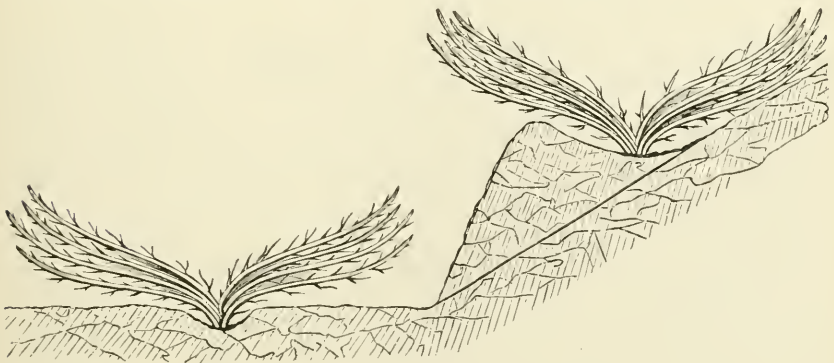


FIG. 2.

FIG. 3.

to the depth of eight inches, a small cone of earth being piled over the roots. Fig. 1 shows the appearance after the tree has been covered up; fig. 2 shows

the general horizontal direction given to the tree by this mode of treatment, the branches being usually collected into four bunches, which are laid out in the form of a cross. The same kind of arrangement is equally applicable to plants on sloping banks, a basin of earth being formed around the stem to retain water, and the bundles of branches being buried in an up-hill direction. This is shown in fig. 3.

Towards the end of February the buried trees are uncovered, a damp, warm day being chosen. The earlier this can be safely done the more forward will be the crop. Sometimes half the tree is uncovered at the end of February, and half at the end of March, by which plan there is a chance of securing a better average crop. After uncovering, the branches are separated to equal distances, those which are too near the ground being held up by means of forked sticks. The young shoots growing from the stock are henceforward carefully cut off. This brings the operations to the end of the fifth year.

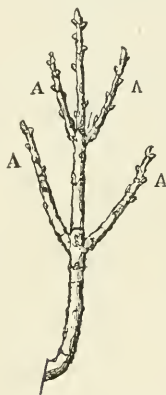


FIG. 4.

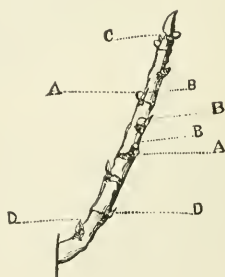


FIG. 5.

In the following spring, as soon as the uncovered trees show signs of coming into leaf, disbudding is had recourse to. The older branches present the appearance of fig. 4, fig. 5 being an enlargement of fig. 4, A. As soon as growth commences, the terminal buds of all the young shoots are nipped off, in order to favor the development of the wood buds at the base, and to encourage the young figs already beginning to appear (fig. 5, A). About half the lateral wood buds, those nearest the young figs, are also rubbed off (fig. 5, B). Two buds are always left near the base of each branch (fig. 5, D), and one towards the tip (fig. 5, C), to draw up the sap. The end shoot of each branch is treated in a similar manner, buds being retained to form side shoots at about a foot apart. When the young shoots attain the length of about two inches, some of those on the lateral branches and on the end branch are nipped off, mild weather being chosen for the operation. On the former, the shoot nearest the base of the branch (fig. 6, c) is allowed to remain, so as to replace the one which bears the fruit of the year. On the latter, a bud near the tip is retained to prolong the branch, as well as some lateral ones

to form new fruit branches the following year. The shoots are spaced out, so that they may receive an equal amount of sunshine, and not injure the fruit by rubbing. When the proper number of branches is obtained, all new shoots are removed.

After the crop is gathered, the fruiting branches present the appearances shown in fig. 6, B, and 7, B, the former representing the aspect of the branch when only the first crop is taken, the latter its appearance if the shoots have been retained for autumn figs. This should only be done with the more vigorous trees, as the autumn crop weakens the growth, and, moreover, checks the production of the early fruit the following season. When, however, it is done, two shoots are allowed to grow, as shown in fig. 7, the one (C) corresponding with C in fig. 6, the other (D) being that which bears the late fruit. In order to force



FIG. 6.



FIG. 7.

the latter to progress more rapidly, the tip of the shoot is pinched out when it has attained a length of about five inches. Towards the end of August, a dry day is chosen for clearing the trees. The shoots that have borne fruit are cut off as indicated in the figures, and useless shoots are taken away just above the lowest eye, which, if it should develop the succeeding year, is disbudded in its turn. The wounds caused by pruning are covered with grafting wax. Similar treatment is adopted in succeeding years, the trees, of course, increasing in size.

The annual earthing-up induces a horizontal direction of growth at about a foot or eighteen inches from the ground, which is advantageous to the trees, as in this position they are not only warmer, but the sap is more equally distributed. The trees begin to bear at six years old, are in full perfection at ten years, and last a long time; but the old stems wear out in from twelve to fifteen years, and require renewal, for which purpose a sufficient number of shoots to replace those to be cut away are retained at the time of disbudding. The soil is dug up annually in spring, and manured every three years. The trees are also well watered several times during the summer. *M., in Florist and Pomologist.*

A STORMY AUTUMN.—We have never known a season which might so properly be called “the storm autumn” as that just past, and it seems, by the following paragraph from the Gardener’s Magazine, that the fruit trees have suffered from storms in Old England as well as in New England.

“*The Late Gales. Our Standard Fruit Crops.*—The late sweeping gales have made sad havoc amongst our standard apples and pears; in fact, in my own case, those left on the trees will not pay for the gathering. Although the fruit has been regularly picked up for some days past, the ground is literally covered with windfalls. Most of the crops are very much infested by maggot, and, consequently, fall the more readily. Unless we have resources at present unknown, our standard fruits will realize, this coming winter, fabulous prices. I would advise housewives to commence preserving all they possibly can without delay, whilst fruit can be bought cheap, especially those who have large families; for fruit is not only a luxury, but both food and medicine; doubtless so designed by the Great Purveyor of the animal kingdom. The effects of the storm have been the same on all kinds. I had good crops of Williams’s Bon Chrétien, Louise Bonne of Jersey, Napoleon, Gansel’s Bergamot, Glout Morceau, Catillac, Easter Beurré, Beurré Rance, Brown Beurré, and several other sorts of pears, which, with the apples, have shared the same fate. Let us hope that some of our growers, both home and Continental, have escaped. *George Fay.*”

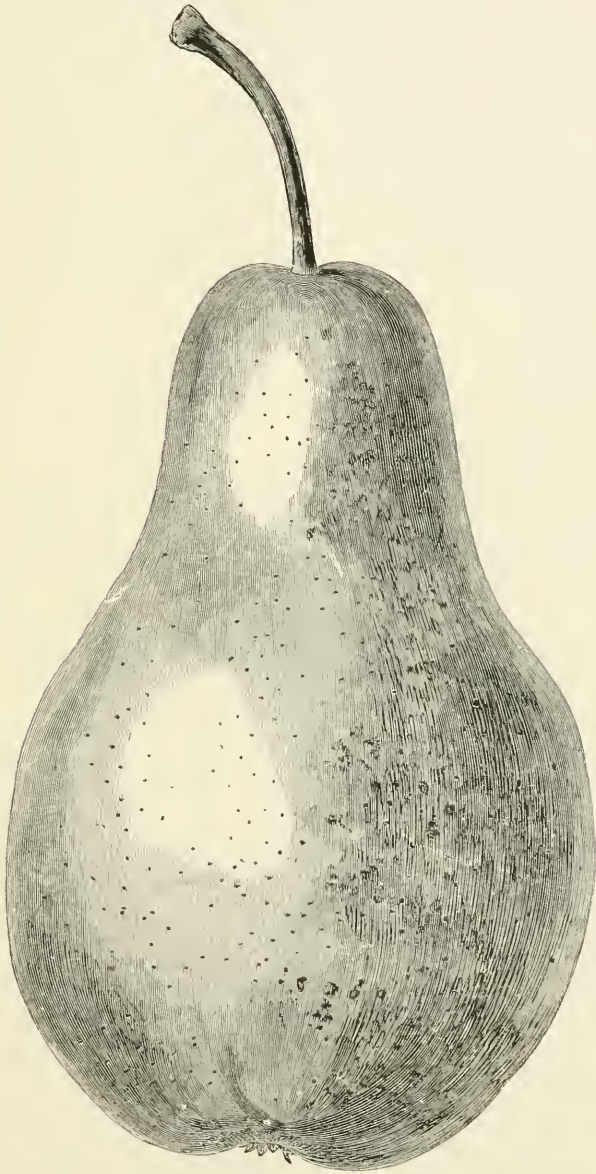
“LEE, KENT.”

THE GOLDEN FEVERFEW.—It is no use for any one to worry about getting up a stock of this plant from cuttings, because it makes much the best and neatest edging when raised from seed. If the seed is sown in heat, on the 20th of March, and nursed on until the beginning of May, the plants will be just in their prime when the other bedders are at their best. If sown much before that time, they begin to flower earlier, which necessitates a constant picking off of the flowers and the disfigurement of the plants. *J. C. C.*

BEURRE LADE PEAR.—Our illustration and description of this new variety are from the “*Revue Horticole.*”

The fruit is of good size, well formed, and of a beautiful color; either calabash or quince shaped, sometimes swollen and knobby, like a Bon Chrétien. It takes a rich carmine vermilion tint on a ground of the color of fresh butter, having previously been of an apple green, splashed with red and stippled with brown. The stem is quite long, in a slight depression, as is also the eye, which is surrounded by somewhat pointed knobs. The flesh is white, almost fine, melting, juicy, and sugary, rendered piquant by a delicate aroma, more refined than that of the de Tongres pear, and, upon the whole, of exquisite quality. It ripens from October to December, but the average season is November. The fruit is abundant, and holds well to the tree; it is an excellent sort for dessert or market. It was originated by M. Gregoire-Nelis of Jodoigne, who for four years has sent us its fruit, which has always been of the first quality. This year we have gathered some in our school of fruits, and are certain of the fertility of the tree and of the excellence of the fruit. We have dedicated it to M. le Consul Ladé,

a learned amateur of pomology in Germany. Its propagation in the nursery



BEURRE LADE PEAR.

has proved its hardiness, both on pear and quince stocks.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS. — *Cercus lividus* (Livid Cereus). Nat. ord., Cactaceæ; Linn., Icosandria Monogynia. — This is a columnar cactus, twelve feet high, and from four to six inches in diameter. Flowers white, ten inches in diameter. Native of Brazil, La Guayra, and Curaçoa. — *Bot. Mag.*, t. 5775.

Crocus Orphanidis (Prof. Orphanides' Crocus). Nat. ord., Iridaceæ; Linn., Triandria Monogynia. — Very beautiful; native of Greece. Flowers more than two inches in diameter, lilac-blue, unveined, throat yellow. They blossomed in a cool frame at Kew during November. — *Ibid.*, t. 5776.

Pelargonium Schottii (Dr. Schott's Pelargonium). Nat. ord., Geraniaceæ; Linn., Monadelphina Decandria. — A garden hybrid, nearly allied to *P. cheverphyllum*, which had for its parent *P. fulgidum*, fertilized by the pollen of *P. sanguineum*. Flowers crimson, with an elongated black blotch on each petal. — *Ibid.*, t. 5777.

Odontoglossum Kramerii (Kramer's Odontoglot). Nat. ord., Orchidaceæ; Linn., Gynandria Monandria. — Native of Costa Rica. Introduced by Messrs. Veitch & Sons. "Like its congeners, it flourishes under cool treatment." Flowers freely and enduringly, and is exquisitely delicate in the purple tints on its otherwise white flowers. — *Ibid.*, t. 5778.

Plumeria lutea (Yellow Plumeria). Nat. ord., Apocynaceæ; Linn., Pentandria Monogynia. — Native of Peru. A fine branching seven-foot-high plant, flowering abundantly in June in the Kew Palm-House. Flowers four inches in diameter, sweet-scented, very pale pink, yellow at the base of the petals. — *Ibid.*, t. 5779.

Gladiolus cruentus (Blood-colored Gladiolus). Nat. ord., Iridaceæ; Linn., Triandria Monogynia. — "A very beautiful and entirely novel species. It was received from Natal by Mr. Bull of Chelsea, with whom it flowered during the past summer. It is not only a very showy plant, but also one of a very distinct character; and we believe it will be welcomed as a grand acquisition for the flower-garden, on account of its vigorous habit of growth, and its large, brilliantly-colored flowers. It will, probably, be also of great value to the hybridizer, and may be expected to impart some novelty of feature to the popular varieties of this favorite flower. As a species, it is remarkable for its almost regular perianth, with blunt emarginate segments; but it has entirely the habit and aspect of the ordinary garden varieties of gladiolus.

"The plant produces a tall scape, two feet high or upwards, furnished with long, flag-like, glaucous leaves, nearly an inch wide, the scape terminating in a distichous spike of about a dozen large, broadly campanulate subringent flowers of a bright, blood-red color, the segments of which are obovate or oblong-spathulate, and emarginate, — the upper ones being more prominent, somewhat larger than the lower, and uniformly colored; while the lower smaller ones are somewhat recurved, crimson at the base, and scarlet at the apex. The two lateral ones of the lower lip are marked about half way down with a white zone, dotted with crimson, which on the exterior edge runs out into a long point, like the flame of the florists' tulip. The base of the segments, where they pass into the slender tube, is marbled with yellowish-green. The stamens have red filaments, supporting linear purple anthers." — *Florist and Pomologist*, 3d s., ii., 121.

THE INTERNATIONAL HORTICULTURAL EXHIBITION, which opened at Hamburg on the 2d of September, proved very successful. We notice the names of exhibitors from Denmark, Austria, Prussia, France, and England. The only American establishment represented was that of Messrs. Schmidt & Francke, of Osnabruck and New York, who exhibited a great quantity of garden tools.

Asters formed a great feature of the exhibition, an immense variety being shown from all the German seed growers. By far the finest lot came from Dippe Brothers, Quedlinburg. They were really splendid. The double Zinnias, Asters, and Everlastings, from Messrs. Ernst & Von Spreckelsen, Hamburg, were very fine indeed. The Bronze Pelargoniums from England, were very fine, and much admired. Decidedly the finest group in the whole exhibition was the collection of new plants from Messrs Veitch & Sons. It included eight splendid plants of *Nepenthes*; that of *Rafflesiana*, very large and fine; *Hookeri*; and the new hybrid between these two, one of the very finest, the pitchers very large; six of the new *Dracænas*, which are models of fine cultivation; the new *Crotons*; Japanese *Amaranthus*; hybrid *Cypripediums*; the new *Dieffenbachia*, a splendid kind; *Lapageria alba*, &c.

Herr Wendland, Royal Gardens, Herrenhausen, carried off the first honors among Palms, of which an immense variety was exhibited. In Conifers, the competition was more spirited than in any other section. They were largely shown, and formed a grand feature of the exhibition. A fine group of fifty varieties of Hollies was contributed by Messrs. Krelage & Sons, Haarlem, Holland. The prize for the finest group of ornamental foliaged plants was taken by A. F. Brackenburg, Hamburg.

In grapes, the English exhibitors, Meredith and Thomson, carried all before them, the latter having three remarkable bunches—Muscat of Alexandria, $5\frac{3}{4}$ pounds; Chasselas Napoléon, 4 pounds—one of the best models of bunches we have ever seen; Black Hamburg, $3\frac{1}{2}$ pounds. From the Horticultural Society of Lower Tyrol, Austria, came upwards of seventy varieties of grapes. Messrs. Demouilles, Toulouse, France, exhibited a vast variety of fruits, including eighty-four kinds of grapes quite ripe, neatly packed in little boxes for export, as we see them in the shop windows. The different varieties of the Chasselas had the prettiest and sweetest look. St. Antoine, a round, black sort, looked well, as also Aramion, a sort much cultivated in the south of France. Diamant Traube, Marocain Noir, Muscat Romain, &c., looked very tempting.

The pineapples were well grown, but peaches did not form a very interesting feature. Melons were largely shown, and among them some splendid fruit. The first-prize lot came from Messrs. F. W. Frisonette & Sons, Copenhagen. Herr Heimendinger obtained a medal for a collection of North American and other watermelons.

Fruit trees in pots were contributed largely and well. Apples, especially, were well grown, the trees very healthy, and the fruit very large and fine. Some examples of Calville Blanche were exceedingly large and beautiful, with a fine bright flush on their cheeks, that would make the mouth of a Rivers water to see them. The apple trees were for the most part small, not more than two feet in height, in ten-inch pots, and bearing from eight to twelve very fine fruit. The pear trees

are larger, bearing some two dozen fruits each. The beauty of these trees is this, that every fruit is a marked specimen; and never do we recollect seeing them finer.

Messrs. Croux et Fils, Aulnay, Lez-Sceaux, Seine, France, exhibited an enormous collection of fruits of all sorts. Apples amounted to one hundred and fifty varieties, and among them were some most magnificent examples. Their collection of pears consisted of three hundred and twenty sorts, amongst which were some exceedingly beautiful specimens. We noticed, especially, *Beurré de Montgeron*, a very beautiful, highly-colored sort; *Beurré Spence*, which is evidently our *Flemish Beauty* — a pear about which there has always been a lot of confusion; *Thompson's Glout Morceau*, *Beurré Clairgeau*, *Beurré Bachelier*, *Duchesse d'Angoulême*, *Beurré Hardy*, *Louise Bonne*, *Senateur Reveil*, — a new and fine-looking sort, — *Madame Treyve*, *De Tongres*, *Doyenné du Comice*, &c. M. Croux also showed fifty varieties of grapes, and thirty of plums, peaches, &c.

Messrs. Jamin & Durand, Bourg-la-Reine, France, also exhibited an enormous variety of apples, pears, plums, &c. The apples and pears were, many of them, exceedingly fine. Among the latter we noticed *Draconon*, — a large sort, in the way of *Easter Beurré*, — *Beurré Hardy*, *Louise Bonne* of *Jersey*, *Beurré Sterckmans*, *General Todleben*, — a fine-looking pear, — and *Joséphine de Malines*.

Another very large collection of apples and pears came from Messrs. Martin Müller, of Strasbourg, France. General Consul Ed. Ladé, Villa Monrepos, Hesse, Prussia, exhibited a very fine collection of apples, pears, grapes, nuts, &c.

From the Horticultural Society, Bazen, Lower Tyrol, Austria, came a very magnificent assortment of apples and pears, and also specimens of the *Maclura Aurantiaca*, or *Osage Orange*.

Messrs. Demouilles, of Toulouse, exhibited seventy-eight varieties of apples and one hundred and eighty of pears, among which the best were *Williams's Bon Chrétien*, very large and fine; *Bon Chrétien de Vernois*, a large, finely-colored, good-looking sort; *Draconot*, like *Glout Morceau*, &c. They had, also, twenty-nine varieties of figs, the only presentable one being *Neapolitan*, a dark-skinned, oblate-shaped, medium-sized fruit, and twelve varieties of plums; and of this fruit it may be said that there was not a single good dish shown.

The exhibition of fruit trees and nursery stock formed a very interesting feature. Prizes were offered for all sorts of fruit trees, such as are offered for sale in the different nurseries. The competition was confined to a few of the great fruit tree nurseries of France, closely pressed, however, by Herr Jürgens, of Nieustadt, Holstein, the able designer of the exhibition grounds. All sorts were exhibited, such as common orchard standards, pyramids of all forms, wall fruit trees, *palmette espaliers*, *cordons*, &c. Many were extremely handsome, some very fanciful, and nearly all were exceedingly good specimens, with their various parts evenly and regularly proportioned. In the matter of fruit tree training our continental friends are certainly a long way ahead of us. Of vegetables there was but a very poor display, as far as quality was concerned. Cucumbers were shown largely — but how? Not as we ever see them in this country, but big, yellow, almost ripe, and full of seeds. In this condition they are always

exposed for sale in the market. How they can be used in this condition we have not the remotest idea, excepting it be for soups ; certainly not for salads, as we are accustomed to.

The important section of machinery and implements was not as good as might have been anticipated. The first prize for a machine for transplanting large trees, was awarded to Messrs. Peter Smith & Co., of Hamburg, over Messrs. Barron & Son, of Borrowash, which we consider a gross piece of partiality. If a trial had been allowed, this decision would certainly have been reversed. Shading for hothouses was exhibited largely : the prize was awarded to an article peculiar to the continent, where the houses require a thicker shade than in this country. This shading is simply thin laths, about an inch in breadth, fastened together by some thick string. This, when painted green, as it usually is, has a very pretty appearance, and may be as easily rolled up as canvas. Messrs. C. Buhring & Co., Hamburg and London, exhibited a quantity of their new charcoal flowerpots. They are made of a composition of pitch and charcoal, afterwards burnt, and are of a very firm substance, yet very porous.

A very splendid lot of drawings of fruits — apples and pears — was exhibited by Dr. Ed. Lucas, Director of the Pomological Institute, Ruttingen. These were well and faithfully executed in colors, and deservedly admired.

As a general exhibition of horticulture, embracing almost every article connected with gardening, — as a beautiful and pleasing sight, for which no expense was spared, — it was certainly deserving of our highest praise ; and unhesitatingly we say it was one of the greatest exhibitions that has ever come under our notice.

English Journal of Horticulture.

LADY-BUGS. — Myriads of the pretty little beetles, known as May-bugs, lady-bugs, lady-cows, or lady-birds, have appeared in England the past summer. This, however, was not a calamity to be deplored, but a blessing to be rejoiced over, for they were an army of deliverers, bent on exterminating the legions of aphides that had quartered themselves in our fields, hop grounds, and gardens.

A similar visitation of lady-bugs occurred in 1835, when the wiseacres of Berkshire actually called out the public fire engines, and charged them with tobacco-water, in order to destroy the hosts of lady-birds which they fancied threatened their crops with annihilation. We fear there is a good deal to be learned in this way yet ; agriculturists and gardeners are too ready to destroy their best friends ; a little encouragement of Nature's police would pay them better than all their pottering with expensive and troublesome nostrums, which seldom achieve the purpose for which they are used. *Chambers's Journal.*

EFFECTS OF CUTTING DOWN FORESTS. — Owing to the extensive destruction of trees in Victoria the climate is changing. Near Ballarat the rain-fall is sensibly diminished, and the government is taking measures to prevent the waste of timber, and to establish nurseries of forest trees.

STEAM PLOUGHING. — It takes two hundred steam ploughs to cultivate the two hundred thousand acres of land owned by the viceroy of Egypt.

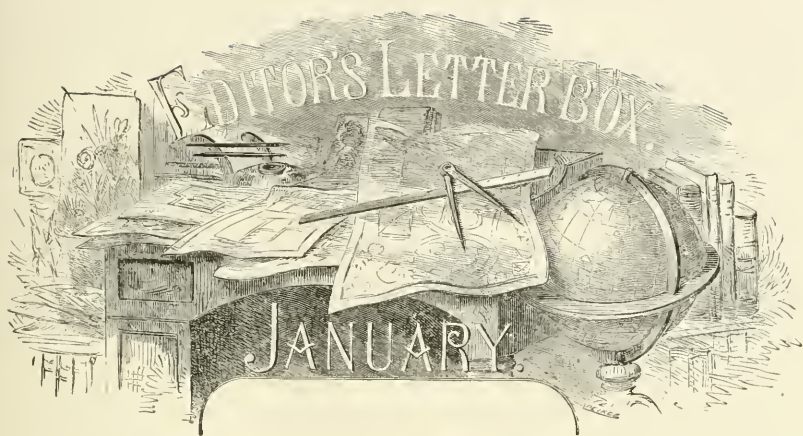
OBITUARY. — Mr. Robert Thompson, so long known and so highly esteemed as the superintendent of the London Horticultural Society's Garden, died at Chiswick on the 7th of September, 1863. Mr. Thompson was born at Echt, in Aberdeenshire, in September, 1793. During the whole of the forty-four years in which he occupied the position above named, pomology was his special and passionate study, not only as it was exhibited under his eye in the garden, but in the literature and practice of the pursuit as existing on the continent. It was this well-grounded and thorough knowledge of the subject which enabled him to produce that laborious work, the Catalogue of Fruits cultivated in the Garden of the Horticultural Society of London, which has formed the foundation of modern pomological synonymy. The Gardener's Assistant, a production of his pen, is a most admirable compendium of horticulture. He was a contributor to Loudon's Gardener's Magazine, the Gardener's Chronicle, the Edinburgh Philosophical Magazine, the Penny Cyclopædia, Morton's Cyclopædia of Agriculture, and Maunder's Treasury of Botany. He also assisted Mr. Loudon in the preparation of most of his great works, especially the Encyclopædia of Gardening and the Suburban Horticulturist, and also wrote some of the most valuable articles in the Pomological Magazine; indeed, the editor acknowledges that whatever claim upon public favor it may possess is due to him. His love of physical science was equalled only by his love of gardening, and his knowledge of mathematics was of a high order. Meteorological science is much indebted to him for the observations which he conducted at Chiswick for a period of thirty-nine years.

American fruit growers have reason to remember Mr. Thompson with gratitude, for at the time when zealous pomologists were beginning to form collections of fruits, and were importing from Europe every variety that could be procured, no scions proved so accurate as those received from the Garden of the London Horticultural Society, then under his superintendence.

Mr. James Veitch, of the Royal Exotic Nursery, Chelsea, died on the 10th of September, 1863, aged fifty-four. He was the third in succession of three generations of nurserymen of his name, who, for nearly a century, have occupied a prominent position in that branch of industry.

The nursery, of which he took possession in 1853, under his management rose to be the largest and most prosperous in England, and its history has been the history of English horticulture for the last sixteen years. It was especially distinguished for its orchids, gathered by collectors sent out for that purpose, among whom were Mr. William Lobb, in Brazil; his brother, Thomas Lobb, in Java; and Mr. J. Veitch's own son, Mr. John Gould Veitch, who, in a journey to Japan and the East, and another to Australia and the South Pacific Archipelago, added numerous treasures to the botanical and horticultural wealth of his country.

Mr. Veitch was not only an ardent collector, but a thorough cultivator.



THE Editors of Tilton's Journal of Horticulture cordially invite all interested in horticulture and pomology, in their various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed; we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

A CORRESPONDENT has an orchard of thrifty apple trees, in bearing condition, and inquires as to the expediency of cutting or heading in. If such a course is advised, at what season should it be done, and to what extent? Would it not tend to density of growth, and involve the necessity, also, of cutting out?

To our correspondent's last question we should answer, Yes, it would, with most varieties. A tree which is disposed to grow with long limbs and an open

top, as some kinds are, might be advantageously shortened in, and with other varieties, when a limb grows faster than the others, and threatens to produce an ill-balanced tree, it may well be shortened. In regard to the season for performing the operation, if it is desired to check the growth of the tree, we would shorten early in summer, otherwise early in spring. But we would not recommend an indiscriminate shortening in at any time, and we advise our correspondent to ask himself what advantage he expects to gain by the operation, and not to begin until he can give a definite answer to his question.

CAN you or any of your correspondents tell what is the cause of the peculiar change in the texture of sweet apples known as watercore? *O. A.*

HAVE any of the readers of the Journal had any experience in the cultivation of the Shallot? In common with the onion, is it equally liable to the attacks of the maggot, or could it be successfully grown in localities where, from the abundance of these pests of the garden, the onion is annually destroyed? How does it compare with the onion in size, quality, and productiveness? *G. R.*

KEEPING CAULIFLOWERS. — N. B. The cauliflower is an annual plant, while the cabbage is a biennial, and the former is therefore much more difficult to keep, and with the utmost care cannot be kept as well as the cabbage. It is also only half-hardy, much less hardy than the cabbage. While the heads are but slightly affected by frost, they are injured or destroyed if exposed to a very low temperature. A common practice is to take them up in November, with as much earth as possible about their roots, and after gathering the leaves carefully over the heads, reset them in earth in a light, dry cellar, or in any other light and dry location secure from freezing. A cold frame, if at hand, might be very advantageously employed for the purpose.

R. V. D., Thompsonville, Conn. — You will find in our last volume, at pages 125 and 189, some hints which will answer most of your questions about the cultivation of the quince.

If you wish to cultivate cleanly and neatly, and have a handsome orchard, you must prune your trees to single stems, and by no means permit them to sucker. You will find in Thomas's Fruit Culturist an illustration of the difference between a tree pruned as it should be and one with the suckers allowed to grow, and you will see the difficulty or impossibility of eradicating borers from the latter. Any good manure will suit them; a light annual dressing, applied as soon as the ground is in good condition to work in the spring, is better than heavy but less frequent manuring. We would use a cultivator to till the ground, stirring it just deep enough to cover the manure, and no more. A slight coating of salt is thought to be beneficial, especially in old gardens, destroying weeds and insects, and absorbing moisture from the air. It requires caution in applying; more may safely be given when the trees are dormant than when they are growing. We would apply say ten bushels to the acre, early in spring. We know of no work especially devoted to the quince; but the varieties are described and directions for its cultivation given in all works on fruit trees. In a rich soil, twelve

feet apart each way is the least distance they should have, and we would prefer fifteen. Nothing is gained by crowding trees of any kind; they need air just as much as they do sunshine and rain.

A CORRESPONDENT, in giving his experience in the culture of the winter radish, remarks, that "the roots attained a size fully equal to the Mangel Wurzel, and on his table had the appearance and flavor of a crude German turnip." He further adds, that he "could not find in it a single desirable property, and was convinced that the merits of the vegetable had been greatly exaggerated."

The sowing was probably made too early in the season. Winter radishes are usually sown late in July or early in August, and are harvested in October or November, while still growing, and long before the roots have attained their full proportions. As soon as they are taken from the ground, the tops are removed, and the roots packed in earth or sand, and stored out of reach of frost for the winter. A full grown winter or spring radish will be tough and piquant, dry and spongy, and altogether worthless for the table.

IN removing decayed branches from long-established grape vines, should the cutting be made above or below the point of vitality? *E. U.*

Our practice has always been to take off such branches as closely as possible to the living wood, but we would be glad to learn the views on this point of those who have had experience with grape vines. We dislike very much to see an old snag on a grape vine or anything else, but we know that a wound on a grape vine heals very slowly.

Since writing the above, we notice that the editor of the *Grape Culturist* gives his opinion in favor of cutting out all old, dilapidated arms or stubs clean and close, if the wound is large covering it with melting wax or shellac.

THE WEEHAWKEN GRAPE. — Messrs. Ferris & Caywood inform us, in reply to the query in our November number, that they have a two-year-old vine in their grounds at Poughkeepsie, N. Y., which this last season ripened its fruit and wood well. Its color is greenish white, and in quality, transparency, and size, it compares favorably with the Canadian Chief, which has been considered a first-class grape where it succeeds.

Mr. Samuel Miller, of Bluffton, Mo., writes, in the *Grape Culturist*, that it is a purely foreign variety, though raised in this country, yet gives him much pleasure. From very small plants, set a year ago last spring, he had last season a few small bunches of most excellent white grapes, while the vines are vigorous and free from all disease, and, no doubt, will prove hardy there, as the wood is ripe to the tips of the shoots.

The editor of the *Grape Culturist* adds that, strange to say, although it shows its foreign origin in every leaf, branch, and tendril, it has stood the summer remarkably, with foliage uncommonly healthy, and he is anxiously waiting its further development. His vine was only one year old.

Notwithstanding these favorable reports, we should advise caution in planting a vine wholly of foreign blood.

T. P., Cedar Rapids, Iowa. — If you have taken the Journal from the beginning, we are surprised that you have not seen our statement that “anonymous communications cannot be noticed.” Send us your name, and we will answer your inquiries with pleasure.

J. C., Havana, Illinois, wishes to obtain a small quantity of seed of the Rohan Potato. This is an old variety, and we think not now in existence. If, however, any of our readers know where it is to be found, we should like to be informed.

THE EUMELAN GRAPE. — In your notice of this new and promising variety in the December number, you say, “It is to be hoped the clusters will improve in size, as they must to correspond with the engraving sent out.” I had *one* cluster on my vine the past season which was *very nearly* as large as the cut on Messrs. Hasbrouck & Bushnell’s pamphlet, but I was prevented from showing it by its being stolen just as it was ripening. The other clusters were undisturbed, and were fully ripe nearly a week before Hartford or Miles. The vine for two years has been *entirely* healthy and as vigorous as Concord, while in quality the fruit, as you say, “deserves to be placed at the head of the black grapes.” My two years’ acquaintance with the Eumelan leads me to say that *in all respects* it is *very* promising. W. H. W.

READING, MASS.

We are much obliged to our correspondent for his interesting note, and glad to know that when fully developed the Eumelan will produce a fine bunch as well as an early berry of high quality. We trust he may produce still better clusters next year, and should be glad to give an engraving of one.

RIVERSIDE, Atchison, Kansas. — We thank you for your suggestion in regard to canker-worms, but think it would hardly be effectual. No similar preventive ever has been; indeed, they will overcome much more formidable obstacles than that which you propose.

In regard to the immunity from the borer, which your apple trees have enjoyed when peach trees were planted between the rows, while we do not doubt your facts, we are at a loss to account for them. The apple and peach borer are two entirely distinct insects, the former being, in the perfect state, a striped beetle, while the latter is a four-winged, blue moth, the female having a broad, orange-colored band around the abdomen. A careful examination of these insects, either in the larval or perfect state, will soon satisfy you of their difference.



THE GARDENS OF AMERICA. — No. I.

ELLERSLIE PARK, THE SEAT OF WILLIAM KELLY, ESQ.,
RHINEBECK, ON THE HUDSON.

By DAVID FOULIS, New York.

SINCE the day when Hendrick Hudson, bewilderingly drifted away up the noble river that now bears his name, in his goodly vessel the "Half Moon," science has made many and rapid strides in various directions; but in no direction has more progress been made since that time than in the science of Horticulture, as the banks of this same Hudson River abundantly testify for some hundred and fifty miles above its exit to the ocean, for there may be found some of the finest horticultural establishments in the country, liberally supported by the proprietors, and ably managed by their gardeners.

Having paid a visit the other day to one of these, the seat of William Kelly, Esq., near Rhinebeck, I would endeavor, however inadequately, to lay before the readers of the Journal some of the chief objects of interest to be seen there, as many of them may not have had an opportunity of personally inspecting the place for themselves, and also to let the Boston folks know there are gardens elsewhere than in Massachu-

setts. Rhinebeck is pleasantly situated on the Hudson, in Dutchess County, about ninety miles above New York, and sixty below Albany, there being abundance of communication by railroad or steamboat from both places; but I would strongly recommend to any one having enough spare time, to take some one of the numerous day boats that ply during the summer months, as a fine view can then be had of the ever-varying scenery on the banks, and many objects of historical interest seen and commented on, as the splendidly-equipped and unrivalled river steamers of America speed on their course up the noble Hudson.

Reaching Rhinebeck, a pleasant walk or drive (but by all means the former, if blessed with good powers of locomotion) over an undulating country brings you to "Ellerslie;" and as real merit is often concealed under a modest exterior, so the entrance to this fine place is by a plain, unpretending gateway, that gives little index of what is inside; indeed, the shortness of the entrance-drive is about the only drawback I saw, and I was pleased to hear of some prospect of even this being rectified; but I have frequently walked along an approach three miles in length, and found very little worth looking at when the end was reached; and here it cannot be more than three hundred yards from the principal entrance gate to the mansion house; but in that short distance how much is achieved by the judicious management of landscape effects!

Leaving the mansion on the right, the drive winds past a Grecian temple, and betwixt well-arranged groups of deciduous and ever-green trees and shrubs, with fine rolling, well-kept lawns stretching away, seemingly, into interminable distance. But leaving the drive for the present, and under the guidance of the intelligent and enterprising gardener, Mr. John Peattie, we ascend a broad flight of steps leading up to a curvilinear, span-roofed Palm stove that very befittingly crowns the elevated plateau. On either side of the walk leading to the Palm stove are some fine specimens in boxes of viburnum, escallonia, acacia, etc., appropriately leading the way, as it were, to their more aristocratic neighbors in-doors.

We now enter the region of umbrageous foliage and waving palm trees; and, O, what a positive luxury it is for the eye to rest on such

tropical gems as *Livistona Jenkinsonii*, *Scaphothia elegans*, *Chamaerops excelsa*, *Theophrasta imperialis*, *Dion edule*, etc., and many others, as the catalogues have it, too numerous to mention!

To the left of the Palm stove is a large curvilinear lean-to house, adapted to plants requiring a less tropical temperature, and only partially filled, as many of the finest specimens wintered here were, at the time of my visit, adding grace and beauty to the lawns and drives. To the right is a large curvilinear grapery, with about two thirds of the crop cut, but enough left to give evidence of superior cultivation. The principal sorts were, Black Hamburg, Muscat of Alexandria, West's St. Peters, Black Lombardy, etc., the clean-looking, short-jointed wood giving good promise for another season. Outside of this range of glass were planted some fine specimens of agave, cactus, Bonapartia, etc., and many of the hard-wooded greenhouse plants, all which would be safely housed in a few days. But what horticultural heresy do I hear? Orders given to prepare crocks, so that these fine plants are actually grown under such "unfavorable" auspices; and I look around in vain for a "one-horse concern," as most of the folks there drive double teams.

Passing through some useful shedding, we come upon three span-roofed houses. No. 1 containing gesneria, cyrtipedium, eucharis, etc.; No. 2 filled with a beautiful and well-grown assortment of fine foliaged and flowering plants, such as *Medinilla magnifica*, *Dracæna umbra-culifera*, *D. ferrea* and *D. terminalis*, *Alocasia macrorhiza variegata*, *Pandanus utilis*, *Ananassa sativa variegata*, *Cyanophyllum magnificum*, caladiums in variety, etc.; and No. 3 filled with camellias, primulas, cactuses, etc.

Passing from these, we now come to an orchid house sixty feet long and twelve feet wide, and filled throughout with fine, healthy, vigorous specimens of that rather neglected, but most interesting, race of plants. Amongst others I noted *Angræcum eburneum*, *Chysis bractescens*, *Acineta Humboldtii*, *Saccolabium Blumei*, *Aerides odoratum* five and a half feet high and four feet through, *A. major* and *A. affine*, *Vanda suavis* in flower, *V. tricolor*, *Oncidium papilio*, Stanhopeas, Cattleyas, dendrobiums, *Phalænopsis amabilis* and *P. grandiflora*, etc. Inter-

scattered were some pretty foliaged plants: *Fittonia argyroneura*, *Peperomia gymnostachyum*, marantas, alocasias, etc.

Regretfully leaving these horticultural curiosities, we proceed, by a winding path, past a flower garden, — arrayed in all its autumnal splendor, one sheltered nook having a clump of fine specimen azaleas planted out, or plunged, for the summer, — through a fine belt of wood to the new kitchen garden, which has lately been formed here, four acres in extent, having at the farther end, on a raised terrace, an imposing range of glass to be devoted to fruit-growing.

Great labor has been expended here before the natural obstacles could be overcome; but by dint of powder and perseverance, what was once a barren waste is now a garden teeming with the fruits of the earth; and in the whole of the details Mr. Peattie has shown both good judgment and horticultural skill. The main walk up the centre has an ornamental herbaceous border on either side, a row of native grape vines very appropriately standing guard betwixt flowers and vegetables. Nor do we consider there is anything incongruous in such an arrangement; for by so doing, a visit to the kitchen garden can always be rendered agreeable to the family, instead of being, as it too frequently is, an unsightly corner, proscribed to visitors, and reserved to the workmen's daily labor.

The main walk is fourteen feet wide, the intersecting ones all twelve feet, thus giving ample room for either carriage, cart, or wagon to come through, as convenience or utility may require. The walks are all lined with well-laid box, the working paths not interfering with the general outline.

The whole range of glass is one hundred and seventy-two feet long, divided into five houses, two being lean-to graperies, with three span-roofed orchard houses projected at right angles to the graperies, and towards the kitchen garden. The inside details were not quite perfected, but, as far as could be seen and understood, gave great promise of future efficiency.

The graperies were already planted out with vigorous vines of Golden Champion, Lady Downs, Chasselas Musque, Bowood Muscat, Black Hamburg, Muscats of Alexandria and Canon Hall, Victoria Hamburg,

and Black Barbarossa, planted inside, on a well-made border, the outside border being reserved to be completed by sections as the roots run, thus giving the roots new material to feed on every successive season until the border is completed. An elaborate system of air-drains intersects the borders from the front, and by means of caps on the inside ventilators, a stagnant atmosphere can at all times be avoided.

The heating of the whole range is done by three boilers, with a plentiful supply of four-inch pipes attached, hot-water pans for giving off moisture at will fixed all along the pipes, to be used at the necessary seasons.

The system of ventilation is well worth seeing, being on what might be termed the *simultaneous principle*, so that one man can reduce or extend the entire ventilation in a very short space of time over the whole range; and to those engaged in fruit forcing the advantages of this system will be fully appreciated during the vicissitudes of a spring or early summer day.

Behind this range of glass are commodious sheds for storing garden produce in winter, mushroom house, fruit rooms, etc.; and near by, on a favorable site, is about being erected, what should never be neglected on a place of any pretensions, viz., a good gardener's cottage, for it is only right that the man who has the ability to superintend a garden deserving the name, should not only be liberally remunerated, but have a comfortable home for the "gudewife" and "bairns." Bachelor gardeners are generally poor hands, and should not be encouraged.

Near the kitchen garden is an orchard of thrifty apple and pear trees, in full bearing, interspersed with rows of native grape vines, loaded with fast-ripening fruit, and giving every evidence of good cultivation. In an enclosed corner is what gardeners know as the *frame ground*, with numerous ranges of cold pits, and the reserve stock of peaches and nectarines in pots, ready for use in the orchard house.

Leaving the culinary department, we now turn to the ornamental grounds; and the manner in which the natural beauties of the locality have been handled does credit to the scientific skill that has effected it. The walks and drives are numerous and well planned; the short grass kept as lawns, etc., covering an undulating extent of nearly fifty acres;

the views of the Hudson, stretching away in the distance, varied and interesting, from the different points of observation; the numerous groups of trees, shrubs, etc., planted with a true artistic taste,—the whole going to form a country seat of which Mr. Kelly may be justly proud, and of which he shows his appreciation by making it his nearly constant residence.

In the lower part of the grounds is a large ornamental sheet of water, some acres in extent, with miniature steamers, boats, etc., afloat on it, ready for the pleasure of the proprietor and his friends. And over this lake is thrown a fine bridge, in perfect keeping with the rest of the grounds, with a broad drive, twenty-four feet in width, (think of that, ye advocates of the narrow gauge system!) leading away through the woods to an avenue some three hundred yards in length, with broad grass verges and double rows of trees on each side.

One thing I noticed is worth mentioning: the entrance gates were all open; and on inquiry I found that Mr. Kelly, with the truly liberal spirit of the country gentleman, does not believe in laying out a fine place, and then selfishly excluding all but a privileged few from enjoying the beauties of it, but throws wide his gates, and invites all well-conducted persons to inspect the beauties of Ellerslie. And many an enjoyable picnic is held here, upon application, by Sabbath Schools, etc.; and the young folks must surely go away, not only amused, but instructed, with pleasing reminiscences of their excursion.

Before leaving Rhinebeck, I would call the attention of horticulturists to the, to me, novel application of the Burglar Alarm that I saw in one of the greenhouses. By means of an ingenious contrivance, worked in connection with the thermometer, the moment the temperature of the house rises above, say, for illustration, ninety degrees, or falls below fifty degrees, a connection is made with a copper wire attached to an alarm-bell in the young men's sleeping rooms. And if at night, the young gardeners must sally out, not to meet a burglar with dagger or revolver, but to the more peaceful occupation of regulating the temperature of the houses under their charge, which some sudden change of weather may have disturbed. This valuable invention, if brought into general use, might be the means of annually saving a great deal of valuable

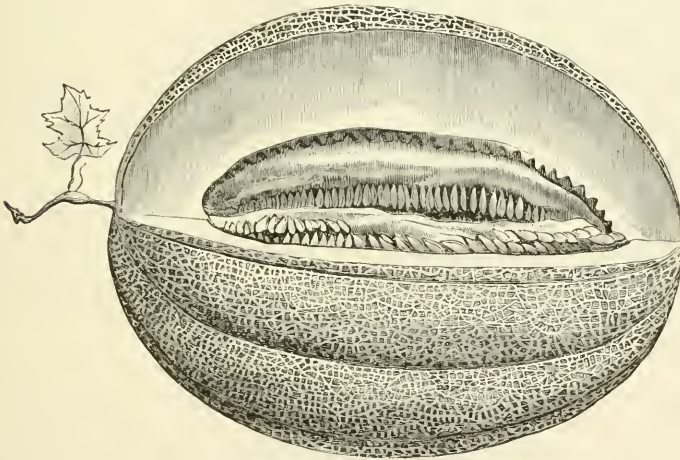
property, if it should somewhat derange the night's repose of some ardent student of horticulture. It is the invention of Mr. Boyle, of New York, once a gardener himself, and therefore fully alive to the wants of his profession, and a further proof, of many, that the early training of the gardener need be no barrier to his future progress.

September 24, 1869.

THE ALTON NUTMEG MELON.

By FEARING BURR, Hingham, Mass.

THE fine specimen of this melon from which the accompanying illustration was taken, and from which our description is made, was raised by Mr. Nathaniel Brewer, Jr., of Swampscott, Mass.



THE ALTON NUTMEG MELON.

The fruit is of small or medium size, measuring six inches in length by five inches in thickness, and faintly, but regularly, ribbed. Skin, light ash or grayish-brown, and very thickly netted throughout. Flesh thick, deep green next the rind, gradually becoming paler towards the centre, and assuming a yellowish tint near the inner surface; fine-grained,

very sweet, juicy, and rich, with some degree of muskiness. Under the influence of a warm and dry season, it is possible that the quality was somewhat above the average. At the West, where rain was excessive, and the weather generally less favorable, the variety appears to have been deficient in flavor.

Mr. O. L. Barler, of Alton, Ill., who introduced this melon to public notice, remarks as follows:—

“Melon growing with us is a specialty. We have tried all the old varieties of the musk-melon family, and very many of the new. Skillman’s Fine Netted and Ward’s Nectar are of small size, but very sweet and good for family use. The Long Green Persian, twelve to fifteen inches in length, is a superior fruit, excellent for family use, and good for market. It is our first choice for eating, and our second for the market.

“The Alton Nutmeg is unquestionably the best *shipping* melon that has come to our knowledge. The past season has been severe on the crop, and something has been lost in quality; but the yield has been abundant, and the market good. One grower, who had under cultivation from twelve to fifteen acres, forwarded by a single shipment one hundred and twenty-seven crates, including three hundred dozen. We are still (September 24) sending these melons to market, and they command the highest price. Two years ago we shipped melons till October 21st; last year, till the 6th of the same month.”

Mr. Barler describes the fruit as being round, regularly ribbed, and measuring from six to nine inches in diameter. Compared with this, our specimen was smaller, more elongated, and less distinctly ribbed.

THE WILD-GOOSE PLUM.

I RECEIVED last evening a box of Wild-Goose plums from Tennessee. They are handsome plums, medium size, though much larger than the old Chickasaw, which they somewhat resemble in color, taste, and general appearance. If we can grow them here in quantity, they will be valuable for the Philadelphia and New-York markets.

Very respectfully,

William Farry.

A GREENHOUSE FOR A SHORT PURSE.

By C. E. DENSON, PITTSBORO', N. C.

MANY are the lovers of flowers who feel themselves shut out from all their treasures, through half the year, for want of a golden key. Our journals of horticulture and our florists' ledgers would show far longer lists of receipts if the great masses in the middle and southern districts of our country knew how easy it was to keep plants in bloom, in perpetual succession, through the year. How simple is the charm by which, when spring's well-trying perennials and summer's gay annuals are over, new claimants for our love and care, in the greenhouse, awake to give us joy through all the dreary winter days, until the bulbs spring forth to join the links of the perpetual chain!

How shall we obtain this winter bloom? Parlor plants do not meet the want in the south. Our houses, built without the double wall, inside and outside shutters, etc., are without the protection, in winter, which our northern friends enjoy; our fires are not of coal, but of wood, and we are without pipes or furnaces. It follows that when our few really cold days come, from December 15 to January 25, the wood fires are built high and generous in our sitting-rooms during waking hours; but, dying out after the family has gone to rest, Jack Frost makes his visit in the early morning hours. We arise to find ice in our rooms, and our cherished plants all dead, that were, perhaps, the day before in bud or bloom, under the warmth of the room, and the sunshine that often invites us to raise our windows in the very heart of January. As they hang all limp and black, we vow never to try to keep parlor plants again.

So that, living in the land of flowers through one half of the year, it must yet be confessed that it is a rare thing to see, in winter, any collection of even half a dozen plants in as many hundred homes through our widely-extended country. This ought not so to be. Providence has so blessed Eastern Virginia, the Carolinas, and the country south thereof, that artificial heat is not required for plants which do not demand more than 45° of temperature.

Several years ago, the writer built a miniature greenhouse, at a cost of but forty-five dollars, which fulfilled all the conditions required, and was never without bloom from September until May. A spot was chosen sloping gently south and east, and protected by a grove from northern winds. An excavation was made, twelve by ten feet, and five feet deep, in hard, dry clay. Stout posts, four on each side, and two at the ends, kept apart inner and outer sheathings of plank, which extended three feet out of the ground at the sides, and six at the ends, or gables. The west and north sides were solid, filled in with dry earth, which was used between the plankings on all sides; on the east a double window was cut, with swinging sash, each of six panes. The doors at the south were cut to fit the gable exactly, opening right and left, with glass let in; the roof was of eight by ten glass, in narrow slips of wood that served both as rafters and sash, reaching from the walls to the ridge-pole, the glass lapping lightly, and puttied at the sides, next the wood. The ridge-pole was triangular, fitting the sides, but with perforations through its entire length for ventilation; on this a cap of wood ran the whole length, like an inverted gutter, to be used in bad weather, but always taken off on fair days. Two slips in the roof were on hinges, to be thrown back for more perfect ventilation, and for syringing. The sides on the north, east, and west, above ground, were banked up to the windows with earth, and turfed, leaving the south open to the sun, and to the movement of the doors, playing free to the ground. This was important, for when the sun was low, in dead winter, it could thus strike freely through to every corner, drying up all damp, and preventing mould.

The interior was supplied with shelves, and an inclined stage at the north end, in front of which was a plain table; the bottom was floored with plank, the steps led from the right door, and under the left hung watering-pot, trowel, scissors, and tools generally. When very cold nights threatened, a cover of the warm country-made cow-hair cloth was thrown over, while it was protected from too great heats by a coat of whitewash on the glass. Within, everything received the same wash, in which flowers of sulphur was mixed. The entire cost, as stated before, was only forty-five dollars.

What was the reward? A charming retreat of blossom and perfume, even though the very snows lay on the roof, without any expense or trouble of fire heat. We began with boxes of verbenas and pots of scarlet geraniums in the fall, to bloom at intervals through the winter; stocks transplanted while blooming in October, and keeping fresh until March; double zinnias of gorgeous colors, taken up without disturbing the earth at the roots, and furnishing gay color until Christmas; chrysanthemums of all sorts from August cuttings, continuing until late in January; Mexican ageratum, also from the open ground, cut back, and then throwing up such a wilderness of shoots that it might be cut any day during the winter; as the last-named gave us light blue, the dwarf French marigold (*Tagetes signata pumila* of the catalogues), supplying yellow, and admirable for the purpose too, because throwing up young buds for bloom even until February, if the forming seed are promptly removed. Sweet alyssum, candytuft, and feverfew gave us plenty of white, until relieved by the daisies in March. Helichrysums, white, maroon, and yellow, eschscholtzias (far finer indoors than as commonly grown with us out of doors), carnations, Hedewigii pinks, etc., made the shelves gay and bright. The writer purposely refers to plants obtained from the garden, to which must be added the invaluable maurandias, and the so-called Austrian ivy (*Senecio scandens*.) I said invaluable maurandias, for there is hardly a day in the year that we need be without them: at this writing, January 7, they are opening their white and purple miniature vases around me. The ivy was a beautiful object, running the length of the ridge-pole, and crowded with hundreds of clusters of its canary-colored blossoms. Nor were more distinctive greenhouse plants forgotten.

Camellias slowly unlocked their sculptured beauty; azaleas tottered like caryatides under great bouquets of color; callas lifted their ivory couches out of their green investiture, all fit for a fairy's sleep; bicolor and tricolor geraniums put on their wintry "togam versicolorem," and rhynchospermums shook out their shining stars of snowy white on a background of rich dark green. Fuchsias, eupatoriums, rondeletias, jasmines, lantana, English myrtle, Chinese oranges, night blooming cereus, *cypripedium insigne*, added their varied charms. Pansies,

grown in boxes filled with rotted leaves, were truly Oriental in beauty. Bulbs kept up a succession of bloom, from the earliest crocus and Van Thol tulip to the last hyacinths, anemones, and ranunculus. But nothing was more lovely than the Persian cyclamen, waving its thick array of mimic mitres, fair and pure, above their blood-stained rims, for twelve weeks long.

Over them all was trained on one side a *Solfaterre*, and on the other a glorious *Maréchal Neil*, the emperor among roses, in the early spring, before great heats affect his glorious color and magnificent size.

This great rose, by the way, has been criticised as being too tender to suit the extreme north, and as injured by heat in the far south. The writer would like to say that, when grown in a cool house, in this latitude, nothing in rose-nature can approach it; even the glowing descriptions of our imaginative catalogue writers fail to do it justice; certainly no engraving that has yet appeared in this country fairly shows of what it is capable; for one flower, with accompanying foliage, will form bouquet enough for a large vase. Out doors, it is perfectly hardy here without the slightest protection, and very prolific of bloom; too much so, as the flowers are far inferior in size to their condition when the plant is pot-grown, and a little root-bound. The color is lighter also in the open air as the summer advances.

To return to my miniature house. Perhaps northern amateurs may be somewhat surprised to learn one of the chief ornaments was *Begonia Rex*, forming a great mass of leaves, with twenty-five heads of bloom, and enriching the centre of my table, the whole winter through, with its contrasts of silver and brown. Even *Cissus discolor*, so truly porphyrogenitus, and child of tropic heats, was so far tractable that it furnished leaves still exquisitely marked for the Christmas bouquets; then cut down, covered an inch or so with rotted manure, placed on a shelf next the glass, and kept nearly dry until April, it pushed forth with full life and strength again with the hot days of early summer.

The writer does not present his little house as a model, but simply to call attention to the value of similar cheaply-made schools of instruction for the management of a building more ambitious and expensive, persuaded that the happiness of the household incident to the successful

care of a greenhouse for a *short* purse, would soon induce the owner thereof to find it *long* enough to indulge a growing taste more freely, and the little house, as in the writer's experience, become an appendage to something greater.

Nor must the value of such a house for starting seed be forgotten. Many fine plants for the following summer were grown from seed planted in boxes Christmas week, and achimenes potted in early March were truly splendid, from July to November, without any hot-bed to start them, or extra heat in any way.

The general treatment was to keep dry in winter, watering sparingly on bright days, give all the air possible, keep down insect life by fumigation with tobacco, and to shade in summer from ten until three o'clock, which is more important than the use of the cover in the winter. The cover should be removed during the same hours exactly in the colder part of the year, lowering before the solar heat has been much diminished in the progress of the afternoon, and not raising early in the morning to allow the sun's rays to strike fiercely on chilled plants, but only after they have gradually penetrated the covering. This is conveniently done, in the writer's larger house, as follows: A cover of heavy ship canvas is made to fit the whole roof, and fastened firmly along the middle to the ridge-pole; it rolls up on either side at pleasure, by ropes attached to booms, to which the canvas is fastened at the lower edge; these ropes pass through a double block at the top of the house on the south, and come down to cleats at a convenient height. In half a minute any required portion of the roof may be shaded or uncovered. It is of course the non-conducting stratum of air between the canvas and glass, separated as they are by the half depth of the wooden slips in which the glass is set, that enables us to secure so wonderful a regularity of temperature, varied by the proper difference between night and day.

Let us have greenhouses for short purses, and flowers all the year for the people.

CLIANTHUS DAMPIERI.

By GEORGE SUCH, South Amboy, N.J.

UNTIL lately, *Clianthus Dampieri* has been treated as a greenhouse-plant, and has been found exceedingly difficult to grow. However, in last season's catalogue of Vilmorin of Paris, it was announced, that, instead of being almost impossible to cultivate, it was, on the contrary, a plant requiring only the very smallest amount of attention, and capable of being grown in the open air as readily as a French bean.

Last spring I bought some seed, and followed strictly Vilmorin's directions; planting about the middle of May in a dry, sunny position. I did not water at all, although for weeks no rain fell; and, except just enough to keep the soil free from weeds, no cultivation was given about the roots, which do not bear to be disturbed.

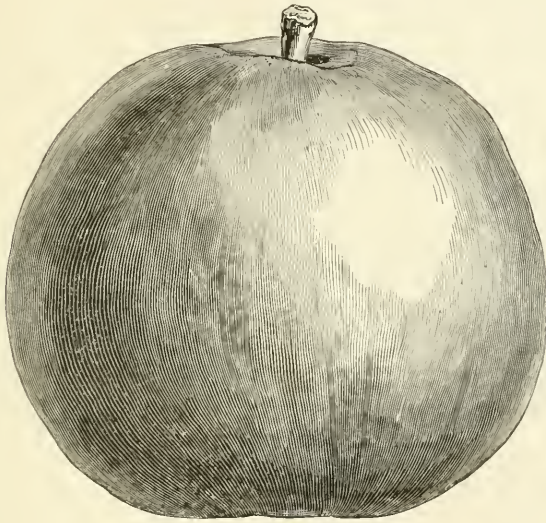
The plants throve amazingly, and the first flowers opened towards the end of August; since which time, continual heads of bloom have been produced. One of the plants has been protected from the frost by a sheet thrown over it at night; and to-day (Oct. 25) several bunches of its dazzling scarlet blossoms are hanging just as fresh as ever. Indeed, the foliage of those clianthus plants left unprotected has not suffered in the least from the frost; although dahlias, cannas, heliotropes, &c., were blackened by the cold a week or more ago.

These few notes may prove interesting, as some doubts have been expressed as to whether the clianthus could be flowered in the latitude of New York without having been started in the greenhouse. But no doubt need be felt, as my plants grew vigorously from the start; the leading shoot on one of them being now fully four feet long, and the numerous laterals not less than three feet.

One thing must be remembered: Red spider is very fond of the clianthus: therefore keep far removed all those old stagers who have been passing their winter in the greenhouse, and whose company is not above suspicion.

THE SAM BROWN PEAR.

AMONG the new pears which have been lately brought to our notice we have seen none which appeared to give promise of greater value than this new native sort, known also as the Maryland Seedling. Specimens were exhibited before the American Pomological Society, at their meeting in Philadelphia last September, by Frank H. Stockett,



SAM BROWN PEAR.

Esq., of Annapolis, Md., through Mr. John Saul, the well-known nurseryman of Washington, D. C., who presented us with the specimen here figured. We are also indebted to Mr. Saul for a letter from Mr. Stockett, giving the following history of the variety :—

“ This pear was introduced by Samuel Brown, Jr., for many years register of wills for Anne Arundel County; and after the separation of Howard County, he held the appointment to that office for Howard County until his death, some fifteen years ago.

“ The original tree, I believe, is still alive on the estate ‘Walnut Hill,’ formerly belonging to him; but it has now passed to strangers.

Mr. Brown was very fond of cultivating choice fruit for his own use, and many years ago was attracted by the appearance of a small pear tree growing where, several years before, there had been a camp-meeting held in that county. He took the tree up, and planted it at his place, where it bore after many years. The fruit is known to but few, perhaps now only to the family of the late Dr. Richard G. Stockett, of Howard County, and to my family, where it is very highly esteemed. The tree is a free grower, an early and regular bearer, and free from blight. The fruit is well flavored, delicate, juicy, and melting."

Our description, made from the specimen figured, is as follows: Fruit large, roundish, a little irregular. Stem hardly half an inch in length, of medium thickness, in a deep, narrow basin. Calyx of medium size or small, partially open, segments standing out; basin deep, narrow, and even, russeted within. Skin dull yellowish-green, in part covered with thin smooth russet; in others, and especially towards the sun, clouded, traced, and speckled with the same. Core small, seeds black, or very dark brown, uncommonly broad, plump, and "chunky." Flesh white, rather coarse, a little gritty at the core, melting, very juicy and sprightly, resembling that old favorite the Brown Beurré in flavor, and decidedly of first quality. The general external appearance is much like that of the Merriam pear. Ripe about the middle of September.

GATHERING APPLES AND PEARS.

THE caution cannot be too often repeated to gather all kinds of fruit with the utmost care, so as to avoid bruising; for it is sure to rot first wherever bruised, though only in the slightest degree. A good rule for gathering pears is to pick them as soon as the first sound pears, free from worms, begin to drop. They cannot be picked too soon after this. The only exception is the Rostiezer, which must be allowed to ripen on the tree to be eaten in perfection. Some of the best early apples, such as the Harvest, Williams, and Gravenstein, attain their highest excellence only on the tree; and the best growers place soft hay on the ground around the tree, and permit the apples to drop on it.

PEAR CULTURE.

By Dr. J. S. HOUGHTON, Philadelphia, Pa.

A REASONABLE "respect for the opinions of mankind" induces me to reply to the comments upon my Essay on Pear Culture contained in the "Notes and Gleanings" of the Journal of Horticulture for December last.

I shall not attempt to go over the whole field of the discussion. I desire only to say, that my essay was not a "dolorous wail over the failure of pear growing," as stated by the writer in the Journal. It was rather a statement of the *difficulties* of pear culture, the world over, with some suggestions respecting the best methods of overcoming these difficulties. I simply declared that fine dessert pears, or the finest specimens of the fruit, could not be obtained, as some persons supposed, with certainty, from old standard trees, in open orchards and in grass; but that the best fruit was everywhere, in all countries, produced chiefly in cultivated and protected gardens, generally in cities and large towns, upon young wood and young fruit spurs, on carefully pruned trees, and on young grafts.

I declared that, in my opinion, more care and skill would be required to produce fine fruit than had generally been applied to the art in America, and that, chiefly, some protection would be found necessary against spring frosts, cold winds and rain at the blossoming period, and for two weeks afterwards.

It has for many years been more difficult to obtain fine pears in Pennsylvania, generally speaking, than in Western New York and Massachusetts; but our pomological friends in the west and in the east have more ills to contend with than they like to acknowledge. The fact is, as I have stated frequently, Pennsylvania never has been able to make a respectable exhibition of fine pears without the aid of Rochester and Boston. Our Philadelphia patriarch, Baxter, living in the city, has taken nearly all the silver medals offered by our Horticultural Society for fine dessert pears for fifteen or twenty years.

When I commenced planting pear trees, nearly twelve years ago, I reasoned thus:—

Pennsylvania lies in the temperate zone, very nearly in the latitude of the best pear regions of Europe. This state has produced some of the best seedling pears the world has ever seen,—the Tyson, King-sessing, the incomparable Seckel, etc. The soil is a strong, fertile, clay loam, in which the pear delights. Winter-killing is very rare. Summer-blight, or fire-blight, is almost unknown. The season is long, the sunlight ample; the autumn generally dry, and the new wood ripens perfectly. The “oldest inhabitant” speaks of a time when the Virgallieu, or “Butter pear,” was as perfect as polished wax, and delicious as nectar. I said to myself, there are very few pear orchards in the State; the experiment of extended culture has not been fairly tried. I will plant numerous varieties, and hope to find some suited to the climate; some, perhaps, which Boston has discarded may grow in perfection here; it cannot be possible that this great belt of the temperate zone is unsuited to the growth of the pear, which flourishes over a larger space of the earth’s surface than almost any other fruit.

I did plant upwards of twenty-five thousand trees in ten years, dwarfs and standards, and hundreds of varieties, the best that Europe and America could furnish. My work was not that of a fanciful amateur, playing nurse to a few garden trees. Indeed, I was not an amateur at all. I planted with a view to the sale of fruit, on a large scale. I engaged, at the outset, the best professional assistance; and for six years past my orchard has been under the care of an educated and practical nurseryman, brought up in the nursery business, in Western New York, almost within sight of Rochester.

The pecuniary results of my planting have not, thus far, been satisfactory. My crops have not been large, nor have the appearance and quality of the fruit been sufficiently good. Some years the crop has been almost entirely destroyed by cold wind, rain, and frost, in the spring. But, in the course of this experience, I have arrived at some knowledge of pear culture not set down in books and periodicals. All the results which I have obtained I have not stated, nor do I intend to state them. Extraordinary as it may seem (for my essay is pronounced

an "extraordinary" one), I have not told all I have discovered in reference to pear culture. Some few of my ideas I have given in the essay, and above. Others I have not stated, nor will I now state them.

Suffice it to say, that the chief of my present difficulties are climatic — the cold winds and rains of spring, and the arid, fungus-producing atmosphere of our summers. Still, my pear culture is very far from being a failure. It is a difficult and expensive process to produce fine fruit here, I admit; but I have produced it, and I can produce it, with certainty and success, and I shall not be afraid to compare specimens hereafter with Boston, or Rochester, or any other region, except California, in fair, regular culture. Occasionally we know that some person, planting very vigorous young trees, in virgin soil, in some happy spot, in the Middle and Southern States, will come out with a few fine specimens pears, the first or second crop on young trees, so fine as to defy all competition by older cultivators, and to astonish all beholders. But if these trees are cultivated on the precious "let-alone system," you never see or hear of the exhibitor afterwards.

The chief object of my essay was to show, or to hint, that *perfection* in pear growing might be made perpetual. I declared not in dolorous strains that my pear culture was a failure, but that through inexperience, bad pruning, frosts, cold winds and rains, clouds of insects, blasts of fungus, and various other ills, I had arrived at a pleasant hope and belief in success; and I am now prepared to contest the palm with the wisest pear growers in America.

Another object of my essay, I confess, was to show up some of the common inflated talk about the ease and profit of pear culture, and to hit, with gentle satire, the advocates of standard pear trees in grass. In respect to these last points, at least, I seem to have met with a good degree of success. This is, philosophically, some satisfaction, for it has been justly said, —

"How terrible it were to common sense
To utter satire which gave none offence!"

The writer in the *Journal of Horticulture* I do not include among the number of those who appear to have been personally touched by my remarks. The comments of the *Journal* are fair and gentlemanly, as times go, and do not seem to be interested in maintaining any falsity.

At another time I may give my plans for producing fine pears under all the adverse influences of climate.

P. S. Jan. 13, 1870. Since writing the above, I have read Mr. Hovey's article, in the Journal for January, on the Pear question. So far as I am concerned, the course of the argument runs fairly enough. If desirable, I may at some future time discuss the subject in the aspect presented by Mr. Hovey. I now desire to amend the sentence quoted from my essay, to which (chiefly) exception is taken. It is that in relation to the value of pears from ordinary standard trees. It should read thus:—

“On standard trees in Pennsylvania, even in the best condition, one half the usual crop is scarcely marketable, at Philadelphia, in the months of September and October, when the bulk of our crop is gathered, at one dollar per bushel; and not over one quarter of any crop is suited to the first-class fruit store.”

We have here such a perfect glut of strawberries, blackberries, peaches, early apples, and pears, in August, September, and October, when our chief crop of Bartlett, etc., comes into market, that nothing but selected fruit will sell at any price worth naming. Medium fruit is only worth about two dollars and fifty cents per bushel. When fine peaches are only one dollar to two dollars per bushel, how can we expect second quality of pears to bring much more money? Boston is evidently a better market for fruit growers than Philadelphia.

REMARKS UPON THE CAMPANULA, OR BELL-FLOWER.

PART II.

By JOSEPH BRECK, Ex-President of the Massachusetts Horticultural Society.

WHILE all the phlox tribe are American, about all of the campanulas are European plants. The only indigenous bell-flower with which I am familiar is *C. rotundifolia*, the American hare-bell, and this is rarely found in gardens. Formerly I had it in my collection, having discovered it growing in great profusion on the banks of the Merrimack River, above Lowell, from whence it was transferred to my gar-

den. It appears to be almost identical with the English species under the same name, where it is known as the *hare-bell*. The specific name is derived from the shape of the radical leaves, which are nearly round, or a little heart-shaped. The cauline or stem leaves are linear, narrow, delicate, and scattering. The plant is perennial, about fifteen or eighteen inches high, with a few solitary brilliant blue bells upon a drooping top in July. The delicacy of the whole plant — leaves, stem, and flowers — makes it a desirable addition to any collection of choice plants. It is so far in advance of a great majority of imported novelties, that it is a wonder that it has not been brought into more general cultivation. But, like many other fine indigenous plants, it is overlooked, for with many, nothing is thought of much consequence unless brought over the seas at great expense.

Campanula persicifolia (Peach-leaved Bell-flower). This species is one of the most desirable of the whole family as a hardy perennial border flower. The flowers are produced on rigid stems, about two feet high, in June and July. There is a single blue and a white variety, and the same colors with double flowers. The double varieties are not such monsters as those of the double Canterbury bell. The flowers are of a shallow bowl shape, and, when by cultivation they become double, are rose-like in form, and rather an improvement over the single. As seed is rarely produced, the mode of propagation is by dividing the roots, which may be successfully performed any time in July and August.

Campanula grandis (Grand Flowering Bell-flower). This is another fine hardy perennial, growing from two to three feet high, with an abundance of light-blue flowers in June and July. For a number of years this was in my collection, and highly prized; but by the carelessness of an assistant gardener, while digging the borders, it was dug under and lost, sharing the same fate with many other choice plants now missing.

Time would fail me to describe all the various ornamental bell-flowers which are cultivated; but I will give a few, viz.: *Campanula Trachelium* (Throat-wort); single blue and white, and double blue and white varieties — three feet high; *C. urticifolia*, *speciosa*, *versicolor*, *azurea*, *lactiflora*, and *bononiensis*, which are worthy of a place in large collections.

The following species are suitable for rock work or for the front of borders : —

Campanula hederacea (Ivy-leaved Bell-flower). A very neat and dwarf flowering campanula, growing about three inches high, and forming a green tuft on the surface of the soil. The flowers are of a bright-blue color, and bloom in June and July. The plant makes a neat edging for bed or border, and did it continue in bloom much longer than it does, it would be a most desirable plant for every flower garden. It is a hardy perennial. Not common in this country.

Campanula fragilis var. *hirsuta* (Hairy-leaved Brittle Bell-flower). This very pretty perennial dwarf campanula is a native of the mountains of Italy, where the bright-blue patches of its lovely flowers are quite enchanting. The plant grows about six inches high; the flowers are about one inch in diameter, produced in profusion, of a fine blue color, with a whitish centre. In bloom from May to September. Alpine plants, of which this is one, require protection in winter; in their native habitat they receive a thick covering of snow, which is the best protection that can be given them or other plants.

Campanula garganica (St. Angelo Hare-bell). A very handsome, flowering, hardy, perennial plant, blooming profusely. A most suitable plant for a rockery, and producing numerous racemes of blossoms. The flowers are of a pale blue inside, and of a pale rose outside.

Campanula carpatica (Carpathian Bell-flower). A handsome, hardy, perennial bell-flower; an Alpine plant of considerable beauty; one variety with rich blue, and another with pure white, flowers; about six inches high; flowering most of the season. It has stood the winter with me very well. Raised from seed or divisions of the root.

Several of the species which were formerly included in this genus have, for some good reason no doubt, been removed by botanists into other genera. Thus, *C. speculum*, which has been described, should come under the head of the genus *Specularia*; and *C. grandiflora*, which has been called *Wahlenbergia*, now comes under the head of

Platycodon (Large Bell-flower). (From the Greek, meaning *a large bell*.)

P. grandiflorum. Separated from the campanulas on account of the manner in which the pod opens. This is a magnificent hardy peren-

nial, growing about one and a half feet high, with smooth and serrate leaves. The stem bears a few very large shallow flowers; color, a rich blue, with a white variety, and sometimes semi-double. The buds are



PLATYCODON GRANDIFLORUM.

quite ornamental, being large and balloon-shaped. In flower in June and July. The roots are large and fleshy, and if cut up in pieces an inch long, and planted on a moderate heat, will make fine plants.

THE MASSACHUSETTS HORTICULTURAL SOCIETY.
REMINISCENCES.

As the writer is one of the original members of the Massachusetts Horticultural Society, and, with the exception of Cheever Newhall, the only corporator mentioned in the charter now living, perhaps some of his recollections of the society's "day of small things," in comparison with its present ample resources and operations, may be worth reading.

Forty years ago the principal seed store and agricultural warehouse in Boston (and excelled by only one or two in the United States) was that connected with the *New England Farmer*, which has been continued and most honorably conducted to this day by Joseph Breck and Son, on the same spot. The room was spacious, pleasantly located, and attractive, and was a favorite resort for both the practical and amateur cultivators of the city and vicinity, — a sort of Farmers' Exchange, — where they met and compared views about crops, culture, &c. There the first idea of forming a Horticultural Society was started, in the winter of 1828-9. The old Massachusetts Society for promoting Agriculture, established in 1792, was in the hands of excellent gentlemen, but who had passed the prime of life; and, as a society, they paid little or no attention to horticulture, although the president, Hon. John Lowell, as well as Gorham Parsons, John Prince, and perhaps some others, were enterprising in introducing new fruits from Europe, and liberal in disseminating scions. It was thought there was an ample field for a new society, of younger men, and that there was an abundance of material and of horticultural taste in the public to sustain it. Accordingly, an individual, who felt much interest in the matter, after consultation with friends, had some fifty notices printed, and addressed them to gentlemen interested in horticulture, inviting them to meet at the insurance office of Z. Cook, Jr., on Congress Street, near State, in the forenoon of Tuesday, February 24, 1829. It was a bitter cold day, but the room was filled. To give character to this preliminary meeting, it was felt to be quite an object to have Mr.

Lowell preside. His health being feeble, he had given us but little encouragement of being able to be present. One of his neighbors, on Colonnade Row, however, Mr. Cheever Newhall, called on him that morning, with his sleigh and extra blankets, and induced him to wrap up and come down, to the great gratification of the company. He presided as chairman, and Mr. Cook acted as secretary. It was voted to establish a Horticultural Society; a committee of five was appointed to obtain members, and another of three to draw up a constitution and by-laws, to be considered at a future meeting, which meeting was held at Mr. Cook's office on the 17th of March. An organization was then effected, and General H. A. S. Dearborn elected president, and Z. Cook, Jr., Enoch Bartlett, John C. Gray, and Robert Manning, vice-presidents; Cheever Newhall, treasurer; Dr. Jacob Bigelow, corresponding secretary, and Robert L. Emmons, recording secretary. All these gentlemen have "passed over the dark river," except Mr. Newhall, Mr. Gray, and Dr. Bigelow. To interest as many as possible, a "Council," composed of thirty-eight persons, in different parts of the State, was also elected, of whom but five or six are living; this clumsy feature in the organization was supplemented, in a few months, by an executive committee of five (Samuel Downer, Elias Phinney, Cheever Newhall, Charles Tappan, and John B. Russell). J. B. Russell was appointed general agent of the society, and attended to all its business gratuitously, and on the day of its organization reported the names of one hundred and sixty members.

Many of the old school of gentleman farmers, at first, gave a cold shoulder to the project, but fell into line, and became members, after it was evident that it would be a decided success. Mr. Lowell, however, was its ardent friend from the start, and always contributed liberally of his means and elegant plants to decorate its exhibitions. At the quarterly meeting in June of that year, Mr. John Welles, a well-known, genial, and generous gentleman, sent the society a check for one hundred dollars, the first pecuniary gift it received. Donations of books on horticulture were also made by Mr. Lowell, Robert Manning, Gorham Parsons, General Dearborn, and several others; seeds by Drs. Mitchell and Hosack, of New York, and Ex-President John Q.

Adams; and more than one hundred popular fruit trees, from William Prince & Sons and Judge Buel, to be planted out where scions and buds would always be accessible to members. A selection of standard French and English books and periodicals was imported, which, with the above donations, was the foundation of the present library. Here I may as well add, that Mr. William W. Warren, late a working member of your City Council, then a bright-eyed lad in Mr. Russell's seed store, was appointed librarian. He covered and made a catalogue of the books, and kept a faithful record of their deliveries for many months gratuitously, till his departure for the West Indies; for which he received the thanks of the society, which were supplemented with the present of a barrel of apples from the generous old ex-sea-captain and nurseryman, Jonathan Winship, of Brighton.

Amongst the gentlemen who were most active and efficient in forming the society and developing its objects and usefulness, were Samuel Downer, B. V. French, Z. Cook, Jr., Cheever Newhall, Captain Daniel Chandler, and Aaron D. Williams. After it was organized, General Dearborn was unremitting in his labors to give it a respectable standing at home and abroad. By the political changes of the day he had just lost the collectorship of the port of Boston, and having abundant leisure, he devoted it liberally to the objects of the society, by correspondence with the leading horticulturists of Europe, and by translating articles from French horticultural journals. He was thus the means of securing many donations of books, seeds, and scions of new fruits, for the society. His attainments and services cannot be too highly estimated.

Mr. Downer is also entitled to grateful recollection for his untiring labors. His great hobbies were the curculio, which at that time had not attracted much attention, and the discovery and trial of *native* pears and grapes, having a theory that they would be less subject to blight and other diseases, and hardier than foreign varieties. Whenever he heard of a good fruit that was thought to be a "native," he was prompt, either by travel and observation, or by correspondence, to investigate and settle the question of its identity. He determined the fact that the Harvard pear originated in Cambridge, Mass., although

sold in the market as the French Epargne. Being a popular fruit, and a great bearer, it had several local names; the committee on the identity and synonymes of fruit (S. Downer, John Lowell, S. G. Perkins, and Robert Manning) gave it the regular name of Harvard, the original tree standing near Harvard University, by which it is now known in all catalogues and books. I recollect with what enthusiasm he climbed into the original Dix pear tree (his age must then have been over sixty), although it was pretty full of thorns, to satisfy himself it was a native and not a grafted tree. He also first brought into notice the Lewis, Andrews, Minot, Fulton, Clapp, Cushing, Heathcot, and Wilkinson pears, and several native grapes and cherries. In the spring of 1829 he collected and packed the scions of twenty kinds of our best native fruits, that were sent to Paris, in behalf of the society, in reciprocation of similar favors from French horticulturists. Some of these pears, and "Downer's cherry," are still in repute, but all his native grapes have been superseded by the Concord and other excellent varieties.

Mr. Aaron D. Williams was also an efficient member, and excelled in raising the finest vegetables of the day. He complained that some of the market-men were opposed to the society, fearing its influence would occasion so large an increase of fruits and vegetables as to reduce the price. He talked them out of that fallacy, however. I judge that the demand has so far exceeded the supply, that the prices of these articles generally are one hundred per cent. higher now than then.

Mr. R. L. Emmons, who had a most refined taste, and passionate love for flowers, was a punctual attendant at all the meetings, and generally brought a small, tasteful bouquet, or half a dozen modest flowers, and placed them on the business table. His example was gradually followed by other members, till a long table was required, which was always filled. As Saturdays generally brought most of the members into the city, informal gatherings were held at their room, with specimens of fruits and flowers, and thus began the weekly exhibitions of the society.

The origin of the Bartlett pear, then grown by a comparatively few

market-men and amateurs about Boston, was a most obscure point to settle, baffling all investigation for a long time, even Mr. Downer's persistent research. After years of examination, it was first identified with the English Williams's Bon Chrétien, by that most accurate and pains-taking pomologist, Robert Manning, of Salem, whose modesty was only surpassed by his great attainments in his favorite pursuit. He pronounced it the best of all summer pears, and showed conclusively that it originated in England about 1780, and was imported with a lot of other English pear trees into Boston, early in this century, by a Mr. Carter, who afterwards sold his place to Enoch Bartlett; hence its name. This noble fruit, which had but a local reputation about Boston, when the society was formed, is now probably more extensively grown than any pear whatever, from its size, beauty, excellence, and early, abundant, and regular bearing. It accommodates itself to all climates, from the shores of the Mediterranean to the Pacific. Mr. Manning first announced his discovery of its origin in the *New England Farmer*, July 2, 1830.

At a quarterly meeting in March, 1829, "Women's Rights" were incidentally and good-naturedly discussed, on a proposition to admit Mrs. Governor Gore, Miss Dix, and Mrs. Griffith (of New Jersey), as honorary members. Some thought it of doubtful expediency, as a woman in the garden made great trouble as long ago as the days of Adam. General Dearborn, however, silenced all cavillers, and they were elected. At one of the weekly meetings that year, one hundred different varieties of the carnation pink were exhibited; and in September Mr. Lowell sent a bunch of Malaga grapes from his greenhouse which weighed three pounds, and one of Black Hamburg, weighing one pound and five ounces.

The first anniversary, or rather public dinner and exhibition of the society was held at the Exchange Coffee House, on the 19th of September, 1829, that being a good season for making a display of fruits and flowers on the dinner tables, as no other general fall exhibition was held. The hall and tables were splendidly decorated with fruits, flowers, and singing birds, and the hall crowded with ladies and other spectators from twelve to two o'clock. At four, the society, with their

friends and guests, to the number of about one hundred and sixty, sat down to a sumptuous dinner, which was enlivened with speeches and toasts, and songs from Mr. Finn and Mr. Andrews of the Tremont Theatre. Mr. Downer toasted his "native" fruits.

I was amused, in looking over a Boston publication, some twelve or fifteen years ago, which gave an account of the various institutions of the city; amongst others that of the Massachusetts Horticultural Society, which, it stated, was established by the exertions of three or four gentlemen, whose names were given. With one exception, those gentlemen, as I happen to know, were all indifferent, and one of them decidedly opposed to the measure. Such is history, — sometimes!
R.

WASHINGTON, D. C., October, 1869.

[We hope that our correspondent who has prepared this interesting account of the early days of the Massachusetts Horticultural Society, may be induced to continue it, as we believe that the labors of this society have had a widely beneficial effect, and that a corresponding interest will be felt in its history. — ED.]

FRUITS IN KENTUCKY.

By "WOODMAN."

THAT certain varieties of fruit succeed well in one locality, and are a failure in others, is a horticultural fact which every intelligent and observing individual now admits. No one truth connected with horticulture is more beneficial, because we are thereby enabled to select such varieties as are known to succeed, or we are restrained from planting largely, in untried fields, of certain kinds, until the matter is definitely ascertained by careful experiment.

Had this fact been generally understood years ago, instead of seeing vast barren orchards here and there through the country, we would see, almost annually, superior crops of excellent fruits on every hand. In

my own case, if I had known ten or a dozen years ago what I have since learned, — partly by observation, mainly by reading intelligent magazines and rural papers, — the fruitless Rhode Island Greenings, Porters, Northern Spy, etc., etc., would not now be occupying valuable space in my Kentucky orchard. Of course I do not here pretend to insinuate that these varieties of apples are *worthless*; far from it; for I know the reverse is true, and in climates adapted to their growth they are truly excellent. But I do say that in Kentucky no one should plant them if I had the power to prevent it. There are in reality so few kinds that are adapted to our very capricious climate, that the entire list of truly excellent bearers may be named in a few lines. If I were planting an apple orchard here of any given number of trees, say one hundred, seventy-five of them should be Rawle's Janet, ten Pryor's Red, five Red Astrachan, ten Rambo, or Milam. Perhaps I might divide the latter kind, and plant five Early Harvest.

As to the hundreds of other varieties I should plant none. I do not mean to convey the idea that no others would answer a good purpose; for many of them do, now and then, produce good crops; but, as a general rule, those above named are peculiarly adapted to our climate; or, more properly, perhaps, our climate is adapted to *them*. The Rawle's Janet is, *par excellence*, the great apple of Kentucky. They bear enormous crops almost every year, from the blue clay peaks of our mountains to the rich low lands of the middle and southern counties of our State. It keeps well until April or May, and the older it becomes, the better. As a table fruit, for cider, for brandy, or in any form an apple can be used, it is all that the most exacting could require. True, it has not that fine, aromatic, nutty flavor, possessed by the incomparable Pryor's Red, which is the most luscious apple, to our taste, known to pomology; but then its productiveness, hardiness, and long-keeping qualities, render it the "king apple" of our State. As a summer fruit, the Early Harvest is the best by long odds. It is a certain and abundant bearer, and the fruit, with us, all that could be desired. The trees, like the Rawle's Janet, bear early, and mature their fruit to perfection even then. Next on the list, for September here, we place the Red Astrachan. For beauty this cannot be exceeded; and, when fully ripe and

well grown, it is grateful to any taste. The Rambo and Milam have been long known, and are warmly appreciated; and no orchard here is complete without a few of each or one of them.

In peaches the field is a much larger one, as there are more than a score of excellent varieties, well suited to our climate. None of them, however, bear *every* year, as our oft-repeated sleets in March and April almost, often quite, destroy the entire crop. With us the peach is an early bloomer, — often coming on with the jonquils and violets, those hardy, simple, spring flowers, that come bursting out at the first warble of the returned bluebird, and the earliest kisses of the spring zephyrs, — and hence are killed by late frosts. Oldmixon Free (God bless it) gives us the surest crop. Hale's Early the first, but rots too much and too often. Van Zandt's Superb, George the Fourth, Early York, Old Mixon Cling, and many others, yield fine crops on our mountains and hills, on an average of one year in three. But, to our taste, the Crawford's Early is the finest peach for Kentucky. One here cannot go far wrong if he plants more of the above-named varieties than any others.

Dwarf pears do not generally succeed well. The leaves are apt to fall prematurely, and we cannot hope for a fair crop, even, oftener than once in five or six years; a full crop scarcely ever. The same is true of the Heart and Bigarreau cherries, except on very old trees. Standard trees do much better; and our advice to beginners would be, plant dwarfs of any kind sparingly; standards, all you have room for. He who plants a tree does well; he who plants many trees does better. Of small fruits hereafter.

STANFORD, KY., 1869.

THE BLOODROOT.

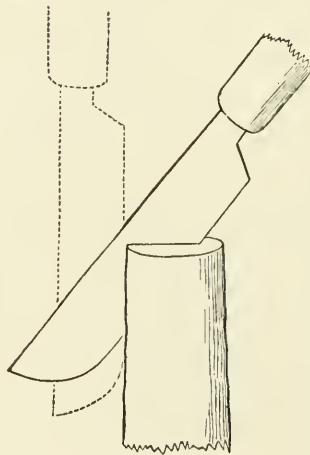
THIS pretty plant (*Sanguinaria Canadensis*) is easily cultivated, and is a gem for the spring-garden. Large clumps are very showy, as the contrast of white petals and the mass of yellow stamens is very marked. In cultivation, the flowers show a tendency to become double. We had several partially so in our garden last spring.

GRAFTING THE CHERRY.

By C. C. MILLER, Marengo, Ill.

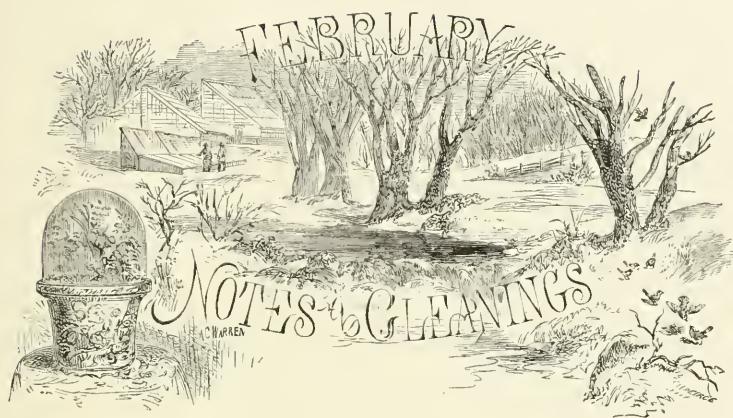
OF the first importance is it that the cherry be grafted early. Do not wait for the buds to start in the least, but let the work be done as early in the spring as the weather will admit, sometimes even in February. Perhaps more failures occur from grafting the cherry too late than from all other causes.

When the cleft for grafting is made in the ordinary way, the bark of the cherry tree is apt to split in a ragged manner, not favorable for rapid healing.



To avoid this difficulty, let the knife be applied to the stock (as shown by the dotted lines in the cut) in such a way that the bark shall first be cut; then continue to cut until the knife appears as in the engraving, leaving the bark entire on one side of the stock.

Taking this care in the work when done early in the season, and using wax hot enough to cover nicely (let the wax be hot enough to be liquid, if the weather be very cold, in filling up the crevices), and nearly all will grow.



CRITIQUE ON THE JANUARY NUMBER. — *Fall and Spring Planting.* — One after another, Mr. Editor, you seem to be summoning to your aid the best horticulturists in the country ; and right glad am I to see a new volume introduced by an article from Mr. Saunders. No doubt hundreds of your readers, who, like myself, have found out by experience the advantages of autumn planting, but had not got so deep as the reason for it, will be equally glad to be told by Mr. Saunders the principle on which it rests. And this brings me to say, that his remarks on the necessity of deducing, from the facts which centuries of horticultural experience and thousands of observers have accumulated, the principles which govern and explain these facts, are of even more importance than the special application of principles to the particular subject of transplanting. “ Surely we are not to be forever debating about whether orchards should be cultivated or not ; whether fall or spring planting is best ; whether we should prune in summer or in winter, or not at all.” Certainly I hope not ; and yet, if we examine our horticultural literature, or listen to the discussions at a meeting of horticulturists, how much of it we shall find to consist of attempts to settle just such questions as these ! There seems to be no end of diversity of opinions, and “ lost guides calling, left and right,” so that the beginner is fairly bewildered. Now, we cannot suppose that this is to last forever ; and the remedy is, to seek out the principles which harmonize and simplify the facts on which these diverse practices are based, — conflicting facts they are sometimes called, — but this only because, with our partial views, we fail to see them in all their relations to other truths, Perhaps it will require a different order of mind to generalize all the facts which

have been recorded, and to deduce from them the laws which should guide us in our operations, from that which collects the facts; but every laborer in the great field can ask himself, when he performs an operation, why he does so; and when he observes something which he has never seen before, he can ask himself the cause of it, and become so far a philosopher; for, according to Mr. Noah Webster, to philosophize is only to search into the reason and nature of things.

But do not let us go to the other extreme, and despise the volumes of facts which have been accumulated, for, as Mr. Saunders well remarks in the very commencement of his paper, in the earlier stages of every art our knowledge is necessarily confined to particulars. It is said that the wise Lord Bacon, who had a large collection of works upon agriculture, had them one day piled up in a court-yard and set on fire; "for," said he, "in all these books I find no principles; they can therefore be of no use to any man." Now, I must be bold enough to differ from so wise a man as Lord Bacon, and think that, though these books were of far less value than if they had contained principles, yet, supposing the facts to be correctly reported, as a great majority of them probably were, they would be of use for the very purpose of establishing the principles which he sought. Probably, however, he would never have thought of burning them if he had only had the *Journal of Horticulture* to redeem them!

But I have already preached too long a sermon from this text, and I must see what Mr. Hovey has to say about our pear culture being all quackery. What can he mean? Ah, I see! It is somebody else who thinks our pear culture is nothing but empirical; and no wonder Mr. Hovey is a little touched, after cultivating pears for a quarter of a century, and not without some degree of success, as his facts and figures show, to be told that neither he nor anybody else has anything but empiricism, and must begin again at the a b c, and learn it all over again. I should not wonder if what he says made a sensation somewhere. But whatever the cause which produced it, Mr. Hovey's article is in one respect more valuable than any other ever written on the subject, for no other writer has ever given us such exact statistics of the quantity, and quality, and variety, and price of his crops of pears through a series of years.

Downing's Seedling Gooseberry. — A fine cut and an accurate description, like every thing that Mr. Campbell writes, of what is, in my opinion, undoubtedly the finest of all American gooseberries.

The gooseberry — I am speaking, Mr. Editor, of the *American* gooseberry — has been altogether too much neglected, perhaps for the reason that it has never been properly appreciated. It appears to me its real merits have been lost sight of in its general employment for cooking purposes, for its value heretofore has uniformly been based on what the green fruit might be worth as a constituent in tarts or pies! Why, sir, I should quite as soon think of deciding upon the qualities of a new grape from the flavor of an unripe cluster thus ignobly converted! Now, I pronounce a well-ripened gooseberry a luxury, and doubt not ere long it will generally be regarded as such.

In Canada, the *Downing* gooseberry is grown with great success. I have seen it stated that a row of this variety, planted in sandy soil, had not failed for the last five years in producing large crops of perfect fruit.

I have headed this note "Downing's Seedling Gooseberry," because that is the name under which you have described it, but I notice that the author of the revised edition of the *Fruits and Fruit Trees of America* calls it simply the Downing Gooseberry; and surely he should be good authority for the name of a fruit which he himself originated. Perhaps you will think me hypercritical on this point; but I deem it highly important not only to adhere to some authority, but to avoid lengthening names.

Your remarks on training and pruning the plants especially interested me, and I shall certainly carry the system proposed into practice.

Market Orchards in the West.—Thirty-three hundred apple trees, two thousand pears, and twenty-five hundred peach trees, from one hundred to four hundred trees of a kind, is rather startling to our ideas of orchard planting here in New England. And even this is nothing to what we hear of; for Mr. Barry, at the meeting of the Illinois Horticultural Society, said he knew of one orchard, of pears alone, of sixteen thousand trees, and Dr. Houghton says he has upwards of twenty-five thousand. What Mr. Flagg has to say of fruits for market orchards in the West, is, as usual, well said, and goes right straight to the point. His statements of the merits and defects of the varieties he has selected are models of terseness and incisiveness.

The Campanula.—Mr. Breck's articles on Floriculture will always find readers. For one, they afford me a degree of pleasure I rarely find in any other writer on the subject. Half a century among flowers! Making these his constant care and study during so many years, one might almost imagine they have imparted to the man a measure of their own sweetness and purity. For the introduction and dissemination of many of our most beautiful as well as most useful plants, we are indebted to him; and we are also under equal obligation for the free promulgation of all the details of culture and management which so long an experience had enabled him to gather. A devotion so constant, blended with a generous heart and strict integrity of purpose, must everywhere command respect—from me it wins a degree of reverence. The ripening into such a manhood is the full consummation of existence. Such a spirit, like the perfume of the flowers he has labored to rear, will ascend as sweet incense to the Eternal Presence.

As I have before said in these random notes, I thought Mr. Underhill's article on the treatment of the American grape vine an unusually valuable contribution to our knowledge of this subject, and so did every one else who read it; but it is difficult for any one man to get all the elements of a wide question into a single article, and so I am glad to see Mr. Seely coming in to supplement Mr. Underhill's statements and conclusions.

Dewing's Early Turnip Beet.—I have had this variety under cultivation, and consider it one of the best. Planted side by side with the common Turnip-rooted, there was a marked difference in favor of Dewing's Early. The bulbs were more uniform in size, smoother and handsomer, and the flesh was quite as rich in color, and I am inclined to think fully as tender and sweet. Further than this, there are few, if any, table beets more productive. It will meet the requirements of market-men, and it is certainly one of the very best for the home garden.

That the Hatch beet and Dewing's Early are valuable acquisitions, any one who has given them a trial will readily admit ; but how can they be brought into general cultivation ? The seedsman can hardly afford the time necessary to convince his customer of their value, and the seeds, as yet, are in too small supply, as well as too costly, to allow of their introduction into the boxes left by the Shakers and others, to meet the requirements of the retail trade throughout the country. I suppose, however, as in the past so in the future, the new will gradually supersede the old, and I doubt not, Mr. Editor, ere long we shall see the seeds of these new beets sold in our market by the *ton*, as the seeds of the common turnip-rooted beet are disposed of there to-day.

The Kirtland and Hadley Pears. — Truly this is a puzzling case, for the evidence of the origin of this pear at Hadley, Mass., and at Poland, Ohio, seems to be about equally balanced. I do not know that I can throw any light on it ; but I will remark that so far as I have seen it under the name of Kirtland, the quality hardly comes up to the reputation generally given it, and instead of showing affinity to the Seckel, from the seed of which it is said to have originated, it resembles the old American Orange pear more than any other that I know of.

I cannot find it in my heart to conclude these notes without adding my tribute to the memory of one to whom pomologists throughout the world are so much indebted as Robert Thompson — a man who might well be taken as a model of thoroughness and exactness in all that he did. Though unknown to many of the horticulturists of our day, the last edition of his great work, the Fruit Catalogue of the London Horticultural Society having been published nearly a generation ago, we commend his example to all cultivators, with the certainty that if followed, the condition of pomology would soon exhibit a wonderful change for the better.

Bismarck.

GIRDLED TREES BEARING FRUIT. — Our readers have heard of the great atrocity of girdling fifteen hundred bearing fruit trees at Benton Harbor, Mich., near St. Joseph, by some unknown miscreant enemies of Martin Green. The neighbors turned out and bandaged the trees with the cloth strips dipped in great kettles of heated grafting-wax. A second lesser raid of the rascally spoilers was similarly met, and now for the sequel. Every tree lived, and has come out of the trial bending under such a fruitage as has never before been seen in Benton Harbor. All Benton Harbor, and the region round about, is filled with the marvel, and an orchardist has promulgated a new theory of fruiting trees by girdling them. Whether or not it will be deemed necessary, as in Charles Lamb's story of the discovery of roasting pigs, to go through the whole process of girdling an orchard over night, and to have the village turn out and repair damages the next day, remains to be seen. Those wise in fruit matters believe that though the interception of the sap has caused fruit to grow instead of wood this season, the real trial of the trees will come next year. As to that, time will show ; meanwhile the trees are giving a magnificent yield, if it is to be their final one.

Chicago Republican.

RHODODENDRONS ON LIMESTONE SOILS. — In looking over the *Journal of Horticulture* for December, I was much pleased with the excellent article on the *Rhododendron*, by S. B. Parsons, of Flushing, N. Y. There are, however, a few sentences of Mr. Parsons's which might need correction. He says, speaking of the *rhododendron*, "They grow as surely and as freely as a willow, wherever a lilac will, unless limestone soils should prove an exception."

Now, Mr. Editor, let me say, for the benefit of those persons who live in limestone districts, who might be deterred from planting by Mr. Parsons's remarks, that limestone soil is not an insurmountable barrier to the successful cultivation of this most superb shrub. I live in a limestone district myself, and have the *rhododendron* growing thriftily. All that is essential to be done in limestone soils for the successful culture of this splendid plant is to dig holes thirty inches in diameter, and as many deep, casting out all the soil for that depth, and refilling with leaf mould soil from the woods, taking care not to go deep enough to reach the lime. My own borders are composed as follows: two thirds leaf mould from the woods, one third rotten sod composted two years, top sod with a smart sprinkle of brush cut up, and all intermixed as I fill in, using a post stamper to settle the contents as the hole is filled up. Raise the compost four inches higher than the surface soil, so as to allow for settling, and plant in the centre of the prepared borders.

I keep my plants mulched with leaves from the woods, summer and winter. They are very thrifty, and have bloomed several times well, and they are now looking finely, and are loaded with blossom buds. I have one plant of the new English variety, H. W. Sargent, which Mr. Hunnewell, near Boston, described in a former number of the *Horticulturist*, if I mistake not. His description of it was this: "That variety will be in demand in England for a thousand years to come." It promises well here, but has not yet bloomed.

Only a short time since, in conversation with a gentleman of eminence in regard to the successful culture of the *rhododendron*, he remarked it was of no use to attempt it on limestone soils. I assured him to the contrary. I now write for the benefit of those similarly situated, to show them how the difficulty can be overcome.

My first and second attempt with single plants on limestone soil, good enough otherwise, was wholly unsuccessful. I now have eight varieties growing thriftily, without any protection from sun or cold.

E. Manning.

HARRISBURG, FRANKLIN Co., OHIO, December 27, 1869.

RIPE STRAWBERRIES were picked in the open fields of Oregon on the 5th of December last.

LAST YEAR'S PEANUT CROP in Virginia amounted to five hundred thousand bushels — a little less than the average.

OLIVES AND CORK OAKS. — The olive is cultivated in Georgia and on the coast islands of Georgia, and cork trees are successfully grown in North Carolina.

NOVA SCOTIA APPLES. — We are indebted to Mr. Charles E. Brown, of Yarmouth, N. S., for a very interesting collection of apples, mostly grown by Mr. Jos. Christopher Starr, of Starr's Point, Cornwallis, N. S., and comprising fifty varieties. Among them were several of the noted Canadian and English varieties, well known by name, but not often seen here, besides some of the leading kinds of this country, and a number of local varieties. The most remarkable circumstance connected with these apples is their freedom from fungus. With the single exception of the Fall Pippin, which showed a few spots, they were perfectly fair and free from blight. The variation in shape from specimens grown here was noticeable, the Baldwin and many others being much elongated, while only one variety, the Gloria Mundi, was flattened. The Canada Reinette was very curiously and prominently ribbed, more so than any other apple we have ever seen, not excepting the Red and White Calvilles of the same collection, which are always strongly ribbed, and in this instance were at least as much so as usual. We have never seen a better specimen of the Yellow Bellflower than we found among these, though this kind is generally supposed to be best adapted to a more southern climate.

Mr. Brown mentions some unusually fine specimens of the Bradshaw plum grown there, six of which weighed fourteen and three quarters ounces, and adds that "in Yarmouth County we are only beginning in fruit culture, and have yet to learn what varieties will succeed in different parts of the county; upon the coast, the average summer temperature is low, modified by frequent fogs; ten or fifteen miles inland, however, I am persuaded most varieties will do well. I have imported, and distributed gratuitously, thousands of scions within the last five years, have fifty or sixty varieties on trial in my own garden; in a few years more there will be fruit from most of the well-known kinds, and such as have done well elsewhere north. In strawberries we are eminently successful, the climate suiting that fruit exactly. Wilson's Albany, Jucunda, and Triomphe de Gand are the only three I have thought worthy of reserving out of thirty varieties in fruit in 1863."

THE CONQUEROR AND CHALLENGE GRAPES. — We received from William F. Bassett, Esq., of Hammonton, N. J., specimens of the Conqueror and Challenge grapes, which, however, were too much decayed to judge of their quality. The editor of the Gardener's Monthly, who visited the vines, and saw them in bearing, says that they are good grapes, no better perhaps than scores of others which have been brought out, but better than a great many for which high prices have been paid.

These two grapes were produced by Rev. A. Moore, as he supposed, by hybridizing the Royal Muscadine on the Concord; but the committee on native fruits of the American Pomological Society could discern no trace of foreign parentage in them, and they are probably only natural seedlings.

It is said that these vines bear a strong resemblance to the *Vitis cordifolia*, and it has been deemed very remarkable that they should have travelled out of the species (*V. Labrusca*) to which the Concord belongs, to the *cordifolia*. In speaking of this point with Mr. E. S. Rogers, he remarked that he had suspect-

ed the Concord to be a hybrid of *Labrusca* with *cordifolia*, and he would account for the strong resemblance of Mr. Moore's grapes to *cordifolia* by the supposition that they had returned to that species. Of many seedlings which he had raised from his hybrids, without artificial impregnation, every one had returned to the wild type of the female grandparent. On the other hand, Mr. Wilder, who has raised several seedlings from Rogers's hybrids, has found in them no resemblance to their native grandparent, but they have appeared to follow the type of the hybrids from which they were raised.

This is a most interesting and important subject, and it is desirable to accumulate all the data from which the laws governing the production of new varieties may be deduced; and to this end we record these facts and inferences.

CALIFORNIA FRUIT AND WINE. — I have already spoken of fruit. It seems to me there can be no other country in the world like this. See the range: oranges, lemons, limes, olives, pomegranates, pine-apples, bananas, figs, almonds, grapes, pears, apples, peaches, plums, walnuts, apricots, cherries, nectarines, strawberries, blackberries, currants. Isn't that variety enough?

Oranges, lemons, and limes grow only in the southern part of the State — Los Angeles County and vicinity. I have not been down there: reports are, that not less than fifteen thousand trees are already in bearing condition, while seventy-five thousand more are growing. Experiments are making farther north, but they do not promise very well. A good tree produces from one thousand to two thousand oranges each year, and trees begin to bear when they are eight or nine years old. They blossom in April or May, and oranges ripen in December and January. Lemons and limes want about the same climatic conditions as oranges do, but don't pay as well for the space they occupy and the labor they require. Olives and figs grow best in the south, but are raised, in favored localities, within thirty or forty miles of San Francisco. I ate all the figs I wanted one afternoon at Belmont, but twenty-five miles away; on several trees the second growth was coming; but that does not usually ripen except in the southern counties. Nothing of consequence has yet been done in pine-apples and bananas, but a few have been sent up from the lower border, and were found to be of full maturity and excellent quality. I saw bananas growing in the open air at San Mateo in the San José Valley; but they cannot be ripened in that region.

Grape growing, many men tell me, is overdone. I've seen many vineyards, but have not been down into the vine country proper. Grapes are the fruit that everybody eats in August, and September, and October — for all I know, in other months also. They are so abundant that it is cheaper to eat them than to let them alone. There was a notion here, half a dozen years ago, that money could be made in wine, and preparations were accordingly begun on a grand scale. Something of a business is done, but the markets of the world do not yet take vigorous hold of California wine. One finds it everywhere in the State, and a great deal of it is used; but, curiously enough, they tell me at the San Francisco Custom House that there will be imported this year not less than eight million dollars' worth of foreign wines and other liquors; which shows that the Californians like something stronger than tea and coffee, — stronger than their own home-made wines.

Correspondent Boston Daily Advertiser.

VINES FOR ORNAMENT.—The American Builder contains the following suggestions with regard to the use of ornamental climbers:—

“The expression which, of all others, it is most desirable to secure in the aspect of residences in the suburbs and country especially, is that of repose and settled domestic comfort. However imposing may be the architectural design, or however elaborate the artistic decorations of a building which is to be occupied as a dwelling, its appearance is of necessity cheerless, if not actually forbidding, until it is mellowed, softened, and subdued by the genial touch and presence of nature. The edifice can in no way be made to receive this effect so easily and fully as by wreathing it with vines, and suffering its outlines and ornaments to be seen through the delicate foliage and brilliant flowers which serve to soften down the angular formality of mere stone or brick. Their effect in heightening the charms of the humblest and plainest abodes is equally striking.

“Of the vines adapted to such use, the wistaria, the trumpet creeper, and the American ivy, are the best three that can be named. Unfortunately, we have no evergreen vine which will bear our climate, and give to our buildings in winter the warm and cheerful look which, farther south, is available by the use of the English ivy; but as an offset, we have more gorgeous beauty of flower and foliage than that vine ever displays.

“The wistaria is a perfectly hardy vine, and grows with rapidity, after getting well started in rich soil. Its foliage is delicate and beautiful, and the flowers hang in rich purple clusters, like grapes. It blossoms twice in a season, and in great profusion. When in bloom, it is such an object of attractive beauty as to excite the wonder and admiration of every passer. This vine, like others named, may be had at any good nursery, and, once planted in a good soil, requires no more care than the most common tree.

“The trumpet creeper is much like it in its general character, but has trumpet-shaped flowers, three or four inches in length, which give it a gorgeous look, and if mingled with those of the wistaria, by planting the two vines so that they may twist and twine together, the effect is very fine.

“The American ivy, known also as the Virginia creeper, has a very beautiful foliage, the leaves growing five together from a single stem. It is a very rapid climber, running ten or twelve feet in a season, if planted in rich soil, and sending off long branches which sway gracefully in the breeze, or attach themselves to adjacent points, and form rich festoons. The appearance of the vine throughout the summer is beautiful, and in the autumn its foliage assumes the most brilliant hues, as if to make its exit in a blaze of glory.”

Referring to this subject, the Working Farmer recommends also the Japan honeysuckle as being a pleasing vine for the embellishment of rural seats, and says,—

“It is deliciously fragrant, and retains its dark, lustrous foliage until mid-winter. Unlike many climbers, this honeysuckle and the trumpet vine are not liable to be infested with insects.

“The feathery clematis is a pretty creeper for walls and fences, and the common hop vine may be made to add beauty to the dove cote and martin boxes, when these are placed, after the old English manner, upon poles.

“There is a slender vine very common in the Eastern States, that is seldom used for ornamental purposes, to which we would especially invite the attention of the florist. It is called the ground-nut (*Apios tuberosa*). Its foliage is dark, thick, and very graceful. The flowers are remarkable. They are dark purple in color, and present a peculiar waxy appearance in dense, pedunculate, axillary racemes. Their odor is wonderfully sweet, and it is so powerful and inexhaustible as to fill perpetually the air. The vine entwines itself among low bushes in its native state. A florist of our acquaintance supplemented the charms

of her trellises of roses by entwining these vines among the branches. Her rooms were filled with fragrance, whenever the windows were thrown open, during the whole of the hot season. The flowers of the ground-nut vine last for a very long period. Remember this vine during your summer rambles."

We have seen the ground-nut under cultivation as well as in its native state, and it is certainly an elegant and graceful climber. The foliage is delicate, and the flowers have all the sweetness and strength of perfume ascribed to them. So far, however, from lasting a long period, or continuing through the whole of the hot season, the term of inflorescence is comprised in the brief space of two, or possibly three weeks. In addition to this, the plant increases rapidly, and once established, particularly in cultivated ground, might prove troublesome.

THE WESTERN POMOLOGIST. — We have received vol. i. No. 1 of this new journal, which presents a very neat appearance, is filled with interesting matter, and will doubtless exert a good influence in diffusing information upon horticulture and floriculture, to which it is devoted. The Monte Bello apple is described in it, by Mr. A. C. Hammond, of Warsaw, Ill., as a most magnificent fruit, of the highest quality, and a great acquisition. The tree is rather upright, moderately vigorous, healthy, very hardy, an early and constant bearer. Fruit large, oblate, very handsome; surface smooth; color yellow, striped and splashed with deep red, with which it is almost completely covered; flesh, white, fine-grained, tender, delicate, and juicy; flavor, mild, subacid, sprightly, vinous; quality very best; season September to December.

"CANCERINE" is the name of a new artificial manure, which is now being prepared in large quantities along the shores of Delaware Bay. It is produced from the bodies of a small crab, which is found in immense numbers all along the Atlantic coast. These little fish are first dried, and then ground up, and packed in sacks for sale. There are places where they can be shoveled up by the wagon load; and it is thought if the onslaught made upon them does not permanently reduce their numbers, the production of "cancerine" can be developed to many thousands of tons annually. *Mining and Scientific Press.*

VIRGINIA THE VINE LAND. — Mr. Marcus Buck, near Front Royal, Warren County, Virginia, has succeeded in making a beautiful Moselle wine of the Catawba, and his brandy, if not French (observes the Richmond Whig), is better than any so called that reaches these shores. He has a vineyard of twenty-five acres of the Ives grape, just coming into bearing, on which he founds great hopes. His belief is, that it will make a red wine equal to any ever fabricated in Burgundy. *Fredericksburg Herald.*

STUDY OF WEEDS. — A careful study of the weeds that spring up spontaneously in his fields will frequently prove more useful to the farmer than a heap of hand-books on agriculture. *Leibig.*

THE PROCEEDINGS OF THE AMERICAN POMOLOGICAL SOCIETY are just published, containing the President's Address, the Discussions of Fruits, the Reports of the Committees and Secretary, Lists of Officers and Members, and the Catalogue with the latest revision.

We have before spoken of the value of these reports, and the present volume confirms our belief that there cannot be found elsewhere such a condensed mass of pomological information of equal value. Every member of the society is entitled to a copy, and we feel quite sure that if their value was understood, the members of the society would be numbered by thousands instead of hundreds.

We were desirous to make some extracts from it for our pages, but where all is so good, we find it difficult to choose. There are, however, several essays and letters appended to the reports of the secretary, among which, we have been particularly interested in the account by Dr. Wylie, of South Carolina, of his experiments in hybridizing the grape. We had the pleasure of tasting several of his hybrid seedlings. A variety produced by crossing Hybrid Halifax No. 1 with the European grape was black; very sweet; bunch of moderate size; ripens in July, but does not set very well. Another raised from Black Hamburg, fertilized by Labrusca, had a medium-sized bunch; berry small or medium, round; color like Catawba; skin thick; pulp very tender and sweet. A cross between Black Hamburg and Delaware was more sprightly than the latter, and had a larger bunch. Hybrid No. 3, from Clinton, fertilized by Royal Muscadine, was the most remarkable, its honeyed sweetness excelling any grape we have ever tasted. The berry was small, transparent; color rosy amber; pulp tender; skin thin. These grapes may prove not to be adapted to the Northern States, but we cannot doubt that the results of Dr. Wylie's persevering labor will be to add to the catalogue of good grapes for southern climates, and we consider the probability of their adaptation to the north stronger than in the case of the Isabella, which was a native of South Carolina.

We shall in our next number present some extracts from Dr. Wylie's Essay, describing the results of his experiments, which we hope will find many imitators.

ILLINOIS STATE HORTICULTURAL SOCIETY.—This organization held its fourteenth annual meeting at Ottawa, December 14, 15, 16, and 17. The attendance was good from the various parts of the State, and increased by a good delegation from Iowa and Indiana, and smaller ones from Missouri and New York. The citizens of Ottawa took good care of strangers from abroad, and in spite of bad weather and worse roads, the meeting was decidedly a success.

The first day was occupied with the reports of officers and the revision of the apple, pear, and quince lists. The address of President Tyler McWhorter, who is one of the first pomologists, as well as one of the most genial and kind-hearted of the fraternity, was a document of special value, of which I hope hereafter to be able to send you some extracts. The treasurer's report showed nearly twelve hundred dollars in the treasury, which, added to the two thousand dollars annually appropriated by the State, gives us some three thousand dollars to meet the expenses of the next year.

But few changes were made in the society's lists of apples or pears. A good deal of complaint was made of most varieties of apples, growing out of their lack of fairness. The codling moth was generally agreed to be less prevalent than in former years; but the "scab" was worse, and seems to have affected many varieties hitherto exempt. Dr. Hull attributes this to a fungus, resulting from the opening made for its attacks by the *Aphis mali*, the eggs of which were unusually abundant in the fall of 1863. This abundance of the *Aphis mali* he attributed to the absence of the lady-bug, which had been destroyed, he thought, by the soldier-beetle, the follower and destroyer of the Colorado potato-bug. Tabulated, the result stands thus:—

Colorado potato-bug results in	soldier-beetle.
Soldier-beetle . . .	" " no lady-bugs.
No lady-bugs . . .	" " aphis mali.
Aphis mali . . .	" " fungus growth.

The theory is ingenious, and, though some facts go against it, may prove to be correct. It is worth examining into, at least.

The second day the cherry list was revised, and a very interesting paper on the Curculio read by C. V. Riley, State Entomologist of Missouri. Mr. Riley reviewed the agreed and controverted points concerning this mischievous insect, and exhorted all good fruit growers to use the jarring and catching practices, as well as to keep hogs in their orchards, so far as practicable. Mr. Barry, Dr. Hull, and others seem to differ considerably in their ways and means of catching and destroying this insect. Dr. Hull uses a large inverted umbrella, which he trundles from tree to tree. This is figured in the American Entomologist. John J. Thomas has sheets stretched upon light frames of wood. Ellwanger and Barry have only the simple sheet laid down and gathered up at every tree. Dr. Hull strikes the machine itself against the trunk of the tree to give the jar necessary to disturb the curculio, whilst Thomas drives a spike into the tree, and Mr. Barry saws off a limb up in the centre of the tree, against which they strike with a hammer or mallet. Dr. Hull's process is the most rapid, probably, and the others less injurious to the trees. Mr. Riley suggested that a spike made with a shoulder, to prevent its penetrating the tree from repeated blows, as theoretically best.

Mr. Barry, in the evening, read a paper on pears, that was listened to with great attention, and generally commended for its straightforward statements and practical common sense. Judge Brown, of Villa Ridge, near Cairo, added his own experience with varieties, which was also a very sound, practical document.

Officers were elected on the third day, after having divided the State into seven Horticultural or Fruit Districts, according to mean temperature and rain fall, and geological, botanical, and other differences. The following are the divisions, as now constituted:—

NORTHERN.—District No. 1. *The Fox River District*.—Comprehending Boone, Cook, De Kalb, Du Page, Grundy, Kane, Kankakee, Kendall, Lake, La Salle, McHenry, and Will, 12.—District No. 2. *The Rock River District*.—Bureau, Carroll, Henry, Jo Daviess, Lee, Ogle, Putnam, Rock Island, Stephenson, Whitesides, Winnebago, 11. Total, 23.

CENTRAL. — District No. 3. *The Illinois River District.* — Adams, Brown, Cass, Fulton, Hancock, Henderson, Knox, McDonough, Marshall, Mason, Mercer, Menard, Morgan, Peoria, Pike, Schuyler, Scott, Stark, Tazewell, Warren, Woodford, 21. — District No. 4. *The Grand Prairie District.* — Champaign, Christian, Coles, De Witt, Douglas, Edgar, Ford, Iroquois, Logan, McLean, Macon, Moultrie, Piatt, Sangamon, Livingston, Shelby, Vermilion, 17. Total, 38.

SOUTHERN. — District No. 5. *The Wabash or Centralia District.* — Clark, Clay, Crawford, Cumberland, Edwards, Effingham, Fayette, Franklin, Hamilton, Jasper, Jefferson, Lawrence, Marion, Richland, Wabash, Wayne, White, 17. — District No. 6. *The Kaskaskia or Alton District.* — Bond, Calhoun, Clinton, Greene, Jersey, Macoupin, Madison, Monroe, Montgomery, Perry, Randolph, St. Clair, Washington, 13. — District No. 7. *The Grand Chain District.* — Alexander, Gallatin, Hardin, Jackson, Johnson, Mansac, Pope, Pulaski, Saline, Union, Williamson, 11. Total, 41.

The officers for 1870 are the following: —

President — Willard C. Flagg, Moro, Madison County. *Vice Presidents* — 1st District: L. Woodward, Marengo, McHenry County. 2d District: Samuel Edwards, Lamoille, Bureau County. 3d District: A. C. Hammond, Warsaw, Hancock County. 4th District: Lyra Montgomery, Mattoon, Coles County. 5th District: J. W. Fletcher, Centralia, Marion County. 6th District: N. J. Hyde, Godfrey, Madison County. 7th District: A. M. Brown, Villa Ridge, Pulaski County. *Secretary* — O. B. Galusha, Morris, Grundy County. *Assistant Secretary* — N. J. Dunlap, Champaign, Champaign County. *Treasurer* — Jonathan Huggins, Woodburn, Macoupin County.

Mr. Meehan's paper on the Principles of Fruit Culture, was read in the evening, and from the scientific as well as the practical ability of its author, it attracted a good deal of attention. Advocating views somewhat heterodox in fruit culture, it provoked some criticism and denial of its positions; but of these I shall have to speak at another time.

There were a good variety of apples and pears on exhibition, most of the latter from Ellwanger and Barry, and also samples of the Chinese quince from Louisiana.

The next meeting will be held at Galesburg, in December, 1870.

W. C. F.

WESTERN NEW YORK: ITS HORTICULTURAL SHOWS, NURSERIES, ETC. — Perhaps there is no section of country that is more noted for its fruits, especially its apples, than Western New York, or the northern part of it. On the north lies Lake Ontario, and through the centre of the State is the noted chain of lakes that are so well known for their beauty — the Crooked Lake, Canandaigua, Seneca, Cayuga, and Owasco, well known to thousands from the large cities, who seek them for pleasure and recreation.

The country lying between these and Lake Ontario, and running from Syracuse to Buffalo, is unsurpassed by any other section for fruit-growing purposes. Mercury scarcely ever sinks to twelve degrees below zero; hence the trees growing

in this section are never damaged by winter, and are not hurt while young, and therefore have a high reputation throughout the whole country.

In the midst of this fruit region, and in the most favorable localities that can be found, are the great Rochester and Geneva nurseries. Their proprietors, among whom are Ellwanger & Barry, Frosts, Hookers, Littles, Moulsons, Maxwells, Smiths, Herendeens, Graves, Willards, Bronsons, Dudley & Merrills, etc., have become well known by reputation throughout every State in the Union, and in fact many parts of the old country.

Within the past week we have attended horticultural exhibitions at both places, and were particularly pleased with many things we saw, especially the one held at Geneva. This was only the second exhibition, and we think we can truly say we were as highly pleased with it as any we ever attended. Great taste was displayed in arranging the many fine paintings, bouquets, cut flowers, fruits vegetables, natural curiosities, etc., about the large hall. Nothing seemed to be overdone. Around the room on three sides, next to the walls, were tables filled with the finest apples, pears, plums, peaches, quinces, grapes, and full bearing raspberries. In the centre of the room was a splendid pyramidal table, terraced, each terrace filled with all kinds of cut flowers, bouquets, etc. Between this and the fruit table was a semicircle of tables laden with a beautiful display of verbenas, phloxes, zinnias, petunias, pansies, dahlias, lilies, etc. Maxwells exhibited over one hundred and fifty seedling gladiolus, and fifty varieties of roses; the Smiths and Graves; Selover, Willard & Co. also had a very choice selection of flowers on exhibition. Among the fruits was the finest lot (nineteen sorts) of exotic grapes we ever saw or tasted, entered by the last-named firm. The other two firms, and also other nurserymen and fruit growers, had upon the tables a choicel ot of fruits. Four young lads of Geneva exhibited cases containing the nests and eggs of forty-six kinds of birds, also shells, quartz, etc., and a fine case of butterflies, insects, bugs, etc., which were truly a great curiosity, and attracted attention from all. Isabella grapes were exhibited by J. D. Nellis, of Naples, perfectly ripened, which, considering the backward season, is worthy of note.

The Eumelan grape was also on exhibition, and so far as could be judged from specimens on the table, and vines that we have seen, we think it comes fully up to all that is claimed for it. Its disseminators certainly show their faith in it by sending it to all the horticultural exhibitions about the country, and we notice it takes the first premium wherever shown, which alone speaks well for it. Would it not be well for others who are introducing new grapes to show a like spirit?

May these horticultural shows become more frequent in all parts of the country, thus educating the masses up to a higher and fuller realization and knowledge of fruit growing, and leading the farmer to plant such, thus making his home more attractive and beautiful. If they would take more pride and interest in these things, they would make the old hearthstone seem dearer to their boys, and they would become closer bound thereto; we should hear less about the youth of the country seeking avocations and homes in the city, less of blasted hopes, ruined characters, and despoliated country homes; the hopes, the joys, and the anticipations of many a doting father, and kind, affectionate mother, would be more fully realized.

A. M. Purdy.

THE LAKE SHORE GRAPE GROWERS ASSOCIATION. — At the meeting of this society last week, I had a better opportunity of examining and carefully testing the Eumelan grape, and formed a more favorable opinion of its quality than I received from the specimens I tasted in Philadelphia. If the vine proves hardy and healthy, its earliness and superior quality, as compared with any other grape of its season, will render it popular and valuable. Rogers's Hybrid No. 5 was also on exhibition in fine condition, and was awarded a first premium. Members of the committee expressed the opinion that it was probably the best of all the hybrids; and from experience with it, and most of the other numbers in my grounds, I am inclined to concur in this opinion, and to add that it has also proved the hardiest in winter and healthiest in foliage. The Croton, white, and Senasqua, black, hybrids from Mr. Stephen Underhill, were also on exhibition, and were deservedly much admired, both for beauty and excellent quality. Should they prove hardy and healthy in foliage upon extended trial, they will be real and valuable acquisitions to our list of fine grapes. The quantity of fruit on exhibition was not equal to that of former years, but the quality was superior, very fine specimens of nearly all the popular varieties being on exhibition.

Geo. W. Campbell.

October 19, 1867.

OBITUARY. — Benjamin Dann Walsh, senior editor of the *American Entomologist*, died at Rock Island, Ill., on Thanksgiving Day, November 18. Mr. Walsh was born in Frome, Worcestershire, England, September 21, 1808, and was therefore in his sixty-second year. He graduated at Trinity College, Cambridge. Though his entomological career dates back scarcely a dozen years, how faithfully and perseveringly he labored the record of those years abundantly testifies. His constant aim was to rouse agriculturists to a sense of the immense losses they sustain from the depredations of insects, and to impress upon them the necessity of a more general knowledge of the habits of these pests. In September, 1863, in conjunction with Mr. C. V. Riley, he started the *American Entomologist*, which has done more to diffuse a knowledge of insects than any other publication. The account of the Apple Maggot, contributed by Mr. Walsh to this *Journal* (vol. ii. p. 338), is, so far as we know, the earliest published account of that pestilent insect.

We have only recently learned of the death of Joshua Pierce, of Washington, D. C., which occurred at his estate of Linnean Hill, April 11, 1869, at the age of seventy-four. Mr. Pierce's taste for horticulture was early developed, and continued through life, and he was for many years the leading horticulturist in the District. He was one of the founders of the American Pomological Society, at some of the earlier sessions of which we have met him, and well remember him as a gentleman of amiable disposition as well as enthusiastic in horticulture.

NOTES AND GLEANINGS FROM FOREIGN EXCHANGES.

DECORATIVE USES OF THE IVY. — The ivy may be readily grown and tastefully used in a dwelling-house. I once saw it growing inside the window of a wine shop in an obscure part of Paris, and on going in found it planted in a rough box against the wall, up which it had crept, and was going about apparently as carelessly as if in a wood. If you happen to be in the great court at Versailles, and, requiring guidance, chance to ask a question at a porter's little lodge seen to the left as you go to the gardens, you will be much interested to see what a deep interest the fat porter and his wife take in cactuses and such plants, and what a nice collection of them they have gathered together, but more so at the sumptuous sheet of ivy which hangs over from high above the mantel-piece. It is



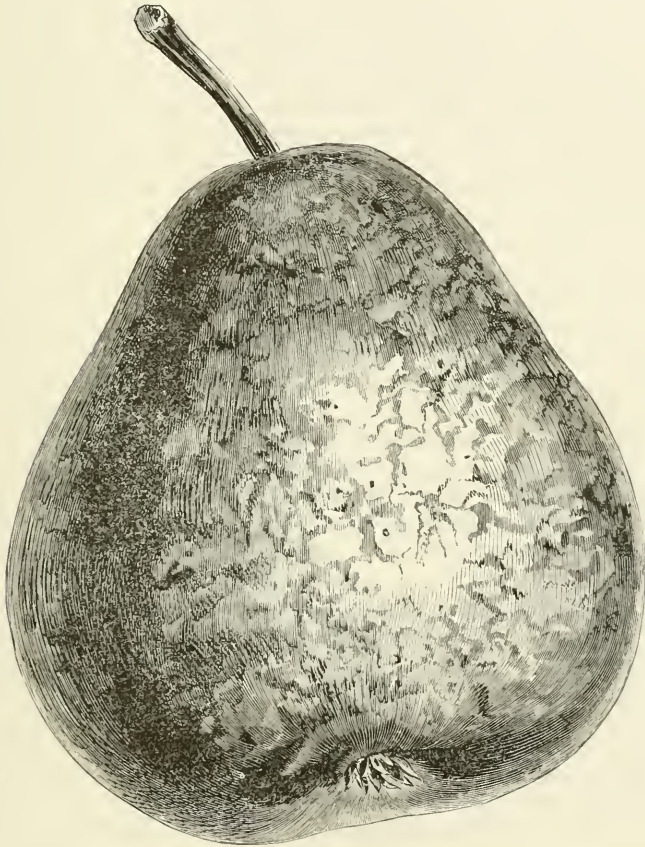
VARIEGATED IVY IN HANGING BASKET.

planted in a box in a deep recess, and tumbles out its abundant tresses almost as richly as if depending from a Kerry rock. The ivy is also used to a great extent to make living screens for drawing-rooms and saloons, and often with a very tasteful result. This is usually done by planting it in narrow boxes, and training it up wire-work trellises, so that, with a few of such, a living screen may be formed in any desired part of a room in a few minutes. Sometimes it is permanently planted; and in one instance I saw it beautifully used to embellish crystal partitions between large apartments.

Robinson's Parks, Promenades, and Gardens of Paris.

MIGNONETTE FOR WINTER-BLOOMING. — Everybody is partial to the delicious aroma of this simple flower ; every one would like to have it through the winter months : and yet all but a very few fail to have plants blooming at that season. Some nurse the plants to death ; others grow them in a temperature much too high for their wants ; and some run to the other extreme, and starve their plants. Now, to achieve complete success, mignonette should be sown three times ; say the middle of July, the middle of August, and the first week in September. The pots must be what are called four-inch, and be quite clean. Drain them thoroughly with rough bones ; fill with a compost of fresh turfy loam and one-third of rotten dung well incorporated ; and, if it is dry, make the soil quite firm. At the time of sowing, cover the seed with sandy loam, give a good soaking of water, and shade the pots until the plants come up. The pots should be placed in a pit or frame ; not that it is necessary that they be covered with glass at all times, but so that, in the event of heavy rain or boisterous storms, the plants may be protected from its force. Directly the plants are of sufficient size to handle them, turn out, retaining not more than five of the strongest plants in each pot ; and, should these be at all spindly or weak, earth them with a little dry soil, and water around the sides of the pot. There is nothing that mignonette is so impatient of as stagnant moisture around the collar of the plant ; and hence it is important that the drainage of the pots be effective, and the pots after the end of August be not exposed to heavy rains ; and, from the end of September until February, not a drop of moisture should fall upon the plants. Give what water may be necessary at the roots ; but, later in the season, do it so that they may be dry before the frame is shut up for the night. The plants first sown will be fit, if properly managed, to take a shift into six-inch pots the end of August : the second lot may be repotted the end of September ; but the plants last raised need not receive larger pots until February. By the end of September, the first raised plants should be strong and healthy : but, unless they be wanted, it will be wise to remove the flower-spikes directly they can be handled ; that will add materially to the size of the plant, and strengthen the bloom for the winter. Now, through the winter, the following rules must be observed in the management of mignonette. First, the place for the blooming-plants must be cool, and close to the glass ; plenty of air must be given ; but the plants must not be exposed to cold, cutting draughts, or the foliage will soon turn sickly. Secondly, water must be carefully used, giving sufficient, but not making the plants sodden ; and, thirdly, the temperature of the house should not exceed, by fire-heat, forty to forty-five degrees. Succession-plants are the best kept in pits or frames. Plunge the pots into cinder-ashes, water very cautiously, and give all the air possible without exposing the plants to rain. On any mild days, the sashes may be taken entirely off with decided advantage. Protect from frost on cold nights, and your success in growing mignonette will not be called in question. If the last sown batch receive a shift in February, they may be grown into very large specimens. A good pot of mignonette in the spring should be two feet to thirty inches high, and a bush quite as much in diameter. Weak guano-water may be used with decided advantage when they are in free growth. — *The Field.*

JOSEPHINE DE BINCHE PEAR. — This variety was found in a seed plot of Josephine de Malines made in 1851, and bore fruit for the first time in 1864. It is to M. le Chevalier Biseau d'Hauteville, a distinguished pomologist at Binche, that we are indebted for this fine acquisition.



JOSEPHINE DE BINCHE PEAR.

The tree is very vigorous and very fertile ; form regularly pyramidal ; branches robust, smooth, of a yellowish-brown pointed with grayish dots.

The fruit is of medium size, globular, much swollen, and flattened at the base, narrowing but little towards the summit ; the eye is large, deeply sunken. The skin is fine, laved and reticulated with brown on a clear yellowish ground. The flesh is half-fine, half-melting, of an exquisite perfumed flavor ; the juice is very abundant and very sugary. It is decidedly of the first quality, and ripens from the end of October to the end of December.

The originator of this variety has seen it growing on the quince only one year ; it seems to thrive pretty vigorously, but he does not recommend that stock, as it appears to him to be the destroyer of the new pears, enfeebling them and causing their premature degeneracy. This, however, will depend much on soil, climate, and exposition.

Illustration Horticole.

GARIBALDI AS A GARDENER. — A correspondent at Turin of the *Allgemeine Zeitung* publishes an interesting account of the results of the cultivation of the Island of Caprera by Garibaldi and his family. He says that Caprera has been converted by Garibaldi's labor and skill from a barren rock into the richest and most beautiful of gardens. There is a vineyard with fourteen thousand vines, mostly Piedmontese and Tuscan, though there are some magnificent specimens of the Malaga grape and of various Sicilian kinds. He has successfully planted lemon trees, orange trees, cypresses, pines, almond and olive trees. Mulberries, apples, pears, cherries, and peaches have proved a failure. The Indian fig (*Opuntia*) and the locust tree, on the other hand, have produced so much fruit that the pigs are fed upon it. There are also plenty of potatoes, and the general has lately taken to the cultivation of bees with great success. The island abounds with artichokes, which are used to feed the cows. The game on the island consists of quails, partridges, and wild goats ; the general has also introduced pheasants and wild boars. The fishing on the coast is very valuable. In the fields are numerous sheep and oxen, and these are allowed to wander all over the island, with the exception of six Cremona cows, which supply the house with milk and butter. Garibaldi also has a windmill, and a great number of agricultural machines given him by an English friend. Round his house are date trees, mimosas, pistachio trees, and thick bushes of laurel and myrtle.

STRAWBERRY RUNNERS. — It is an error to suppose that the first runner is less prolific than the second on the string. I invariably choose the first runner, and cut off the string beyond it. Some soils are so good that they drive the runner into foliage instead of crowns. This does not often occur. There is another error in the opposite direction, viz., that only the first runner is prolific. If the plant is not staminate (i. e., a male plant ; most of our European sorts are hermaphrodites), the last runner would be equally prolific, but it could be planted later, and hence would not bear so well as the early runner.

W. F. Radcliffe, in English Journal of Horticulture.

THE GREAT "FOREST TREE" OF MORAY. — A magnificent aboriginal pine (*Pinus sylvestris*) is, *par excellence*, known by the name of the "Forest Tree" to the frequenters of the forest of Darnaway, which for miles surrounds the castle of the same name, the northern residence of the Earls of Moray. The "Forest Tree" is fifteen feet in circumference, and rises to the height of fifty feet from the ground without a collateral branch, terminating in a vast spreading head, like a gigantic green tent, impervious to snow or rain. In summer its topmost boughs are covered with the blossoms of the white wild rose, which has climbed to the summit of this mighty tree.

Note in Poems by Charles Edward Stuart.

FLORISTS' FLOWERS. — The return of the great exhibitions is the occasion for the production of new florists' flowers, and these are putting in appearance with wonted profusion. At the exhibition of the Royal Botanic Society on the 19th ult., Mr. Turner was strong with new Continental Azaleas, the majority of them partaking of fiery hues. The darkest was *Éclatante*, deep red, a fine and strong hue of color much wanted; the flowers small and somewhat cupped. Next came *President A. Verschaffelt*, salmon-red, spotted with purple on the upper segment; a bold but somewhat loose flower. *Duke of Buccleuch* was in the same way, but slightly paler. *Frederick II.*, paler still, of a pale salmon-red hue, the upper segments plentifully marked with small blotches of rosy purple; a very free-blooming variety. *George Eyles*, still paler, and of a softer hue; a bold and showy, stout and well-formed flower; awarded a first-class certificate for its undoubted good qualities. *Le Paix*, a light rosy-purple flower, something in the way of *Charmer*, and certainly not equal to it. *Reine Marie Henriette*, pale pink, with narrow margin of white, the upper segments heavily marked in a striking manner with deep violet-rose (in the case of a few flowers, one or more of the segments marked with pale scarlet); a fine and bold flower, though somewhat rough looking, awarded a second-class certificate; and *Mrs. Turner*, a thin and somewhat flimsy-looking form of *Criterion*, scarcely so good in color.

Here, too, were seen the first representatives of the new show pelargoniums of the season. Mr. Turner had *Northern Star* (Foster), the lower petals glowing orange-red, with slight dark blotch in each; dark upper petals, with irregular margin of fiery orange; flowers small and somewhat rough; a valuable high-colored decorative variety, of vigorous habit. *Needle-Gun* (Hoyle), a showy painted flower, the lower petals violet-rose overlaid with orange, and painted dark red; upper petals good, regularly margined with a slight edge of pale rosy-crimson; free blooming and showy. *Herald* (Foster), lower petals deep orange rose, heavily painted with dark, glossy, dark top petals, with regular narrow edge of rosy-crimson; free blooming and good habit. *Heroïne* (Foster), soft rich pink lower petals, large pure white throat, upper petals blotched with dark close to the throat, broad margin of deep pink lit up with orange; good habit. *Lady of Lyons* (Foster), delicate pink lower petals, with very slight blotches of rose; dark top petals, margined with fiery orange, and slight edge of pink; a large and somewhat rough flower. That grand variety, *Troubadour* (Foster), was shown in excellent condition by Mr. Turner. Of fancy pelargoniums, Mr. Turner had *Marmion*, a very fine dark purplish-rose self flower, very slightly edged with white, and white throat; a striking exhibition variety. *Excelsior*, shaded rose upper petals, with a kind of blotch of violet towards the centre of the flower; lower petals rose, dashed with violet, and veined with white, and narrowly edged with the same, white throat. *Leotard*, a deep violet-pink self flower, slightly edged with white, and large white centre; very fine and free. *Agrippa*, white lower petals pencilled with pink, violet-pink upper petals, margined with white; free blooming and showy. A capital silver-edged pelargonium, named *Bright Star*, was also shown by Mr. Turner, the leaves are edged with creamy white, and the plant has bright orange-scarlet flowers, larger and much finer in quality than is generally seen in this class. *Miss Ingram Rose* also

received a first-class certificate : it was shown in fine condition, the flowers nicely expanded, and of a delicate blush-white, with a tinge of deep blush in the centre. Fancy Pansy Magpie, from Mr. Hooper of Bath, represented as a bedding kind, has large flowers of a bright purple ground, blotched and margined with pure white ; it is certainly novel in character, the flowers large and of good shape and substance.

The special prize and pelargonium show at South Kensington, on the 22d inst., was the means of bringing together a goodly number of new florists' flowers, in addition to the new variegated pelargoniums. Mr. Mann of Brentwood brought a batch of fine zonale pelargoniums, which quite maintained his reputation as a raiser of new kinds ; and the floral committee acted with great discretion in only awarding certificates to flowers of undoubted superiority. First-class certificates were awarded to Duchess of Abercorn, of Mr. Mann's batch, a flower of a rosy-salmon hue, shaded with orange on the upper petals, large, circular, well-shaped flowers, nearly an inch and a half in diameter, dark zonate foliage ; and to Illuminator, rich bright orange-scarlet, large, and very showy, and having dark zonate foliage and good habit. Other good flowers in this group were Lady Hope, pale salmon ; Charmer, salmon-rose ; Ariosto, bright orange-scarlet ; Christabel, pale salmon, shaded violet ; Lord Stanley, bright crimson ; Challenger, salmon ; Prince Teck, a fine scarlet variety, of a brighter hue than Lord Derby ; Prima Donna, orange-salmon and rose, large and showy ; Princess Teck, pale salmon, with light centre ; Beauty of Brentwood, salmon-rose, a fine flower ; Pandora, salmon-scarlet, flushed with orange ; and Ambition, orange-scarlet, very fine. Mr. Groom showed Mrs. Sach, white, tinted with pink about the centre. Mr. Thomas Laxton, Stamford, had a batch of promising bright flowers, the best being Sophia Clapton, salmon-rose, shaded with violet, large and showy ; Consequence, deep orange, very bright ; Imprimis, orange-crimson, showy and striking ; Vivid, in the way of Sophia Clapton, but darker ; and Nisi Prius, vivid orange-crimson, with dark zonate foliage. First-class certificates were awarded to the following double-flowering pelargoniums : Wilhelm Pfitzer, with large and full-fringed flowers, full and of good shape, and having a dwarf, compact habit of growth ; and Marie Lemoine, flowers large and full, and of a soft pale pink, habit good, a promising variety for pot-culture. The same award was made to Mr. Harman, Denham, for a variegated ivy-leaf pelargonium, named Mr. Lambert, a great deal in the way of Duke of Edinburgh, but with more yellow in the variegation ; habit robust and variegation good. The same award was made to ivy-leaf pelargonium *Willsii rosea*, one of the best of Mr. Wills's new hybrids, yielding flowers of a fine hue of rose, smooth, and quite as circular in shape as those of the ordinary zonale kinds. Mr. Turner contributed some new pelargoniums similar to those described above, and first-class certificates were awarded to Heroine (Foster), shown in fine condition ; and to fancy pelargoniums Excelsior and Agrippa, described above. The same award was made to Mr. William Paul for a silver-edged pelargonium named Waltham Bride, the mode of growth somewhat resembling that of Flower of the Day, and producing pure white flowers ; habit good.

Some gold and bronze and zonale pelargoniums were furnished by Mr. J. R.

Pearson, Chilwell, a raiser who has distributed some fine things in this way. Two of the latter are very promising: viz., Principle, having a fine shade of magenta-rose; and Margaret Wilson, salmon-scarlet, lit up with orange; both varieties of good habit, and having dark zonate foliage.

Two roses received first-class certificates, viz., climbing Rose Duchesse de Mecklenburg, with pale salmon rose colored flowers, from J. H. Arkwright, Esq., Hampton Court, Leicester; and to H. P. Mons, Woolfield, bright pink, suffused with rose in the centre of the flowers, which were large and full, a beautiful and delicate flower; this came from Mr. Turner. A much darker-colored flower was shown by Messrs. Paul & Son under the same name; the flowers appeared to be deeper in the build, and less globular in shape. It was thought that differences in the mode of cultivation might have caused this divergence, though by some it was fancied that they were two distinct flowers, one incorrectly named. — *R. D., in Gardener's Chronicle.*

NEW METHOD OF GROWING ROSES. — All the world loves roses: half the world grows them; some account therefore of a novel method of growing them will be sure to be acceptable. There is in the gardens of F. Pryor, Esq., of Digswell, Welwyn, which are under the able management of our excellent correspondent, Mr. William Earley, a rose-hedge about two hundred and eighty feet long. This hedge skirts one of the principal walks in the kitchen-garden, and, notwithstanding the heavy showers of rain and hail of the preceding day, presented on Wednesday last a charming mass of bloom. The hedge was originally a row of half-standards, of which the crimson Boursault formed the mass; this row was afterwards trellised over with wire to the height of about four feet six inches, and four feet in width at the bottom. Many of the original trees were then removed, and some of the best of the old and well-known sorts were planted in their place. They have all since been grown on what Mr. Earley aptly calls the "extension system." Plenty of wood is left in, and this is tied to the trellis, and all vacant spaces are filled by budding. The whole of the row is now completely covered with growth, and literally loaded with blooms in all stages of development. The following varieties, which form the principal mass, seem to be admirably adapted for the purpose: Charles Lawson, fine flowers and a very free bloomer; Lord Raglan, Comtesse de Chabrilland, first-rate; Blairii, No. 2, beautiful flowers, very free; Gloire de Dijon, profusely bloomed; Jules Margottin, grand; General Jacqueminot, Caroline de Sansal, Chênédolé, Anna Alexieff, all first-rate; the yellow and copper-colored varieties of the Austrian Brier; and last, though not least, the Manetti, now so much in favor as a stock, and which gives relief and variety to its more showy rivals. That this method of cultivation is a very successful one, there can be no doubt, as the result of Mr. Earley's skill amply proves this. As the trellising can be made to any height or width, the plan cannot be too strongly recommended for furnishing tall or dwarf edgings along the walks of either kitchen or flower gardens, or even to form back rows in ribbon-borders; and there is no doubt it would succeed equally well on the outskirts of shrubberies, which sometimes present a very rough appearance near the ground. — *Gardener's Chronicle.*

LARGE FUCHSIA. — It may not be generally known that the Fuchsia endures the winters of the south of Ireland in the open ground. The following extract from the *Floral World* gives an account of an enormous specimen : —

“Friends who have lately visited me here (Valentia) encouragé my conceit about the size of my fuchsias. I have just measured one plant of Riccartoni which was planted in the year 1854, on a sloping grass bank in my flower garden. It measures just ninety feet in circumference, taken around the extremity of the branches. It would certainly have measured eight or ten feet more if it had not been cut away to prevent it from encroaching on a gravel walk. The garden slopes to the sea, with an easterly aspect. The plant in question stands, perhaps, ten or twelve yards from the edge of the sea bank.”

SUPERIOR BEDDING PELARGONIUM. — Among a rare collection of scarlet pelargoniums, by far the most beautiful bedder I have this year is Bayard, raised by Mr. Pearson, of Chilwell. In a trying situation, and through two months of a trying season, whether in heat or cold, wind or rain, it has been in brilliant beauty, the trusses many and large, and the intense crimson unimpaired. My gardener finds it equally good for forcing ; and, indeed, like its namesake of old. I think it *sans reproche*. *Sans Peur*, in *English Journal of Horticulture*.

NEW PLANTS. — *Dendrobium densiflorum*, var. *albo-lutea* (Bot. Mag., t. 5780). — “Of all the varieties of *Dendrobium densiflorum*, this is certainly the most profuse flowerer, and in many respects the most elegant, resembling *D. Farmeri* in the laxer raceme and contrast between the color of the lip and the sepals.”

Moræa bulbifera (Bot. Mag., t. 5785). — A beautiful yellow-flowered species, one of the most beautiful of the genus.

Griffinia dryades (Bot. Mag., t. 5786). — A fine species, quite eclipsing the noble *G. Blumenavia*. The scapes contain ten to thirteen flowers, of a fine, clear, blue-lilac color, white in the centre.

Aphelandra acutifolia (Bot. Mag., t. 5789). — A glorious stove shrub, of the acanthaceous order, native of Peru, New Granada, and Surinam. The leaves are oblong-ovate, four to eight inches long ; the flowers in terminal spikes, of a bright, deep, vermilion-red color.

Epidendrum conspicuum (L'Illust. Hort., t. 592). — A good figure of this pretty orchid, interesting because of its neat habit and the fresh, mauvy tint of its flowers, which is enhanced by the pleasing harmony of the deep, puce purple lip.

Lasiandra macrantha (L'Illust. Hort., t. 594). — This magnificent Pleroma (for such it may be designated) has been several times noticed in these pages. The present figure shows a flower measuring nearly six inches in diameter, the color an intense cobalt blue, with shades of violet and purple. Striking as the picture is, it falls far below the beauty of the flower ; in fact, it is not in the power of the artist to portray it accurately. One of Mr. Bull's best acquirements. Every lover of fine plants should have it.

Clerodendron speciosum hybridum (L'illust. Hort., t. 593). — A splendid hybrid, with deep violet rosy, shaded with vermilion flowers, the calyces of which



CLERODENDRON SPECIOSUM HYBRIDUM.

are of a pale pink color, marked with dark stripes. Will be invaluable for specimen culture, for decoration and exhibition. For the introduction of this beautiful plant we are indebted to Mr. William Bull, of Chelsea. *Gardener's Magazine*.

SPRING GARDENING.—A few days ago, I had the pleasure of calling at Crabwood establishment, near Southampton, the residence of Rolles Driver, Esq., to see my friend Mr. Higgs, the gardener there, who has for some years past paid considerable attention to spring gardening, and to selecting the best subjects for that purpose. Mr. Higgs has now for several seasons been able to produce very pleasing and harmonious results from simple means, and those, too, of a very inexpensive nature; so much so, that the materials employed by him are within the reach of every person who has a garden, and is able to devote a portion of it to ornamental purposes. The gardens at Crabwood are on a small scale; but in small gardens we often meet with meritorious results. The flower-beds here are close to the south side of the mansion, at perhaps a dozen yards or so distant from the windows: a gracefully curved walk intervenes between the beds and the house, which winds along until passing out of sight amongst the shrubs beyond the flower-garden. This flower-garden has about fourteen beds cut out in grass, having ample space between the beds for promenading with ease; and beyond the beds there is enough space to allow of the modern game of croquet being played: beyond this there is an irregular and diversified outline of shrubbery, which, when seen from the mansion, seems, as it were, to hold and incase this little gem of spring flower-gardening in a living frame of shrubs. There is one great point to be observed in connection with spring gardening; viz., that the plants employed must all be in flower about the same time; and, to secure this end, Mr. Higgs principally uses the following four: *Silene pendula*, pink; *Myosotis sylvatica*, blue; *Limnanthes Douglasii*, yellow; and *Saxifraga granulata*, white. These four are those principally used in the flower-beds. In some of the borders, a small yellow *Cheiranthus Marshallii*, and a scarlet daisy, which yields an abundance of flowers, are used. In the largest beds, Mr. Higgs uses three colors: for instance, next to the grass is the yellow *Limnanthes Douglasii*; next is the blue *Myosotis sylvatica*; having the taller-growing and more showy pink *Silene pendula* in the middle of the bed. Some plant the white saxifrage in the middle; but, in any bed where the silene is used, it grows too high to allow of the saxifrage being seen to good advantage. These plants are all hardy; and, when in flower, a shower of rain or a moderate amount of frost does not detract from the beauty of their display.

G. Dawson, Shirley, Southampton.—I had the pleasure of walking through the gardens at Osberton last week: and I say Mr. Bennett may well be proud of his spring bedding; for it is certainly a grand success. As the Osberton Gardens are so well known to most of your readers, I may be allowed to offer a few remarks on the spring bedding, &c. In the kitchen-garden was a ribbon-border of cerastiums, primroses, variegated kale, and wallflowers, which looked well. A design with colored walks in front of the conservatory was arranged with *Viola cornuta*, primroses, tulips, and hyacinths; some little diamond-shaped beds at each end of the conservatory being planted with a few choice flowers, and edged with that little gem, the blue gentian. Leaving the conservatory and rose-garden, we entered upon a long walk with beds on each side, a round and a long one alternately: the round ones are planted with purple, blue, and yellow pansies, hepaticas, daisies, polyanthus, euonymus, and a fine hardy plant named

Heuchera, which will be much sought after for spring bedding, and edged with cerastium; the long beds are filled with similar materials, with the addition of *Silene*, *Myosotis*, and *Arabis alpina*; and the whole of the beds on either side are planted to match. This is the most charming display in spring bedding I have seen. Passing over the bridges, and through the rhododendron grounds, &c., we reached the top terrace, covered with spring flowers, which I need not enumerate, as every sort of spring flower is brought into requisition at Osberton. Leaving this garden, we have a peep at a little one enclosed with yew hedges, where the same lovely sight presents itself.—flowers everywhere. I could almost have fancied that it was summer, and we were in the height of the bedding season. In addition, I may mention that the general stock of plants in the houses, and especially some fine specimens of crotons, sanchezias, dipladenias, allamandas, &c., pot vines, melons, and cucumbers, looked remarkably well. Strawberries are forced extensively here, the favorite being President. The pines are showing fruit nicely, and the peaches are swelling their fruit vigorously. *J. H. C.*—Having read with much interest from year to year the articles in your pages describing the beauties of Cliveden and Belvoir in the spring of the year, I have often wondered and regretted that we had nothing of the sort to see in this country. Lately, however, I was agreeably surprised to learn, that in the neighborhood of Dublin, at the marine residence of Lord Gough, “spring gardening” had been carried out to a large extent for some years past. Recently I took the opportunity of calling, and was so much pleased with what I saw, that I am induced to send you a few particulars, which may be of interest to some of your readers. St. Helen’s, which was the late Lord Gough’s favorite residence, is situated close to Booter’s Town, on the south shore of Dublin Bay. The mansion stands on elevated ground facing the north-east, and is surrounded by a demesne of a hundred and twenty acres, densely wooded, especially to the east and north-east. The ground undulates in the most picturesque manner. The terrace and flower-garden, which is four hundred feet square, lies directly under the north-east front of the mansion. Standing here on the upper terrace, we get a full view of the “spring bedding.” The second terrace, which is composed of two square grass-plats, has a large circular bed in the centre of each square, with four oval and four circular beds round the edges of the squares. The large central beds at once challenge attention, and are effectively filled with crimson beet as a centre, surrounded by scarlet anemones, and next three circles of color composed of *Myosotis sylvatica*, *Alyssum compactum*, and *Aubrietia purpurea*, the latter very effective indeed. The other eight beds in each square are bedded so as to produce various designs in corresponding pairs, and are planted with golden-drop wallflower, *Iberis sempervirens*, polyanthus, *Arabis variegata*, double and variegated-leaved daisies, *Alyssum compactum*, *Aubrietia purpurea*, cerastium, Cliveden blue pansy, dark wallflower, *Stachys lanata*, and *Myosotis sylvatica*. There is a chain of beds on each side of this terrace, each bed being filled with plants of distinct colors; viz., double white daisy, *Saponaria calabrica*, *Alyssum*, *Arabis variegata*, *Myosotis*, and *Aubrietia variegata*. The angles at the back of this chain are filled with dark wallflowers edged with cerastium; the front angles being dark crimson beet and *Arabis va-*

riegata. The straight chain of beds on this terrace corresponds with a half-circle chain of twenty beds on the lower terrace: each bed has a centre plant of box eighteen inches high, separately filled with *Alyssum compactum*, *Iberis*, *Myosotis*, *Cheiranthus*, *Aubrietia*, polyanthus, *Arabis variegata*, *Nemophila*, *Saponaria*, &c. The back angles are filled with wallflowers and variegated *Arabis*; the front ones being very effectively arranged with crimson beet, edged with *Stachys lanata*. The two corners beyond this half-circle of beds are elegantly ornamented with chain arbors, each arch being covered with climbing roses. These terraces, which are bounded and raised by a handsome granite wall, have three borders four hundred feet long, which are very effectively planted with large clumps, two feet wide each, of *Aubrieta purpurea*, *Alyssum compactum*, *Arabis variegata*, and *Cheiranthus Marshallii*. The east and west borders are edged with *Myosotis sylvatica*, and the north border is edged with *Stachys lanata*. The effect of these large clumps of telling colors is very striking and beautiful. A flight of steps on the north side opens on to an ornamental croquet-ground, from which a lovely view of Dublin Bay is commanded, with the "Hill of Howth" to be seen in the distance. Mr. Webby deserves great praise for having in a few years brought this place to its present excellent condition, as it formerly had the reputation of being an almost neglected wilderness.—*A. C. Dublin, in Gardener's Chronicle.*

PELARGONIUMS.—The past week has put to the test the cold-enduring powers of the tricolor and bicolor pelargoniums; for doubtless many, like myself, were tempted by the genial state of the atmosphere of last Monday week to venture upon bedding them out. It was stated by Mr. Grieve, at the discussion on the 22d ult., that they required a high temperature; in fact, that they should not be exposed to a lower one than fifty to fifty-five degrees. Could any thing possibly be more trying for them, than, after only four days' removal from a warm house, to have been exposed (perfectly unprotected) to such a day of bitter cold rain as Friday last, followed by three successive nights of frost, the thermometer registering four degrees of frost on the very bed they stood in?—which bed, numbering two hundred and forty plants, consisted of the best of the old tricolors and bicolors, viz. Lucy Grieve, Lady Cullum, Sophia Cusack, Sophie Dumaresque, Queen Victoria, Edwinia Fitzpatrick, Countess of Tyrconnell, Jock o'Hazledean, Louisa Smith, Italia Unita, Sunset, Mrs. Pollock, &c., with very many seedlings of my own, both tricolors and bicolors, some of which are but a few months old and a few leaves high. All seem to have passed through this awful ordeal almost uninjured: the bicolors seem to have felt it more than the tricolors; here and there a young leaf upon them is slightly touched. It would be interesting to know if pelargoniums of these classes have stood equally well in other and more exposed situations, because, if so, it would make one question whether we are not coddling them too much, — making them, in fact, more tender than they otherwise would be; and whether they are, or would not under other treatment prove to be, a much more easily managed and valuable class of plants for bedding than we give them credit for being.—*John Denny, Stoke Newington, June 2, in Gardener's Chronicle.*

ACANTHUS LATIFOLIUS. — This plant, observe MM. Vilmorin, Andrieux et Cie., in their *Fleurs de Pleine Terre*, is, without doubt, only a variety of *Acanthus mollis*, and is distinguished by the larger development of all its parts. Its leaves are numerous, ample, rising to a height of about two feet, and forming, when mature, tufts of foliage of more than a yard in diameter. Its robust stems attain from five feet to six feet in height, simple or slightly branched, and terminated by a long spike of flowers, these being somewhat more highly colored than in the ordinary form of *A. molle*. One of the peculiarities of this plant is to continue growing all the year, flowering from June to August. Lifted and potted in the autumn, its leaves



ACANTHUS LATIFOLIUS.

remain green throughout the winter. It is somewhat tender in the climate of Paris, but is one of the most beautiful plants for the decoration of lawns and flower gardens.

Both the name of *A. latifolius*, and that of *A. lusitanicus*, under which it is also known, appear to be of garden origin.

We have to thank Mr. Robinson, whose handsome volume on French gardening we have had several opportunities of commending, for the use of the annexed cut, which shows the fine picturesque aspect of this *Acanthus latifolius*. It is

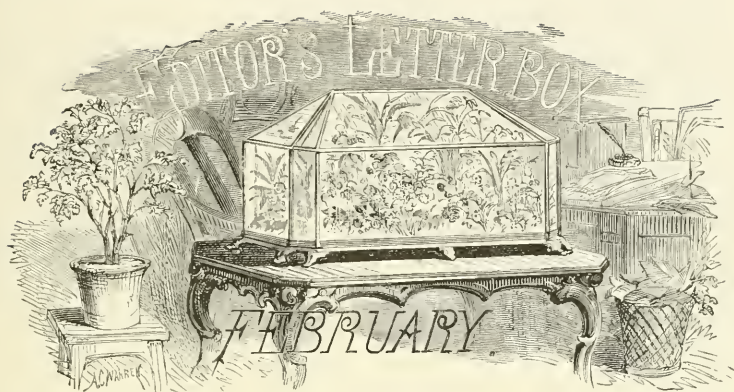
one of those things that will not disgrace any position, and will prove equally at home in the mixed border, in the sheltering angle of a wall, or projecting in front of a shrubbery. Its quality of retaining its leaves till the end of the season is a strong point in its favor; and it is just one of those plants which, if a suitable spot for them can be found, are best planted and suffered to grow on undisturbed. Hence, as it is moreover liable to suffer from extreme cold without it is provided with some protection, such a position as the front of a greenhouse or conservatory, close to the sheltering wall, would be just adapted for it. We need add nothing in praise of its beauty, which is well indicated in the wood cut.

M., in Florist and Pomologist.

LEROY'S DICTIONNAIRE DE POMOLOGIE. — Following closely on Mr. Downing's revision of the Fruits and Fruit Trees of America, we have the second volume of Mr. Leroy's Dictionary of Pomology, completing the pears, of which he has described nine hundred and fifteen varieties. The next volume will contain the apples, services, medlars, and quinces; the fourth, the stone fruits; and the fifth, the grapes. The descriptions are very full, and every one is accompanied with an outline, while of kinds which are apt to vary in form, two types are given.

The number of varieties of pears described is very nearly as large as given by Mr. Downing, but the apples, unless the descriptions are very much condensed, must be far less in number than in the American work, to be comprised in a single volume.

Although such a work, from its size and price, can never come into the hands of the majority of fruit growers, and indeed contains much that would be of little value to those who only wish to cultivate a select few of the best varieties, those who have given their lives to the study of pomology will not fail to appreciate and admire the industry and research which have drawn from every source, ancient and modern, the materials for what we may pronounce an exhaustive history and description of all these multitudinous varieties of pears.



THE Editors of Tilton's Journal of Horticulture cordially invite all interested in horticulture and pomology, in their various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed; we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

W. D., East Medway, Mass. — The Massasoit, or Rogers No. 3, is a good bearer; not as good as the Wilder (No. 4) or Agawam (No. 15), which, especially the Wilder, are remarkably great bearers. This is the opinion of Mr. Rogers, the originator; but while you have found the Massasoit more healthy in foliage, and less affected by mildew and rust than the others, with him the case is reversed. The Massasoit is, however, undoubtedly one of the earliest grapes.

EDITOR OF JOURNAL OF HORTICULTURE.

If you please, I would like to ask, through the Journal, a question which some of your readers who have had experience in such matters will, no doubt, be kind enough to answer.

I wish to know whether or not a stream that affords twenty gallons of water per minute would, with a fall of six feet, be sufficient to turn a light wheel with force enough to work a pump and raise water twenty or twenty-five feet?

And if answered in the affirmative, I should be doubly thankful for a few hints as to the best manner of constructing such an arrangement, kind of pump, etc.

Truly yours,

F. D. Thurman.

ATLANTA, GA., December 23, 1869.

We are not much versed in such matters, but we should suppose a hydraulic ram would effect the object our correspondent has in view in the cheapest manner. Doubtless there are many among our readers who have, or know of, such an arrangement as he wishes, and would be happy to give him the desired information.

J. E. TILTON & Co.

ENCLOSED please find three dollars, subscription for Tilton's Journal of Horticulture for 1870, which please send to my address. Please also inform where the ferns mentioned in your number for the present month, pages 374-6, can be procured; and oblige your friend.

Respectfully,

Joseph Bancroft.

WILMINGTON, DEL., 12th Mo. 25th, 1869.

Messrs. Hovey & Co., of Boston, have all or most of the ferns described in our December number, and probably most of the leading nurserymen in the country could supply them.

J. C., Fishkill, N. Y. — The specimens of *Selaginella* were misplaced when they came to hand, so that we cannot designate them by the numbers; but the finely cut species is *S. lepidophyllum*, and the broader leaved *S. stolonifera*.

W. G., Cambridge, Mass. — When we answered your query about the Canada plum in the December number, we knew we had seen somewhere a statement in regard to its cultivation and varieties, which we endeavored in vain to recall; but we have since come across it. It is in Nuttall's continuation of Michaux's *Sylva*, vol. ii., p. 20, and is as follows: —

"When ripe it contains a very sweet, thin pulp, with the disadvantage, however, of having a thick, bitterish acerb skin; but by cultivation it is considerably improved, and the fruit is sometimes, as Dr. Darlington remarks, as large as a common apricot. In Upper Canada, where it was formerly cultivated, I have seen as many as twelve distinct varieties in the same orchard. It is also free from the attacks of insects, which have proved so fatal to nearly all the cultivated plums. In the western part of the State of New York it is very common, and in some instances (as it appeared to me in 1810) it has been cultivated by the aborigines, around their dwellings, in the same manner as the Chickasaw plum."

R. C. T., Nauvoo, Ill. — You will find difficulty in wintering palms in a cellar, unless it is warm, dry, and light. You can, however, grow them very well in the parlor, where many species grow well, and are very ornamental.

The following species are among the hardiest and most easily grown: *Latania borbonica*, very cheap, and a magnificent plant when well grown. *Latania rubra*, rather more tender, but most beautiful. *Chamærops Fortunei*, *humilis*, and *tomentosa*, all very hardy. *Areca sapida*, the cabbage palm. *Corypha australis*, a fine fan palm. *Thrinax parviflora*, a very beautiful plant. *Phœnix dactylifera*, *reclinata*, and *sylvestris*, are all fine. *Livistona olivæformis*, a splendid fan palm, but somewhat tender. *Cocos nucifera*, the cocoanut palm, may be easily raised from the nut, but is impatient of cold. The date palm is *Phœnix dactylifera*. *Chamærops Palmetto* is a native of the Southern States. *Chamærops humilis* is the hardiest of all, and is the only palm indigenous to Europe.

Mrs. M. S. B. C., Northampton. — The only sure cure for green fly is smoking the infested plants with tobacco. The simplest way, where there are only a few plants, is to put some live coals on an old plate, throw some damp tobacco on the coals (be careful it does not blaze), and covering the plants and the plate of tobacco with a flour barrel, let them remain in the smoke for ten minutes, then syringe or shower the plants thoroughly. Moisture is the preventive of red spider, and if your plants are frequently showered, say twice a week, you will not be troubled with this pest. Of course, in a parlor you cannot shower them; but lay the pots on their sides in the kitchen sink, and you will have no trouble.

Idem. — You can procure the new Coleus from Peter Henderson, New York, and seeds of the new Primulas and Golden Feverfew (which is *Pyrethrum parthenifolium aureum*) from B. K. Bliss, of New York, or of seedsmen generally.

Sow the Feverfew about April 1, and the plants will be in good condition to plant out by the middle of May. The new Coleus will be expensive this year; but the seed of the Primula and Feverfew cost only twenty-five cents a packet.

C. F. H., Waterville, Me. — The best method of glazing sashes for garden use is to *bed* the glass in putty, afterwards removing the superfluous putty beneath, and *all* that above. The sash above should be thoroughly painted, and kept so. It seems hardly necessary to say, as every glazier knows, that the sashes should receive a thin coat of paint before glazing, as otherwise the wood will absorb the oil from the putty, which will not then set firmly. To one who has never seen sashes glazed as above described it looks insecure, but the method has been thoroughly tried, and is now generally adopted.

We do not know that rubber is used in any form, and think that if it is, it must be only by amateurs on a small scale.

J. C., Lawrence, Kansas. — The Royal Ascot grape is advertised in the Journal, by Mr. George Such, of South Amboy, N. J.

PEARS IN OREGON. — I notice in your account of the meeting of the Pomological Society, in the November Journal, you speak of pears weighing twenty ounces. We have pears that weigh four pounds, and some five pounds. I wish you could see some of them.
G. W. C., Portland, Oregon.

We wish we could see some of these enormous pears. We recollect seeing a monstrous specimen from California a few years ago, but we think the weight was far short of five pounds. But how about the quality of these monsters?

MILDEW ON GRAPES. — I have read accounts from all parts of the country of the mildew of one or all varieties of grape grown in each locality the last wet season. My experience being more favorable, I thought it worth notice. On one of our lake shore sand ridges I set out, two years ago next March, on a new clearing, *without trenching or ploughing*, five thousand grape roots, of the following varieties: Delaware, Iona, Israella, Allen's Hybrid, Diana, Norton's Virginia, Wehawken, Martha, Joanac, and Black Hamburg. They have all grown finely, without rust or mildew, notwithstanding the extremes of drought the first season and wet this year. So mild are our winters that the vines are not taken off the trellis. Even Black Hamburgs do not winter-kill. I picked unfrozen Delawares December 1.
 Yours truly, *H. E. B.*

SOUTH HAVEN, MICHIGAN, December 3, 1869.

A CORRESPONDENT informs us, in reply to the query of "Ruralist" in the Journal for October, 1869, that it requires four quarts (dry measure) of fresh black cap raspberries to make a pound of dried fruit. Doolittle's were the kind used.

W. P., Enfield, N. H. — The lighter colored of your two apples is the Westfield Seeknofurther; the other, neither we nor several of the best pomologists in the country, to whom we have submitted it, have been able to identify.

BEAT THIS WHO CAN. — I picked from a four-year-old Delaware vine forty-five pounds of luscious ripe grapes, of the finest quality I have ever seen, berries unusually large. The vine covered a trellis eight feet long and four feet and a half high.
W. C. B.

GLEN ISLAND, ALBANY COUNTY, N. Y.

This is certainly an enormous crop, and we would like to know the effect produced on the vine next summer by bearing it.



KANSAS FRUITS.

By ALEXANDER HYDE, Lee, Mass.

THE award of a gold medal, by the Pennsylvania Horticultural Society, to Kansas, for her display of fruits at the recent session of the American Pomological Society, in Philadelphia, has turned the attention of fruit raisers to this land of promise. We have been accustomed to think that California was the Paradise of fruit growers as well as the Eldorado of gold-seekers; but a formidable rival to this distant sunset land has sprung up in the very heart of the country. We have recently made a flying trip to Kansas, have examined her fruits in the cellars of the farmers and the fruit stores, have communed with some of her prominent horticulturists, studied her climate and soil as well as we could at this unfavorable season; and some of the lessons we learned may not be uninteresting to the readers of the *Journal of Horticulture*.

In the first place, the Kansas fruits, especially the apples, far surpassed our expectations. We had heard President Wilder expatiate

on the beauty of the exhibition at Philadelphia ; but the half had not been told us. It is not difficult in any state or county to select, in ordinary fruit seasons, specimens of pears, apples, and grapes which are large and fair, and will make, with the aid of "the art of putting things," a pyramid that shows off to great advantage. But when we went into the cellar of the Messrs. Farrell, who are large fruit dealers in Leavenworth, and saw the bins of apples and pears, just as they were brought in by the farmers in their lumber wagons without springs, and only a little straw on the bottom to keep them from bruising, we were convinced that the pyramid at Philadelphia was no humbug, and that the gold medal was well merited. The season for pears was pretty much over, but the apples were large, fair, tender, and high-flavored. The Messrs. Farrell have sold this fall two thousand barrels of apples, and thought we could not find a wormy specimen among the large stock now in their cellar ; but we did find, after considerable examination, the tracks of a worm.

We afterwards visited the home of Mr. William Tanner, President of the Kansas Horticultural Society, and in his cellar we found no signs of the apple worm, but abundant evidence that the soil and climate of Kansas are in the highest degree congenial to the production of the apple — the king among fruits. Mr. Tanner has five thousand apple trees, and some two hundred varieties, and among them were some that were new to us. The Kansas Keeper, that holds good till May, and the Chronical, that continues sound the whole year, he considers promising fruits. The Kansas Queen, a seedling from the New York pippin, and the Lady Finger are also fine apples. Most of the varieties that grow east also do well in Kansas ; but it was a little difficult to recognize our old friends, as they had grown so portly by transportation to a more genial soil and climate. Virgil was not more astonished when, leaving Mantua, he first saw Rome, than we were to see the large Northern Spys and Yellow Bellflowers. The poet thought that one city must be like another city, and we thought one Spy must be like another Spy ; but the Kansas Spys seemed more like small pumpkins, and the ribs of the Bellflower stuck out like the sides of a fat ox.

Late keepers with us are fall or early winter apples in Kansas; thus the Rhode Island greening is an autumn fruit there, and the Roxbury Russet is best in January, while the Chronical is so hardy that it will remain on or under the tree all winter without injury. Mr. Tanner considers the New York pippin as the best market apple in Kansas, but prefers, for family use, the Winesap and Jonathan. The Spitzenberg we have always considered the highest flavored apple at the east, and for cooking unequalled, but have seldom tickled our palate with it uncooked, as it is tough and indigestible. We were delighted to find our old favorite so tender in Kansas that we could eat it without any sensation of having swallowed lead.

We also visited the farm of Dr. Howsley, who was efficient in collecting the specimens for the Philadelphia exhibition, and accompanied Mr. Tanner to that city. Kansas is much indebted to Dr. Howsley for the development of her fruit interests, when the general impression of the first settlers was, that the state would have to rely upon Missouri for her apples. The doctor attributes the excellence of Kansas fruits very much to the climate, which is generally moist till August, so that the fruit gets a large growth, when the season usually becomes dry and remains so till November, thus developing the saccharine quality and vinous flavor to their highest extent.

The soil of Kansas must share with the climate the credit of producing her superior fruit. This soil is a black, deep, rich, clay loam, based on limestone, and having just sand enough in it to make it loose and friable. When dry, it crumbles in the hand, and feels as soft under the foot as a compost heap, and when wet, it makes mud of the consistency of putty. It gullies badly on the side-hills, and the little granules constantly rolling down the slopes of the ditches, indicate that porous nature of the soil which is so gratifying to the eye of an experienced farmer. Wherever we find this granulated appearance, we know that the soil is easily permeated by the air, and is the receptacle of the rich stores of fertility which the air contains. The Kansas soil is evidently adapted to fruit, as well as the Kansas climate. For centuries the rank vegetation of the prairies has either decayed, furnishing a rich deposit of vegetable mould, or has been burned, leaving

the ashes with their various inorganic treasures, which now reveal themselves in luscious peaches, buttery pears, large, high-flavored apples, abundant strawberries, and clusters of grapes that rival those of Eschol.

We have spoken more particularly of the apples, because we had ocular and gustatory demonstration of their excellence; but the pears and grapes were not all gone, and the canned peaches and strawberries proved what there had been in their season. The numerous vineyards bore evidence of proper attention to this most healthful fruit. Dr. Howsley assured us that the White Doyenné pear matures perfectly in Kansas, never cracking. That country is to be envied where this old favorite's fair cheeks are not deformed with cracks.

As to grape culture, there can be no doubt of its success in Kansas. The same dry, warm air, which develops the sugar in the apples during the latter part of summer, will mature grapes in perfection. This is not mere theory. We visited the vineyard of Mr. Grant — some two or three miles west of Leavenworth. This is situated on the east side of a bluff, and seemed in a flourishing condition. The Concord is the favorite variety, though the Catawba also does well. Most of the grapes are sold for the dessert, and the price varies from eight to twelve cents per pound. If the supply is more than the demand, the surplus is made into wine, for which no sugar is required. The vineyard of Mr. Rivard, covering three acres, yielded an income, in 1868, of thirty-two hundred dollars; and Marcus J. Parrott, the past summer, raised fourteen hundred pounds of Concords on an eighth of an acre, from vines three years old. The numerous wild vines, some of them of great size, running up the trees, also prove that Kansas soil and climate are adapted to grape culture.

Of course we tasted of the wines made from these grapes; but we do not profess to be connoisseurs in vinous beverages, and cannot give an opinion that will have authority. We can only say that they appeared to us light and pleasant, with little, if any, more intoxicating quality than our New England cider.

The Kansas fruit grower is thus far ahead of the pestiferous insects which put in a claim to the first bite at so much of our eastern fruit.

We saw no crescent marks of that little Turk, the curculio, on the apples; but we were told the plums gave evidence that he was advancing westward with the march of empire, and was already across the Missouri. We do not, however, apprehend much trouble from insects for many years in Kansas. Where trees grow so luxuriantly as they do in this virgin soil, they have the power of resisting insects, just as a man of vigorous constitution resists disease. When an animal, or vegetable, becomes enfeebled, then the parasites make their attacks with success. If this deduction from our limited observation is correct, then the most successful mode of resisting insects at the east is the thorough cultivation of our orchards, and keeping the fruit trees in vigorous health. But even the careful cultivators at the east must labor at comparative disadvantage with those at the west, as the former are surrounded with a multitude of old and neglected orchards, that are so many breeding-nests of insects. They may take never so good care of their trees, and still these trees will be much in the situation of a healthy man surrounded by those diseased.

Some may wish to know about the market for Kansas fruit. At present, the market, beyond the home demand, is in Western Kansas, Colorado, Iowa, and other western sections, where either the soil and climate are uncongenial to fruit, or the trees and vines have not yet come into bearing. The Messrs. Farrell, the great fruit dealers at Leavenworth, assured us that the market was unlimited. They paid fifty cents per bushel for apples, delivered at their store by the market wagons, in an unassorted and untidy condition; and after being assorted and barrelled, they commanded three dollars and fifty cents per barrel. The Kansas farmers are only beginning to learn that fruit is an object worthy of their careful attention. At present the great majority of the farmers are as careless of their orchard products as it seems to an eastern farmer they are of their flocks and herds. They are in the condition of the boy learning to read, who said he knew one letter now, and being asked what that was, replied, "Let her slide." If Kansas farmers do justice to themselves and to their facilities for producing fruit, an eastern, and possibly a European, market is open to them. The price of pears in Kansas last fall was three dollars per

bushel; and one farmer—John Gist—raised four hundred bushels, which were readily disposed of at this price. Fruit at these rates must pay better than wheat or wool, and the Kansas farmers will soon see it; for under their slouched hats they have keen eyes.

On the whole, we were well satisfied that the gold medal was justly awarded, and that there is a glorious future to the Kansas fruit growers. In developing this future the medal has greatly aided.

January 10, 1870.

IS THERE MORE THAN ONE VARIETY OF ASPARAGUS?

By FEARING BURR, Hingham, Mass.

NOTWITHSTANDING soil, location, and culture have a marked influence on the size and color of the sprouts, still we are satisfied there is more than one variety of asparagus.

In the same plantation, from the same stock of seed, and under like conditions of soil and situation, some shoots will be green, others purple, still others red, and we have sometimes noticed scattering plants almost pure white. Further than this, each successive year has proved these peculiarities to be in a good degree permanent, if not invariable.

If there are no varieties of asparagus, then one stock of seed will be as good as another, which we certainly do not believe. It may be, and probably is the fact, that these differences in size and color are not reproduced from seed; still we are convinced that large and stocky plants, as a general rule, will afford seeds which will produce finer asparagus than seeds from plants of an opposite character.

Our experience has shown that the seeds of asparagus *sport*; and this being the fact, there are varieties, though we confess them to be less marked and distinctive than are those of most classes of our garden vegetables.

THE SOLANUM AS A DECORATIVE PLANT.

By EDWARD S. RAND, Jr., Boston, Mass.

THE genus Solanum, which is the type of the large natural order Solanaceæ, is one of the most important in the vegetable kingdom, whether regarded as to its economic uses, or merely as ornamental and decorative.

The order comprises about sixty genera, mostly natives of tropical countries. It is especially distinguished for plants of narcotic and poisonous properties, and yet includes plants which form staple articles of food.

Solanum is a very large genus, comprising more than one hundred and fifty species, and hundreds of varieties. The best known is the Potato (*S. tuberosum*), too much cultivated as a vegetable to be considered as a flower, although the blossom is very beautiful, and no finer floral display can be found than a field of potatoes in full bloom. Next we have the Tomato (*S. Lycopersicum*) — or, as more properly named, *Lycopersicum esculentum*, which combines economic uses with great decorative properties.

It is only within a few years that the tomato became an article of food; but for a long time previous it had been grown in the flower garden for its rich red fruit, and was known as "Love-apple."

The large-fruited varieties now find their appropriate place in the kitchen garden; but the small-fruited kinds, such as the "grape," "currant," "cherry," and "pear" tomato, are singularly ornamental, and are worthy of a place in the flower border. They require, however, careful training to develop the full beauty of the rich clusters of fruit; but we will venture to say, that any one who has once had them under good culture will yearly leave a place for them in the garden. Their beauty is, however, entirely in the fruit: the flower is inconspicuous, and the foliage not showy.

Next we have the Egg Plant (*S. Melongena*) in its varieties, which, though not unornamental in flower, is valuable chiefly for its fruit. These are white, dark-purple, and striped, with all intermediate hues;

are round, oval, or long; and are very showy. In this country they are much used as a vegetable, but in England are chiefly employed as decorative plants. The scarlet-fruited egg plant, a native of the tropics, has recently been introduced from Portugal. It is a very showy plant, and when covered with the bright scarlet fruit, which is about as large as a hen's egg, is very ornamental. It is, however, rather a late variety, is quite tender, and, to perfect its fruit, should be started in a hot bed in early spring, and not planted out until the weather is warm.

S. Dulcamara, or Bittersweet, is a very beautiful plant, both in flower and fruit. It is a half climber, often growing five or six feet high, and, in its native habitat, rambling over bushes. The stem is woody, and the plant a hardy perennial. The flowers are in drooping cymes, purple, with a yellow spot at the base of each petal; the fruit in clusters, small, oval, and of a bright-red color. As the plant flowers all summer, and produces berries freely, a large plant, properly trained, is a very beautiful object. We have seen a trellis, five feet high, a mass of red berries and purple flowers, nodding from a rich mass of hastate and cordate leaves.

There is, however, one popular objection to the cultivation of this plant—the berries are very attractive to children, and are considered poisonous, although, to produce fatal results, a very large number would have to be eaten. This prejudice against the plant arises from ignorance, and has no real foundation in fact.

The Deadly Nightshade (*S. nigrum*), although doubtless poisonous, and characterized by Dr. Gray as a "homely weed," is not without beauty. The plant is annual with us, but in warmer countries is perennial, and, in a rich soil, makes a surprising growth. The flowers are white, not showy, and are succeeded by dark black fruits, about the size of currants. A large plant, in full fruit, is very ornamental; but as the berries are sweetish and very poisonous, we can hardly advise its cultivation.

It is singular, however, how climatic influences change the nature of plants. Of this the Black Nightshade is a case in point; for in Norfolk Island and in Russia the berries are eaten, and in the Isle of France, the leaves, so poisonous with us, are boiled and eaten like spinach.

The Horse Nettle (*S. Carolinense*) of the Middle and Southern States, although likely to become a troublesome weed, if not kept within bounds, is a very pretty plant, growing a foot high, with large, prickly leaves. The flowers are large, showy, blue or white, and are followed by orange berries. These three comprise all our native species, and of these, probably, *S. Dulcamara* and *nigrum* are naturalized from Europe. We have called *S. nigrum* "Deadly Nightshade," as it is with us popularly so known; but this name belongs properly to an allied plant — *Atropa Belladonna* — which is not indigenous to America.

S. esculentum and its varieties produce the fruit known in France as Aubergines, or Brinjals. These are occasionally shown at our horticultural exhibitions, usually marked, "For a name." They are oval, about the size of a goose's egg, and of a rich scarlet or purple color, and full of seeds, embedded in a purple, agreeably-tasting pulp.

The plant is tall, attaining a height of six feet, has large leaves, small flowers, and, when in fruit, is very ornamental. Plants raised from seed in spring, grown well during the summer, and protected through the winter in the greenhouse, will flower and perfect fruit the next summer.

The Jerusalem Cherry (*S. pseudo-capsicum*) we have before taken occasion to commend as a decorative plant. It is a native of Madeira, and has been in cultivation nearly three centuries. In its native country it attains a height of four feet, but with us is usually grown as a small, round-headed shrub, seldom more than two feet high. The flowers are small, white, and inconspicuous; but the berries, which are orange-scarlet, freely produced about as large as a cherry, are very ornamental. There is no prettier plant for the parlor or greenhouse than this, when well grown.

S. capsicastrum is a dwarf species, from nine inches to a foot high, which produces berries freely, and is desirable. The variety with variegated leaves is also very pretty.

We now come to the species of more recent introduction, which the rage for "foliated plants" has brought into notice. Many of these are noble objects when well grown, and are worthy of general cultiva-

tion. They are, however, as yet rare, and of only a few can we speak experimentally. As they are increased freely from seed, and propagate readily from cuttings, we have reason to think they will soon be accessible to all. In the city gardens in Paris there is, as we learn from Mr. Robinson, a large house entirely devoted to Solanums, in which are preserved through the winter more than sixty species, which are used for the decoration of the public parks. Among these we may especially mention *S. marginatum*, No. 1 in our figure, a large foliaged species, with dark-green leaves, silvered on the under side—a very showy and beautiful plant. *S. pyracanthum*, No. 2 in our figure, with fine cut foliage, set with bright orange spines, with which the stem is also thickly covered. The fruit of this species is very beautiful, and freely produced. *S. aculeatissimum* somewhat resembles the last, but the foliage is darker, and the spines, which cover every part of the plant, are deep purple. It is a very beautiful species, and is well figured in our plate No. 3.

S. beataceum is a very large growing species, with pinkish flowers and dark-green foliage.

S. laciniatum is a very sturdy grower, with fine cut foliage, and very effective. The flowers are deep bluish-purple, freely produced, and are succeeded by clusters of yellow fruit.

S. robustum is a tall species, with dark purplish-green leaves. *S. Warscewiczii* is a noble plant, with deep-cut foliage, and is very effective.

We may also mention, as showy species, *S. crinipes*, *macranthum*, *macrophyllum*, and *verbascifolium*.

The general cultural rules for all of the genus may be briefly stated. Being natives of the tropics, they will not bear frost, and are impatient of cold. During the winter they must be preserved in a greenhouse. They require a rich, moist soil, and plenty of room. If not allowed to dry up, they can have the warmest place in the garden. All the species, whether annual or perennial, are easily raised from seed, or readily propagated from cuttings.

Our space forbids us to more than mention the allied genera of

Datura (*Brugmansia*) and *Solanum*, so showy in flower; *Capsicum*, most ornamental in its many-colored fruits; and *Nicotiana*,



THE SOLANUM.

ornamental both in foliage and flowers, — all of which we leave for a future article.

RHODODENDRONS.

By C. M. HOVEY, Boston, Mass.

“ To obtain bloom the next year, or even good growth, it is absolutely essential to cut off the seed-vessels immediately after blooming.”

In a very excellent article in your December number on that magnificent shrub, the rhododendron, by Mr. Parsons, of Flushing, I find the above remark, and am rather surprised at the statement. In our experience in the culture of this shrub, extending back thirty years, we have had a fair opportunity to know something of its habits, its mode of growth, its blooming, and its general characteristics; and I cannot omit the opportunity to correct what I consider an error, which might prejudice many against its cultivation.

Our collection of rhododendrons is very large, and, without doubt, contains older and larger specimens of the fine *hardy* varieties than any other in the country. In 1844 we visited Europe, and made it a specialty to inspect all the best collections near London; among others was the well-known establishment at Knap Hill, belonging to the Messrs. Waterer. Here, after learning all that we could of their collection, the hardiness of the kinds, etc., we selected several hundred rhododendrons and azaleas, the former embracing the very kinds Mr. Parsons names, as follows: *Album elegans*, *Album grandiflorum*, *Everestianum*, *Purpureum elegans*, *Roseum elegans*, *Celestinum* and *Grandiflorum*; and, in addition, *Gloriosum*, *Bicolor*, *multimaculatum*, and some others.

These plants arrived here in March, 1845, in good order, and were planted in April in the open ground. They all grew finely, and flowered abundantly in 1846. The plants have now, such as were unsold, been planted twenty-five years, and are, many of them, twelve feet high and twelve feet broad; and each displayed last spring some thousands of heads of bloom — forming such a rich array of flowers as could nowhere else be seen except at Knap Hill or in similar establishments in Europe. Nor is this bloom exceptional; not a year has passed — but one, when the buds were injured slightly by the winter — but what

we have had an abundant bloom, *without ever picking off a seed-pod*. In fact, to gather the seed-pods from our acre of plants eight to twelve feet high, would be a labor which no nurseryman would attempt, though a wealthy amateur might do so.

What Mr. Parsons might have said, if he did not intend the same thing, is this: To bring newly-planted rhododendrons into a healthy and fine condition and abundant bloom, the seed-pods may be gathered. It certainly induces a plant, not well established, to make bloom, while it must not be forgotten it also enfeebles the plant to bloom *too much*. Just as it weakens a young vine to allow it to bear too early, just so it enfeebles the rhododendron, and weakens its vitality, so that it often succumbs to the severity of the winter — the penalty of over-doing.

That the *Rhododendron Catawbiense*, a native of North America from New England to Florida, will not bloom in its native clime without picking off the seed-pods, is certainly something novel in the nature of shrubs. We can safely aver that it is an entirely useless operation on our grounds.

We have now some thousands of *seedling* rhododendrons from five to fifteen years old, and, with the exception of the kinds before named, we cultivate few or no others. In fact, there is not a single rhododendron of all the so-called hardy kinds in England, France, and Belgium, unless a variety of *Catawbiense*, which will stand the climate of Boston *entirely unharmed*. They will live and bloom, but so weakly, and with such shabby foliage, that they remind us of a scrub oak.

All Mr. Parsons says in regard to importation of English kinds and their culture is strictly true; and to have the rhododendron in perfection, in our climate, the plants must be of the *Catawbiense* blood, and they must be supplied by the production of seedlings — which tell the story. The plants do not usually bloom till the fourth or fifth year; if they live to that age they are safe for all time. Let our cultivators give the same attention to this shrub that they have given to the grape, and our grounds will be enriched beyond measure with countless numbers of magnificent varieties.

MR. BYINGTON'S METHOD OF PRUNING GRAPE VINES.

By EDWARD F. UNDERHILL, Brocton, N. Y.

I NOTICE that several contributors to the *Journal of Horticulture* and to the agricultural journals, while speaking in terms of commendation of my article on the Treatment of the American Grape Vine, published in the November number, express a doubt in reference to the advantages to be gained by the adoption of Mr. Byington's system of pruning. It will be recollected that Mr. B. postpones the greater portion of his annual pruning until after the shoots have grown to a sufficient length for the fruit clusters to have made their appearance, which brings the period of removing the ripened wood to some time in June. Winter or fall pruning was objected to in my article, upon the theory that it disturbed the balance which should exist between root and vine, and left the balance unrestored when the shoots commenced to push out from the buds in the spring or early summer. The writers to whom I have referred seem to have overlooked the question of the *time for pruning* in its relations to the growth of the vine, and to base their doubts upon the assumed idea that fall or winter pruning is only objectionable because it disturbs or destroys the normal proportion between the root underneath and the vine above the surface; and they say that this same objection will apply as well to pruning in accordance with Mr. Byington's system. I anticipated this very objection when I wrote the article, and I supposed I had met it. Possibly, however, I may not have been sufficiently explicit; and, as I am in the city for the winter, and have not a copy of the November number by me, I cannot recall the language I used on this point. But I will endeavor to make myself understood now by way of supplement.

There is no question but that the needful pruning of a grape vine *does* disturb the proportion which nature seeks to establish between the root and the vine, but less so if the pruning is done after the shoots have commenced their growth. Suppose a vine is winter pruned to four canes, each cane having, say, thirty buds! If the pruning were

postponed until each of these one hundred and twenty buds had pushed out into a shoot, the existence of these hundred and twenty shoots is a partial compensation for the loss of the superincumbent ripened wood.

Now, admitting that long pruning is the correct method, let me state the theory in reference to the advantages of June pruning over pruning in the fall or winter.

During the winter and spring the vine rests from its labors. But, with the more direct rays of the sun in spring time, the dormant energies of the vine awaken into a new life. The sap moves from the root, and soon the buds swell and burst, and rapidly the vine becomes covered with green vegetation. From the time when the sap begins to move to the time when vegetation has begun its full career for the season, is preëminently a transitional period, and no less in vegetable than in animal physiology. Transitional periods are critical. Hence, allow but the one hundred and twenty buds on the four canes (which I have supposed in a previous paragraph) to receive the large amount of sap sent up from a strong and vigorous root spreading many feet from the vine, and inevitably the shoots from those buds will be forced into a too rapid growth, in the effort of Nature to restore the balance between root and vine, which has been disturbed by the winter pruning. And too great rapidity of growth produces weakness. With children, it is a common cause of chorea, or St. Vitus's dance—that most distressing nervous disease, which so deeply excites our sympathy for the sufferer. With the grape vine it causes the fruit to “blast” in its incipiency, or to “slough” when it is further advanced. But, with many buds to receive the sap in spring, the shoots make a natural and not an excessive growth; and when once vegetation has fully commenced, the period of danger is passed. Then use the shears or knife, and Nature will thank you.

I am aware that in what I have here written I have presented a theory. That theory may or may not stand the test of severe scientific criticism; but better than all theory, for demonstration, is the irresistible logic of facts. Explode the theory, if you will, but Mr. Byington's healthy vines and large crops of early ripening and most delicious

grapes cannot be gainsaid. Wide planting, and high training, and an advantageous soil, alone, will not account for his success; for I saw mildew of both leaf and berry, and light crops in neighboring vineyards, which had been treated in every way like Mr. Byington's, except in the matter of pruning.

A word in respect to the plan of wide planting at Naples Valley, N. Y. I did not intend to convey the impression which Dr. Seelye received, as shown by his article in the January number, that the vineyards in the valley were nearly all planted at wide distances. The fact is, that the older vineyards are planted at distances not less than ten by twelve feet asunder, and many at greater distances. "Outsiders," who have removed to the valley, or natives who have followed the directions of the text-books, have latterly planted closer; but I venture to predict that, sooner or later, they will remove alternate vines from their vineyards. One of the best vineyards in the valley is that of Mr. J. W. Clark, which is planted, I think, twelve feet by twelve; and he has reaped as large crops from it as have been obtained from any vineyards more closely planted which are pruned in the ordinary manner, for he, I believe, does not approve of Mr. Byington's method.

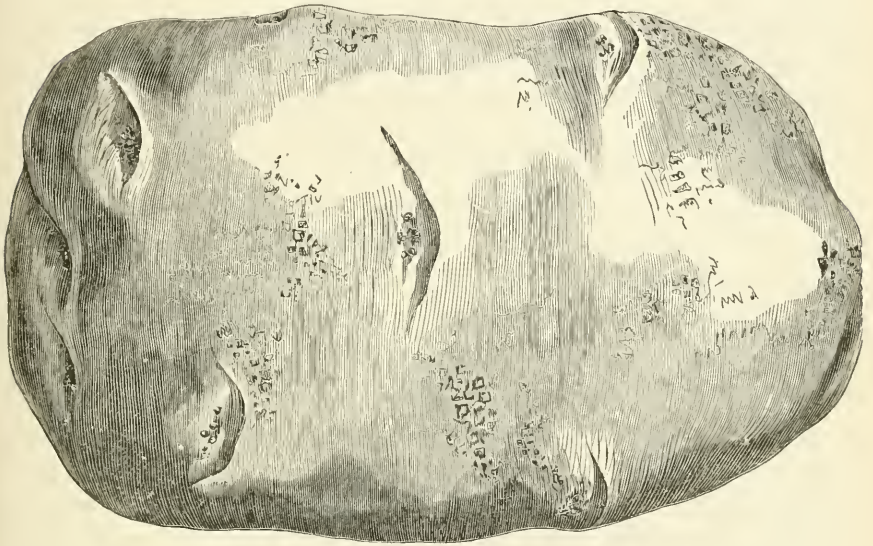
NEW YORK, January 15, 1870.

BRESEE'S NO. 7 POTATO.

CONTINUING our descriptions of Mr. Bresee's remarkable seedling potatoes, we present our readers with an illustration of another variety, known as No. 7. In form and color the tubers so strongly resemble those of No. 5, figured on page 267 of the Journal of November, 1869, that many might believe them to be one and the same variety. Mr. Bresee, however, affirms that such is not the fact, and assures us that they are really distinct sorts.

He states that No. 7 was originated from a seed of the Garnet Chili, and describes the tubers as being of good size, smooth, and

handsome, somewhat flattened, and half or three fifths as wide as they are long. The skin is white, and more or less rusty-coated. The eyes are slightly sunk, and of a bright, but not deep, pinkish color. The stems are not quite so deeply set as those of No. 5. By the side of the last named the tubers of No. 7 are somewhat more slender on the average, and they are, further, of a paler color when first taken from the ground. Mr. Bresce pronounces the quality excellent.



BRESEE'S No. 7 POTATO.

With regard to the value of these new potatoes there can scarcely be a question. There may be individual sorts among them less meritorious in some particulars than others, but as a class—health, hardiness, productiveness, and quality considered—it must be admitted Bresce's Seedlings stand without a rival. We have heard some anxiety expressed as to whether they will retain their fine quality or will speedily "run out;" but their health and hardiness, in our opinion, give promise that they will endure as long as any other varieties of this valuable root.

HOW TO PROPAGATE SHRUBS.

By FRANCIS PARKMAN, Jamaica Plain, Mass.

You have, perhaps, some favorite shrub which you wish to multiply, for yourself or your friends. The process is usually simple and easy; varying, however, with the nature of the shrub in question.

Division. — First, you may dig it up, tear it apart, or divide the roots with an axe, knife, or saw. In this way you will sometimes get a score of small shrubs from one large one. Or, if you do not wish to remove the original plant, you may often sever from it, without displacing it, small stems with roots attached. Some shrubs, such as calycanthus, rose acacia, bladder nut, clethra, and many more, throw out suckers from the root, which, if taken up and re-set, readily make new plants. Besides the above, some of the shrubs propagated most easily by root-division, are the deutzias, hydrangeas, symphorias, spiræas, lilacs, syringas, dwarf almond, Chinese plum, japan quince (*Cydonia Japonica*), and some species of cytisus.

Layers. — Next in simplicity is the process of *laying*. This is applicable to by far the greater number of shrubs, and is so easy that a boy of ten may readily be taught to practise it. It consists in choosing a twig or small branch so situated that it may be bent to the ground, cutting half through it with a knife, and then turning the knife and slitting the branch upward to the distance of about an inch. The branch is next to be bent upward at the part where the slit is made, buried two inches below the surface of the soil, and pegged down with a forked stick. Thus treated, some shrubs will throw out roots, in a few weeks, from the projecting tongue of wood at the place where the slit is made. Others root with more difficulty, and there are instances in which layers must remain two years in the ground. This is often the case with magnolias; while, on the other hand, a honeysuckle will root almost immediately, and it is not even necessary to tongue the stem, as it is sufficient to give it a slight twist when it is laid in the ground. This checks the flow of sap, and causes an emission of roots at the bruised place. Before putting down layers, the ground should

be dug and enriched around the parent shrub, and if a little sand is added it will be well, unless the soil is naturally light. Layers may be made in spring, summer, or autumn. For most shrubs we prefer summer, using the young wood of the same season's growth, and laying it as soon as it has become hard enough to bear the operation. The layers may remain on the parent plant till the following spring, when they should be removed, if roots have formed, and planted out for growth.

Cuttings.—Some shrubs are very quickly and easily raised from cuttings; others refuse to multiply by this method. *Deutzias*, *spiræas*, *euonymus*, *tartarian* and *climbing honeysuckles*, *hydrangeas*, *syringas*, *lilacs*, *Forsythias*, *flowering currants*, *elders*, *tamarix*, *viburnums*, and *weigelias* all strike root very readily. Nearly all of them can be raised from the ripened wood, by the following simple process. In the autumn, after the leaves have begun to fall, cut ripe shoots of the last summer's growth, and divide them into lengths of six or eight inches, cutting them smoothly at the lower end, just below an eye. Then tie them in bundles and bury them in the earth for the winter in a dry, sheltered place. In the spring, as soon as the soil is in good working order, plant them in rows in the open garden, setting them in a sloping position, with the upper eye on a level with the surface, and pressing the ground rather firmly around them. All that remains is to keep the weeds down. The cuttings, or many of them, will root early in the season and form thrifty young plants. The wood is cut in the autumn, because a severe winter might injure it; and the cuttings are planted in the spring, because, if planted in the autumn, the frost would throw them out of the ground. This, however, may be prevented by a thick covering of dry leaves; and, if this precaution is taken, autumn planting does very well.

Many shrubs are raised easily from cuttings of the green or half-ripe wood. Some are propagated much better in this manner than from the ripened wood. Thus *Deutzia gracilis*, which grows but indifferently from the ripened wood, strikes root with the utmost ease from the green shoots. Cuttings of this kind may be made during summer. The tips of growing shoots are preferable, provided the wood is ripe enough not to snap off when bent double. Neither should it be so ripe

as to have turned brown. Cuttings of the green wood should be planted on the north or shady side of a hedge or fence. If the sun lies upon them early in the morning or late in the afternoon, it will do no harm, but they need shelter from it through the heat of the day. They may be planted in sandy soil and covered with hand-glasses, or in pots or boxes, which latter plan is the better of the two. A frame covered with glass must be provided for them. It may be made by nailing together four boards, and covering them, in the absence of better, with an old window-sash. In the frame thus provided place your pots and boxes of cuttings, and cover them with the glass. Every morning, when the lower surface of the glass is covered with dew, turn it over, placing the dry side downwards; and if the leaves of the cuttings are wet, it will be well not to replace the glass till they are dry. The soil in the boxes, which should be light and sandy, must be kept neither very moist nor very dry. After a week or two the glass may be removed at night. Some green wood cuttings will strike root within ten days, while others require several weeks.

Root-cuttings. — These are sections of roots, one or two inches long, covered with soil, either in the open ground or in boxes in the greenhouse. Planted in the spring, in the open ground, they will form plants during the same season, and their growth is quickened and made more certain by the use of bottom heat in the greenhouse. This, however, is rarely necessary, and the amateur can perfectly well dispense with it. All that he need do is, to cut the roots into short pieces, dig a shallow trench or drill, and bury them in it to the depth of about three inches. They will then “come up” like seeds. The shrubs capable of propagation in this way are those which have a tendency to throw up suckers from the root, either at a distance from the main stem, or close around it. Among them are many of the spiræas, Japan quince, lilacs, calycanthus, rose acacia, and the climbers bignonia and celastrus, besides numerous others. Whenever, on digging up the roots, dormant buds or “eyes” are visible upon them, it is certain that they can easily be raised from root-cuttings; but the converse of the statement does not always hold good, for some root-cuttings will grow when the dormant buds upon them are wholly indistinguishable.

Budding, Grafting, Inarching.—All these processes consist in implanting a portion of the shrub or tree which we wish to multiply, in the bark and wood of another shrub or tree of a kindred nature. If the stock is not of a nature kindred to that of the bud or scion, the operation will not take effect. The methods of procedure are very numerous, and to describe them would occupy a great deal of space. They are all the same in principle, and consist in bringing the sap-vessels of the plant to be propagated into close contact with the sap-vessels of the stock, and keeping them thus in contact till they unite. In budding, this is done when the sap of the stock is in full action; that is to say, when the stock is in active growth. A slit is made in the bark, and a dormant bud of the plant to be propagated, with a small portion of bark attached, is slipped into it and bound fast. If the plant is congenial with the stock, the union takes place very readily. In grafting, not the scion alone, but the stock also, may be in a dormant state, or nearly so; consequently the operation may take place in the spring, before growth is fairly begun, and, in most cases, this is by far the best time for performing it. The scion, or shoot of the plant to be propagated, is fitted to the stock in such a way that the inner bark of the two shall be in close contact. It is then secured in this position, and covered with grafting-wax or clay, to protect it from the drying effects of the air. The methods of proceeding are very numerous, and are explained at length in books of practical horticulture. They are all the same in principle, and admit of almost endless variation in practice. To attempt to describe them here would treble the length of this article. Inarching is a kind of grafting in which the scion is allowed to remain on the parent plant till it becomes united to the stock. To accomplish it, the stock and the plant to be propagated must be grown side by side, or else one or the other of them must be in a pot, so that the two can be placed together. A portion of wood is shaved from the stem of the stock, and a corresponding portion from a branch of the shrub to be propagated. The flat surfaces thus formed are then brought together, bound fast, and covered with wax. In the course of the season they unite, and the shoot, now receiving nourishment from the sap of the stock, is cut from the parent plant, and begins at once an independent growth.

These processes of budding, grafting, and inarching, are useful in cases where layers or cuttings strike root with difficulty, and where the shrub does not "come true" from seed, or refuses to bear seed at all. This brings us to the last mode of propagation, — that by seed, — and as this article is already too long, we will speak of it in another number.

PEACH ROT.

By PARKER EARLE, South Pass, Ill.

THE Hale's Early would be one of the most valuable peaches in cultivation but for its great and generally fatal fault of rotting on the tree. There are few peaches so hardy in winter and spring frosts; none bear earlier, and none bear heavier and finer crops. And yet few peaches have proved less profitable, notwithstanding its season gives it every advantage in the market. In one section of the West no early peach has been so largely planted, and no orchard planting has been attended with so much loss. Everywhere its promise in the spring and early summer is of the brightest, and everywhere its harvest time is crowned with bitter disappointment. This is the common report. But it is encouraging to be able to remark some exceptions. Two or three parties in our neighborhood, and one other in an adjoining county, within my knowledge have the past season saved large and profitable crops of Hale's Early. These orchards are all located on a rich clay loam soil. The whole secret of success is in the faithful killing of the curculio, and in the picking off every day and destroying all peaches commencing to rot.

The facts about peach rot seem to be, that all peaches are more or less exposed to it, and that its spread depends on mechanical injuries of the peach (by curculio mainly), conditions of the weather, hardness of the variety to resist it, and the general freedom of the locality from the infection. It has been often observed that some of the first peach crops in a locality, or the first crop in an isolated orchard, have

been quite free from rot, while subsequent crops have been increasingly affected under similar conditions of cultivation and management. So in a neighborhood where the rot has prevailed for years, and especially in an orchard where it has spread unchecked, it becomes necessary to use the most stringent measures to secure a crop of any variety, and particularly of the kinds most liable to rot, like Hale's Early.

It is apparent that the rot has had an alarming increase during the last few years. We have a conspicuous illustration of this fact in the very noted peach region on the eastern shore of Lake Michigan, where the rot has been reported as one thousand per cent. greater this season than last.

Every peach of the tender varieties, which is stung by *curculio*, or bitten by other insects, or otherwise mechanically injured, is pretty certain to rot under every circumstance of weather, while the hardier kinds will carry the same injuries without rot, if the weather be cool and dry. But when the rot has commenced, it spreads very rapidly by contact of peaches, and if it is rainy by the spatter and drip of the rain. This we may call the "transplanting" of the rot, the microscopic fungus being transferred from peach to peach. This is always fatal, and can only be prevented by destroying the affected peaches as fast as the rot appears. Every tree should be carefully examined daily during the season of ripening. Often have I seen a dozen or so of peaches commencing to rot infect a bushel or more with the plague during one warm rainy night.

The destruction proceeds more slowly and less certainly when the peaches have been thinned, so that no two hang in contact, and when there is no rain to spread the infection. In this case the fungus matures its spores (seeds), which are carried by the wind to take root in any congenial soil. Those peaches which have been injured by the *curculio* or otherwise, furnish the required soil for the growth of the infinitely minute fungus seeds, millions of which may mature on a single rotting peach, and on these injured spots they take root and grow, and the peach rots. But the perfectly sound peaches supply no conditions for the germination of these spores, and such peaches escape. This seems to be the philosophy of the matter. Hence the two cardi-

nal requirements to avoid peach rot are, to prevent all mechanical injuries to the peach, which are mainly by curculio, and to save its infectious spread by destroying it as fast as it appears. These two things faithfully done, and a peach crop can be saved whenever there is one set on the trees. Thorough and clean cultivation is very desirable on all accounts; and the use of lime, sulphur, or charcoal, as a manure, and whatever tends to sweeten the soil and the air, will have a good effect.

The first impression of most persons who read of this energetic management most likely is, that it won't pay, or that it is wholly impracticable; all of which is a mistake. Parties here have kept a careful account of the time employed in killing the curculio on a given number of trees during the two or three months in which the "curculio catcher" must be run daily, and the average cost this past season has not exceeded ten cents per tree. The cost of picking off and destroying the decaying fruit has not been so exactly ascertained, but it is not so great as to be any proper discouragement to the effort. But, whatever the labor and expense may be, *it is the price of having peaches* in all old peach-growing neighborhoods. A few men practising this plan in a peach district, where a majority neglect it, — as a majority are quite sure to do, — will have a vastly greater work than would be necessary where all would join in the work. But they will have peaches that will sell, while the negligent and lazy will not. Similar energy and faithfulness are becoming more and more necessary to success in every branch of fruit-growing; and all our past experience and observation indicates that profitable fruit culture in this country will very soon be in the hands of the comparative few who will use system, energy, and pluck.

November 1, 1869.

FITTING UP A FRUIT ROOM.

THERE has been a good deal said lately about building fruit rooms; but the question what to put the fruit in, has received comparatively little attention. We have been asked, How and of what material to make shelves? But our answer has been, Do not have any shelves; that is, to place your late fruit directly upon them for keeping. They are very convenient for varieties of which there are but a few specimens of a kind; but the fruit is pretty sure to wilt when kept long on them, and after that it can never ripen perfectly. The English still recommend placing the fruit singly on shelves, and the practice was formerly adopted here, but found not to be adapted to our climate, where the atmosphere is so much dryer than that of England. We have found it a good way, when we had several lots of a half dozen to a dozen specimens each, of new kinds, to put each kind in a paper bag, and place them all in a box together. Drawers are very convenient, but costly, and if fitted as tightly as common, the moisture of the fruit will swell them so much that the carpenter will have to be called in to "ease" them. Bins are sometimes used where the quantity is large; but they are inconvenient to clean out, and the fruit cannot be removed without handling it all over. For apples, there is nothing better than *clean* barrels; but the more delicate pears are apt to be bruised when packed in so large quantity. Broad, shallow boxes seem to be, on the whole, the most eligible. The size used in Boston market is eighteen inches square by seven deep (inside), made of inch boards, planed. These may be filled and piled one on top of another very conveniently. Second-hand boxes may be obtained very cheaply at grocery stores, and answer a very good purpose; but such as have acquired any bad odor should be rejected.

Some cheap shelves may be built to place the boxes on, when, if covered up, they will answer the purpose of drawers, at much less expense; or a rack with two stout bars to rest the boxes on would be still cheaper. A broad shelf of the height of a table will be found convenient for spreading out summer pears, and also as a work-bench

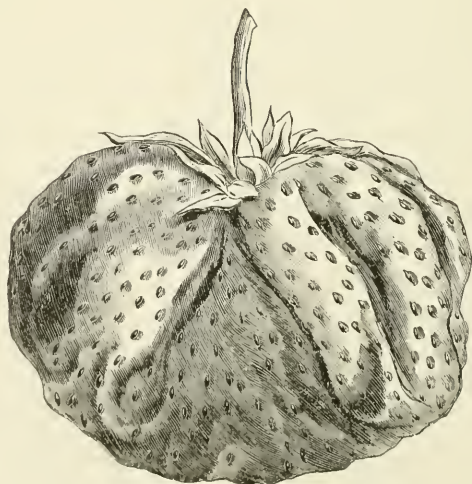
for sorting over fruit, though the latter work is better performed in a separate apartment, or ante-room. Boxes or shelves made of bass or white wood would be preferable to those of pine, or other resinous wood, as the latter, when new, are apt to impart their taste to the fruit.

NEW STRAWBERRIES.—I.

By J. M. MERRICK, Jr., Walpole, Mass.

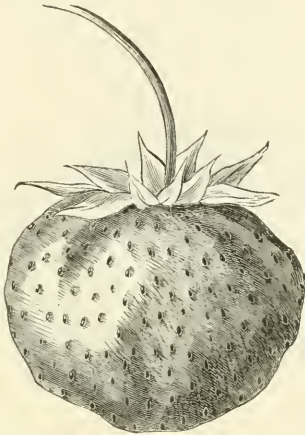
Dr. Nicaise.—This great strawberry, which excited so lively a war of words in France when it first appeared, has proved of no value here. The specimen figured was raised by Davis & Bates, of Cambridgeport, Mass., and was selected as one of the best shaped that could be found.

The surface of this berry was covered with large wrinkles, or folds, which were puckered together at the apex. Seeds large, on the surface, set wide apart. Color pale red, shading to white; looking unripe even at maturity. One side, indeed, is often green and unripe when the other is fully colored. Flesh red near the surface, white at the centre; hollow, pasty, and very deficient in flavor. Only a curiosity. July 10.



DR. NICAISE.

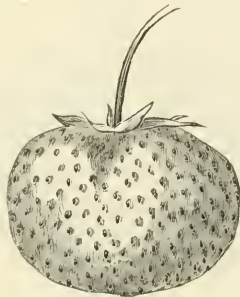
Stinger (Stinger).—First known as the Union. Form pretty regular; seeds of light color, partially bedded. Large, scarlet, and showy. Flesh not quite firm enough; rather more acid than the Wilson. Hardy, early, and productive. It is said to be a seedling of the Triomphe de Gand. June 29.



STINGER.

Michigan Seedling.—Foliage large, somewhat wavy; fruit-stem stout, holding the truss well up. Fruit medium size, roundish conical, the larger specimens approaching cockscomb shape: scarlet, seeds yellow; flavor rather acid.

The berry figured is not above the average size, and is less conical than many, especially of the smaller ones. July 2.



MICHIGAN SEEDLING.

Bijou (De Jonghe). — Fruit medium to large, inclining to conical; bright, shining rose color. Seeds yellow and prominent. Flesh snow-white, juicy, and moderately good. I have fruited the *Bijou* four years, and find it a pretty berry, but a rather shy bearer. June 24.



Bijou.

Emma (De Jonghe). — Fruit large, obtusely conical: bright, shining red. Seeds few, sunken. Flesh rosy white, juicy, sweet, and good; ranking, perhaps, as second rate. June 24.

A spurious variety has been sold as the *Emma*.



EMMA.

Ambrosia (Nicholson). — Large, roundish, dark, shining red. Seeds small, white, and deeply embedded. Flesh rose-colored, sugary, and full of juice. The berries have a slight mulberry flavor. It is said to force well. In open culture it has proved with me only a very moderate bearer. June 26.



AMBROSIA

MASSACHUSETTS HORTICULTURAL SOCIETY.
REMINISCENCES. — No. II.

THE second year of the society witnessed no abatement in the zeal and activity of its able president, nor want of interest in the members. It began to attract the notice of intelligent cultivators at home and abroad, also of foreign consuls and shipmasters, who had heretofore had frequent official business with its president while collector of the port of Boston, and thence received many donations of seeds and plants, and specimens of improved garden implements. The weekly exhibitions through the summer were so attractive to the ladies that they graced the hall every pleasant Saturday with their presence. As the number of members already exceeded two hundred, if but a small proportion of them exhibited noteworthy specimens, the aggregate always made a beautiful show — such as was not seen elsewhere in those days.

That modest and estimable gentleman, and most accurate and dis-

criminating pomologist, Robert Manning, of Salem (who died in 1842), was now a regular attendant every week, with liberal collections of rare fruits, almost always labelled; and, in identifying doubtful varieties, such was the confidence in his judgment and intelligence, that no appeal was made from his decisions, either by the new or old school of cultivators. He was an enthusiastic collector; and in the course of twenty-five years had brought together in his garden nearly one thousand kinds of pears, and half as many of apples, cherries, etc. He had the names and habits of the trees, and the qualities of fruits, at his fingers' ends, and could identify most rare kinds at sight. I remember two instances of his intuitive readiness on this point: some member of the society had observed a barrel of handsome red apples in Faneuil Hall market, brought from the South, of which the name was unknown, and showed a specimen to Mr. Manning for identification. He said at once, "it was the Pennock, No. 78, of Coxe. If you cut it, you will find in it numerous small specks of bitter rot; a very popular apple, however, in Pennsylvania and Western New York." Another exhibited the Julienne pear, then sold in market under various names. Mr. Manning, after a moment's examination, said, "its proper name was the Julienne, No. 12, of Coxe; a fine summer pear. Don't its long, bending branches have peculiar swellings at their extremities?" "Yes." "That's it!" In a public address, General Dearborn pronounced his "services invaluable to the society." His memory was so retentive, it was said of him in Salem, that, during the war of 1812, he could tell the name of every private-armed American ship afloat, with the number of her guns and men.

The exertions of General Dearborn to open a correspondence with leading horticulturists in Europe were heartily responded to, and at meetings through the season letters full of interesting and valuable facts were read by the president, among which was one from the Horticultural Society of Paris, acknowledging the receipt of the scions of American fruits, that had been collected by Mr. Downer, as before stated. Mr. Downer's descriptive letter was published in the *Annales de la Société Royale d'Horticulture de Paris*, vol. vi., page 269

(now before me), and the scions confided to leading horticulturists for grafting and future distribution.

I well recollect the first time the Belle et Magnifique cherry appeared on the tables of the society. It was exhibited by General Dearborn, who imported it from France in 1824; the label was so much injured on the voyage that the *name* was obliterated; but the Frenchman's short *description* of the fruit as "belle et magnifique" was legible, and as its true name was lost, it was called the "Belle et Magnifique," which appellation it still retains in nurserymen's catalogues, though I observe some of them, including the new edition of Downing, have cut it short by omitting the conjunction "et." The general diffusion of this fine, late, mottled cherry through the country should be credited to the society, which first brought it into notice.

The Benoni apple, now in all nurserymen's catalogues as a valuable summer fruit, was first exhibited by Mr. E. M. Richards, of Dedham, Mass., in August; and the Porter apple, now grown everywhere, soon after, by Mr. Downer. It originated in the garden of Rev. Mr. Porter, of Sherburne, Mass., and is now cultivated in Europe.

It may be worth stating, that the first mention of the famous *Morus Multicaulis* in this country was by General Dearborn, in August, 1830, who translated from a French journal an interesting account of its character and introduction into France from the Philippine Islands in 1821. As the culture of silk (about which there was much talk at the time) did not take root in this country, the tree was not wanted, and should not be charged with the crazy transactions in its culture and sale got up by speculators, chiefly in the Middle States.

Among the more noticeable fruits exhibited in 1830 were the Moor Park apricot, six inches in circumference, by Mr. Phinney, of Lexington; plums by Charles Stearns, of Springfield, Mass., same size; mammoth gooseberries by Dr. S. A. Shurtleff, who raised a bushel of this fruit on a single bush in his garden on Pemberton's Hill, that were sold at twenty cents a quart, amounting to six dollars and forty cents — a pretty good result from one bush; a "cluster" of large

purple grapes, weighing eleven pounds, from a vine imported from Gibraltar by Captain Urann, of Dorchester; fifty-five sorts of apples from John Prince, of Roxbury; E. Weston, Jr., of Duxbury, Mass., exhibited apples from a seedling tree nearly one hundred years old, which had been known to have borne in a single year seventy-six bushels of sound, ripe fruit. We don't hear of such apple trees nowadays. The Duchesse d'Angoulême pear, now grown almost as extensively as the Bartlett, was first exhibited on the tables of the society, October 16, 1830, by S. G. Perkins. It was thought to be the first specimen produced in this country. In a note accompanying the fruit Mr. Perkins said, "This precious pear, which keeps till December, was found, a few years since, in a hedge near Angers, in France. The tree is a great bearer." The specimen exhibited measured eleven and one third inches in circumference, and was the only one grown on a small tree. Trees of this pear, one year from the bud, sold readily the next spring at five dollars each. Samuel R. Johnson, of Charlestown, Mass, exhibited Bolmer's Washington plum, of which he had sold about fifty dollars worth per annum from a single tree in his yard for three years. The ravages of the cercalio were not so extensive then as at present.

The second anniversary of the society was celebrated at the Exchange Coffee House this year, the address being delivered in the lecture-room of the Athenæum, then on Pearl Street, by Z. Cook, Jr. The tables were splendidly arrayed with flowers and fruits, including bunches of Black Hamburg grapes, weighing two and two and a quarter pounds each, raised by Mr. Lowell, and Ebenezer Breed, of Charlestown. Several distinguished strangers were present as invited guests, and, with speeches and toasts, and songs by Mr. Finn and Mr. Andrews, of the Tremont Theatre, three hours were pleasantly passed at the table. Mr. Pierpont was chaplain on the occasion, as was the Rev. Mr. Greenwood on the first anniversary. Mr. Cook was toastmaster on both occasions. It is a noticeable fact, that of the thirty gentlemen (Governor Lincoln and others) who offered volunteer toasts on this occasion, all have "passed on" except three — John C. Gray, Dr. Storer, and Dr. Shurtleff. R.



CRITIQUE ON THE FEBRUARY NUMBER. — *The Gardens of America.* — A most worthy example of them you have selected for number one, if all the reports that I hear are true, for though I have never had the felicity of viewing Ellerslie Park, the fame of its beauty has reached my ears as unsurpassed in this country, and Mr. Foulis's excellent description confirms it. I must set it down among the first on the list of places to be visited in the "good time coming," and I advise all the readers of the *Journal*, who have the opportunity, to do the same; for from what Mr. Foulis tells us of the liberality of the proprietor, in throwing open his grounds, I am sure that they will meet with a hearty welcome. Such liberality is, as Mr. Foulis intimates, not universal; but how any man, who cares enough for fine gardens, trees, flowers, and fruit, to keep up, with infinite pains and cost, a first-rate place, can feel repaid until they have gratified as many eyes as possible, is more than I can see. Perhaps in near neighborhood to great cities it would not do to throw open one's grounds indiscriminately: but we, Mr. Editor, who believe in progress, look for a time when it will be possible, because all shall be educated to such a love for the beautiful and good, that they would not knowingly mar a tree, or plant, or flower, nor even unnecessarily injure the grass beneath their feet. Happy the man who lives in a community where such a love for beauty, and such a respect for the property of others already exist, that one can throw his gates open to all without misgiving!

The Alton Nutmeg Melon. — Most admirably illustrated. In beauty of design and workmanship, the engraving can scarcely be surpassed. It is a gem. But are you aware, Mr. Editor, that the statements of our best known and most experienced cultivators, with regard to the real merits of this melon, are most strangely contradictory? Such, however, is the fact; for while one class of

growers pronounce it not only the most productive and salable, but the *best* variety known to them, others declare it to be absolutely worthless, or possibly deserving of trial by those to whose palates a compound of muskmelon, squash, and cucumber may be acceptable! Now, I am not in the least surprised at these differences of opinion. In view of the exceedingly unstable character of all hybrids, or sports between the large, netted muskmelon on the one hand, and the green citron melon on the other, they are precisely what ought to have been expected. Looking over the long catalogue of varieties which have come under my observation within the last thirty or forty years, I find them, almost without an exception, to have been short-lived in the extreme. Though they gave early promise of future distinction and excellence, scarcely one survived a decade of years, and all that is now left of them is the record of their names.

In view of these facts, — though I confess I am sorry to say it, — I am somewhat sceptical with regard to the permanency of the Alton melon. To retain its distinctive characters in their full perfection, will, in my opinion, prove a task beyond the reach of human skill. The numerous complaints of failures, so generally attributed to impure or mixed seeds, are, in a large majority of instances, manifestly unjust. The true cause, most unquestionably, lies in the natural tendency of the fruit to change or variation, and here the grower should look alike for the evil and remedy.

A Greenhouse for a Short Purse. — The writer has a taste for the beautiful, and I like the article. The facts he has given with regard to the construction and cost of a miniature greenhouse will attract the attention of many of your readers. Forty-five dollars! Ah, Mr. Editor, I fear an expenditure so trifling would secure for us at the North but a small measure of the beauty of blossom and sweetness of perfume enjoyed by your correspondent under the sunnier skies and milder climate of the Carolinas.

Reading his graphic description, I admit a sigh escaped me for a like charming retreat, where “camellias slowly unlock their sculptured beauty, and azaleas totter under great bouquets of color; where callas lift their ivory couches out of their green investiture, all fit for a fairy’s sleep, and where tricolor geraniums put on their wintry *tozam versicolore*; where rhyncospermums shake out their shining stars of snowy white on a background of rich, dark green; and where the lovely Persian cyclamen waves its thick array of mimic mitres, fair and pure, above their blood-stained vines, for twelve weeks long!” A beautiful picture, truly! sketched, too, at midwinter, from material produced at so trifling a cost. Can anything like it be in reserve for us, in the midst of howling storms and almost unbroken frost during nearly half of the year? Would there might be.

Perhaps you, Mr. Editor, or some one of your correspondents, could give the readers of the Journal a plan for a cold grapery equally simple and economical with that proposed by Mr. Denson for “a greenhouse for a short purse.”

Pear Culture. — So Dr. Houghton has found out, by experience, a good many things about pear culture not laid down in the books, as men who take hold of almost any subject practically are very apt to. But he almost provokes me by telling us, just as I was expecting some new light on this subject, that he has

not stated them, and will not now state them. However, this implies that he will tell us at some time, and I hope it will be soon, for I haven't the slightest doubt that, with his extensive experience, he has found out some things that we did not know before. Put them in a book, doctor; or, at least, put them in a Horticultural Journal, so that we may all have the benefit of your experience.

Well, I cannot attempt to go over the whole field of the discussion, any more than Dr. Houghton can, but there is one point that I must notice; for when he says that his essay was "not a dolorous wail over the failure of pear culture," and implies that he did not even intend to be understood that pear culture was a failure, why, I must think that his language was extremely unfortunate, to say the least. Certainly, Mr. Editor, I received the same impression from his essay that you did, and so did every one with whom I have spoken on it; and so did the editor of the Gardener's Monthly, who says the "whole essay was a complete jeremiade of failures: sobs and cries seemed to break out from every sentence; everything has been done, but no fruit follows;" and so did the careful and judicious editor of the Country Gentleman, who, after asking whether pear culture is a failure, says that Dr. Houghton has answered the question in the affirmative. "On standard trees," says Dr. Houghton, "even in their best condition, scarcely half of any crop is marketable at one dollar per bushel, and not over one quarter of any crop is suited for the first class fruit-stores." Now, if these statements, made without exception or limitation, do not mean that pear culture is a failure, pray tell me, what do they mean?

Certainly Dr. Houghton has found his first assertion rather too sweeping, or he would not have modified and guarded it as he has; and if his first essay had contained only such ideas and statements as his second article in the Gardener's Monthly (I refer to that in the number for December, 1869), or that now under consideration, he would not have provoked the opposition which the views expressed in his essay met. I must, however, do him the justice to say, that he is quite right as to the effect on the pear market of a plentiful supply of other fruits, especially peaches. It is difficult for any fruit to compete with peaches, even in Boston, where the abundant supply last year, with the freights on top of Delaware prices, interfered sadly with the pear trade; and in Philadelphia, where peaches are so much cheaper, the effect must have been still worse.

The Campanula again.—I had my say on this subject last month; and so, lest you should think me garrulous, I will only remark of the beautiful, delicate little harebell, that it *is* a wonder that it has not been brought into more general cultivation. I have a few plants growing in the garden, and it succeeds perfectly; and I wish I had more. I know not whether to admire most the graceful blue flower or the fine delicate foliage. I have found it growing abundantly more than half way up Mount Washington, the plant a little dwarfed, but the flowers of a deeper blue than I have ever seen them anywhere else. But wild or cultivated, it is one of the choicest gifts of Flora.

The Josephine de Binche Pear.—A fine, rich-looking, good-sized, and good-shaped pear, though your wood-cut, excellent as it is, cannot give the beauty of the colored plate. Do not, however, pronounce the name *Binch*, but *Binkeh*, or *Bink*. It is very seldom that we are able, as with this variety, to trace the

pedigree of a fruit through four generations. The Josephine de Binche, we are told, is a seedling from the Josephine de Malines; the latter was, like many others of Esperen's pears, undoubtedly raised from the Passe Colmar, and the Passe Colmar bears the evidence of having sprung from the Old Colmar. And these four generations are all fine fruits. *Bismarck.*

EXPERIMENTS IN HYBRIDIZING THE GRAPE, BY DR. A. P. WYLIE, OF SOUTH CAROLINA. — We present the following extracts from Dr. Wylie's letter, in the Proceedings of the American Pomological Society, and regret that we have not space for the whole. The discoveries he has made as to the difficulty of hybridizing the Scuppernong grape, and the causes of it, are very interesting as well as curious.

"I find that all the natives with which I have experimented hybridize freely with the foreign (*Vitis vinifera*), except the Scuppernong (Bullace). I have impregnated successfully with foreign pollen the following, viz.: *Vitis aestivalis*, several varieties; *Vitis Labrusca*, many varieties; *Vitis cordifolia*, four varieties; also successively fertilized *Vitis vinifera* with each of the above species; also many hybrids with each other and with pure species, and many natives with each other; also numerous hybrids with hybrids, and fixed species. The Scuppernong appears to be a very distinct species, and least capable of all others of hybridizing with other species.

"My experience goes far to establish the following facts, viz.: First, that we cannot fertilize the Scuppernong with pollen from any other species or their hybrid varieties, as I have repeatedly failed to do so under the most favorable circumstances; also failed, after numerous trials, to fertilize Scuppernong with male (staminate) hybrid Scuppernong. Second, that we can impregnate the foreign (*Vitis vinifera*) with pollen from the Scuppernong; as I have had the plants growing ever since 1861, but none have borne fruit. Third, that we cannot impregnate either *Labrusca*, *Aestivalis*, or *Cordifolia*, as I have repeatedly failed in the attempt. Fourth, that you can fertilize both native and foreign, and their hybrids, with male (staminate) hybrid Scuppernong pollen, as I have often done. Fifth, that no first crop of Scuppernong and foreign will produce a prolific fruit-bearing plant, as those have invariably either proved to be male (staminate) or hermaphrodites, with male and female organs of reproduction (stigma and staminal) defective, consequently bearing no fruit. It is true I have seen one of these hermaphrodites bear a few berries, by applying pollen from a grape vine of a different variety. (See Gardener's Monthly, 1863, p. 153). Sixth, that you can produce a prolific hybrid Scuppernong by impregnating the foreign (*Vitis vinifera*) with pollen from hybrid male (staminate) Scuppernong, as I have had a hybrid thus produced bear *perfect* fruit, with perfect seed, for the first time, this last summer. I have also plants of Herbemont, Delaware, Lenoir, Clinton, and others, impregnated with the same pollen, which have every appearance of bearing plants, but were not old enough to bear this summer.

"There appears to be a mechanical difficulty, which limits the production of hybrids with the Scuppernong and other species. Suspecting some difficulty of this kind from my repeated failures, I requested my friend Dr. T. T. Robert-

son, of Winsboro, S. C., a gentleman of high respectability and intelligence, who was familiar with the use of a microscope of high power, to examine for me the various kinds of grape pollen. He writes thus: 'I have examined every variety within my reach, — native, foreign, wild, tame, winter, summer, and all, — and had come to the conclusion that grape pollen was grape pollen, and nothing more, the world over, and that there was no difference whatever in the size, shape, color, etc., of the pollen grains; but when I came to the Scuppernong (the very one you seem most solicitous about), I did find a difference. In this the pollen grains are smaller and more spherical than any of the others. The rest (which all look alike) are more oblong, with a greater longitudinal diameter than the Scuppernong. The transverse diameter, I think, is about the same in all. If there is any difference, the Scuppernong is a shade less; and this may account for the result of your experiments; that is, the ability to impregnate other species with the pollen of the Scuppernong, and the inability to do the reverse.

"I believe the theory is, that the pollen grains must pass through the style of the pistil, and come in contact with the ovule at its base, to effect its fecundation. Now, if the pollen grains are smaller in the Scuppernong, the inference is, that the canal through which they have to pass is also smaller than that of the other varieties; and thus may be explained the result of your experiments. The smaller grains may pass through the larger tubes; but the larger grains cannot pass through the smaller tubes.'

"Some time after this I sent him some hybrid Scuppernong pollen to examine. He writes thus: 'Dear Sir, I have examined the pollen, and think I could have diagnosed it as a hybrid or mixed specimen. The difference between the Scuppernong and all other varieties that I have examined is very distinct, and so much so that I believe I could detect a single grain of it in any specimen that might come in the field of view.

"The specimen sent contains a very large proportion of grains resembling the Scuppernong, and a much smaller proportion resembling those of all other varieties that I have examined. I send you a rude sketch of the appearance, in outline, of the various kinds; that is, the Scuppernong, all other varieties, and the hybrid Scuppernong. You will perceive that the Scuppernong grains are more spherical, and less uniform in shape, than the others. The long diameter is considerably less; the short diameter about the same, or probably a shade less. I have no micrometer, and therefore cannot give you the dimensions; can only judge from the eye. The pollen grains appear, in outline, to be oblong, elliptical, or oval. If I were anything of a botanist I could probably write more intelligibly upon this subject.'

"Still, notwithstanding my failures and the revelations of the microscope, I have broken the barrier which separates the Scuppernong from the other species of grapes, and produced one prolific plant, with well-formed berries — fine, *high musk* flavored fruit, and *perfect* seed; the bunch containing from twenty to twenty-five berries, and ripening in succession as the Scuppernong; and who can predict the fine varieties that may be acquired in future by producing hybrids of this species and planting their seed? for I find that there is no end to

the sporting of varieties raised from seed of hybrid plants, or the crosses between two hybrids.

“The Scuppernong is one of the most distinct and remarkable species in the world; and in loamy, porous soil, or even in the damp, sandy soil of the South, where other kinds cannot flourish, it flourishes and bears incredible quantities. It never rots, and has no disease that I ever heard of. The ægeria, or grub, so destructive to the foreign and other soft-wooded species, never touches it. I have seen it bear and flourish with its roots entwined among the roots of other species, completely honeycombed with the grub.”

THE BLENHHEIM PIPPIN AND DUTCH MIGNONNE APPLES. — I wish to correct a mistake in regard to Blenheim Pippin, Blooming Orange, and Dutch Mignonne apples, as described in the second revised edition of Downings' Fruits and Fruit Trees. From an examination of these as grown here the past year, and from specimens received from various other sources since the last edition was published, I am convinced that Blenheim Pippin, Blooming Orange, and Dutch Mignonne, as described in the former editions of this work, are all one and the same variety, viz., Blenheim Pippin.

I have had the impression for some time that Blooming Orange was the Dutch Mignonne of former editions, judging from the growth of the trees, but not having seen the fruit of all in perfection until this winter, to be satisfied of the fact. My late brother, in the first editions of his book, made a mistake in relation to the Dutch Mignonne, having made his description from the fruit of a tree he found, unnamed, in William Denning's orchard, at Fishkill Landing, N. Y., which he concluded, from examination of the books, was Dutch Mignonne; and the mistake has been continued until now. The following are its synonyms: —

BLENHHEIM PIPPIN.	
Blenheim Orange,	Woodstock Pippin,
Blooming Orange,	Northwick Pippin,
Blenheim,	Kempton's Pippin,
Dutch Mignonne, incorrectly.	

The tree of Blenheim Pippin is one of the most vigorous in growth of any we have, of a spreading form, somewhat declining when in bearing, and makes a large, noble tree in the orchard. It is late coming into bearing, but when fully established is sufficiently productive, and one of the most valuable of early winter apples for the Middle and Northern States.

The true Dutch Mignonne is correctly described in the second revised edition, on p. 151.

Charles Downing.

STRAWBERRIES IN CALIFORNIA. — One garden in California has forty acres of strawberries. Judicious irrigation, in a climate which really has no winter, enables this fruit to be provided the whole year round.

LARGE VINEYARD. — The largest vineyard in California is said to cover five hundred acres.

STRAWBERRIES FOR THE SOUTH. — Among the varieties which may be considered well tested and worthy of general cultivation in the South, are Wilson's Albany, Longworth's Prolific, and Triomphe de Gand. We have grown all these, and can speak from experience. As market berries we consider them the best now known.

Wilson's Albany succeeds in all soils, from Maine to Florida. Here it often produces two distinct crops the same season, and by heavy mulching and copious watering, may be kept in bearing several months. It is very acid, though less so here than at the North, but with plenty of sugar is not unpalatable. It is somewhat difficult to raise plants of this variety in our climate, as it is very late in putting out runners, and by the time it is ready to propagatate itself, the season has generally become too hot and dry, so that, unless the ground be shaded, many of the young plants fail.

Longworth's Prolific is now little cultivated except at the South, but with us it is one of the best. Its quality is better than that of the Wilson, and it is a few days earlier, but not quite so productive, continuing but a short time in bearing. The plant is very vigorous, and propagates rapidly.

Triomphe de Gand. — As a rule the foreign varieties fail here, not being able to withstand the heat of our summers, but the Triomphe is an exception. It is a large, irregular, conical, but often flattened berry, of a bright crimson color, and a firm, crisp flesh, of mild flavor. It requires a stronger soil and higher cultivation than the preceding sorts, but with proper treatment is productive and profitable.

Were we relying on our own experience alone, we should add to the foregoing list the following varieties : —

Victoria (Trollope's). This has proved with us one of the most desirable varieties we have tried. On good strong soil, and with good cultivation, it has been wonderfully productive, and of fair, though not high flavor; but others who have tried it have not been equally successful, Mr. Berckmans (excellent authority), for instance, pronouncing it worthless. It is, doubtless, one of those variable kinds that succeed in some localities and fail in others. It is of luxuriant growth, and when it succeeds produces a large and handsome berry, and continues a long time in bearing.

Peabody's Seedling. — Too poor a bearer for market, but desirable for family use, being far superior in quality to either of the varieties already named.

Of the new varieties which are pronounced promising, the following possess qualities which render it probable that they may be successfully grown at the South, and we recommend them for trial.

Nicanor gives promise of being prolific and valuable.

Charles Downing. Originated in Kentucky. Its character and habit indicate the ability to withstand our hot summers; but, so far as we know, it has not been tested here.

Durand has had a partial trial in Georgia, and so far has proved a success.

Lennig's White. Of all the so-called white strawberries, this is the best. It is a vigorous grower, and stands our summers well so far as tried, but is only a moderate bearer.

Starr. Mr. Berckmans, of Augusta, Ga., speaks of this as very promising for market.

Jucunda, Agriculturist, Ida, Dr. Nicaise, Napoleon III., La Constante, and many other new and much lauded varieties, have not proved of much value with us, the plants, in most cases being destroyed by the heat of the summer. By growing seedlings here, we should, no doubt, soon secure new varieties better adapted to our wants than most of those now sent us from the North and from Europe.

Rural Carolinian.

RUSSIAN APPLES. — At the meeting of the Northern Illinois Horticultural Society, Mr. E. H. Skinner, of Marengo, read an essay on Russian apples, which is published in the *Western Rural*, and from which we make the following extracts: —

“The growing interest in procuring hardy varieties of the apple to supply the extensive region of the north-west, has induced me to procure from Europe a number of varieties, originating in a high northern latitude, some of them as far north as sixty-two and a half degrees.

“Four hundred of these varieties were obtained from Dr. Lucas, of Germany, accompanied with a list of their names in the German language. Nineteen were of Russian origin, and their names are Tetofsky, Szabadkaer grasser Szentsika, Pojnik apple, Charlamosky, Czsilinis Szertiska, Schickenappel, Reinette Szecheny, Outz Reinette, Passarts Natavia, Granat apple, Agaapfel, Kaupøuger, Norwegian Wax Reinette, Youngfernschanchen, Duchess of Oldenburg, Borovitsky, Borsdoffer, Sczintzky.

“The Duchess of Oldenburg is a perfect type of the class called Russian apples; and if crops that I have raised on sixty-two trees, for the past five years, may be taken as an example of productiveness of the new kinds, which are now being tested, it is certainly a promising experiment. This variety (the Duchess) is found quite hardy as far north as St. Paul, Minnesota; but, unfortunately, it does not fill the place of a winter apple; and if, among the nineteen varieties which I now offer to this society, should be found one winter fruit, as hardy and productive as the Duchess, I should consider it a more enduring and honorable monument than to have a marble statue erected to my memory.

“But it is objected to these fruits that they are coarse, and not equal to the older sorts in flavor. Granted; but are we to reject the fruits which Nature has placed within reach of the poorest and humblest citizen, who, but for these hardy fruits, would as seldom know the flavor of any apple as we do of the pine-apple?

“The great north-west, including North Illinois, on its southern boundary, and the extensive wheat growing regions of British America on its northern frontier, is a region vast in its extent, and important in its future destinies. In all this immense region, there is every reason to believe that the improved Russian and Siberian apples will find a congenial home, while most of the older and more tender sorts will be partially or wholly excluded.”

USING UP THE TIMBER. — At the present rate of destruction the forests of Michigan will be gone in about seventeen years. Somebody had better be planting new ones, not only in Michigan, but in every other state.

AN IOWA PEAR GARDEN. — A very superior collection of pears was exhibited at the Iowa State Fair, by Mr. John Given, whose orchard is situated on the banks of the Mississippi River, overlooking a portion of the city of Keokuk. It is a loamy clay on the surface, with a firm clay underneath. Here we found one hundred and seventy-five as handsome young pear trees as we ever had the pleasure of witnessing.

His ground, in the first place, was trenched two feet deep, not only a deep hole dug and filled again to a proper depth to plant the tree, but all over: as Mr. Given says, he dug just one hole, and that extended over his entire grounds. He did not manure any, and does not believe in it. He planted none but choice, healthy, vigorous trees, and would not take any others as a gift; and none others are worth planting, in comparison to such as he plants. So determined was he in this, that he would have the first choice of trees, regardless of cost, and paid as high as two dollars and fifty cents each for some.

We were never more completely convinced of the importance of this matter of planting only the most vigorous growing trees. A tree in high health, and full of vigor and power, will most surely come to a bearing condition sooner than one of a weaker or slower growth.

These trees are planted about ten feet apart; and although the cost of trenching this lot, 50×100, was about one hundred dollars, a short time will prove that this labor is worth many times its cost. The trees in this lot are nearly all standard, and Mr. Given prefers them entirely to dwarfs. Some have made a growth of from eight to nine feet the present season, while all, with one single exception, have made a splendid growth. We looked in vain for blight, but found not the slightest trace or indication of it in a single leaf or limb, and were told that there never had been any. We have long ago believed, and are now more thoroughly convinced, that pear trees, to be successful, must be planted on none but undoubtedly dry soil.

These trees are on soil that will never have a surplus amount of water about their roots, and we have not much doubt but that to this fact alone can be attributed the entire absence of blight. They are positively the healthiest looking trees we ever saw.

Mr. Given's system of pruning is partly after a method of his own. His trees are so handsomely formed as to be without a fault; and as an evidence of what may be learned in a short time, Mr. Given told us that six years ago he did not know a pear from a cherry tree — knew nothing of planting and treating trees; but he bought books, gained information, had a natural tact and taste, and now his lot cannot be visited by any one without learning many things of importance: we acknowledge we came away a wiser man on the subject of pear culture. To his success we attribute the following important requisites: a dry location, trenching his land, no manure, the selection of none but the most healthy and vigorous trees, the careful planting, clean shallow culture, careful and judicious pruning. The pruning he trusts to no one, but does it with his own hands.

Six years ago this lot had on it just two cherry trees and one plum tree. All these pear trees have been since planted, and this fall Mr. Given exhibited thirty

varieties at the State Fair, and took the first premium over all competitors. The following is a list of varieties cultivated: —

Howell, one of the most promising. Belle Lucrative, Bartlett, Beurré Diel. Dearborn's Seedling bore half a bushel to a tree — considers it the best early pear; specimens we saw on the trees measured two and a half inches in diameter. White Doyenné, Duchess, Tyson, Graslin; this last is very productive. The Clapp's Favorite he thinks well of. Henkel, Beurré Sterkman; this, the sixth year, has a full crop. Buffum, handsome grower, some made five to six feet this season. Brandywine, very fine tree. Beurré d'Anjou, Seckel, Louise Bonne, Ott's Seedling, Lodge, Beurré Giffard. This last, Mr. Given says, is next best to Dearborn's Seedling for early bearing. Beurré d'Amalis, set out three years ago, grew over seven feet this season; is now twelve feet high. Alexandrina, Doyenné d'Alençon, Lawrence, prodigious grower. De Tongres, Urbaniste, Rostiezer, fruit rich and sweet, equal to Seckel. Doyenné du Comice, Merriam, Winter Nelis, Excelsior, Gerardin, Admirable, Sheldon, Swan's Orange, Dana's Hovey, Easter Beurré, Golden Beurré of Bilboa, Kingsessing, St. Michael Arch-ange, Beurré Superfin, Glout Morceau, Josephine de Malines, Jaminette, Madeline, St. Ghislain, Vezouzière, Manning's Elizabeth, Beurré Hardy, Belle Epine Dumas, Andrews, General Tottleben, Bloodgood, Beurré Langlier, Flemish Beauty, Nouveau Poiteau, Beurré Clairgeau, Vicar of Winkfield, Uvedale's St. Ger- man, Baronne de Mello, Beurré Bosc, Dix, Doyenné d'Été, Kirtland.

We are satisfied that this list is too large, and Mr. Given will no doubt find some of these varieties very unproductive and unprofitable. But as he grows them for pleasure more than for profit, it is well for Iowa growers that Mr. Given is making the experiment with so large a variety. We hope to watch this pear orchard for several years hence, and by the aid of its owner report its behavior. Mr. Given has also upon his grounds twenty peach trees, twelve cherry, and half a dozen plum trees; thirty varieties of hybrid perpetual roses; some of these have made five to six feet this season; four or five varieties of climbing roses, that have run upon his portico ten to twelve feet high; also all the small fruits. We also saw an enormous caladium, with leaves three feet long.

Mr. Given anticipates planting out a large pear orchard, and says he is satisfied that he can grow more bushels of pears from a given amount of land than any man in Iowa can of apples. He is enthusiastic in horticulture, and his efforts and results are worth noting.

Iowa Homestead.

ANOTHER "PATENT" PROCESS. — Mr. Sullivan Hutchinson has patented a method of propagating fruit trees by grafting small roots into the branches of bearing trees, placing a box of earth around them. No doubt such trees would bear very speedily, but it is a good deal more trouble to carry the root to the graft than the graft to the root.

OSAGE ORANGE PLANTS. A single nursery firm in Illinois advertise the enormous number of fifty million Osage Orange plants. At six inches apart these would plant nearly five thousand miles of hedge — a pretty long piece, but a very small part of all the fencing in the United States.

INSECTS INJURIOUS TO THE ASTER: BLISTERING BEETLES, PLANT-LICE.

— I have sometimes been informed by gardeners and others that they had abandoned attempts to cultivate the aster, on account of two troublesome insects which destroyed the plant or the flower.

These troublesome insects are the *Cantharis*, or blistering beetle, and the *Aphis radicans*, or the root plant-louse; the first destroying the flower, the other a little white aphid, which attacks the root of the plant, sucking all the sap from it, and causing it to wither and die before it comes to the flowering state.

Of the *Cantharis* there are at least four species; viz., *C. vittata*, *C. atrata*, *C. cinerea*, and *C. marginata*. All these species are injurious to vegetation; but *C. atrata*, a black cantharis, is the rogue with which I am most familiar. I have not been troubled with these plagues for many years. In a dryer soil than that which I now cultivate, I had to contend with them, and made my fingers sore by pinching their heads; the only method I could devise then to get rid of them. I was ignorant of their medicinal properties; but the smarting of my fingers induced me to consult Harris, as I always do when I come across an insect which I do not understand. He thus describes them: "The following are the most striking peculiarities of the family to which the blistering-beetles belong. The head is broad and nearly heart-shaped, and it is joined to the thorax by a narrow neck. The antennæ are rather long and tapering, sometimes knotted in the middle, particularly in the males. The thorax varies in form, but is generally much narrower than the wing-covers. The latter are soft and flexible, more or less bent down at the sides of the body; usually long and narrow, sometimes short, and over-lapping on their inner edges. The legs are long and slender; the soles of the feet are not broad, and are not cushioned beneath; and the claws are split to the bottom, or double: so that there appear to be four claws to each foot. The body is quite soft, and, when handled, a yellowish fluid, of a disagreeable smell, comes out of the joints. These beetles are timid insects, and, when alarmed, they draw up their legs, and feign themselves dead. Nearly all of them have the power of raising blisters when applied to the skin; and they retain it when dead and even dry. It is chiefly this property that renders them valuable to physicians. Four of our native cantharides have been successfully employed, and are found to be as powerful in their effects as the imported species. Occasionally, potato-vines are very much infested by two or three kinds of cantharides, swarms of which attack and destroy the leaves during mid-summer." One of the species attacks the virgin's-bower (*Clematis Virginiana*). *Cantharis cinerea* begins to appear in gardens about the 20th of June, and attacks and almost destroys the English bean. *C. atrata*, or black cantharis, may be found in great abundance about the middle of August, or before, on potato-vines, tall golden-rod (*Solidago altissima*), and on the wild indigo-plant; and this is the species which is a pest to asters in some places, eating off the whole of the petals as they are appearing. The moment the plant is touched, they fall to the ground, and make believe dead. They are in such numbers, sometimes, that the disagreeable pinching process will not do much towards their destruction; and I do not know how they can be got rid of, unless air-slacked lime is strewed over the opening heads of the flowers, and over the ground.

I have never had much trouble from the *Aphis radicans*, or the root plant-lice. These abound in lighter soils than I cultivate. Mr. Harris says, "Some plant-lice live in the ground, and derive their nourishment from the roots of plants. We annually lose many of our herbaceous plants, if cultivated in a light soil, from the exhausting attacks of these subterranean lice. Upon pulling up China asters which seem to be perishing from no visible cause, I have found hundreds of little lice, of a white color, closely clustered together on the roots."

I do not know of any remedy for this trouble, except that the ground be made more heavy by the addition of clay: perhaps lime may have some effect, if applied round the root below the surface. There are many varieties of the *aphis*, which are all vexatious to the gardener.

There is something very curious about the *aphis*, and its friends the ants. The celebrated author whom I have already quoted says, in relation to some of these aphides, "We are often apprised of the presence of plant-lice on plants growing in the open air by the ants ascending and descending the stems: by observing the motion of the latter, we soon ascertain that the sweet fluid discharged by the lice is the occasion of these visits. The stems swarm with slim and hungry ants running upwards, and others lazily descending with their bellies swelled almost to bursting. When arrived in the immediate vicinity of the plant-lice, they greedily wipe up the sweet fluid which has been distilled from them, and, when this fails, they station themselves among the lice, and catch the drops as they fall. The lice do not seem in the least annoyed by the ants, but live on the best possible terms with them; and, on the other hand, the ants, though unsparing of other insects weaker than themselves, upon which they frequently prey, treat the plant-lice with the utmost gentleness, caressing them with their antennæ, and apparently inviting them to give out their fluid by patting their sides. Nor are the lice inattentive to these solicitations when in a state to gratify the ants, for whose sake they not only seem to shorten the periods of the discharge, but actually yield the fluid when thus pressed. A single louse has been known to give it drop by drop successively to a number of ants that were anxiously waiting to receive it. When the plant-lice cast their skins, the ants instantly remove the latter; nor will they allow any dirt or rubbish to remain upon or about them. They even protect them from their enemies, and run about them in the hot sunshine to drive away the little ichneumon flies that are forever hovering near to deposit their eggs in the bodies of the lice. These little root-lice are also attended by ants, which generally make their nest near the roots of the plants, so as to have their milch kine, as the plant-lice have been called, within their own habitations; and, in consequence of the combined operations of the lice and the ants, the plants wither and perish. When these subterranean lice are disturbed, the attendant ants are thrown into the greatest confusion and alarm: they carefully take up the lice which have fallen from the roots, and convey them in their jaws into the deep recesses of their nests; and here the lice contrive to live upon the fragment of the roots left in the soil.

"It is stated that the ants bestow the same care and attention upon the root-lice as upon their own offspring; that they defend them from the attacks of other insects, and carry them about in their mouths to change their pasture; and that

they pay particular attention to the eggs of the lice, frequently moistening them with their tongues, and, in fine weather, bringing them to the surface of the nest to give them the advantage of the sun. On the other hand, the sweet fluid supplied in abundance by these lice forms the chief nutriment of the ants and their young, which is sufficient to account for their solicitude and care for their valuable herds."

We can truly say with the wise man of ancient times, "Go to the ant, thou sluggard," and learn a lesson of industry, wisdom, and prudent thrift. It is pleasant to see such mutual good services performed by insects of such different habits. It is amusing to see the care of the ants to protect their profitable flock from all harm. No farmer could tend with more solicitude his farm-stock. The green aphid is well known to all gardeners as a great pest; but is easily destroyed in the greenhouse by tobacco-smoke, but not so easily controlled in the open air.

The only other insect with which I am acquainted, injurious to the aster, is the grub-worm, which sometimes cuts the plants down in June, near the surface of the ground: they are easily found when the damage is done, as they bury themselves by the stump of the plant. It is easy to destroy them; but, when the steed is stolen, it is of no use to shut the stable-door; and the only way to repair the damage is to take another plant from the reserve-bed, of which there should always be a stock on hand.

Joseph Breck.

THE PREPARATION OF A CROQUET-FIELD. — Being somewhat interested in croquet, which has really become a "man's game," our attention was drawn to an article on the turfing of a lawn in the last number of the Journal, extracted from "The Gardener's Chronicle."

While there can be no question as to the superiority of a swarded surface, provided it is often cut, and kept soft and even, still it must be admitted it is attended with some disadvantages. If much used, it becomes worn along the line of the wickets, the force of the balls becomes uneven, and the player is often disappointed. A swarded surface, also, soon becomes damp at night-fall, a time at which many have the most leisure; and it is, besides, useless for some hours after rain. Taking every thing into consideration, a field prepared by removing the sward, making it perfectly level, raking it entirely clear of stones, rolling it smooth and hard, and then applying about half an inch in thickness of fine, spent tanner's bark, will be found the most serviceable, most comfortable, and really the best method that can be adopted. It will be dry and clean, and will be in good condition for use a much greater proportion of time than ground prepared in any other form. The more it is occupied, the harder and smoother it will become. It will require a re-dressing of bark but once or twice during the season, and, when rendered uneven by heavy rains, the surface may be readily restored by the use of a common garden-rake. After an experience of three years, we are convinced that such a field will not only gratify the player, but prove at once durable and economical. Will those who enjoy the game please try the experiment?

B.

TRAINING THE TOMATO. — A correspondent of the *Ohio Farmer*, in relating his experience in the cultivation of this vegetable, makes the following statement : —

“ I early learned that no vegetable responds more generously to a rich and deep soil and to good cultivation ; but I was long troubled in finding a satisfactory mode of training. I tried almost every way recommended, and none of them seemed to be just the thing. I bedded with straw, I laid down brush, I trained on trellis and horizontal lattice-work, but none satisfied me. With the two former the fruit rotted, or ripened imperfectly ; the latter was too expensive.

“ My custom for a long time has been to set a pole for my tomatoes, as I would for a hill of beans, only I select poles a little heavier, and not more than four or five feet long. I set a pole to each vine, and as the plant grows, I fasten it to its support, as need requires, with heavy wool twine. All lateral, flowerless branches I nip off, and if the growth is rank, I head back the top.

“ With me this is a very satisfactory arrangement. My tomatoes do not rot ; they are clean and of fine quality. The loose tyings do not seem to injure the plants at all ; the fruit has air and light, and still seems to be sufficiently shaded. By this mode the ground is left clean between the plants, so that the weeds can be kept cut, and in dry weather can be often stirred, so as to prevent in a good measure the effects of drought. Others may see objections to this mode, but with me it works well, causing me but little expense and trouble, and rewarding me with a bountiful and luscious harvest.”

TREE BOX. — Not one of the evergreen shrubs or trees of moderate size is more desirable than the tree box, with its compact, conical, or bee-hive shaped head, branching to the ground, and its roundish, myrtle-like foliage, of the darkest, richest, glossiest green. Unfortunately it is too tender for the northern states, but at Washington and south of that, it is perfectly hardy. We would recommend planting it, not only for its beauty, but for the value of its timber, which the multiplication of books and newspapers illustrated with wood-cuts is every day making scarcer and more costly. No substitute for box-wood for this purpose has ever been discovered, though many attempts have been made.

NOTES AND GLEANINGS FROM FOREIGN EXCHANGES.

THE CORDON SYSTEM OF TRAINING FRUIT TREES. — We take the following remarks on this system from the Gardener's Magazine, and Robinson's Parks, Promenades, and Gardens of Paris. We do not anticipate that the system, which has been chiefly applied to the apple in France and England, will be used for that fruit here, for we can grow the finest apples without it; but it is equally applicable to the pear, and no doubt very superior specimens may be produced on trees thus trained. For this purpose the pear should be dwarfed by working on the quince stock, and should be of one or two years' growth from the bud, and the largest and finest kinds that succeed on that stock should be chosen, such as the Duchess d'Angoulême, Beurré Superfin, Glout Morceau, Vicar of Winkfield, Beurré Diel, Passe Colmar, Urbaniste, Louise Bonne of Jersey, Doyenné Boussock, and Beurré d'Anjou. The system will probably prove well adapted to such late pears as do not always ripen well, like the Easter Beurré, and Chaumontelle, and for other kinds in extreme northern climates. It cannot, however, be expected that it will come into general use even for the pear; but it is well adapted for the small gardens of amateurs, who are willing to take extra care to produce fruit of extra quality, and especially where economy of room is an object.

“There is one form of cordon which merits favorable consideration, as being admirably adapted for the largest and smallest gardens, and peculiarly well fitted



SELF-SUPPORTING HORIZONTAL CORDON.

to occupy spaces now vacant near the footings of front walls and other such places, as well as for embellishing the boundary lines of the kitchen garden. The form of tree to which we now refer is the *single cordon*, which may be termed *the cordon, par excellence*. A true cordon consists of a single branch, bearing fruit spurs only, never being allowed to ramify, but increasing in length only in one continuous line. A matter of the first importance is the stock, which should be the true “Paradise” apple of the French, a very different thing from the so-called Paradise commonly met with in English gardens. Since cordon apple trees, grafted on the true Paradise stock, have been imported from France and largely planted in English gardens, we have had many opportunities of inspecting them, and can have no doubt at all as to their value. Trees planted last winter have produced fair crops of the finest quality, and have made such a moderate growth that very little pinching has been required, while there has

been a regular thickening of fruit spurs, and but little tendency to the production of side branches. We have seen them trained along narrow borders in town gardens, affording much interest to their possessors, and we have also seen them trained to low walls where fruit was never produced before, and also forming the boundary lines of kitchen gardens in great establishments.

“Amateurs who seek light amusement in their gardens, will find these little trees a boon to them ; they require only moderate patience to keep the growth in order ; and as to skill, that is scarcely needed, for they very nearly take care of themselves. As for the rest, it will be best, doubtless, to let Mr. Robinson speak for himself ; and we therefore copy the following from his *Parks, Gardens, and Promenades of Paris* :—

“A simple galvanized wire is attached to a strong oak post, or rod of iron, so firmly fixed that the strain of the wire may not disturb it. The wire is supported at a distance of one foot from the ground, and tightened by one of the handy little implements described elsewhere in this volume. The raisisseur will tighten several hundred feet of the wire, which need not be thicker than strong twine, and of the same sort as that recommended for walls and espaliers. The galvanized wire known as No. 14 is the most suitable for general use. At intervals a support is placed under the wire in the form of a piece of thick wire with an eye in it, and on the wire the apple, on the French Paradise, is trained, thus forming the simplest, best, and commonest kind of cordon, and the one so extensively employed for making edgings around the squares in kitchen and fruit gardens.

“Cordons are trained against walls, espaliers, and in many ways ; but the most popular form of all, and the best and most useful, is the little line of apple trees acting as an edging to the quarters in the kitchen and fruit garden. By selecting good kinds, and training them in this way, abundance of the finest fruit may be grown, without having any of the large trees, or those of any other form, in the garden, to shade or occupy its surface. The bilateral cordon is useful for the same purposes as the simple one, and especially adapted to the bottoms of walls, bare spaces between the fruit trees, the fronts of pits, or any low naked wall with a warm exposure. As in many cases the lower parts of walls in gardens are quite naked, this form of cordon offers an opportunity for covering them with what will yield a certain and valuable return. It is by this method that the finest colored, largest, and best French apples, sold in Covent Garden and in the Paris fruit shops at such high prices, are grown. I have seen them, this year, in Covent Garden and in Regent Street, marked two and three shillings each ; and M. Lepère, fils, of Montreuil, told me, when with him last summer, that they have there obtained four francs each for the best fruit of the Calville to send to St. Petersburg, where they are sold, in winter, for as much as eight francs each !

“There is no part of the country in which the low cordon will not be found a most useful addition to the garden ; that is, wherever first-rate and handsome dessert fruit is a want. So great is the demand in the markets for fruit of the highest quality, that sometimes the little trees more than pay for themselves the first year after being planted. In any northern exposed and cold places, where choice apples do not ripen well, it would be desirable to give the trees as warm

and sunny a position as possible, while the form recommended for walls should be used extensively. In no case should the system be tried except as a garden one, an improved method of orcharding being what we want for kitchen fruit, and for the supply of the markets at a cheap rate.

“When lines of cordons are perfectly well furnished, the whole line is a thick mass of bold spurs. Some keep them very closely pinched in to the rod, but the best I have ever seen were allowed a rather free development of spurs, care being taken that they were regularly and densely produced along the stem. The system, as generally applied to the apple, is simply a bringing of one good branch



YOUNG CORDON OF THE LADY APPLE TRAINED AS AN EDGING.

near the earth, where it receives more heat, where it causes no injurious shade, and where it may be protected with the greatest efficiency, and the least amount of trouble.

“A few words are necessary as to the best method of planting and managing the apple trained and planted around the quarters or borders. In a garden in which particular neatness is desirable, it would be better to plant them within whatever edging is used for the walks; but in the rough kitchen or fruit garden they may be used as edgings. The reason for supporting the cordon at one foot from the surface is to prevent the fruit getting soiled by earthy splashings. By having something planted underneath which would prevent this, we might bring the cordon lower down; but though I have thought of several things likely to do this, none of them are very satisfactory. Doubtless, however, we shall yet



REINETTE DU CANADA TRAINED AS A CORDON.

find something that may be cultivated with profit immediately under the cordon, so as to prevent splashings, and thus be able to bring it within six inches of the earth. In gardens where it would not be suitable as an edging, the best way would be to plant it ten inches within the box, or whatever kind of edging was employed. In planting, keep the union of stock and scion just above the surface of the ground, to prevent the apple grafted on the Paradise from emitting its own roots, and consequently becoming useless for such a mode of training. The

trees should never be fixed down to wire or wall immediately after being planted, but allowed to grow erect during the winter months, and until the sap is moving in them, when they may be tied down. Some allow them to grow erect a year in position before tying them down. They should in all cases be allowed to settle well into the ground before being tied to anything. For general plantings the best and cheapest kinds of plants to get are those known as "maidens," i. e., erect-growing trees about a year from the bud or graft. These can be readily trained down to the wire, or to the wall in spring. In training the young tree, the point with its young growing shoot of the current year should always be allowed to grow somewhat erect, so that the sap will flow equably through the plant, drawn on by the rising shoot at its end. To allow gross shoots to rise at any other parts of the tree is to spoil all prospect of success. If the tree does not break regularly into buds, it must be forced to improve, by making incisions before dormant eyes.

"A chief point is not to pinch too closely or too soon. The first stopping of the year is the most important one, and the first shoots should not be pinched in too soon, but when the wood at their base is a little firm, so that the lower eyes at the bases of the leaves may not break soon after the operation. Stop the shoot at five or six leaves, as the object is, not to have a mere stick for the



SIMPLE HORIZONTAL CORDON, THE TREES UNITED BY APPROACH GRAFTING.

cordon, but a dense bushy array of fruit spurs quite a foot or more in diameter, when the leaves are on in summer. All the after pinching of the year may be shorter, and as the object is to regularly furnish the line, the observant trainer will vary his tactics to secure that end; in one place he will have to repress vigor, in another, to encourage it. About three general stoppings during the summer will suffice, but at all times when a strong soft "water shoot" shows itself well above the mass of fruitful ones, it should be pinched in, though not too closely. I have, even in nurseries, seen things called "cordons" with every shoot allowed to rise up like a willow wand, utterly neglected, and on the wrong stock; and I have in other cases seen them so pinched in as to be worthless sticks. Of course success could not be expected under the circumstances; and I must caution the reader against taking such things as examples of the cordon system, or placing any reliance on the opinions of their producers.

"As the Paradise keeps its roots quite near the surface of the ground, spreading an inch or two of half-decomposed manure over the ground, or, in gardening language, mulching it, could not fail to be beneficial. The galvanized wire support (No. 14) is neatest and cheapest, and, in fact, the only one that should be used.

"The cordons are usually planted too close together in France. In Decem-

ber last I finished an experimental plantation of five hundred, at six feet apart, but anticipate taking every second one up after a year or two. When the cordons overtake each other, it is common to graft them one to another — a very simple operation. If, when all are united, they should grow too strong in rich ground, the stem of every second plant may be cut off just beneath the wire, and the trees will be nourished by the others. When the line is well trained and established, the wire may be taken away altogether; but it is so very inexpensive



A CORDON ORIGINALLY PLANTED TOO THICKLY. AFTER ALL HAD BEEN SECURELY GRAFTED TOGETHER, EVERY ALTERNATE STEM WAS REMOVED.

that it is scarcely worth while removing it. If the plantation be made on a slope, all the trees should be planted so as to grow up the incline.

“Finally, in winter the trees will be the better for being looked over with a view to a little pruning here and there, taking care to thin and regulate the spurs when the plantation is thoroughly established, to cut in objectionable stumps, and to firmly tie the shoots along the wire. These should never be tied tightly, so as to prevent their free expansion; but they may be tied firmly without incurring any such danger. As the system is chiefly valuable for the production of superb dessert fruit, only the finest kinds should be selected.”

THE EVER-BEARING ANDINE STRAWBERRY, from the highlands of Mexico, is doubtless, observes Dr. Spruce, one of those varieties of *Fragaria vesca* commonly cultivated throughout the Andes, within the tropics, where the perpetual spring of that favored region has had the effect of rendering the strawberry perennially fruitful, and many of the deciduous-leaved trees of Europe evergreen. In the equatorial Andes the province of Ambato is famed for its strawberries, which equal in size and flavor some of our best varieties, and are to be seen exposed for sale in the market-place of Ambato every day in the year. They are cultivated at an altitude of from seven thousand to nine thousand five hundred feet above the sea, where the mean temperature of the year ranges between 59° and 67° ; but the best are grown a little way out of Ambato, as you go towards Guayaquil, on the slopes of Guachi (lat. 14° S.), at near nine thousand feet, and in a mean temperature of 60° ; where, however, the thermometer does sometimes descend, perhaps half a dozen times in the year, to the freezing point, in the early morning, scarcely ever on two successive days. *Florist and Pomologist.*

FRUIT OF THE YEW. — The pulpy portion of the fruit of the yew tree is generally believed to be harmless, while the kernel or seed is regarded as poisonous. M. Clos, of Toulouse, who has recently investigated the subject, has come to the conclusion that the yew berries, including the kernels, are perfectly harmless. *Idem.*

LONDON LONG GREEN CUCUMBERS. *Properties essential in Prize Specimens.* — We have been applied to by several correspondents for some rules applicable to deciding the comparative merits of cucumbers exhibited to compete for prizes. We are not surprised at such applications, because there is often great and just dissatisfaction when a huge brace, thicker than a man's wrist, twenty or twenty-four inches long, yet yellowish at the ends, and so flexible from keeping that if held in the middle the ends would bend down far towards meeting, are passed over for a neat, perfectly fresh brace, green throughout, not much above a foot in length, nor more than one and a half inches in diameter. To the latter we should award the prize, for they would be far superior in crispness and sweetness. To meet the wishes of our correspondents, we reprint from a former volume of our Journal the following : —

1. The first essential is, that the brace of cucumbers be young, fresh, and green.

2. Both the cucumbers forming the brace should be straight, and the one a counterpart of the other in thickness and length.

3. Though young and crisp, the fruit should be sufficiently grown to be free of anything like deep sutures along the sides, as these involve as much loss in preparing for table as deep-eyed potatoes.

4. The shorter the shoulder of the cucumber, and the more distinct it is, the better ; that is, no blending of the shoulder with the general length of the cucumber ; but that general length, or gun-barrel part, should start, with an abrupt roundness, at once from the shoulder, and proceed with the same diameter until it ends as abruptly at the point.

5. It is well that the point should be quite green ; and if the blossom be attached to it, all the better. If the bloom on the cucumber is fresh from end to end, an extra point will be gained.

6. As respects proportion, nine diameters used to be considered a good proportional length ; and hence a well-grown symmetrical brace, nine inches in length and one inch in diameter, will have many admirers. We would prefer, for longer cucumbers, that the diameter should be a little less, proportionally ; that is, a little less than two inches for eighteen inches in length.

7. We have kept length to the last, but it will ever form a favorable item in judging, when united with freshness and symmetry. Shorter fruit will win, if shown against long, only when more fresh, more symmetrical, covered with richer bloom, etc.

Eng. Jour. Hort.

CANDYTUFT. — None of the perennial species of Candytuft are, according to Mr. G. Maw, so ornamental as that which takes its name from the Rock of Gibraltar — *Iberis gibraltarica*. Plants procured and sent home last April were almost continuously in flower up to November ; and one specimen in the open border, which had been frozen hard three weeks previously, was on November 19 covered with delicate lilac flowers, the corymbs and individual flowers twice the size of those of *Iberis sempervirens*. It differs from all the other species in being a continuous bloomer, the lateral shoots outgrowing and hiding the old flowers as they decay.

Florist and Pomologist.

VEGETABLE TRANSPIRATION AND SENSITIVENESS. — A gardener who studies Nature, and gives his mind to chemistry, botany, &c., can tell us something that relates to plant-life and to vegetation generally in its relations to the elements. In fact, a cultivator has the best of opportunities to become a philosopher, if he will. I verily believe that a gardener's calling is one of the best, in spite of the low rate of wages, because of the enjoyments that accompany it, and the stimulus it affords to thought and observation. However, let us pass as quickly as possible to the subject of this paper.

Every cultivator is aware that evaporation takes place in plants to an inconceivable degree in certain circumstances. It is known by the experiments of Dr. Hales (Statical Essays) that a sunflower will lose as much as a pound and fourteen ounces by perspiration in twelve hours, and that, in general, a sunflower perspires seventeen times more than a man. The same accurate observer found that a cabbage perspired in twelve hours a pound and nine ounces; a paradise stock in a pot eleven ounces; and a lemon-plant eight ounces. Guettard states that he found *Cornus mascula* perspire twice its own weight in one day; and Mr. Knight remarked once, that a vine lost moisture in a hot day with such rapidity, that a glass placed under one of its leaves was speedily covered with dew, and in half an hour the perspiration was running down the glass. In damp weather, evaporation is the least; in hot, dry weather, it is the most. The loss which results must be supplied by the moisture introduced into the system by the spongioles; and, therefore, if we destroy the spongioles, evaporation cannot take place until they are replaced, and, of course, the plant must necessarily make a struggle for life, or die. This is undoubtedly the reason why we cannot remove deciduous trees when in leaf, for it is impossible to remove them without injuring their spongioles; and it must be equally impossible to prevent the evaporation from their leaves: this evaporation exhausts them of their sap, and the roots afford no help to keep up the supply, and death follows. When they are kept in pots, it matters not at what season their removal takes place, because, as their spongioles are then uninjured, if they are planted out with proper care, even excessive evaporation would be made good by the action of the roots. Moreover, we can give them the advantage of shading, frequent sprinkling, &c.

It is a well-known fact to most of us that certain evergreens, such as hollies, laurels, &c., can be transplanted in almost any month. This must arise from their perspiration being much less copious than is the case with deciduous trees; wherefore the spongioles have less difficulty in supplying the loss occasioned by it. Yet even evergreens cannot be removed in the hottest months of the year with impunity, because then the action of such spongioles as may be saved in the operation would not be sufficient to supply the waste by evaporation. Now, if deciduous trees are taken from the ground in the summer, and are potted and then plunged into a hotbed to recover themselves, not for the sake of the heat, but because the atmosphere of a hotbed is so charged with humidity, that perspiration cannot go on, their lives may be saved, and in the end they may be little the worse for the operation. The vital energies of the plant, instead of being wasted by evaporation, are directed to the formation of new roots, or new mouths by which to feed; and theory and practice are conjoined in their preservation. I

have been frequently entertained by making observations on the sensitive plant (*Mimosa sensitiva*). It has been during the summer growing in the stove. It is well known, that, if we touch it, there is a sensitive power of feeling made manifest (or, at all events, something very like feeling); so that it droops and shrinks at the slightest touch. I had occasion to remove a plant into a cool greenhouse: it then, very strange to say, lost all its feeling, and refused to shrink when touched; but as soon as ever it went into the stove again its sensitive actions returned to it. We might in this behavior liken it to an animal that loses volition when benumbed by cold. Then, again, there is the Venus's Fly-Trap (*Dionæa muscipula*), which has jointed leaves, furnished with a row of strong prickles. Flies, or any other insects, attracted by the honey secreted in glands on their surface, venture to alight upon them. No sooner do they touch the leaves than they spring up, locking the two rows of prickles together, and squeezing the insect to death. The sensitive sorrel (*Oxalis* or *Biophytum sensitivum*), and some species of the berberry, are of an irritable disposition. I have noticed also a similar thing in some of the greenhouse acacias and the hardy locusts and gleditschias: these are not exactly sensitive, but, of an evening, the leaves are always closed up in the same manner as those of the sensitive plants are when touched. Another remarkable instance is the tremulous fern (*Pteris tremula*), which always seems to move as if worked by some invisible agency; but whether it is the air, or real volition, that causes the fronds to move always, I am at present unable to say. Again: there is the pretty trembling grass of our meadows (*Aira canescens*), which always appears on the move; but whether it is possessed with the power of trembling, or it is only imagination, I will leave philosophers to decide.* Those who take interest in such subjects as these may find examples in the *Hedysarum gyrans*, also in the common clover, notably in the flowers of the berberis, when the bases of the filaments are touched by the point of a pin, and in the beautiful aspen-tree (*Populus tremula*), the leaves of which are always on the move. It is one of the charming fancies of the poet Moore, that

“ The wind, like a lover,
Wooed the young aspen-trees till they trembled all over.”

John Bowlby, in Gardener's Magazine.

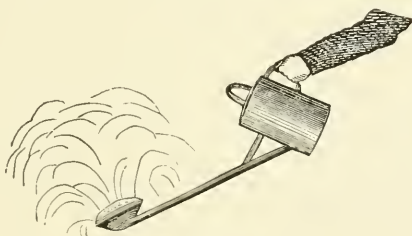
HUYSHE'S VICTORIA PEAR.—This is one of the Rev. Mr. Huyshe's first seedlings, from a cross between Marie Louise and Gansel's Bergamot. It is a pear that has received a very high character; higher than it really deserves. I have never tasted a fruit of it to equal a good Marie Louise or Gansel's Bergamot. It is generally (near London, at least) pasty, and frequently gritty. The fruit is of medium size, somewhat oval in form, flattened at the two ends; skin pale yellow, covered with numerous spots and patches of russet; stalk short, thick; in some cases it is inserted quite in the centre of the fruit, in others obliquely, as in the Beurré d'Aremberg; moderate bearer, succeeding best on the quince. Season, November and December.

* *Aira canescens*, the “gray hair-grass,” has a peculiarly-constructed awn, furnished with a delicate process, which is highly hygrometrical, and moves with the least communication of moisture to it. — Ed. G. M.

THE WATERING-CAN, WITH AN IMPROVED FORM OF ROSE. — If an idea is worth being considered by a home gardener, and its merit tested by a trial, two conditions may very fairly be required, viz., that the advantage should be manifest, and the mode of attaining it easy of execution.

All home florists who have occasion to use the watering-can, find that the ordinary rose discharges a small, destructive water-spout upon their seedlings, which also, besides this, batters the ground in so merciless a way that the hot sun of the following day bakes a complete pie-crust over the inundated region ; the malice of the ordinary watering-can being, that it opens fire, if the expression can be used, from so many formidable port-holes, aiming its discharges straight down upon the rank and file of the home gardener's tender nurslings, to their imminent peril, and not uncommon destruction ; whereas, the obvious desideratum is, that the watering-can should be able to imitate the rain, which falls on the just and unjust, not merely in its copiousness, but also in the gentleness of its fall.

Allow me to suggest to my brother home gardeners the following very simple expedient, which I find to answer so completely that I shall never wish to use



THE WATERING-CAN.

the ordinary form of rose any more. Get any tinman to make a rose of the annexed shape, to fit the can or cans that are in use, five inches in diameter, sufficiently convex, without being perfectly globular, i. e., somewhat like the crown of the human head, and let the stem be from a foot to eighteen inches long. This crown, or semi-globular disk, is to be perforated with a number of the finest possible holes ; and when the operator holds it in the position shown in the cut, provided the holes are all as they should be, viz., as minute as possible, but perfect, there will rise up, from the pressure of the water held above in the can, a multitude of miniature jets, shooting out all round from the semi-globular disk, which miniature jets afterwards fall on the ground as nearly like a gentle rain as possible, without the least damage to the most tender of seedlings. If the smallest pin that is made will go into the holes in the disk, the discharge from the can will be almost too rapid, except for a very large can, and for very heavy work. The disk which I am using for a medium-sized can has almost imperceptible holes, and still the discharge from the can is sufficiently abundant for my purposes. This point, however, can be regulated at pleasure, according to the way in which the disk is perforated. From the exit of the water upwards into

the air, instead of downwards on the ground, nothing in the way of sediment in the water tends to settle in the holes and stop them up. I recommend, then, my brother home gardeners to try this simple experiment, and see if they will care to use any other form of rose afterwards. *Ulysses, in Gardener's Magazine.*

OLDCOTES, NOTTS.

DEPTH OF ROOTS. — An illustration of the depth to which the roots of plants penetrate was furnished at the show of the Highland Agricultural Society, at Edinburgh, in July last. The Marquis of Tweeddale exhibited a sample of oats, growing in earth, contained in a glazed case, six feet in depth, the upper three feet consisting of ordinary surface soil, and the lower three feet of subsoil. The top and root progress of these oats was as follows: April 20, the points of leaves just appeared above the surface of soil; roots one inch down. April 22, leaves one inch high; roots five inches down. May 12, leaves three inches long; roots twelve inches down. May 24, scarcely any increase in the length of the leaves; roots two feet nine inches long. On the 7th of June, the portion of the box containing the subsoil was added. June 16, roots four feet deep, and extending at the rate of one inch in twenty-four hours. June 20, roots four feet six inches deep; plants fifteen and one half inches high. July 7, roots entering the ground on which the case stood, therefore six feet long. *Florist and Pomologist.*

LATE BEARING. — We have never known a pear tree so long coming into bearing as that mentioned in an extract from the Gardener's Magazine. We hope none of our readers will be discouraged by it from planting pear trees, for we assure them it is an exceptional instance.

"A Pear Tree bearing once in Thirty-seven Years. — We have a pear tree here that was planted when the garden was first made, thirty-seven years ago; and until this year it was never known to produce a fruit. Strange to say, this year there is a very nice crop of pears upon it. I had heard so bad a character of this tree that I had in my own mind condemned it to make a gate-post, and so much firewood; but a press of other work prevented me from removing it last winter; so it stood over for a more convenient season. The result is as just stated. There is, for the first time in the memory of a man who helped to plant the tree, some fruit, and in sufficient numbers to induce me to spare its life for another year. This is an illustration of the adage, —

'He who plants pears
Plants for his heirs.'

MUSCAT HAMBURG GRAPE. — We have received from Mr. Wray, of Ramsgate, a bunch of Muscat Hamburg grape, from a vine grafted on the Syrian. The berries are the largest we have ever seen of that variety, and this increase in size is evidently due to the stock. The bunch is well set and large. The Muscat flavor is not well marked, though traceable, indicating that the stock also influences the flavor; but as the berries were not quite ripe, it is probable that this may yet be developed. *English Journal of Horticulture.*

SEDUMS AS BEDDING-PLANTS (read by Mr. R. H. BARD, Wellington-road Nurseries, St. John's Wood, at the United Horticultural Society's Meeting, April 12, 1869). — Sedums are becoming very fashionable, and will soon be more used than they are at present. I therefore think a few hints respecting some of them may be found useful. I do not intend to review the whole of the sedums, but only some of the best; and I shall put them in four sections.

Section 1 consists of such as may be used for a groundwork or ground-covering for beds that are intended to produce a novel effect. Some of them were employed last season on what I call the Miniature Mountains in Battersea Park; but, if I remember aright, Mr. Gibson called the spot Alpine Point.

Sect. 2 includes what are generally known as the Stone-Crop, or "Acre" section. They are very useful for bedding-purposes in hot and dry situations where many other plants would not live.

Sect. 3 will be found a good and useful selection for rockwork.

Sect. 4 is very useful for autumn blooming.

Section 1. *Lydium*. — This is one of the prettiest: it is very dwarf, and of the most beautiful green I have ever seen.

Farinosum is a beautiful sort, — one of the very best. It is dwarf, and of a very light glaucous-green.

Pruinosum. — This is generally called *glaucum*; but the former is the proper name. It is very dwarf, of a glaucous-green, and spreads rapidly. This is the kind which was chiefly used in Battersea Park last season.

Album has small, thick, very dark-green leaves, and is rapid-growing, filling up quickly, and very pretty.

Corsicum. — This is nearly gray, of dense dwarf habit, and a very good sort.

Brevifolium. — Grayish-white and red; dwarf; very distinct and beautiful.

Anglicum. — Very dwarf; light green, turning reddish with hot weather, when it acquires a very pretty appearance.

Dasyphyllum. — This is a large form of *corsicum*, but of equal beauty.

Hispanicum is another very good kind, very dwarf, and of a light glaucous-green. I think this will prove one of the best.

Cyaneum is pretty, and distinct in color and form: it looks like a very small *Echeveria glauca*.

Multiceps. — Small round heads; very curious and distinct.

Sect. 2. — This section is more useful than is generally supposed. One of its uses seems to be the covering of old walls and rockeries. A friend of mine brought me a piece last year from the Vosges Mountains, in the department of the Bas Rhin, and assured me that a castle, which was wholly covered with it in full bloom, had the appearance of "a real golden castle." It was the Château de Hoh-Kœnigsbourg, near the town of Schlestadt; and the people about there called the plant Gold-Dust. As the specimen was in a rather dry state, I could hardly determine whether it was *Sedum acre* or *S. acre aureum*; but I should say it was the former. They are both very beautiful, and not to be despised, though they are only stone-crops.

Mornegalense is a fine free-growing variety of the acre style, and very pretty for bedding out in summer.

Anopetalum, a large-growing, dark green stone-crop, which does not appear to bloom at the same time as those previously mentioned.

Collinum. — This makes a much neater and prettier growth than *S. anopetalum*.

Sexangulare is another large form of *S. acre*.

Ochroleucum is somewhat like the former in growth; but the flowers are a kind of stone-color.

Pallidum. — This is a distinct sort: the color of the flowers is a pale reddish-brown.

Pulchellum is the smallest I have seen of this section, and is certainly very pretty.

Sect. 3. — *Macranthum* has long stems; the leaves grayish, and turning reddish with age.

Monstrosum is a very peculiar sort: it is of a very dark green, and grows in the form of a cockscomb.

Beyrichianum is a pretty, small, flat-growing kind.

Sieboldii and *Sieboldii variegatum* are both fine for rockwork; especially the latter, which is one of the best of the genus.

Azurcum is a fine, free, spreading sort. The flowers of this also look well, as they are bluish.

Altissimum is of long growth; the leaves fleshy, of a grayish color.

Kamtschaticum and *Braunii* are very much alike. They are of a very dark green, and spread very quickly.

Carneum variegatum. — A very pretty variety, with variegated leaves.

Anacampseros has flat, glaucous-green leaves, and is fine.

Dentatum and *denticulatum* are both good. The latter is of rather longer growth than the former. They are both dark green.

Forsterianum is pretty and distinct, having long shoots thickly studded with fleshy-pointed leaves.

Glaucum Smithii is of closer growth than the former, and of a more glaucous hue.

Neglectum. — Very distinct and pretty, resembling a mesembryanthemum in growth.

Populifolium is bush-like in its growth, and has very pretty leaves. It is very distinct.

Speciosum has long stems and round leaves, and is a good and useful kind.

Involucratum partakes somewhat of the character of *ibericum*, but is of much closer habit.

Sect. 4. — *Fabaria* has large heads of white flowers. Those of *Fabaria rubrum* and *Telephium* are purple.

These are very useful, coming into bloom in the autumn. The first two are the best, as they are two months later in flowering than *Telephium*; and do not grow so tall, scarcely ever exceeding a foot in height. The best way to treat them is to plant them out in the garden, and take them up and pot them just as they are coming into bloom; which will be about October. They will be very useful when flowers are becoming scarce. — *Journal of Horticulture*.

SWEET APPLES IN ENGLAND. — Looking over the London Horticultural Society's catalogue a short time ago, we were surprised at the entire absence of the sweet apples, which make so large a show on our tables in this country as well as in our books. We could only infer that there were none in England, though this seemed almost incredible; but we afterwards came across a passage in "The Gardener's Chronicle" which confirmed this opinion. "There is," says the writer, who is discussing the subject of American apples and other fruits, "a class of apples quite peculiar to the States; viz., sweet apples, or pig-feeding apples. These have scarcely any trace of acid, even when grown in England, but are of a luscious, rather dull, sugary flavor. Pigs thrive upon them, and they are grown largely by the farmers for autumn feeding. The Jersey Sweeting, Tolman's Sweeting, Ramsdell's Sweeting, and hundreds of seedling sweet apples, are planted 'to please the pigs.'" So these benighted Englishmen are utterly ignorant of the Yankee luxury of baked sweet apples and milk!

THE GOOSEBERRY CATERPILLAR. — To destroy this insect, which is so injurious to the foliage of the currant and gooseberry, "The Gardener's Receipt-Book" recommends putting an ounce of white hellebore into a four-quart earthen jar of water. This will be sufficient for a hundred and fifty ordinary-sized bushes. The way to use it is, on a dry day, to take out the quantity needed into a basin, and with an old whitewash-brush sprinkle the parts that are attacked. Keep the jar always closely corked from the air. Green fly on roses and greenhouse-plants may be removed in the same way. We should think this method would be preferable to using it in powder as commonly recommended, as it would not be so apt to adhere to the fruit.

Another way is to take a quantity of elder-leaves, and boil them in as much water as will cover them until the liquor becomes quite black; then clear and cool it, and to every gallon add a gallon of tobacco-water. When the bushes are quite dry, drench them through the rose of a watering-pot; and in ten minutes the caterpillars will fall off. We have not tried this; but, if it proves effectual, it would be best of all, as we have decided objections to using so poisonous a substance as hellebore if it can be avoided.

THE ARRANGEMENT OF CUT FLOWERS. — Those who have conservatories to resort to for their flowers and foliage have a comparatively easy task, and can, with a little practice, easily fill their vases with beauty. The colors of exotics are so clear and delicate, that nothing but simplicity is required in their arrangement. What, for instance, can be more beautiful than a Dobson vase arranged with azaleas, a few sprays of pink at the bottom and white at the top, with nothing but maiden-hair fern for foliage? or the magnificent eucharis, with small bright-colored flowers and leaves intermixed? or some richly-tinted pelargonium and the *Deutzia gracilis*, with any suitable fern? though perhaps the maiden-hair is of all the most effective. Several of the fronds should be tied at some distance up the stem of the vase, to take off the bare appearance there would otherwise be; and, before the flowers are put in, the glasses should be filled with sand and

water, and (instead of moss, which is recommended for garden and wild flowers) the small-leaved lycopod should be planted all over. It will live a considerable time, and seldom requires changing. Should the vase be small, or the flowers very light, the sand may be dispensed with.

A group of ferns only, in a high vase of frosted glass, has a very pleasant effect in a bright sunny room, and is especially recommended for dinner-table decoration in summer. Care should always be taken to suit the flowers to the room or place for which they are intended. In a gayly-furnished room, plenty of white flowers and foliage should be used; while, in a dull or shaded room, brilliant coloring is better: but the colors must be well blended, or they will completely spoil each other. Scarlet and white, as the most prominent colors, with a free mixture of small blue flowers, and a tinge of yellow here and there, with ferns and grasses, have a cheerful effect; but no two reds, blues, or violets, should ever be placed side by side. Yellow should be used sparingly as a rule; though it often looks well when alone, or mixed with blue or violet. Purple and white flowers look exceedingly well with very yellow-green foliage, such as belongs to the white periwinkle.

One very easy and effective way of arranging flowers is to have a number of small vases about the room, and to fill each with a distinct variety. This way is particularly useful for wild flowers, as their colors are seldom decided enough to mix well with other tints; and yet they will furnish many a fragrant and dainty decoration for the drawing-room, if skilfully managed. Imagine a Dobson stand covered with deep-pink dog-roses, a basketful of honeysuckle, a high vase of the blue water forget-me-not, and some specimen glasses with any pretty flower that may chance to grow in the neighborhood: the whole effect will be very good, and the scent delightful.

Though it is certainly more difficult to arrange garden and wild flowers than those which grow in a hothouse, yet, if a little time and thought be expended on the subject, it is astonishing what a variety of beautiful arrangements may be made from the simplest materials. Almost every thing that grows in an ordinary garden may be used with advantage at some time. Even the twigs of trees will sometimes look well as foliage, such as the dark-brown leaves and nuts of the copper-beech, the brush-like flower of the sycamore, and the sweet-scented lime-blossom. But every thing should be arranged as Nature directs. That which grows in a drooping form should still be allowed to droop; and many a long-stemmed flower is spoiled by being clipped to the requirements of a shallow vase. Crowding, also, should be carefully avoided; and the light and graceful forms of plants and trees should be imitated as much as possible in the arrangement of flower-vases. — *L. Laughton, in Journal of Horticulture.*



THE Editors of Tilton's Journal of Horticulture cordially invite all interested in horticulture and pomology, in their various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed; we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

MR. EDITOR: When I inquired about the use of rubber in glazing garden sashes, I considered its great advantage over putty to be, that it would answer at least equally well, to save breakage of glass by concussion, and enable broken panes to be much more readily and cheaply replaced; that is, to have a strip of suitable rubber cloth underneath, and the usual good fastening by points above.

I had in mind a very interesting description of Beard's Patent Glass Houses, in the Journal of Horticulture, vol. ii. p. 50. This, though an iron frame structure, has some principles of construction that would be of benefit in a wood-

one. By fresh reference, however, I see that "asphalted felt" is used instead of any form of rubber. If I were going to make a glass house, I should certainly try the use of some kind of rubber belting or packing, and this hint may be of use to some of your readers.

C. F. H.

WATERVILLE, MAINE, February 9, 1870.

We think our correspondent's suggestion is worth acting upon, and if any of our readers should act upon it, we hope they will communicate the results to the Journal.

K. A. J. — If your soil is too stiff, you must cart on sand or fine gravel. By mulching the trees or plants on it with tan or sawdust, which, as they decay, will gradually become mixed with the soil, the character of it will be greatly improved, and the plants will be saved from throwing out by the action of the frost, as they are apt to in such soils. It requires a good deal more sand to ameliorate a clay soil than it does of clay to make a sandy soil sufficiently tenacious; but when once brought to the proper consistency, it makes one of the most valuable soils, especially for pear trees. By underdraining, if susceptible of it, it may be brought into condition to be worked much earlier in spring than otherwise.

EDITOR JOURNAL OF HORTICULTURE: I am engaged somewhat extensively in fruit raising, particularly apples, pears, and peaches. We have had good crops, of all kinds, during the season just closed; have worked them off, and have no reason to complain of results. In regard to apples and pears, I have felt the want of experience in handling them, and write this to ask of some one who has the necessary experience, to communicate it through the columns of the Journal, for the benefit of novices like myself. The points upon which information is more especially needed are, the kind of buildings necessary for storing and wintering fruit, with an arrangement for the ripening of winter pears, the best method and mills for making cider and vinegar, and for keeping the same. My pear orchard is on the quince, and as the success of the pear cultivated in that manner is yet doubted by many, when the result of my experiment is known, I will give it to the readers of the Journal. Yours, very truly,

T. J. P.

GOSHEN, OHIO.

You will find information in regard to ripening, packing, and keeping fruit, and the construction of fruit-houses, in our vol. iii. p. 321, vol. v. p. 333, and vol. vi. p. 45, and on cider and cider manufacture, in vol. v. p. 331. We should be glad to hear further from our readers on the points mentioned by "T. J. P.," and especially in regard to making and keeping cider and vinegar. It will give us pleasure to publish the results of your experiments in cultivating dwarf pears.

MR. EDITOR: I notice that the last number of the Horticulturist classes the Flemish Beauty among popular pears, and would name it, without hesitation, for a place in every pear list. Now, I am under the impression that this variety has been subject to blight of late years; but as the journal above named says nothing of this, I would like to ask if I am right.

S. J. R.

You are right. Ten years ago, or more, the Flemish Beauty was one of the

most popular pears, and justly recommended for general cultivation ; but within a few years it has been so subject to crack and rust, in many parts of the country, that it should be planted cautiously, especially as, judging from the fate which has overtaken other varieties, this deterioration is likely to extend to parts of the country now free.

THE "WALTER" GRAPE. — Late in the spring of 1863, a vine of this variety was sent me for trial. Last summer it bore three bunches of grapes. There is but one word that describes them, and that is — *delicious*.

I have some forty varieties in my garden, most of them new. Not one, in my estimation, excels, or even equals, the "Walter." The vine is hardy and a good grower. A. C. L.

MADISON, IND., February 9, 1870.

MR. EDITOR: In 1868, I found several black grapes — evidently Concord — growing upon the same stem bearing Catawba grapes. A Concord vine was within seven feet of the Catawba, and bearing grapes. Have you, or any of your readers, witnessed a similar product of a vine? R. L. U.

GREENCASTLE, INDIANA.

We have never witnessed such an instance of "sport" in a grape vine as is described above ; and, to tell the truth, we feel a little incredulous about it. If any of our readers have ever noticed such a product of a vine, we would like to know of it.

J. W. B., Harrison Square, Mass. — You will find, in the back numbers of the Journal, many plans of greenhouses and graperies. We cannot give you hints adapted to your particular location, without knowing something about it.

The general principles of construction you will find in our back numbers. As to double glazing, you can easily run out to Mr. Strong's greenhouses, at Brighton, and see for yourself the working result, which will be worth a volume of theory. The principle of double glazing was fully stated in the article in the journal to which you refer.

L. H. B., Deposit, N. Y. — We cannot tell you where to obtain seed of *Canna grandiflora floribunda* in this country. It is a new and scarce variety in England.

We are glad to hear such a favorable report of *C. Bihorelli*, as we think it very fine. *C. Nepalensis*, *Depute Hernon*, *Marechal Vaillant*, and *Rendatlerii*, are all very fine both in foliage and flower, and will give you perfect satisfaction. You can get seed of all from B. K. Bliss, of New York.

There have been two parts of "Beautiful-leaved Plants" published. You will receive the remaining numbers as they are issued.

J. C., Havana, Ill. — The "invariable law of color in plants," of which you speak, is imperfectly understood, if, indeed, it exists at all. It was once considered certain that no genus, in which the prevailing colors were red or yellow,

could have blue flowers. Yet the discovery of the blue *Tropæolum* gave a startling exception to this rule.

There is no reason why we should not have a yellow verbena. In fact, one of the species (*V. sulphurea*) is yellow. So in phlox, where the prevailing color is red, in its various shades. Yet last year gave us a variety of the annual phlox (*P. Drummondii*) of a pale yellow color.

The blue dahlias and roses are unattained, but who shall say they are *unattainable*?

MRS. J. T. S., Yuba City, Cal. — The crape myrtle is easily propagated from cuttings, which root freely if inserted in sand, under a bell glass, with bottom heat. You may root them without heat, but not with certainty.

We never heard of "rooting rose cuttings in charcoal." Roses are easily rooted from cuttings, in sand or sandy loam; we can see no advantage in using charcoal for cuttings.

R. P., Queens, N. Y. — The leaves of the *Begonia* sent are very fine. The markings are distinct, and the combination of color effective. If, as you suppose, a chance seedling, you have been fortunate to obtain so fine a variety. You should propagate it. We will consider as to figuring it. Can you furnish a plant?

J. G., Ayr, Ontario, Canada. — The names of your plants are,

No. 1. *Physalis grandiflora*,

No. 2. *Physalis viscosa*,

No. 3. *Ranunculus rhomboideus*,

No. 4. *Liatris scariosa*,

No. 5. Probably *Solidago rigida*,

No. 6. Undistinguishable.

ANNIE M., Worcester. — The "German ivy" is *Senecio scandens*, the "Coliseum ivy" is *Linaria Cymbalaria*. Neither of these is true ivy, which, botanically, is *Hedera*.

JOHN WEST, Indianapolis. — We cannot name your plants from the description; give us leaves, fruit, and flowers, and we can, doubtless, identify them; — often from leaves alone, generally from flowers. We cannot, however, name aloes from *leaves*. You must send flowers.



APRIL.

THINNING OF FRUITS.

By MARSHALL P. WILDER, President American Pomological Society.

ONE of the most important lessons which experience has taught us is the necessity of thinning our crops of fruit; and no operation, in the whole round of fruit culture, has been so much neglected. It is not strange that the young cultivator, delighted with a fine show of large pears on a young tree, or an abundant crop of grapes on a young vine, should, in the pride of his heart, — and not knowing the impossibility of the tree or vine bringing them all to maturity without a tax on its vital powers of which the effect may be felt for years, — permit them to remain upon the plant; for even the most skilful and experienced cultivators have just begun to realize the importance, when fruit is grown on a large scale, of properly thinning the crop. It is true that the labor is great, but so is the profit; and oftentimes it happens that the labor of thinning a crop makes all the difference between absolute unsalableness and a high price in the market. Not unfrequently a pear tree will set so much fruit that it cannot bring any part of it to a size which will render it salable in a crowded market, when if one half, or even a

larger part, of the fruit had been removed, the remaining specimens would not only have filled nearly or quite as great a bulk, but would have sold quickly at the top prices of the market. One of our farmers, near Boston, always thins his fruit—another, adjoining his orchard, neglects it. The location and treatment of these two orchards, in other respects, are much the same; but the former realizes for his crop of Baldwin apples about four dollars and a half per barrel, while the latter, standing by his side in the market, receives less than three dollars and a half for his.

The case is still stronger with the pear, which, growing on smaller trees, is more easily thinned, and the prices obtained for the fruit afford a better remuneration for the labor of thinning. While those properly thinned and cared for will command four dollars per bushel, those of the common run will not bring more than two dollars; and this rule applies not only to fruits, but to all vegetable productions. Every one has observed that the overbearing of a fruit tree one year is likely to result in barrenness the next. Hence the necessity of thinning our fruits so as to avoid exhaustion of the tree, and to keep up a regular succession of good fruit. Even the Baldwin apple, which, from its great productiveness, bears only on alternate years, we think might, by thinning, be made to bear annual crops.

When fruits are crowded, they are not only deprived of light, air, and warmth, but actually of room, so that the adjacent sides of two fruits are compressed, and they fail of their full development. Not merely the form, but the color, is improved by thinning; for without light fruit can never attain perfect color. When fruits are crowded in clusters, they are particularly liable to be attacked by insects and disease; and therefore the necessity, if we wish perfect specimens, for removing a part, so that no two fruits shall touch each other. This necessity is especially strong in the case of the peach and plum, where rot is liable to be communicated by contact. These should be so severely thinned, when young, as to make it certain that they will not touch each other when fully grown. In every case, in performing the operation, it should not be forgotten that the danger, when we have a large crop to begin with, is not of thinning too severely, but the reverse.

FALL AND SPRING PLANTING.

By D. W. ADAMS, Wawkon, Iowa.

ALL American horticulturists have been in the habit, for many years, of reading the writings of William Saunders with very great pleasure and profit. His article in the January number of the *Journal of Horticulture* is written in his usual straight-forward style, and is full of good, sound thought.

The article is an argument in favor of fall planting of deciduous trees; and a careful and repeated perusal thereof scarcely discloses a single unsound or doubtful position, until we reach the last four lines, which read thus: "Whether fall or spring is the best time to plant, does not admit of any argument, so far as the principle is concerned. The question can only arise as a matter of personal convenience, and therefore of no public interest whatever, so far as concerns the laws of growth."

It seems incredible that Mr. Saunders should close this paper with such a sentence, after having, on the second page of the same article, penned such great truths as the following: "Rules for practice are promulgated as if they were of universal instead of being only of special application." "No rules can be given that will be of equal force or application in every case; the practice perfectly adapted to one soil and situation would be altogether unsuited to another, if differently circumstanced."

There is no operation in horticulture to which this fact applies with more force than to that of transplanting trees. Iowa, Northern Illinois, Wisconsin, Minnesota, Dacotah, and Nebraska are larger than all the New England and Middle States. Probably there is not another body of land in the whole world, of equal size, that is so uniformly fertile and arable; yet, through all this great natural garden, fall planting, as a rule, is a failure. Abundant trial has proved this, and spring planting is now almost universal here; and we claim that this practice is not based upon "empiricism," but is "governed by a knowledge of

principles." It must not be understood, from this, that fall planting here *never* succeeds; for there are frequent exceptional cases of trees planted in autumn making a fair growth; but it is certain that they *are* purely exceptional. Why?

When a tree is planted in early autumn, the soil is warm. The wounded roots at once commence healing, and throw out numerous fine young rootlets, to replace those removed in the process of digging. Now, it is a well-established principle, that the growth of new roots, and the formation of callus, — when there is no foliage on the tree, — is mainly at the expense of nutriment previously stored up in the tree, and not formed of new material, freshly taken from the soil and atmosphere. When winter sets in, we have a tree weakened by this unusual and unnatural drain upon its resources. What is the result? Usually very little snow falls in this region. The ground freezes terribly hard, and often several feet deep; and these new, tender rootlets and the forming calluses are killed like sprouting corn. The wounded roots decay, and the remainder, weakened by the loss of needed nutriment, are seriously injured, and often killed outright. Spring usually finds the roots of fall-planted trees in this condition.

Now, how about the top? This portion of the tree has also contributed from its precious stores towards the formation of those short-lived roots; and then, with its vitality weakened, its reserved forces exhausted, and its supplies cut off, it is asked to brave the terrors of a north-western winter. The dry winter blasts that sweep across these prairies call imperatively for moisture: every living thing must contribute its quota. The poor, fainting tree, with no source of supply but a few dead and dying fragments of roots, is drained and sucked at every pore through the weeks and months of the long winter. Unite to this the terrible ordeal of cold, as indicated by the mercury going down ten, twenty, thirty, and even forty degrees below zero, and it will take but a small amount of thought to decide that a tree thus situated must be in a very poor condition to strike new roots, push out new leaves, and go on vigorously repairing the losses of the past, and building up a new structure for the future.

In short, then, viewed from this north-western prairie stand-point, "theoretically, it is apparent that the fall-planted tree has great" DIS-

“advantages over its spring-planted neighbor ; but it may be doubted if any one, not familiar with the subject, could imagine so great a difference as occurs in reality.”

CYANOPHYLLUM MAGNIFICUM.

By “ELLERSLIE.”

No doubt a few hints on the propagation and cultivation of this magnificent foliage plant will be interesting to many of your readers. Some propagate this plant by taking the head of the plant, others by cutting up the old stem into eyes, as we would grape vines ; in either case, one plant is destroyed. I prefer cutting the plant down to within six or eight inches of the pot, and placing it in a warm house to break, which it soon will, if plunged in a little bottom heat, say sixty or seventy. When these have grown six or eight inches, take off with a little peel, insert into a pint pot with any sort of sharp sand, place in a bottom heat of seventy-five to eighty. In about six or eight weeks they will be rooted, if covered with a bell glass, which must be wiped every morning. Now, the next thing to be done is to grow this plant into a beautiful specimen, which we rarely see, it being so subject to all sorts of insects.

Your plant is now rooted : put into a quart pot with three parts turfy loam, a little leaf mould, and rotten cow manure, with a little sprinkling of rough bone, and as the plant fills the pot with roots, put into a larger size from time to time, with stronger compost, say a good handful of rotten manure instead of so many crocks. Keep in a warm, moist stove at a temperature of from sixty to eighty. This plant must have rich compost, as it is as gross a feeder as a tobacco plant ; and as a remedy for insects, I occasionally water with tobacco water, which is carried up by the organs of the plant, and no insect or scale seems to touch it. I have one of those fine plants of eleven months from the cutting pot, which is five feet in height, with leaves three feet long and twenty inches in width, with nine set of leaves, and hanging gracefully, and spreading to five feet in diameter ; and no insect wishes to look at it.

THE SALVIA.

By EDWARD S. RAND, JR., Boston, Mass.

THIS pretty genus of *Labiatae* is well represented in our gardens and greenhouses, although but few of the many known species are in cultivation. The most common is the Garden Sage (*S. officinalis*), well known for its aromatic properties, and, when in bloom, by no means unornamental. The name is derived from the Latin "*salvo*," I heal, or save, in allusion to the supposed medicinal or curative properties of the genus. There are about one hundred and fifty species, the greater proportion of which are indigenous to Europe; but the most showy are natives of Mexico and South America.

In Miller's Plants, published in 1760, we find two of the blue-flowered Cape species beautifully figured, and Pritzel refers us to illustrations of nearly two hundred species and varieties. The general color of the flowers is blue, but in many species they are white, pink, and even yellow, while in the showy Mexican kinds they are brilliant scarlet. We have two indigenous species, both ornamental and desirable: *S. gyrata*, a hardy perennial, and *S. urticifolia* — both natives of the Middle, Western, and Southern States, and both blue-flowered. Of the scarlet-flowered species, the best known and most showy is the so-called Mexican Sage (*S. splendens*). When well grown, this is one of the finest of autumn-flowering plants. Nothing can be more showy than a large plant of this species in full bloom. The only fault it has is its late-blooming habit, as it seldom comes into flower before the middle of September, and is very liable to be cut down by the frost, which not unfrequently falls before the first of October. Farther south, — and with us, in sheltered situations, or if protected from frost, — it continues to bloom until November, displaying its gorgeous flowers in rich profusion. There is a dwarf variety very desirable, as coming into bloom earlier in the season, called *S. splendens Gordonii*, which has given us great satisfaction.

Salvia fulgens and *gesneriflora* are very beautiful species, with large deep-scarlet flowers, much resembling a gesnera; they are not, however, very free-blooming, and are more showy as pot plants than in

the garden. The former is Mexican, the latter comes from South America.

S. coccinea is an excellent plant for bedding. The flowers are small, and soon drop if gathered; but with a little care in pinching, the plant may be made very bushy, and will bloom freely all summer. We have seen a bed of this species very effective in a lawn.

S. patens is the best of the blue-flowered species. The blossoms are very large, of the richest blue, and are freely produced all summer. The root is a tuber, which may be taken up in the autumn, and preserved during the winter in dry sand in a frost-proof cellar. There is also a white-flowered variety.

It is best to set out strong plants in the spring, as they begin to bloom early in July, and continue until killed by the frost; whereas if seed is planted, the first flowers are often destroyed by the cold. Cuttings strike freely, and seed ripens from early-blooming plants. This species is almost too straggling in its habit to form a good mass, but the spikes of large blue flowers are very showy, and no garden should be without a bed of it. It may be pegged down to advantage, as the branches are very brittle. We know of no blue flower which can rival it in depth and purity of color.

Many other tropical species are useful for bedding, but they are not generally grown, although they would doubtless be acquisitions to the garden. *S. hians* is a fine herbaceous species, with large blue and white flowers. *S. rugosa* has fine woolly foliage, and if not allowed to bloom is very ornamental. The flower is white, and not showy. It is a biennial, and must be sown every year for succession.

There is nothing easier than the general culture of all the species. All do well in a rich, light soil. The annual and biennial species should be sown where they are to bloom, or may be started in a moderate hot-bed or cold-frame, and planted out when they become large enough to transplant. The biennial kinds are the better for a slight protection, such as evergreen boughs, in winter; and of these, seed should be sown every year to keep up a succession of bloom. The greenhouse species root freely from cuttings in common loam and sand; but the stove kinds do better if struck in bottom heat.

All of them make good bedding plants, but the soil in the garden

should not be too rich and heavy, as they are liable to grow too much to leaves, and are cut down by autumn frost before they can flower. Some of them, of which *S. splendens* is an example, do well with parlor culture, blooming freely from October to Christmas. For city gardens there are no better plants, as, protected from early frost, they have a season long enough to display their full beauties. The genus is a favorite of ours; and a most attractive feature of our garden would be wanting, did we fail to plant our masses of blue and red *Salvias*.

GLEN RIDGE, October, 1869.

BOUVARDIA VREELANDI.

By PETER HENDERSON, Bergen, N. J.

THE engraving is an excellent representation of a plant that will probably prove a valuable acquisition to our winter flowers. I say *probably*, for the point is yet to be decided whether it will retain its character when propagated from roots — our previous experience with the white varieties, that have “sported” from the red, having shown that they go back to the original type, and can only be held true to character when propagated from cuttings of the shoots. In this particular variety, — *Vreelandi*, — however, there is a marked difference from the white varieties we have before had, all of these being tinged with a pink or rose shade, while the present one is of the purest white, without a tinge of any other color. We are inclined to hope that this well-marked distinction may be fixed, and that when increased by root cuttings, the plants so made will produce the pure white flowers of the parent.

The history of this plant is rather peculiar. The gentleman in whose hands it originated, Stephen B. Vreeland, of Greenville, N. J., purchased from me, last spring, five hundred *Bouvardia Hogarth*, and on lifting, to pot them for winter flowering last September, discovered one plant showing the flower buds white. This was the plant from which the specimen was taken that the drawing was made from. During the past ten years, perhaps, twenty thousand plants of *Bouvardias* have been forced for winter flowers annually; yet in all that vast number it is likely that no pure white variety has ever before been produced. The plants

I sold Mr. Vreeland were all propagated from roots, so that there is no doubt of its origin being known as a "bud variation," or "sport," as there is no possibility of its having originated from seed.

Mr. Vreeland was entirely unacquainted with the business, and was



BOUARDIA VREELANDI.

astonished when told of the probable great value of the plant. He has been offered a most extravagant price for the stock, but prefers to hold it in his own hands until such time as he has increased it enough to offer it at reasonable rates.

GRAFTING LARGE TREES.

EVERY pomologist who has ever undertaken to make a collection of fruit has found among the multitudinous varieties gathered together a great number which have proved of inferior quality ; and even the cultivator who, profiting by the experience of those who have preceded him, plants only a selection of the best varieties, finds, to his mortification and regret, that some of his trees are not the kinds which he ordered, or they prove not to be adapted to his soil, or some of those most popular when he planted them have, in the few years that have elapsed between that time and their coming into bearing, shown defects which cause them to be generally condemned. The time and labor spent in rearing such trees are not wholly lost, for, with skill and judgment, they may, by grafting into the limbs, in a very few years be made to produce the best varieties. Too often, however, from want of skill in performing the operation, many grafts fail to grow, or from want of judgment as to what limbs should be grafted, or where they should be cut, an unsightly, ill-balanced tree is produced, when a little care would have given a tree which in a few years would be as beautiful as any in the orchard.

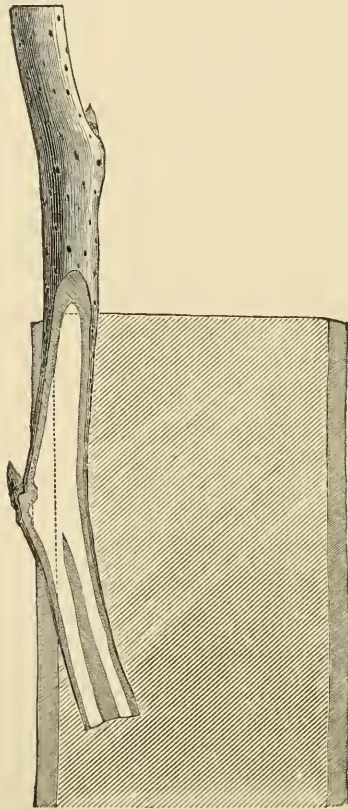
There are a few points connected with this subject, not generally noticed in treatises on fruit culture, to which it may be worth while to call attention. Suppose we have a handsome pyramidal tree, of perhaps twenty feet in height, which we have reluctantly concluded must be regrafted. The first point to be considered is what branches to graft and where to graft them, so that when the work is completed, and the grafts are grown, the tree shall still present the same beautiful pyramidal form. Stand off at a little distance, and observe what limbs, if any, are superfluous, and would be cut out if you were pruning. Do not touch these. The whole top of a large tree should never be grafted at once, but two or even three years should be taken for the operation ; and it is very plain that it will be a saving of time to graft the limbs which you mean to retain, leaving the others to be cut out the second year, rather than to adopt the contrary course. Then, as to the points where the

limbs are to be cut: it is plain that these should be chosen so that the general outline of the tree may be preserved, and it is especially important that no limb should be allowed to project far beyond, and, still more, to rise much higher than those adjacent, for it will certainly grow more strongly, and produce an ill-balanced tree. It should also be remembered that the grafts in the main stem and the upper branches will attract a greater portion of the sap than the lower ones; and therefore the former should be cut shorter in proportion than the latter, to counteract the effects of this propensity. When the whole tree is not to be grafted in one season, the commencement must be made at the upper part; for if we began with the lower limbs, the grafts would make scarcely any growth the first year.

It is difficult to lay down rules such as shall be exact guides for this part of our work, and consequently it is here that we see the most frequent failures; but by practice in the study of the habit of trees, the necessary judgment is soon acquired.

The method of inserting the grafts in the limbs of trees most commonly used is that known as cleft grafting. The beginner is not quite so sure of success as in grafting under the bark; but the necessary skill is soon acquired, and all the tedious trouble of tying in the grafts is avoided. One of the most common sources of failure with this method is from making the wedge part of the scion too short, particularly for large stocks. The wedge should be made of such length and shape as to fill the split as far as opened, touching the sides at all points. If you do not succeed the first time, take out the scion and try again. You will soon be able to cut your grafts so skilfully that you can prepare enough for a dozen stocks at once, with the certainty of their fitting. If the split is not perfectly clean and smooth, it must be trimmed out with a sharp, thin-bladed knife, removing any fibres and roughnesses that would prevent the proper insertion of the grafts. A thin, broad, flat blade should be used for sharpening the scion, and the cuts should be made smooth, and in a single plane. It is commonly directed to make the bark of the scion and stock coincide in the inner surface; but this is hardly possible, both from the difficulty of seeing them in the narrow split, and from the fact that the scion, if cut with an eye on the wedge, as it should be, is apt to be curved, especially in pears, while

the older wood of the stock has outgrown this curvature and become straight; consequently many grafters content themselves with placing the scion in such position that the inner lines of the bark of the stock and scion shall cross each other, thus making sure of contact in at least one point; but by taking advantage of the difference in the stock and scion mentioned above, a contact can be secured in at least two places, as shown in the cut, which represents a stock with the half nearest the spectator removed; the dotted lines showing the bark of the stock, the inner line crossing that of the scion near the bottom, and again close to the top of the wedge.



If the operation is skilfully performed according to these directions, the failures will be so few that they will not be worth taking into account.

It sometimes becomes necessary to graft a very large limb; and in this case more than two scions should be inserted, so as to have a greater number of buds to receive the sap. Sometimes a cross split is made for two additional grafts; but this is objectionable as opening the wood too much, and being also difficult to adjust. It is better to insert two or more under the bark, by the method known as crown grafting, which may be cut out in a year or two after they have served their purpose. Use the large part of the grafts in the clefts, and the tips under the bark. It is also well, in grafting such large stocks, to put in the cleft one or two wedges of seasoned wood, to relieve the grafts from too great pressure. With these precautions, we have grafted stocks three inches in diameter with perfect success. They must, however, be watched and protected from decay until healed.

In crown grafting, it is commonly directed to make a single cut through the bark; but inserting the scion under bark at all thick, as it is apt to be on large stocks, causes an unnecessary separation of the bark from the stock, and therefore we recommend making two cuts as far apart as the width of the scion, raising only the tongue of bark between them, and leaving that at the sides entirely undisturbed. It makes a much neater job to cut the scions with a shoulder to rest on the top of the stock when inserted, than with a straight scarf. If any stock appears to be cross-grained, and difficult to split, it will be better to insert all by crown grafting, and in this case those designed to be ultimately retained should be good strong shoots. It has been objected to this method that the grafts are in danger of blowing out; at least it is so stated in books; but we do not recollect a single instance, among hundreds of such grafts that we have seen, of the realization of this fear, and believe it to be only an illustration of the manner in which incorrect ideas are copied by one writer from another, without taking the trouble to examine into their truth.

Our practice has been to permit all suckers to grow the first season, so as to afford plenty of leaves to elaborate the sap, removing them early in spring, saving now and then one which may be needed to fill the place of a deficient limb, to be grafted when of sufficient size. At the same time, such branches as are not wanted may be cut out, and any smaller limbs which are wanted to fill out the top may be grafted.

For branches from half an inch to an inch in diameter, the following method, which is a modification of saddle grafting, is most eligible. It was first described in 1811, by Mr. Knight, in the London Horticultural Society's Transactions, vol. i., p. 240, but is now quite well known, yet not as much practised as it deserves to be. The stock is first cut smoothly and cleanly at an angle of about forty-five degrees, and the bark slit from the highest point about two inches down. To prepare the scion, after cutting it of proper length, hold it in the left hand by the upper end, and with a sharp, thin blade slit it open, beginning at the butt end, for about two inches — not in the middle, but so that the lower portion shall be twice as thick as the upper. Then turn the scion so as to have the butt end towards you, and pare away the larger part so that it shall taper to the end. This portion is now to be inserted in the slit before mentioned, between the bark and wood of the stock, bringing the thinner part down over the sloping cut of the stock. It will unite with the stock at the lower part of the cut, thus causing the wound to be speedily covered, which is the great advantage of this method. A tolerably stout scion is better than a small one in this method.

Still smaller limbs may be budded in summer; but it is more convenient to do all the work at the same time, and therefore whip or splice grafting will be found convenient. In this the scion and stock, which should be of the same size (say a quarter of an inch or more in thickness), are both cut with a scarf an inch or more in length. The two surfaces are then, in the simplest method, applied directly to each other, and bound around with bass matting or grafting paper, and the operation is finished. It is, however, somewhat difficult to tie them properly, as they are apt to slip one on the other; and therefore a tongue is made by commencing at about one fourth the distance from the point, and making a cut downward on the stock and upward on the scion about half as long as the scarf. The tongue on the graft is then inserted in the cut on the stock, and the tongue on the stock in the cut on the graft, and they are bound tightly, as before described. By this contrivance of tonguing, which is at once the most simple and beautiful in the whole art of grafting, not only is the scion prevented from slip-

ping on the stock, but the surfaces are kept in contact, and consequently the chances of success are increased twofold; and, when well performed, it is undoubtedly the most perfect method of grafting. In this, as in all other methods, there should be a bud on the part of the scion overlapping the stock. This is easily secured by a little care.

For cleft grafting we prefer grafting wax applied directly to the stock; for all the other methods here described, it is better spread on cloth or paper, and all except those inserted by cleft grafting should be tied tightly with bass matting or cotton twine. In all ordinary cases, a scion having three, or at most four buds, besides the one on the portion overlapping the stock, will be of sufficient length, but for very large stocks grafts two or three times as long may be used.

SMALL FRUITS IN CENTRAL MASSACHUSETTS IN 1869.

By JAMES DRAPER, Worcester, Mass.

A FEW pencillings on the small fruits in this section of the state may be of interest to some of the readers of the Journal. The past season has been most favorable to give all a fair trial, and we have had good opportunity to judge of the comparative value of the different varieties. Our soil is mostly of a deep loam, with a clayey subsoil.

STRAWBERRIES. The *Philadelphia* ripened first with us, and is a very strong grower. The fruit very uniform, rather above the average size, quite firm, and of a fine flavor; it ripens its crop in a very short time; very promising.

Nicanor ripened with the earliest, and continued bearing till late in the season. Plant is a very strong grower and hardy; berry of good size, very firm, rich, sweet, and highly flavored; when grown in beds the fruit is small, but in hills of large size and very productive.

Metcalf's Early, when grown in beds, entirely worthless; in hills a little better, though the difference is hardly perceptible.

Downer and *Jenny Lind* still hold their reputation, as good, old, tried varieties; the *Downer* in particular pleases all who have tried it.

Ida has done well, and is very much liked, as it is a very strong grower and enormously productive. Fruit stands well up from the ground, of a uniform medium size, quite firm, and the color a brilliant scarlet; flavor very good.

French's Seedling commenced ripening early, and produced a large crop of very fine-flavored, good-sized, showy berries, firm enough for marketing when kept thin or in hills.

Wilson's Albany still holds the first place as a market berry, as it is a sure bearer every year, and very productive; a great favorite of the producer, but not so much so with the consumer. Some of our cultivators are learning that a larger, sweeter berry will command enough higher prices to warrant an increase in their cultivation. The past season, when our market was glutted with the *Wilson*, the *Charles Downing*, *Lady of the Lake*, *Jucunda*, &c., sold readily at fifty per cent. higher rates.

Triomphe de Gand has disappointed us again this year, producing a very small crop only, and not more than half its usual size: save in a few gardens, this variety is rapidly losing favor, and most of the strawberry cultivators have discarded it altogether.

Agriculturist has done a little better than the above, and with some has produced a very fine crop of large, showy fruit; it has proved such an irregular bearer the past three years that only a few try to cultivate it.

Jucunda has given us the best of satisfaction; our soil is similar to that of Mr. Knox, of Pittsburg, and the product, though not quite equal to his, has been surprising: commencing to ripen, as it does, after the main crop of other kinds has been gathered, and bearing a heavy crop of large, fine-shaped, attractive berries, it fills a space in the strawberry season which fruit-growers have long desired to see occupied.

Lady of the Lake is a good grower, the berry large, rather uneven in shape, color dark red, flesh firm, sweet, and juicy,—though only ordinary in flavor,—and wonderfully productive. It is becoming a great favorite among marketmen, as it has given better satisfaction to the

consumer than the Wilson, being without the objectionable acid flavor of that variety, and surpassing it in productiveness.

Charles Downing has proved all that was ever claimed for it, and is being planted largely in the family gardens, as well as for market purposes. The plant is a very vigorous grower, healthy and hardy; fruit extra large, roundish conical; color bright red; flesh firm, very juicy, sweet, and highly flavored; equally as productive as Jucunda, or any berry of its size, save the President Wilder.

Colfax is really a curiosity, if nothing more. It will take entire possession of my grounds soon at the rate it is growing: from a few berries gathered on plants set last spring, I should judge it was not much of an acquisition, if fine fruit is any object. Though I would not sanction slovenly culture in any particular, I am satisfied that the Colfax will stand neglect and produce a large crop of fair fruit, with less labor than any variety yet produced.

Napoleon III. is very promising; a strong grower; plant healthy and hardy; the fruit on spring-set plants being of good size, and of the highest flavor.

Peak's Emperor strongly resembles the Agriculturist both in growth of plant, and size, shape, and color of fruit. Another season's trial will be needed to decide its real value.

RASPBERRIES. Of the tender varieties Brincklé's Orange still remains unsurpassed as the finest table variety; berry of a rich orange color, of large size, and sweet, rich, and delicious flavor.

Franconia is more generally cultivated, and produces large crops of fine, showy fruit, and has proved a very profitable market variety.

Knevelt's Giant has produced some of the largest berries; not as firm as the Franconia, but surpassing it in flavor.

Of the hardy varieties the Clarke takes the lead for quality, while the Philadelphia is more productive.

The *Clarke* thus far has proved perfectly hardy; is a very robust grower; canes strong enough to support a heavy crop of fruit without stakes or trellis, if properly pruned; it suckers rather too freely; fruit of good size; roundish conical; color light crimson; quite firm, sweet,

rich, and highly flavored; very productive, and continues long in bearing.

Philadelphia lacks the good quality and size of the Clarke, and is less showy in appearance; color dark purplish red, when thoroughly ripe; quite firm; parts freely from the core; of ordinary good flavor; a vigorous grower, and enormously productive; not as desirable a garden variety as some others, but for market purposes it has proved very remunerative.

Of the Black Caps the *Doolittle* holds its former reputation, and bears heavily every year. *Davison's Thornless* nearly equals it in productiveness, is a finer flavored berry, and being destitute of thorns, is becoming a favorite for garden culture.

Seneca and *Mammoth Cluster* are making a heavy growth of healthy wood, and have outdone all the other Black Caps in this particular, but have not been fruited here yet.

BLACKBERRIES. The *Kittatinny* takes the lead of the newer sorts, as it has proved to be as hardy as an oak, and a strong upright grower; fruit equalling in size the New Rochelle, and in richness and high blackberry flavor vastly superior.

Wilson's Early has not proved quite as hardy as the *Kittatinny*, having winter killed slightly in some localities; fruit of the largest size; color of a deep glossy black; flesh sweet and rich, and free from core; in productiveness equalling any in cultivation.

Missouri Mammoth has a fine bushy form of growth, that is very desirable; the fruit this season would hardly be called Mammoth, being small and not of the best flavor; another year will prove more effectually its value, if it has any.

Sable Queen and *Wachuset* are growing finely, and look promising; and I shall watch them with deep interest, hoping they will reflect credit on the state where they originated.

HISTORY OF THE LUNGREN SQUASH.

By DR. H. G. LUNGREN, Volusia, Fla.

THE Lungren squash originated at Volusia, Fla., in 1867, under the following circumstances: A gentleman living in Orange County, Fla., planted some seeds of pumpkins which he obtained while in the Seminole nation during the last Indian war in this state. Amongst these seeds were some that produced a curious-looking pumpkin (as he called it), one of which he gave to me. I planted the seeds amongst some other varieties, and I suppose they must have hybridized; for the next year, on planting seeds saved from one of these squashes, I was surprised to find that some of the plants were brilliantly marked on their leaves. I thought that it would be a curious if not valuable addition to the squashes of the North; so I sent seeds of this new variety to my friend E. F. Washburn, of Boston, with the request that he would give them a trial. He was so pleased with them, that, in 1868, he brought it to the notice of the public as a really valuable addition to the list of winter squashes.

No squash similar to this grows in Florida, save the one with plain or unmarked foliage. It has all the good qualities, with but few of the objectionable ones, of winter squashes.

The Seminole Indians living amongst the Everglades and on islands in Lake Okechobee, in the southern extremity of the peninsula, have some really valuable varieties of vegetables, especially pumpkins, squashes, melons, beans, peppers, etc., as well as many vegetables with which the people of the North are but little acquainted. Many of these seeds would prove valuable additions to our catalogue of vegetables.

During the last Seminole war, the United States volunteers found, on some of the islands in Lake Okechobee, small fields or patches of corn, pumpkins, melons, and beans, seeds of which were brought home with them. One of these really valuable seeds was the Seminole sugar pumpkin — a small pumpkin which would not weigh more than four or five pounds each; very sweet, fine flavored, long keeping, and highly prolific, a single vine often producing from forty to fifty pumpkins. These pumpkins are now quite common with us, and are highly prized for their good qualities, being considered the best we raise.

SUCCESSFUL PEAR CULTURE. — I.

SELECTION OF SOIL.

By T. T. SOUTHWICK, Dansville, N. Y.

TOBIAS MARTIN, of Mercersburg, Pennsylvania, has achieved unqualified success in pear culture.

His achievement does not consist in obtaining a few specimen pears from the garden, or in producing a moderate crop of passable fruit from an orchard. It does lie in the fact that in an orchard of four thousand pear trees, in open culture, he has produced large crops of "specimen" pears. The proof of their high quality is shown in the fact that Mr. Martin markets the bulk of his crop "by the dozen" at the highest prices.

Judged by the high and critical standard reared by our mutual friend, Dr. Houghton, the position assumed above stands the test; for the pears grown by Mr. Martin are uniformly large and beautiful. They are high flavored and high colored, — exceedingly high colored, — and possess a strong aroma. The trees are healthy and vigorous, bear young, and abundantly.

Those who attended the meeting of the American Pomological Society held at Philadelphia last September will remember his superb collection of pears, and those of us who have tasted of pears grown by him will recollect, with "water in our mouths," their exquisitely high flavor. Grown by him, Vicar becomes a dessert pear.

Mr. Martin started his orchard about ten years since. He commenced his new avocation with empty hands, having neither money nor experience. His total capital consisted in his sturdy will and his earnest, eager desire to succeed; and his only "backing" was a strong love of fruits. It must afford him much gratification to reflect on his early struggles and present success, as compared with that of others who have had an abundance of capital to sustain their enterprise.

His first planting of one hundred pear trees was made on a piece of slate shale.* The land was covered (to use his own words) with "pov-

* I believe some exceptions are taken to this word "shale;" but I use it, as I know of no better word, to indicate shelly, loose, slatestone soil.

erty grass" and "judgment," and was too poor to produce either grain or grass, and its owner "was as poor as the soil." He has planted for himself from two hundred to five hundred pear trees per year, until his orchard now contains about four thousand trees.

In the mean time he has planted large orchards for others on every kind of soil known in the Cumberland Valley within a scope of more than fifty miles — on slate shale, on freestone with clay or limestone subsoil, on freestone with gravel subsoil, on clay or limestone, and on alluvium deposit.

For the production of pears of high quality he regards no soil with so great favor as slate shale. Next in preference stands freestone with gravelly subsoil, while alluvial soils, or any naturally retentive of moisture, and calculated to cause a luxuriant growth of wood, he looks on as least likely to produce pears of the best quality, or, at least, not unless well under-drained.

His private orchard lies high and dry on slate shale; and it has been found by chemical analysis that the soil contains a perceptible quantity of iron. To this fact he attributes much of the high color and flavor of his pears.

He considers exposure and site as of little consequence, his own grounds sloping from the centre to all sides, and all doing equally well, save a few trees in one corner, where the land forms a "dish," and thus is rather damp. Here the trees are the most thrifty in the orchard, but the fruit is insipid and poor. Virgin soil he regards as best, but by no means necessary for the production of fine fruit.

May I add a comment and belief of my own, to the effect that a large share of all the failure attending pear culture in this country is due to the fact that a popular notion prevails that a strong retentive soil is best adapted to the pear. "Wet feet" are not less hurtful to pear trees than to the human being.

[Every one who saw Mr. Martin's fine collection of pears at the meeting of the Pomological Society, and all who are interested in pear culture, will be glad to know how specimens of such remarkable excellence were produced. Being too diffident to come before the public in his own name, Mr. Martin has kindly put Mr. Southwick, of Dansville, in pos-

session of such facts concerning his orchard as he was not acquainted with, and he will communicate them to the Journal in a series of articles, of which the above is the first. Those which follow will embrace the subjects of "Preparation of Soil," "Selection of Trees," "Training in the Orchard," "Comparative Value of Standards and Dwarfs," "Gathering and Marketing," "Ripening," "Prices," "Selection of Varieties," etc. — ED.]

NEW STRAWBERRIES. — II.

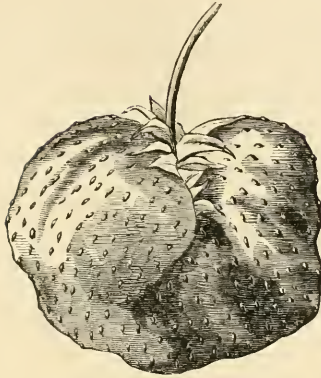
By J. M. MERRICK, Jr., Walpole, Mass.

Exposition de Châlons (Dr. Nicaise). — Vines vigorous, strong, moderately productive. Berries very obtusely conical, regular shaped, dark red or purple. Flesh rosy with red streaks; juicy, and of a very peculiar flavor. I have fruited it three or four years, and consider it curious rather than useful. In France it stands the drought well.



EXPOSITION DE CHALONS.

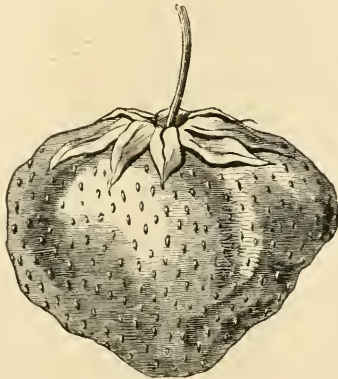
Empress Eugenie (Knevet). — Plant very vigorous, making large, round, compact hills, but setting its fruit poorly. Berries sometimes enormous, irregular, shining purple-red, juicy and good. I have found the Eugenie very unproductive from one year's experience. It is said to force well.



EMPRESS EUGENIE.

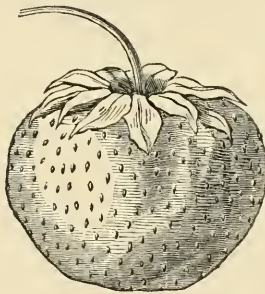
Duc de Malakoff (Gloede). — This is one of the most satisfactory French varieties, for an amateur's strawberry, that I have fruited. Berries enormous, sometimes eleven to the pound. Form variable, cocks-combed. Color dull red. Seeds small, light colored, and prominent. Flesh very juicy, with a sort of mulberry flavor. Vigorous, moderately productive, and as hardy as any foreign kind. Said to be a cross of a Chili and the British Queen.

Like the Admiral Dundas, the *Duc de Malakoff* bears far better when the plants are two years old, and must not be judged from the first year's crop. I condemned it too hastily in this Journal after only one year's trial.



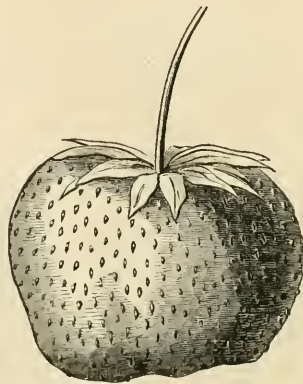
DUC DE MALAKOFF.

Lennig's White (Lennig). Syns. White Pine-apple, White Albany, Albino — often incorrectly spelled *Lenning's*. — I consider this the best of all the white strawberries. The Bicton Pine cannot compare with it in vigor or productiveness. Kept in rows, with the runners clipped, it yields tolerably good crops. Fruit medium to large; conical, often much compressed; rosy on the sunny side, pure white on the other. Seeds conspicuous. Flesh rich, melting, and delicious, with a high pine-apple flavor.



LENNIG'S WHITE.

Jucunda (Salter). Syn. Knox's 700. — This variety is now pretty well known, thanks to Mr. Knox's efforts, and is finding its appropriate place

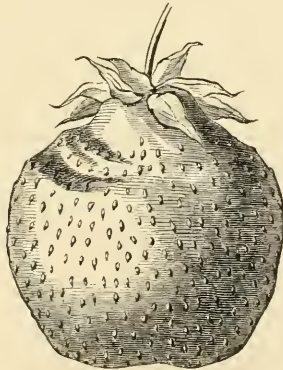


JUCUNDA.

in general cultivation. Though not first class in flavor, its beauty and firmness, added to its good size, make it a fine market strawberry. It may be described as large to very large, sometimes obtusely conical, and perfectly regular in shape; and in other localities cockscombed and flattened, bright, light scarlet. Seeds of good size, yellow, somewhat imbedded. Flesh pink, very firm, sweet, and good; not very high flavored, and occasionally hollow.

The plants make handsome hills, and to give the best satisfaction should be grown in that method, with high culture.

Boyden's No. 30 (Boyden). — A new variety of great vigor and productiveness, which render it promising for market purposes. Mr. Downing speaks of its firmness; but so far as my observation extends, it is quite deficient in this respect. Large, roundish, slightly conical, regular, sometimes depressed at the apex, generally necked, seeds large and prominent. Flesh subacid, rich, and juicy.



BOYDEN'S NO. 30.

MAKE THE MOST OF YOUR GARDENS.

By W. D. PHILBRICK, Newton Centre, Mass.

VERY few kitchen gardens are made to produce more than half what they might, if a little more care were given to the cultivation, and two crops taken each year from the same land. The market gardener, who makes his living from the few acres which he manures heavily, is obliged to plan and work skilfully, in order to make a profit from his crops; and some hints, taken from his practice, will be the subject of these remarks.

The vegetables used for double cropping are mostly the following: Early peas, early string beans, early potatoes, lettuce, spinach, early beets and radishes, onion sets, and early cabbage, followed on the same land by marrow squashes, melons, cucumbers, Savoy cabbage, ruta бага and white turnips, and tomatoes.

The land for most of these crops needs to be well manured and thoroughly tilled, and some care is needed to succeed in ripening both crops; but a little practice will enable any one to succeed, by following the directions below.

If the land is not very rich, in consequence of several years' good tillage, it will not be worth while to try lettuce, spinach, or onion sets. But little land, hereabouts, will raise a good crop of early cabbage; but peas, beans, and potatoes may be raised with certainty, and cleared away in time to be followed by either marrow squash, Savoy cabbage, cucumbers, turnips, or tomatoes on ordinary garden land, if moderately light and early, and moderately well manured.

When the second crop is to be marrow squash, strike out furrows three feet apart, and manure in the drill; plant the peas as early as possible; the potatoes had best be sprouted before planting. If the land is very rich, spinach, lettuce, early beets, onion sets, and early cabbage can be raised for first crops; but whatever crop is planted for a first crop, every fourth row should be left unplanted, in order to plant the squashes afterwards. This will leave the squash rows twelve feet

apart. Along these rows, at distances of eight feet asunder, the squash hills should be made, about the 10th of June, by mixing a few handfuls of hen manure or guano well up with the earth, and dropping six seeds, to be well covered. Planted even as late as the 20th of June, the marrow squash will often make a good crop, if the land is rich. After the squash vines are well up, and begin to run, they should be thinned out, leaving only two or three in a hill; and by the 10th of July all the early crops should be cleared off, and the land well cultivated between the rows.

When the second crop is to be melons or cucumbers, we generally plant lettuce or spinach for a first crop. The land, for both early and late crops, should be in first-rate order, highly manured and tilled; and the first crop must not be allowed to lag behind time, or the others will crowd it. The hills for the vines are made as usual, about six feet apart.

Tomatoes, as a second crop, may be planted among the spinach, or early peas, beans, or lettuce, at four feet apart, and both crops grow together until the first crop is cleared away, about the 20th of June.

Savoy cabbage, ruta bagas, and white turnips require the first crop to be cleared off before planting, which is generally done before the 10th of July. The cabbage seed should be sown in a seed bed, May 10 to 15, and the plants will be in fine order to set out after any of the early crops above named, or even after early sweet corn. Ruta bagas are sometimes transplanted as late as August 1; but it is better to sow the seed where it is to grow, about July 10. White turnips will do well sowed as late as August 20, if the land is good.

THE GARDEN ROYAL APPLE

Is one of the most desirable varieties for planting in small gardens, the moderate size attained by the tree rendering it peculiarly eligible for such situations. In flavor it is unexcelled, if equalled, by any other variety. We eat it, even though we have an abundance of the finest pears, which we cannot say of any other apple. It ripens in August.

HOW TO GROW GRAPE VINES WITHOUT GLASS.

By SAMUEL MILLER, Bluffton, Mo.

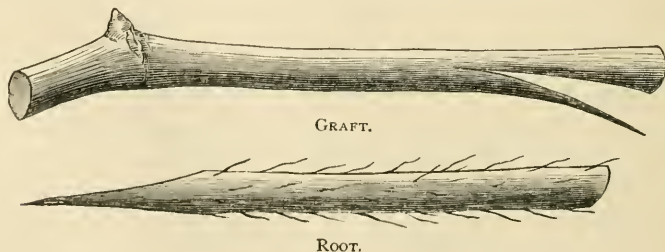
I HAVE now for a succession of years grown, or rather propagated, vines in the following way so successfully, that I am induced to give the plan to your readers.

Of course, many of the learned of the craft will say, We knew this long ago, but did not think it worth while to make it known. And why? With many, simply because then every one would grow his own vines as soon as he could get a start of a new variety. This is my very reason for making it known through your pages.

A noted horticultural editor told me not long since that nurserymen, as a rule, did not like horticultural publications, as they gave the masses too much information, and thus spoiled the trade. As for myself, this is inapplicable, for it has ever been my motto not to hide light under a bushel, but to add my mite to help along this noble cause, horticulture, in which I have grown gray, without any pecuniary advancement thus far.

But all this has no bearing upon the subject in hand.

In the first place, trim the vines early in the winter, and keep the wood buried on the north side of a building or fence, or in a cellar, packed in clean sand. Well decomposed sawdust or tan-bark will do. Save, also, roots from one eighth to one quarter of an inch in diameter. Not *cuttings* that are rooted, but the small ones that are usually to spare off larger vines when taken up. If the wood be quite short



jointed, take two eyed grafts ; if long, one eye will answer. The roots should be cut into pieces of about three inches. I will illustrate as well as I can the mode.

With a little practice any one will be able to make a nice fit, pressing the root wedge tightly into the cleft in the under side of the graft. Then wrap, and tie firmly with well-waxed thread. Pack them close in a box which is a little deeper than the length of the root and graft when united.



A ROOT AND GRAFT SET.

The best plan is to set a box against a wall at an angle of about forty-five degrees, put in an inch of earth, then a layer of grafts just so thick that they do not touch each other ; then an inch of earth again, and so on, till your box is full.

In a box of four square feet one thousand can be packed, put away in the cellar, and left until warm weather comes on ; when they can be brought out, set in a place where the five hottest hours of the day will leave them in the shade, until they have grown about one inch, when they can be set out where they are to grow. In your latitude this can be done as late as the middle of April, or even the first of May, by keeping the grafts a little dryer and cooler than the roots. Those need not be put in the cellar. Last season I operated with Delawares as late as the middle of April, and planted them out in three weeks after. I did not lose five per cent.

This plan comes into play most admirably with those difficult to propagate by cuttings or eyes, such as *Cynthiana*, *Hermann*, etc.

Here, then, is a way of getting vines cheap. A glass house, a stock of pots, and a professional propagator — all are dispensed with.

If this appears in your Journal for April, I have no doubt you will have the thanks of a number of your readers.

PEAS — OLD AND NEW VARIETIES.

By FEARING BURR, Hingham, Mass.

DURING the last season, several carefully-conducted experiments were made by different growers of peas in England for the purpose of testing the comparative earliness and value of all the kinds most approved and in general cultivation. Interesting statements of the results of these trials were published in the *Gardener's Magazine*, *Gardener's Chronicle*, and others of the leading horticultural journals of England, and probably embody nearly everything connected with the progress made in pea culture up to the present time. Of the sorts described as new, no one appears to be put prominently forward.

The earliest pea now known is unquestionably Carter's First Crop. It fully sustained its reputation, taking the lead of all others, and was ready for gathering several days in advance of any variety on trial. The plant is not stocky, and the pods are small, containing, on the average, about four peas of medium size. To this variety was awarded the prize of the Massachusetts Horticultural Society, in 1869, for the best peck on or before the fourth Saturday in June.

Dan O'Rourke and Sangster's No. 1 are two excellent peas; and where a few days may be a matter of no importance in gathering the first dish, one of these, at least, should be grown; but in any garden, where it is desirable to gather for use at the earliest moment, Carter's First Crop is the pea.

Taber's Perfection, also known as Dickson's First and Best, is another fine early pea. Though a few days later than Carter's First Crop, it remains longer in the pod, and is more productive than any other equally early kind within our knowledge.

To this class of "first earlies" should be added the Caractacus, a somewhat recent sort, found, however, on the catalogues of most of our principal seedsmen. Of the stock of the Dan O'Rourke, it has proved early, quite productive, and is recommended for trial.

Among the Dwarfs, — most of which are early or half early, — we find Beck's Gem and Long-podded Tom Thumb — both English varie-

ties, and largely sent out to this country as substitutes for the true American Tom Thumb; also Multum in Parvo, and the Advance—the latter superior; Dwarf Waterloo, everywhere highly prized; Dwarf Peabody, productive and good; and the universally popular and indispensable McLean's Little Gem.

No variety, however, is more dwarfish in habit, better defined, or really more permanent than the American Tom Thumb. With regard to quality, we regret to say it is somewhat deficient. In order to obtain anything of the tender, sugary character common to many peas, the pods must be plucked even while scarcely half grown. But it is hardy and early, and the pods are large and abundant; and these properties will secure for it a place in the garden, to the exclusion of other kinds much more meritorious.

Of the numerous samples of seeds received from Europe under the name of Tom Thumb, few, if any, have proved identical with the Tom Thumb as generally known and cultivated in this country, though we have been informed that the stock imported by most seed-dealers for the spring of 1870 was raised from seeds American grown.

Among the intermediate and later descriptions, we have the Champion of England, old, but still the criterion of excellence; the British Queen, almost its rival; the Napoleon and Eugenie, standard kinds; the Queen of the Marrows, much less grown than it deserves; Veitch's Perfection, every way good; and lastly, the tardy, but yet excellent, Competitor.

Glancing at the new varieties, we find Barr's Tom Thumb, a fine pea, growing twelve inches high, and so prolific that "the rows were literally smothered with large, well-filled pods;" the Forty-fold and Wonderful, first-class peas, and in season soon after the Champion of England; the Prince and Princess of Wales, not fully tested; and the Premier, which is said to be superior to the last named, and promises to be an acquisition.

To the list we would class as meritorious there should be added Laxton's Long Pod and Laxton's Supreme. The former we have had under trial, and regard it as one of the most productive and best. In selecting for the main crop, it should not be overlooked.

Laxton's Supreme, for which so much was promised, failed to give general satisfaction. Indeed, so conflicting are the statements of different growers, that they leave little doubt of the substituting of spurious seeds for the genuine, and this to a large extent. One cultivator affirms that the plants attained a height of nearly eight feet, instead of three feet and a half; in the place of fourteen peas to a pod, out of many hundreds counted, in no instance did he find ten; instead of a total growth of three feet and a half, they did not generally show fruit until four feet from the ground.

On the other hand, from the trial in Messrs. Barr and Sugden's grounds, we learn that it was pronounced "a grand pea in every respect." It produced wonderfully; the peas were of large size, of a remarkably deep green color, and presented a fine appearance on the table. Though it somewhat exceeded the height stated by the introducers, it was admitted to be a first-class pea, and one that would soon take a leading place in that section. Another cultivator says the height of the plants did not exceed four feet and a half, and that the pods were produced in such profusion that it was found necessary to support the haulm by extending cord along the lines. Most of the pods contained from eight to ten and twelve peas each. We are inclined to think it will prove an acquisition, "where flavor, color, and bearing are taken into consideration," and recommend it for trial.



CRITIQUE ON THE MARCH NUMBER.—*Kansas Fruits.*—It is of no use now for me to undertake to say anything in praise of Kansas fruits. Everything has been said in their praise, and they deserve it all. But I have something to say about insects. Messrs. Farrell thought that Mr. Hyde could not find a wormy apple among the large stock in their cellar, but he did find the tracks of one; and Dr. Trimble, when he looked at the Kansas Pyramid, at Philadelphia, said, “No worms here,” but on a second glance exclaimed, “Ah, yes, they’ve got them!” as he spied a little brown dust in the eye of an apple. But perhaps, Mr. Editor, your readers will say, “What are two worms?” Not much, to be sure, for all Kansas; but if all Kansas were searched thoroughly, I think we should find quite a number of twos; and every two worms this year means two hundred next year, and twenty thousand the next, and two millions the next, and—well, I won’t reckon any further, but you may be sure there’ll be enough. Now, if I had the ear of every man, woman, and child in Kansas, and all new states and territories where noxious insects are hardly known, the first thing I should say would be, Whenever you find an apple with the mark of a worm, dig him out and kill him. *Don’t let them increase. Exterminate them.* And so of the whole pestilent brood of borers, caterpillars, curculios, canker-worms, maggots, and all the rest of the legion. If you haven’t them now, you will soon; and if you don’t kill the first one you see, and the second one, and every one you see, the next thing you’ll know will be that they are on you like the plagues of Egypt. Burn them, crush them, suffocate them. You can accomplish more in five minutes of this work now than you can ten years hence in five months.

The Solanum as a Decorative Plant.—Mr. Rand’s article on this subject introduces us to a most singular class of vegetables, many of which, though

highly ornamental, and even useful, appear to be really little known. For one, I frankly confess myself a stranger among the Solanums. So strikingly anomalous are the plants included in the natural order, that the whole appears to be a mystery. Grouped here together, the wholesome and deleterious, the beautiful and the unattractive, find strange brotherhood and fellowship. In some of the species, botanists represent a certain portion of the plant as being positively poisonous, while the remaining part is described as not only palatable, but healthful and nutritious.

And then, too, the fruit, bearing alike the seeds of life and death, but yet so beautiful and inviting, and produced in such profuse abundance that one is tempted most irresistibly, turn which way he will? Now, what am I to do? The warning of the botanist seems everywhere written on leaf, flower, and fruit. In the scarlet egg-plant, on the beautiful berries of the *S. pyracanthum*,—fine specimens of which graced my grounds during the last season,—and even in the purple flesh of the plum-like fruit of the *S. esculentum*, there is something which seems to say, "Beware!" and, Mr. Rand, I am bewildered. I indulge freely in the use of the tomato, and the purple egg-plant is always welcome to my table; but beyond these I proceed with wary steps. Though I have repeatedly tasted of the fruit of the black nightshade with impunity, and though I regard the scarlet berries of the bittersweet as being quite as harmless as the berries of the common potato, still I think it often difficult to discriminate between the innocent and the injurious. That

"Each fruit *may* have its poison, too,"

is eminently applicable to plants of this family.

I am aware these somewhat utilitarian notes are not quite in accordance with the spirit of the article before me; but visitors *will* ask the properties of fruit so alluring, and I know not the answer.

As decorative plants, the solanums can hardly be surpassed. Besides this, the field is new, and I thank Mr. Rand, not only for the names and descriptions of the kinds considered most desirable, but for the suggestions with regard to propagation and culture.

I should be gratified, could I look over the sixty or more species alluded to as being found in the city gardens of Paris; and it is to be hoped that, through Mr. Rand, or some person equally competent to make the selection, we may soon share in the new beauty such a collection would add to the public and private gardens of this country.

Rhododendrons.—Really, their culture would seem to grow more and more easy. Mr. Parsons has told us that the common idea that they require a carefully prepared bed of peat is incorrect; and then Mr. Manning comes to tell us how he makes them grow in Ohio in limestone soils; and now Mr. Hovey informs us that there is no necessity for the trouble of picking off the seed-pods. Well, the easier the better; for I do not think it would be possible for me to have too many of these magnificent flowers. But best of all is Mr. Hovey's statement, that, with the exception of a few kinds, he cultivates only seedlings. So all we have to do is to get a few good kinds, and then go to work to multiply them by seed, with the pleasure of watching all the countless varieties into which they

run. Only four or five years to wait, and then they are safe for all time. Let us all set about growing seedling rhododendrons, and enrich our grounds with these magnificent varieties.

Mr. Byington's Method of Pruning Grape Vines.—I don't know when we are going to get this subject of grape culture and pruning settled. I have more than half a mind not to say a word about it until it is settled; and then I should never say anything at all! But we must advance to its settlement one step at a time, and I think that Mr. Underhill's statement of the theory in reference to the advantages of June over fall or winter pruning throws a good deal of light on it.

Bresee's No. 7 Potato.—Mr. Bresee's seedling potatoes—nearly all of which have been not only well described, but finely illustrated in this Journal—are now fairly in the hands of the public, and the coming season will probably determine their comparative value. It can hardly be expected that all will equal the Early Rose, and no cultivator should be disappointed if they do not. Indeed, were the remaining numbers originated by Mr. Bresee to prove utter failures, we have in the Early Rose an acquisition which, in my opinion, has not been equalled by any kind brought to notice since the introduction of the Jackson White. I predict, however, that among Mr. Bresee's seedlings the Rose will not take the lead in *quality*, whatever it may do in being early or productive. We shall see.

Let me add one word by way of entreaty. I beg of the dealers in these potatoes not to be tempted, by the high prices some of the sorts may readily command, to substitute one number for another, or to sell a spurious tuber for the genuine. Let them all go out honestly; and let them be carefully put up, that no possible error be committed in the name. The trial will then be fair and just, and the result a true guide for future selection.

Peach Rot.—Like all Mr. Earle's papers, this is on a most important subject, and goes right to the point. The whole secret of success is stated in two lines. But what I like best is his last paragraph. If you don't recollect it, get out the last number again, and read it over till you learn it by heart. Labor and expense is the price of having fruit of any kind, and every day this truth is more and more strongly enforced.

Dr. Wylie's Experiments in Hybridizing the Grape have certainly brought out some curious and interesting facts. If we can't fertilize the Scuppernong with *Vinifera* and *Labrusca*, why, we must hybridize them with Scuppernong; and I fully agree with Dr. Wylie, that we may expect some novelties from these crosses. I have had the satisfaction to taste some of the varieties which the doctor has already produced; and though some of them are very remarkable, I shall look for still more extraordinary results when the new element of Scuppernong blood is infused into the species hitherto most cultivated.

The Cordon System.—Yes, Mr. Editor, you are exactly right in your estimate of this system. It would be of no use for a man with acres upon acres of orchards and thousands of trees to "putter" with cordons; but if an amateur could plant a few in place of his unproductive edgings, thereby gaining many dozens of fine pears, who wouldn't do it?

Bismarck.

ABOUT PEARS.

UNSETTLED CONDITION OF HORTICULTURE.

Horticulture is very far from being an exact science. There is little that is settled in any department of it. Suppose one should try to find the very best method of pruning and managing grape vines, and thereto should read all that has been written on that question within the last ten years by scientific and practical men (if life were long enough); what would most likely be his conclusions? So in regard to any other branch of our fruit culture. Our knowledge is lamentably limited and inexact. Our conclusions are curiously divergent.

PEAR CULTURE NO EXCEPTION.

Pear culture forms no exception to this painful state of facts; and it must be acknowledged that all the experience of two hemispheres and all the science of this age have failed to tell us how best to grow and manage a pear tree. It is therefore an embarrassing thing for any one to attempt what might seem like instruction. The most that any man can do is to give his latest opinions — which a year's experience may materially change. And no man's opinions mainly based on the narrow experience of a particular locality can be much relied upon under different conditions of soil and climate.

So I stand here to-day, not as a teacher, but as a somewhat enthusiastic student of pear culture, to give you some of my present impressions, which may be worth but little for any place, and that little only for sections whose conditions of climate and soil do not materially vary from those of the hills of Southern Illinois.

CONDITION OF THE SOIL.

The mechanical state of the soil for a pear orchard is, I think, the most important consideration connected with it. It should be in that happy medium condition which gives free natural under-drainage without being leachy. Such a soil will give those temperate conditions of moisture and warmth in which pear roots delight. Our western soils are generally too heavy for pears, and require very thorough subsoiling and artificial under-drainage. This is somewhat expensive, but indispensable to success in retentive soils. It is said that tile drains are soon obstructed with roots in an orchard. Probably a foot in depth of small cobble stones covered with gravel at the bottom of a four foot ditch will make the best drain for the orchard. As all vegetable substances are derived much more largely from the air and water than from the soil, it seems that the mechanical condition and chemical properties which enable it to absorb and retain the gases supplied by the air and the rain are more important than mineral constituents.

I would plant a few trees on the best soil I could get or make, wherever I was located, as pears are a luxury worth taking great trouble to obtain; but I would not plant largely or for profit, except on soils adapted, by natural constitution or artificial preparation, to the healthy growth and longevity of the trees.

IMPORTANCE OF SELECTING GOOD TREES.

Having the right soil, it is important to get good trees to plant. And among trees, as among animals and among men, I believe there are great differences of constitutional vigor. A large majority of the pear trees I have seen come out of the nursery, are deficient in their native vitality; this may come from a feeble stock, or from a weak bud or graft. A young pear seedling inherits the qualities of its parent tree, and only the seeds of perfectly grown pears from healthy and vigorous trees should ever be used in propagation. It is my impression that we suffer greatly from the neglect or ignorance of propagators in this respect. It is wholly impossible to make healthy and long-lived trees from puny stocks. Perhaps it is not less important to select buds or grafts from healthy trees, and which have been well developed by full exposure to the sun and air. A vigorous graft on a weak stock may be induced to throw out roots from itself, but a weak graft will never amount to much, whatever the stock.

I will venture the opinion here that the best way to make a pear tree is to sow the seed where the tree is to stand, and put on such tops as you prefer. This cannot be done, however, in all places. But I have no doubt that the oldest, largest, and most regularly productive pear trees in this world have grown from seed where they stand.

As most of us must buy our trees from the nursery, and take the chances as to their "noble blood," I would buy only those trees which show a vigorous habit, and a good balance between stock and top; and other things being equal, would take year trees in preference to older. Nature is violated less in the removal of a young than an old tree.

SEASON AND DISTANCES FOR PLANTING.

As to the time of planting, I unhesitatingly say it should be in the autumn; and the earlier the better, after the leaves have fallen. I also believe in planting closer than is the common practice. The great need of an orchard in our climate is protection against severe winds, and shade to trees both in summer and winter. All these conditions are more easily secured by close planting than in any other way. In those sections where root-pruning is essential to the health and life of the trees, four hundred or five hundred trees can be set on an acre, and remain permanently. Or one half or three fourths of them may be root-pruned at three or four years of age, and brought into early bearing, while the balance are left to grow to their natural size. In time the root-pruned trees, having amply paid for themselves and the others too, can be removed. If pears are worth growing, as a market crop, in preference to other fruit, in a given locality, then I know no other fruit or crop, to grow in the orchard, so profitable or convenient as pears.

NATURAL SYSTEM OF CULTURE.

Trees, such as I have described, planted in a soil such as I have indicated, should therefore be treated as much on natural and as little on artificial principles as possible. Nature does not cultivate by a constant stirring of the soil, but mulches. Nature plants closely, and gives shade in summer and shelter in

winter. Nature prunes sparingly, and not by a systematic shortening or cutting back. Nature grows grass, and weeds, and small brush, to protect her young orchards from all extremes. Can we grow orchards in this way? That is a difficult question to answer, with our present amount of careful experiments and observations. There are scattered instances of complete success in growing pear trees in this way, but I know no one who has attempted to follow Nature closely, and on a large scale. Not but that plenty of trees have been planted in a poor way, in soil poorly adapted to their growth, and then left to their own fate. There is an abundance of neglect everywhere; but this is not Nature's way. Nature is particular as to soil and climate. She grows her oaks, her pines, her beeches, and her poplars in locations specially adapted to their several wants. Man has not copied her well in this respect. Nature plants the seed where the tree is to grow. Man has not followed her in this particular. It is my impression that her success is far the most triumphant, and that her methods are worthy our attention, study, and a much closer imitation.

ARTIFICIAL SYSTEM OF CULTURE.

The artificial system of culture produces everywhere abnormal results. It gives great growth of wood, but great tenderness. It gives premature fruitfulness, and fruits extravagantly large, and "fit for exhibition," but painfully rare. It brings troops of diseases and early death. The agricultural press of the country is full of a murmur of wailing over the results of this system. And yet the few bold men who have dared advise a radical change in our methods of managing trees get little gratitude and much abuse.

DOUBTFUL POINTS.

For myself, I am unsettled in opinion as to many of these points. I know this — that I have no knowledge of any pear orchard that has endured the systematic pruning, manuring, and cultivation recommended in the books, for a very long term of years; while I do know of many scattered trees which have yielded their annual abundant harvest for a half century of time, and still stand in green and venerable beauty, monuments of something better than the orthodox system of tree management.

I do not commit myself to anything beyond this — that the comparative results of Nature's method and man's method are worth our pondering. I do not say that orchards should be seeded to grass, for that is a question of soil and circumstances. Especially I do not say that they should be left to the protection of weeds, for there is a better way. But it should not be forgotten that Nature abhors the nakedness of the ground, and hastens to clothe every ploughed field with her mantle of greenness. I only recommend that we try all these ways, and hold fast to that which gives us the most good pears for the greatest number of years.

THE CURCULIO.

Something should be said about "Insects and Diseases," in every well-regulated horticultural talk; and heretic as I am, I will in this respect follow the

ritual of our societies. The two insects which damage us most at present, and which threaten the future of "pear growing for profit" the most alarmingly, are the curculio and codling moth. The larvæ of the curculio do not often, if ever, mature in the pear; but in neighborhoods where they abound they disfigure the young pears sadly. With orchards of peaches and pears side by side, I have found the latter much the most numerously stung early in the season, while the infant fruits were about the size of peas. The effects of these punctures are not outgrown by most varieties; the development of the fruit is arrested at the point of injury, or goes on slowly, forming a woody texture, and this scarred knotty fruit is not worth half price in the fall.

THE CODLING MOTH.

You are all familiar with the work of the codling moth in the apple, and I need say nothing concerning this insect, only that it is quite as hard on the pears as the apples, and so damaging to both that a dozen years more of neglect of measures for its extermination promise to leave our pear and apple orchards as barren of eatable fruits as are those of many sections of New England and New Jersey, whose proprietors enjoy their abundant supply of these necessities of the table — when they buy them.

LEAF BLIGHT.

Among diseases affecting pear trees, I think there is none so damaging as leaf blight; by which I do not mean the sudden blackening of the leaves which we so often see on pear seedlings, but that fall of the leaves in summer which is caused by a slower growing fungus, and sometimes apparently by a premature ripening of the leaves not connected with fungoid disease. This disease affects most varieties in my neighborhood, where the ground is cultivated in the common way. There are a few of our best kinds quite exempt, however, under the most trying circumstances. This fungus attacks only those leaves having a deficient or weakened vitality. Our pear orchards generally stand in a soil which is systematically kept naked during the entire year, and exposed as much as possible to all the severe changes of temperature. Such a soil becomes intensely hot every bright day in summer, and radiates heat rapidly at night — a condition of things precisely contrary to all the requirements of physiology and the teachings of Nature. Most of our pear trees can't stand it. The debilitated leaves, which are constantly exposed to the spores of this fungus, become unable to resist it. This is pretty much all theory, of course; but I know that those trees, of varieties most liable to summer defoliation in our neighborhood, which have been kept in a close grass sod, or in clover, have held their leaves quite perfectly through the summer.

WOOD BLIGHT.

This leaf blight lays the foundation for wood blight in many, if not in most, cases. Those trees which shed their leaves in midsummer will generally put out leaves again in a few weeks; a new wood growth is commenced, many of the perfected fruit buds will blossom; and the freezes of early winter find the tree

wholly unripened and unprepared, and all those new adolescent branches are backward with the frost, and the whole tree must be greatly shocked and more or less permanently diseased. That such trees should yield to the blighting fungus seems in no wise strange. The tree has passed through the feverish vicissitudes of summer, has been often wounded in root and top, and, finally, has been exposed to the severities of winter while in summer clothing, and it is quite to be expected that the abased and weakened thing should yield to the attacks of disease.

PREVENTION OF BLIGHT.

Now, whatever will keep the leaves on the trees through the season, whether it be high culture, special manuring, root-pruning, mulching, or grassing, is better than any other management which is accompanied with leaf blight. Without giving any opinion as to which of these methods is best, I will state two facts: I planted a dozen Flemish Beauty trees nine years ago; have given them moderate annual culture. They are all alive and in apparent health to-day, but they have been badly defoliated for several summers past, and never matured many fruit buds, and I have never got a barrel of pears from them all. A neighbor of mine planted a few of the same variety out of the same bundle. He set his trees in ground that he seeded down a year or two after, and which has remained in sod ever since, and he says he has never manured them. His trees are as large as mine, and he has had three or four crops, getting over three bushels to the tree in one season — the pears of fine size. I don't know that the grass was good for them, but I shall try what grass will do for mine. Now, please don't anybody report me as recommending you to plant trees in grass, for I don't make any recommendation. I think it is only the naturally strong and vigorous trees which will ever amount to anything if planted in grass — or anywhere else.

VARIETIES.

I don't wish to speak of varieties, as so much depends upon particular localities and management. It seems unfortunate that so large a share of all our trees ripen their fruit in August and September. We need more early kinds, and many more later ones. Nature designed the pear season to continue as long as that of apples.

ETERNAL VIGILANCE.

I will only say further, that successful pear growing depends upon fitness of soil, climate, and varieties, and the largest energy and thoroughness of management. Whatever system of culture is adopted, laziness, slovenliness, and neglect will not win. If I have deprecated the too general violation of Nature's plans, I have not meant that all could be left to Nature, for

“Ours is an art that doth
Mend nature.”

[The above excellent essay was read by our correspondent, Parker Earle, Esq., of South Pass, Ill., at the late meeting of the Central Illinois Horticultural So

ciety at Mattoon. We attempted to make some extracts from it, but found it all so good that we gave up, and concluded that the only thing to be done was to publish the whole. ED.]

THE HEBE PEAR. — The Rural Carolinian describes and figures this new variety originated by Mr. William Summer, of Pomaria, S. C. It promises to be an important acquisition, but has not yet been so widely tested as to determine its value for general cultivation. It is thus described by Mr. Summer: —

“Fruit large, specimens frequently weighing twenty-eight ounces; color lemon yellow, inclining to greenish, dotted all over with russet specks and deep irregular russet blotches; stem short, thick, and in a deep basin; form round obovate, with irregular protuberances, similar to those of the Duchesse d’Angoulême; flesh sprightly, melting, buttery, with a slight vinous flavor; seeds never matured, and seldom formed at all; ripens in South Carolina in December; tree vigorous, with finely matured wood, free from thorns; shape of tree naturally pyramidal.”

PROTECTION OF PLANTS IN WINTER. — At the annual meeting of the Montgomery County (Ohio) Horticultural Society, Mr. J. H. W. Mumma spoke of the necessity of protecting plants during the winter. For strawberries, he had found sawdust entirely useless, three fourths of all the plants protected with it being dead in spring. He had tried spent tan bark with tolerably good results, but in its new state it is apt to sour the ground and cause the plants to mildew. He had known sorghum stalks used, but judged that they were not very good.

Straw is a good protection when free from grass seed. The offal of a flax mill has been used; but it lies too heavy on the plants, and has an objectionable amount of seed mixed with it. Forest leaves are as good a protection as can be had when they can be placed around the plants so as not to be blown away; but the best material is fodder, which he had used with perfect success. He has a power machine which cuts and grinds the stalks very fine, so that they can be worked in around the plants. He uses it for bedding for horses, and applies it to the plants after it is thrown out of the stalls. It acts both as a fertilizer and a winter protection. It is excellent for protecting flowers, and for mulching raspberry, blackberry, and currant bushes, etc. He applies a good-sized double handful to a hill of strawberries, so as to nearly cover it, leaving it on in the spring, and letting the plants grow up through it, so that the fruit rests on the mulch. All strawberries and other small fruits should be mulched either with straw, leaves, or fodder. We should plant less, cultivate more, and give more attention to winter protection, and success will be sure.

THE GRAPE CROP OF TENNESSEE last year was large and of excellent quality. The premature dropping of the leaves — a disease which sometimes does a great deal of damage to grape vines in that state — was not much noticed last year.

THE "PATRONS OF HUSBANDRY." — We are informed that this new order is slowly but surely increasing, and promises to be of general interest to all who are engaged in the dissemination of knowledge, and in cultivating the productions of the earth.

We have received the address delivered by our correspondent, William Saunders, Master of the National Grange, at the close of the third annual session, February 4, 1870. Mr. Saunders says that the basis of the order is to increase the productions of the earth by increasing the knowledge of the producer, for this purpose freely using the valuable results of scientific investigation in establishing principles. One of the first duties of every grange is to form a good library, well supplied with elementary works on the various branches of science, preference being given to treatises on principles and fundamental laws.

Social relaxation from every-day duties and toils is inculcated and encouraged by the order. To make country homes and country society attractive, refined, and enjoyable, is part of its mission and aim. To these ends the admission of woman to full membership is proving of incalculable value.

The secret ceremony of initiation of members has been objected to by some ; but it is claimed that the discipline necessary to secure permanent organization could not be secured by any other means.

Suggestions of great moment are constantly being presented, not the least of which is that of coöperation in every branch of rural economy, valuable alike to the producer and the consumer. This is a subject requiring and receiving careful and cautious consideration ; so that, while members of the order are protected, the rights of others will not be infringed, but all will be benefited.

THE SIEULLE PEAR. — Our opinion has been asked in regard to the value of this variety for general cultivation. We believe this question may be answered by the statement that while occasionally very large and handsome specimens are produced, it has never gained a foothold as a standard variety. There are one or two strong objections to it — it is deficient in flavor, and quite apt to blow off the tree. Its brilliant color is an advantage, and in this respect it is superior to the Lawrence, with which it ripens ; but in quality and in regular bearing it is quite inferior, and we would sooner plant two trees of Lawrence, than one of Lawrence and one of Sieulle.

THE BOTTLE GREENING APPLE. — We have just been eating (Feb. 1) some of the last specimens of this fine apple, of which a full description and engraving were given in our volume 1., p. 357. Its most striking characteristic is its extremely tender, almost melting, flesh, excelling, in this respect, any other apple of its season. It cannot be relied on to keep beyond the end of January.

FIGS. — P. J. Berckmans, in the Proceedings of the American Pomological Society, recommends the following varieties of figs for cultivation in Georgia, viz. : Angelique, Brunswick, Black Genoa, Black Ischia, Celestial, Green Ischia, Jaune Hative, Lemon, Violet, long ; Violet, round ; Nerii, Prequesta, White Marseilles, Superfin de la Saussaye, Turkey.

MUSCLE VERSUS MIND. — There are persons in this world who seem to look upon physical labor, even severe physical labor, as a good thing in itself, and who, if we may judge by their talk, think it an especial blessing when a man has the opportunity to work hard at tilling the soil, whether on the farm or in the garden. That is, they take this view of the subject for others, and can discourse most eloquently on the dignity of labor; but they take precious good care never to soil their own hands. Now, there is nothing in itself desirable in the performance of manual labor, especially when coarse and difficult; it is only when informed and elevated by intelligence and a perception of the desirable ends to be attained by it, that it becomes dignified; and it is exactly in proportion to the conscious intelligence which guides it that it becomes elevated above brute labor. Another fallacy which has been urged by theorists in regard to a farmer's life is the opportunities for mental culture which it affords. No doubt, to one who is disposed to use them, the comparative leisure of winter on a farm does offer such opportunities; but the farmer or gardener who is ambitious to keep every part of his establishment up to the highest point of order, will find in barn, shop, or green-house, work that will not leave much leisure for study. It is a perception of these truths, and a laudable desire to avoid severe and long-continued manual labor, which has led to the invention of the improved labor-saving machines of our day; but it would be a great error to suppose that when an invention is once perfected, the occasion for the exercise of intelligence is ended. So far as regards the operator of the machine, it is just begun. Every new machine for preparing, planting, tilling the ground; for mowing, harvesting, etc., requires vastly more intelligence to guide it than the simple ploughs, hoes, and spades of our forefathers; and it is the necessity for such intelligence which is slowly, but surely, causing the old prejudice against "book farmers," as thoughtful, progressive men were once stigmatized, to give way. Every new machine which relieves the cultivator from bodily toil requires new mental activity and intelligence. The less muscle, the more mind.

NEW SEEDLING APPLES. — Mr. Asahel Foote, of Williamstown, Mass., has originated several new varieties of pears and apples, some of which have been mentioned in the Proceedings of the American Pomological Society, and in other publications. We have had the opportunity to test some of his seedling apples, and have made the following notes on their quality: —

Foote's Seedling Bellflower resembled its parent, the Yellow Bellflower, in shape and color, though rather more regular in form, and the skin smoother and more delicate in texture and color; perhaps, in all these points it approached the Porter more closely than the Bellflower. Medium size, flesh tender and of good flavor. Ripe about the same time as its parent.

Foote's Pound Sweet strongly resembles the Lyman's Pumpkin Sweet, or Pound Sweet, and, so far as we could perceive, shows no marked superiority to that variety. Ripe late in autumn.

Sweet Mother. — The general appearance of this variety would indicate that it bears affinity to the Spitzenbergs. It is of good size, brilliant red color, flesh white, tender, aromatic, sweet, and rich. Early winter.

ARNOLD'S YELLOW CANADA RASPBERRY. — We received from Mr. Charles Arnold, of Paris, Ontario, C. W., the originator of the above-named raspberry, last September, a note, in which he stated that the specimens sent the year previous, from which our illustration in the September number was made, were considerably below the natural size, having been sent, not for the purpose of illustration, but merely to show that they had escaped hard frosts up to the 18th of October, when the specimens were sent. Accompanying the note was a specimen which he said would demonstrate the inferiority of the former ones. The largest of these were decidedly larger than the largest in our cut, being by careful measurement one fourth more in diameter.

We make this statement as an act of justice to Mr. Arnold; but we wish to take advantage of this occasion to say that it has always been our aim, in our illustrations, to make them from such specimens as would give a fair and just idea of the production, whether fruit, flower, or vegetable, so as to avoid that disappointment to those who may by our notices be induced to procure them, which is always the result of exaggerated specimens, and which is always exactly proportioned to the exaggeration.

CUTTING ASPARAGUS. — By referring to the June number of the Journal for 1869, our readers will find a somewhat elaborate article on this subject from Mcintosh's *Book of the Garden*, published in answer to an inquiry from one of our correspondents. The plan there recommended, and which is almost universally followed by foreign growers, does not, it appears, find full favor among the cultivators of asparagus in this country; and the criticism of Mr. Baldwin on page 300 of vol. vi., will, we think, be generally commended.

Mr. Baldwin's theory, however, has an opponent in one of our western correspondents, who writes us as follows: —

“Mr. Baldwin says that the portion of the shoot which grows beneath the surface of the ground is never eatable; and he also advocates a growth of ten or twelve inches before gathering. Now, I have been a grower of asparagus for many years, and during its season cut about two bushels daily. As soon as the crowns of the shoots show themselves above the surface, they are in fit condition for cutting, and they are never more tender or of better quality than when so cut and used. Many persons refuse asparagus after the sprouts have attained a considerable growth, or when they are in what is termed the “green” state; and I think they are right.”

As an offset to this, another correspondent, Mr. C. F. Hathaway, of Waterville, Maine, makes the following statement: —

“With Mr. Baldwin, I think it is better to allow asparagus to make a growth of from nine to twelve inches before cutting. But breaking off the shoots is a method of gathering not generally advised. It has been said that cutting a little below the surface of the ground will cause the wound to heal more readily, and with less detriment to the root. Now, every one knows how difficult it is to cut them thus without injury to shoots which have not reached the surface; and if the new theory be correct it will be of great advantage. Who can testify by actual experience of the relative merits of the plans recommended?”

We have cultivated asparagus during the last thirty years, and regard it as one of the cheapest and best of our garden vegetables. There is no esculent within our knowledge more hardy, more easily grown, or that suffers less from the attacks of insects or disease than this. *It never fails.* It is so easily grown, and the yield is so generous, that we really have little sympathy for any owner of a garden, who may esteem it a delicacy, and at the same time neglects to provide for a supply. If such persons complain of meagre bunches, shrivelling sprouts, and high prices, we care not. They have asparagus in name, and this is all they deserve, or should expect.

From a couple of small beds, about eight by thirty feet, we gather in superabundance. During its season of use, it is rarely, if ever, necessarily absent from our table; and a bountiful indulgence is daily at our command.

With regard to cutting, we have at times practised most of the plans advised by different growers. That it is generally gathered at too early a stage of growth there can be little question. Nothing certainly is gained in quantity by taking the sprouts as soon as they appear, and we think nothing is gained in quality. We do not consider a shoot in its greatest perfection until it has attained a height of ten or twelve inches. When thus developed, we not only find a large portion of the sprout tender and fit for use, but there is a certain delicacy of flavor in these more mature shoots which is altogether wanting in those of scarcely a day's duration. So far from regarding a sprout as worthless in consequence of the slight expansion of the tip or crown, we think this measure of growth desirable. In short, we prefer "green" asparagus.

In severing the stalk, we make the cutting only so far below the surface as may be necessary to provide for the covering of the scar by the earth when the shoot is removed—the average depth not exceeding half an inch. Thus managed, very little injury results to the crowns of the roots or the undeveloped sprouts, and the bed at all times presents a neat appearance. Our principal objection to the system of *breaking* off the shoots, recommended by Mr. Baldwin, is, that the process leaves the plantation ragged and unsightly, and more difficult of cultivation.

The general practice of boiling and serving the shoots entire is neither convenient nor economical. The sprouts should be taken one by one, and the tough or more fibrous part removed either by cutting or breaking, reserving only that portion for use which is found to be tender and eatable. After being thus prepared, the tips are sometimes snapped or cut in small sections, cooked, and served like beans or peas—a method we commend and generally practise.

SHELTER FOR PEAR ORCHARDS. — At the meeting of the Wisconsin Horticultural Society, Mr. Suel Foster recommended giving pear trees more shelter than has heretofore been thought necessary. He would shelter them on the south as well as the north, and not only around the borders, but through the orchard, planting a row of evergreens at every fourth row of pears, and setting the pears and evergreens in close proximity.

His list of pears for Iowa is Bartlett, Flemish Beauty, Beurré d'Anjou, Onondaga, Seckel, and Doyenné d'été, named in the order in which they have proved themselves worthy.

BIGNONIA VENUSTA.—We are under obligations to Mr. George Cruickshanks, gardener to J. C. Whitin, Esq., Whitinsville, Mass., for a remarkably fine specimen of the flowers of this beautiful climber. Mr. Cruickshanks informs us that the plant, which has heretofore been supposed to require a hot-house temperature, was trained under the roof of the green-house, where the thermometer has not stood over forty-five degrees at night, and often as low as thirty-eight degrees. The plant is about sixteen or seventeen years old, and was cut in severely until two years ago. Since then he has cut away only such branches as interfered with other plants in the green-house. It is planted in the ground in the green-house, the roots running under the water-pipe.

VINELAND AGRICULTURAL AND HORTICULTURAL SOCIETY.—The annual election of the officers of this society was held January 8, 1870, and resulted as follows:—

President, Philip Snyder; *Vice-President*, Charles S. Mason; *Rec. Secretary*, S. P. York; *Cor. Secretary*, Philip Snyder; *Treasurer*, John Ingram, M. D.; *Librarian*, G. R. Starkweather; *Standing Committee*, C. B. Campbell, S. R. Fowler, Charles de Groff.

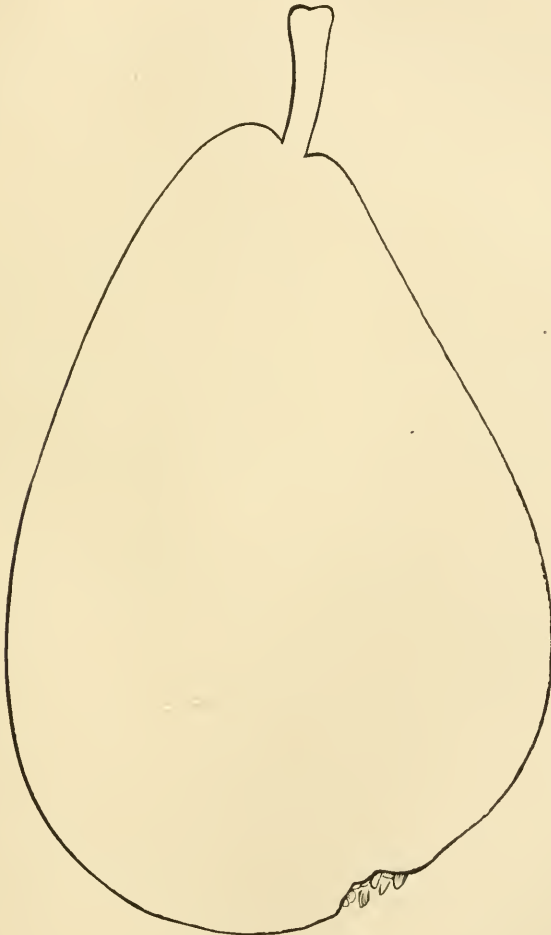
The membership for 1869 slightly exceeded three hundred, embracing quite a number of ladies, some of whom are successful fruit growers. The disbursements for the year were about twelve hundred dollars. The society is doing an excellent work. Since the election the constitution has been amended in some important particulars, which, it is believed, will result in greatly increasing the society's strength and usefulness. These provide for a system of annual payments and credits for premiums (when awarded) which, when amounting to twenty-five dollars, makes the member a *life* member, and *then* entitles him to cash premiums; also the placing of all funds for life membership at compound interest for a series of years, to create an endowment fund.

FINE ROSES.—The following collection of roses exhibited by J. C. Chaffin at the Annual Rose Show of the Massachusetts Horticultural Society received the Hunnewell premium for the best twenty named Hybrid Perpetuals, viz.:—

Anna de Diesbach, Marie Beauman, General Jacqueminot, Fisher Holmes, Therese Levet, President Mas, Mademoiselle Bonnaire, Pierre Notting, Charles Lefebvre, Duchesse de Caylus, Mad. Marie Rady, Mad. Charles Crapelet, Mad. Pulliat, Mons. Boncenne, Ville de Lyon, Victor Verdier, Mad. Victor Verdier, Prince Camille de Rohan, Senateur Vaisse, Jules Margottin.

NOTES AND GLEANINGS FROM FOREIGN EXCHANGES.

PITMASTON DUCHESS PEAR.—The name by which this pear has hitherto been known is Pitmaston Duchesse d'Angoulême, it having been raised by the late Mr. Williams, of Pitmaston, from a cross between Duchesse d'Angoulême



PITMASTON DUCHESS PEAR.

and Glout Morceau. Bearing no resemblance whatever to Duchesse d'Angoulême, it might with as much reason have been called Pitmaston Glout Morceau; and as it is a mere misapplication of the name to continue it, we are induced to

call it simply Pitmaston Duchess, it being sufficiently meritorious to stand on its own merits, without borrowing its reputation from any other fruit.

This is one of the largest and handsomest dessert pears we have. The specimen from which our figure was taken was grown by that skilful cultivator, the Rev. William Kingsley, of South Kilvington, whose unwearied labors in the study of all kinds of fruits, and particularly of those adapted and adaptable to the climate in which he resides, will have a most beneficial effect in improving the fruit collections of that district.

The Pitmaston Duchess is a large handsome pear, generally even, or a little undulating in its outline, and sometimes rather prominently bossed. The skin is smooth and fine, of a pale lemon color, thickly covered with patches of delicate cinnamon-colored russet, with a large patch round the stalk. In appearance, it is not unlike a good specimen of Marie Louise grown against a wall, when the skin is bright and smooth. Eye large and open, set in a wide cavity. Stalk about an inch long, stout, and inserted either level with the surface or in a small, narrow cavity. Flesh very tender and melting, very juicy, exceedingly rich and sugary, with a brisk, refreshing flavor and a delicate perfume.

It ripens in some places about the end of October, but in others it comes into use in the end of November.

As yet the variety has not been extensively distributed. It is little known among fruit growers, and hence the information regarding it is limited. Mr. Kingsley has grown it only on the quince, and as yet has fruited but one tree, which is a very small one, in a pot. Nevertheless, that tree bore eleven fruit, one of which supplied our figure. Mr. Kingsley says, "The ordinary Duchesse has never come to perfection with me yet." *English Journal of Horticulture.*

HOW TO FORCE RADISHES.—We extract from Galignani's Messenger the following somewhat singular method for raising early radishes:—

Radishes may be grown in a few days by the following method: Let some good radish seed soak in water for twenty-four hours, then put them in a bag and expose it to the sun. In the course of the day germination will commence. The seed must then be sown in a well-manured hotbed, and watered from time to time with lukewarm water. By this treatment the radishes will, in a very short time, acquire a sufficient bulk, and be good to eat.

If it be required to get good radishes in winter, during the severe cold, an old cask should be sawn in two, and one half of it filled with good earth. The radish seed, beginning to shoot as before, must be then sown in, the other half of the barrel put on the top of the full one, and the whole apparatus carried down into the cellar. For watering, lukewarm water should be used, as before. In the course of five or six days the radishes will be fit to eat.

LILACS.—It is a matter of surprise that the fine varieties of lilac now in cultivation, such as the magnificent dark-colored kinds, named Dr. Lindley and Charles X., are not oftener planted in preference to the very inferior older kinds of common lilac, which they excel as much as the plant usually grown as Persian Lilac, but which appears to be the Rouen variety (*rothamagensis*), does the comparatively puny-looking type of *Syringa persica*. *Florist and Pomologist.*

PEAR GROWING IN FRANCE.—So much has been said lately on the profit of pear culture on standards and trained trees, that we think our readers will be interested in what a correspondent of the *English Journal of Horticulture* says on this question in France. He gives an account of a visit to the garden of M. Chardin, an amateur, where he saw “pears, pears everywhere; pears trained in all sorts of ways—palmette, pyramid, upright cordon, oblique cordon, all are there—on walls, on trellises, alongside of walks, trained over walks, forming arbors, in fact, in every possible way that pears can be grown. They are grown alongside of the walks; about four feet from the path, iron trellises are run, sometimes reaching twelve or thirteen feet in height, and up these the pears are trained; then some shoots are allowed to lengthen, and are trained overhead. It may be at once gathered from this that the garden is in a very sheltered position. It has, moreover, a thorough pear soil, that rich, unctuous loam in which the pear rejoices, so that M. Chardin has every advantage. Moreover, he is an enthusiast; his garden is his child; it receives his first attentions in the morning, his last at night. At four and five A. M. he is in it, and is only driven out by the darkness. For neatness, for beauty of training, and for general effect in its own peculiar way, this garden is unique.”

He also visited the garden of M. Nallet, at Bronoy, where “the collection of pears is very numerous, and the various systems of training are carried out in great perfection. Perhaps the most interesting were the pyramids in the form of a crinoline, where stout iron rods are used to give the shape, and the branches are tied as they grow to the iron framework. This gives a greater current of air and more light than when pyramids are grown in the ordinary method. The palmette Verrier is a beautiful and favorite form of tree; and from what I saw, we might advantageously copy it either on trellises or walls. But after all, the question which most concerns us is this: Does this system pay? Do all the pains, care, and skill bestowed on these trees return to their owner an adequate recompense? Now, on this I have conclusive evidence. M. Nallet, when I asked him this question, said, ‘Decidedly not. If,’ he said, ‘I could grow only such kinds as Doyenné d’Hiver (Easter Beurré), and Bergamotte Esperen, which would come in late in the season, then they might; but I cannot grow these, except on the wall. When I send pears in early in the season, the market is so full that I get nothing for them.’ And in talking to M. —, in the Rue du Marché St. Honoré, he distinctly said that the finest fruit that he had to sell did not come from these highly-trained trees; in fact, it is not the neighborhood of Paris that supplies the fine fruit that we see in the fruiterers’ shops in Paris, or that come over to our own Covent Garden; we must go farther south—to Tourraine or Anjou. When I was at Angers some years ago, in the month of October, I saw immense quantities of splendid fruit, which were being gathered for transport to Germany, Russia, and even America; and M. Leroy, I remember, told me some astonishing statistics of the number of tons’ weight of pears annually exported from that part of France. There, with a brighter sun and more favored atmosphere, the finest varieties ripen on pyramids and bushes.”

THE KITTATINNY AND WILSON’S EARLY are advertised by a London nursery as “new American blackberries, plants in pots.”

THE FAIRY APPLE. — We do not often notice the new varieties of apples which we find mentioned in our foreign exchanges, for it is only with very rare exceptions that European apples prove suited to our climate. The present variety, however, we think, will prove valuable for the gardens of amateurs, and for the same uses which have made the Lady Apple so popular. We have no doubt, also, that it will be hardy and highly prized in those northern climates where ordinary apples do not succeed, and reliance is placed on the improved Crabs.

We wish we could give our readers the charming colored engraving of this fruit. In form it is represented as more conical than the Lady Apple, and the yellow ground color of the skin is much more brilliant. The foliage shows a decided resemblance to that of the Siberian Crab. The description, from the Florist and Pomologist, is as follows: —

“Notwithstanding the efforts which the late Mr. Thomas Andrew Knight made to cross existing varieties of the cultivated apple with the Siberian Crab, they all failed to produce a result which has been of any real benefit. Mr. Knight’s object in thus crossing these individuals was, as he states, ‘to obtain such fruits as vegetate very early in spring by introducing the farina of the Siberian Crab into the blossom of a rich and early apple, and by transferring, in the same manner, the farina of the apple to the blossom of the Siberian Crab.’ At the time Mr. Knight wrote this, the trees so produced had not yet borne fruit; but he observes, ‘The leaf and habit of many of the plants that I have thus obtained possess much of the character of the apple, whilst they vegetate as early in the spring as the apple of Siberia, and appear to possess an equal power of bearing cold.’ But what was the result of these carefully performed experiments? From this crossing we got the Siberian Bittersweet, which, Mr. Knight himself says, ‘is wholly worthless, except for the press,’ that is, for cider making. Then the Siberian Harvey has a juice so ‘intensely sweet,’ that it, too, can only be used, mixed with other apples, for cider. Both of these were raised from the fruit of the Siberian Crab fertilized with the Golden Harvey, one of our best dessert apples. Another, called Foxley, was also raised from the Siberian Crab; but the male parent was the famed Golden Pippin. Yet the Foxley is a worthless little apple, not so large as some gooseberries, and fit only for cider.

“It is interesting to watch these struggles between philosophy and nature. Philosophy says, ‘I will,’ and Nature replies, ‘You won’t.’ But when left to herself, Nature fashions an object without the philosopher’s aid, excelling in merit all that he had dreamed of. Here we have such an instance in the little Fairy Apple. This, too, was raised from the fruit of the Siberian Crab, but without any human aid. What is its parentage, and how it was produced, no one knows; but there it is, a haphazard foundling, destined and worthy to take its place among the worthiest of its kind.

“Whether for its beauty or its excellence as a dessert fruit, the Fairy Apple cannot fail to become popular and valuable. In color, size, and form it rivals the Pomme d’Api, or Lady Apple, so much vaunted, and which makes the fruiterers’ windows and our desserts gay during the dreary months of winter. For this purpose, the Fairy will command the attention of all growers of dessert fruit in large establishments, and for commercial purposes; for not only does it com-

mend itself by its great beauty, but its flavor is similar and not inferior to that of the old Golden Pippin, its flesh being of a fine deep yellow, with a rich and briskly-flavored juice.

“The fruit is produced in clusters of from three to five, much in the same way as clusters of cherries. They are an inch and a half wide, and about an inch and a quarter high, rather flattened at both ends, consequently inclining to the oblate form, and very even and regular in the outline. The skin is smooth and shining, covered with bright lively crimson, shaded with streaks of a deeper tinge, and on the unexposed side it is lemon-yellow. The eye is closed, set prominently, almost level with the surface, and surrounded with plaits; stalk sometimes less than a quarter of an inch long, and frequently straight, slender, and as much as an inch or more, inserted in a small, shallow cavity, which is russety. Flesh of a fine deep yellow, firm, crisp, very juicy, with a rich brisk flavor, and fine delicate aroma when eaten with the skin on.

“The fruit comes into use in December, and lasts till well on in the season. It is now (February) in perfection, and has the appearance as if it would last for some weeks on into April.

“This desirable acquisition was raised by Mr. Jennings, in his nursery at Shipston-on-Stour, from seed of the Scarlet Siberian Crab, or Cherry Apple. The seed was sown with no intention of raising new varieties of fruit, but for stocks on which to graft the ordinary varieties of apples. One of these showing signs of fruit, Mr. Jennings grafted it upon a free apple stock, and from one of the trees obtained the fruit as described.

“The parent tree from which the seed was taken is growing in an orchard consisting of such varieties as Ribston Pippin, Wyken Pippin, Blenheim Pippin, Margil, Hanwell Souring, and Pearmain. That which is in closest proximity to it is Margil; and it is not improbable that this was the male parent. The tree is of moderate vigor, with an erect habit of growth, and is hardy and prolific. The young wood is moderately stout, of a dull purple color; and the leaves downy, elliptical ovate, evenly serrated, with a stalk half an inch long.

“Another and not an unimportant recommendation of the Fairy Apple is, that it makes a delicious preserve.”

LARGE GRAPE VINE.—A grape vine in Jonchecy, France, fifty-four years old, yielded three tons of grapes last year. The stem is one hundred feet long, and the branches cover a space of two hundred feet square.

FINE GINKGOS.—There is a fine specimen of the Ginkgo (*Salisburia adiantifolia*) at Whitfield in Herefordshire, the residence of the Rev. A. Clive, which measures seven feet two inches in girth at five feet from the ground, is fifty feet six inches in height, and has a diametric spread of foliage of forty feet. It is supposed to have been planted about 1776. At Messrs. Cutbush's nursery, Highgate, is a vigorous and beautifully symmetrical tree, also about fifty feet in height. One of the largest trees is said to be growing in the garden at Hassop Hall, Bakewell, Derbyshire. Probably the oldest and highest Maidenhair tree in England is that in the grounds of Lord Ravensworth, Walham Green, which is seventy feet high, and was planted in 1767. *Florist and Pomologist.*

A SELECTION OF CHAMBER-PLANTS. — The following is a list of plants which will live in a room through the year, if the frost is kept out, and due attention is given them in various seasons, according to their requirements. All are handsome, some of them pre-eminently so : —

Lomatia elegantissima.	Aralia Sieboldi.
" ferruginea.	" variegata.
" silicifolia.	" trifoliata.
" polyantha.	" several other species.
Nerium splendens.	Ficus elastica.
Dracæna terminalis.	Rhopala Australis.
" ferrea.	Arundo Donax variegata.
" Cooperi.	Begonias, of sorts.
" gracilis.	Palms "
Aralia leptophylla.	Ferns "

Many other things would be quite as tractable in a room, and far more graceful than *Ficus elastica* : orchids, for example, such as, —

Barkeria Skinneri.	Leptotes bicolor.
Ærides Warneri.	Lycaste Skinneri.
Brassavola Digbyana.	" aromatica.
Calanthe vestita.	Mormodes aromatica.
Chysis Limminghi.	Oncidium ampliatum.
Cypripedium barbatum.	" flexuosum.
" venustum.	" divaricatum.
" insignis.	" cupreum.
Dendrobium nobile.	Pleione maculata.
" pulchellum.	Sophronites cernua.
Epidendrum vitellinum.	" violacea.

Robert Bullen, in Floral World.

EARLY TULIPS. — These are the most showy of the whole family, and are sufficiently bright to light up the most sombre collection of plants ; and are particularly useful early in the season on that account. They are best grown three in each pot, and should be brought into the conservatory immediately they begin to show color ; for they last but a short time in good condition after the flowers are fully open. As they can be bought for a trifle, I should recommend them to be grown rather extensively, and brought into the conservatory in batches of about a dozen pots at a time : I don't care for too many at once. The following are all good for early forcing ; but Duc Van Thol, both single and double, and Tournesol, are the best for growing in quantity for early work. Of the single varieties, select the following : Bride of Haarlem, crimson and white ; Chrysolora, yellow ; Cottage Maid, rosy-pink, striped with white ; Duc Van Thol, in its various colors of scarlet, white, and yellow ; Fabiola, rosy-purple and white ; Keizerkroon, yellow and red, one of the very best ; Pottebakker, in its three varieties of pure yellow, white, and red and yellow ; Proserpine, dark rose, very dwarf, and an early flowerer ; Rose Luisant, rosy-crimson, edged with peach ; Thomas Moore, orange ; Vermilion Brilliant, rich vermilion. The best of the doubles are, Duc Van Thol, red ; Duke of York, red and white ; Rex Rubrorum, red ; Tournesol, red and yellow ; Tournesol, new, yellow, very distinct. The following are a dozen good single varieties for growing in pots for enlivening a cold-house : Belle Lissette and Canary Bird, bright yellow ; Donna Maria, white and crimson ; Florida, purplish violet ; Imperator and Gris de Lin, mauve, striped with white ; Queen Victoria, white and crimson ; Roi Pepin, white and rose ; Superintendent, violet-purple, feathered with white ; Van der Neer, purplish violet ; Yellow Prince, yellow. — *Floral World.*

THE NEW ROSES of 1869 demand a few words. We find a list of seventy-eight varieties, with the names of the raisers appended in the case of fifty-one of the whole number. Those who speculate on new roses attach great importance to the names of the raisers, for they are in some degree guarantees of merit or of something else. There appears to be but one from Lacharme in this year's lot, but many from Ducher, Granger, E. Verdier, C. Verdier, Gonod, Pernet, and Liabaud. Our readers will not expect us to select largely from the Continental list; we trust, indeed, they will not select in a prodigal manner for themselves, for we need rather to check than encourage the spirit of our noble allies in the matter of circulating new roses, though we could not wish to damp their ardor in raising them. Let us for the present be content with the following French Perpetuals: —

Alexander Humboldt (C. Verdier), *Edward Morren* (Granger), *Elise Boelle* (Guillot père), *General Grant* (E. Verdier), *Louis Van Houtte* (Lacharme), *Madlle. Eugénie Verdier* (Guillot fils), *Perte Blanche*, *Souvenir du Baron Rothschild*, offered as a bedder, *Thomas Methven* (E. Verdier). Amongst the tea-scented, Ducher's *Jeanne d'Arc* and *Mont Blanc* will probably be found first rate. The English roses are few in number, but they are good; so good that we begin to believe that our amateurs have but to give their minds to the matter, and they may equal the best accomplishments of our fellow-laborers on the other side of the Channel. *Duchess of Mecklenburg* (Awkright) is extremely beautiful in bud; *Monsieur Woolfield* (Turner) is a fine, large, globular flower, of the deepest rose-color. *Prince Leopold* (W. Paul) takes rank with *Red Rover* as a showy climbing rose, and affords an agreeable reminder that one of the most accomplished and conscientious of English raisers is not yet tired of his work, or deserted by that good fortune with which he has long been familiar. The raising of roses in English gardens is an infantile art at present, but the triumphs accomplished hitherto justify perseverance, and afford reasonable grounds for hope that greater things will in this way yet be done than have been dreamt of hitherto.

Gardener's Magazine.

NEW ROSE LOUIS VAN HOUTTE. — This bids fair to be *the* rose of the season. I have heard a good deal of it. Its raiser, Lacharme, the raiser of Charles Lefebvre, thinks very highly of it, and I find the following in the last number of *L'Horticulteur Français*: —

“This variety has given occasion to an act of rare probity, which we are happy to record. Last September, at the Horticultural Exhibition at Lyons, the jury gave the premier prize to a rose of M. Guillot père. This honorable grower having heard that M. Lacharme had one exactly resembling it in color, they compared their two flowers, and it being found that that of M. Lacharme was superior, M. Guillot suppressed his own, which had been already announced, and sends out in its place the variety of his competitor, which is the Rose Louis Van Houtte. This conduct of M. Guillot père needs no commentary.”

D., Deal, in English Journal of Horticulture.

HORTICULTURAL EXHIBITION IN THE CRIMEA. — A Russian journal announces an exposition of the fruits of the Crimea during the year 1870.

WASTE OF MANURE BY DRAINAGE. — That the drainage water from manure is valuable will be evident from the fact that in one case there were in one gallon no fewer than 15.13 grains of ammonia, 716.81 of organic matter, and 625 of ash ; in which ash there were 73 grains of phosphates of iron and lime, 14.2 of sulphate of lime, 10 of carbonate of magnesia, 297 of carbonate of potash, 70 of chloride of potassium, 102 of common salt, and 10 of silica. When we calculate by tons instead of gallons, the loss from drainage from large surfaces of manure must be very great.

Country Gentleman's Magazine

RAISING SHALLOTS. — It is not usual to grow shallots from seed, but the practice is very successfully followed by Mr. Trigg, of Hayling. His plan is to plant out the offsets in the usual manner, and allow them to seed, which they do the second year. The seed is sown in good, rich soil, at the same time as onion seed, and the crop is such that five fair average specimens weigh one pound seven ounces. They at first look like onions, but when they begin to divide into offsets the peculiar difference between the two is readily distinguished.

Florist and Pomologist.

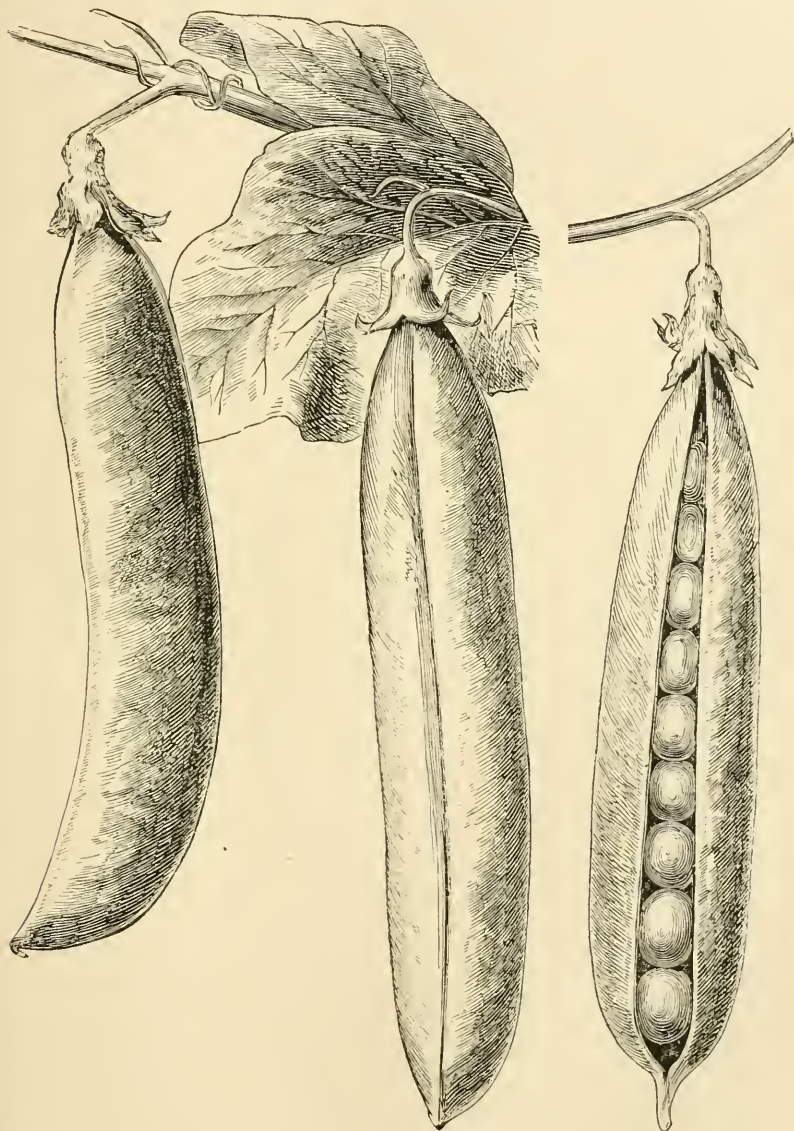
A WIDE-SPREADING TREE. — When at Nagarote, in his Nicaraguan travels, Dr. Seemann measured a famous Genisaro tree (*Pithecolobium saman*), of which the villagers are justly proud, since they had the public spirit — the rarest of virtues in a Spanish American — to refuse an offer made for it of two hundred dollars. The tree is but ninety feet high, but some of the lower branches, which are quite horizontal, are ninety-two feet long and five feet in diameter. The stem, four feet above the base, is twenty-one feet in circumference, and the crown of the tree describes a circle of three hundred and forty-eight feet. A whole regiment of soldiers might seek repose in its shade.

Florist and Pomologist.

NEW PEAS. — One of the most important of our esculents is the pea ; and without any disparagement of certain good old favorite sorts, it may fairly be stated that during the last few years, commencing with the labors of the late Dr. Maclean, a wonderful improvement in the quality of the garden varieties has taken place. Some of Maclean's sorts, such as Little Gem, Advancer, Premier, etc., have proved to be grand acquisitions, and are not even yet surpassed in their respective classes ; but improvements of this kind are stimulative, and since the advent of those just named, other novelties, bearing high characters on good authority, and for which horticulturists are indebted to Mr. Laxton, of Stamford, have made their appearance.

Subsequently to the production of these later novelties, the Messrs. Carter have taken up the raising of new peas ; and one of their first results, represented in the annexed figure, is that which is called *The Cook's Favorite Pea*, or Hundredfold. This was obtained by crossing Laxton's Prolific with Ne Plus Ultra. It is described as a prolific late variety, about fourteen days later than Supreme, as growing about four feet high, and as producing abundantly its remarkably fine pods, which are slightly curved, of the deep color of the Ne Plus Ultra, and carrying a fine bloom. When cooked the peas are of excellent quality, and of a

dark-green color, the ripe seed being of a pale olive-green. This sort is noted by the Gardener's Chronicle reporter, from personal inspection, as likely to become



THE COOK'S FAVORITE PEA.

popular both for marketing and garden use. *M., in Florist and Pomologist.*

KALOSANTHUS-CULTURE.—The kalosanthus, or crassula as it was formerly called, belongs to the houseleek family, and is therefore a succulent, and requires a somewhat different treatment to ordinary soft-wooded plants, though it is by no means difficult to grow well. In the first place, the propagation is effected by taking off the tops of the shoots that have not flowered as soon as the beauty of the flowers is past: this is the best time of the whole year, for the wood is by then tolerably ripe and firm, and not likely to decay, which is the case if the tops are taken off early in the spring, when the plant is in full growth, and the shoots soft and sappy. Any light sandy soil will do for filling the pots, in which the cuttings are to be inserted, and a layer of dry silver sand on the surface. This runs down into the hole made for the reception of the cutting, and forms a base for the cuttings to rest upon. The cuttings root with greater freedom this way than they would do if they were surrounded by soil only. After the cuttings are inserted, place the pots in a position where they are exposed to the full light and air; for no close coddling must be attempted, or the cuttings will very soon go off, especially if accompanied by plenty of moisture. Supposing the cuttings to be placed on a shelf in the greenhouse, fully exposed to the sun, a mat might be thrown over the glass to break the full force of its rays; and prevent them from being burnt up before they have formed roots. The branches can also be cut up into lengths, and rooted, if a number of plants are wanted, and there are only a few growing points to be had; but the latter are the best, if they are obtainable. After they are rooted, they must be potted off into small pots, in which they must remain through the winter. In the spring, shift into pots two sizes larger, and give them a little encouragement for a few weeks by placing them in a growing temperature, about ten degrees higher than that of the cold greenhouse: directly the plants begin to make fresh roots into the new soil, nip the points off; and then, when these pots are full of roots, and the plants require a second shift, they can be either potted on singly or into larger pots, or about three plants potted in one large one. The latter method is preferable; for a large plant can be had quicker, and with less trouble, than by growing them on singly. The plants should now have all the light and air possible; for upon the maturity of the wood depends, in a great measure, the quantity of bloom the following summer. The drainage of the pots should be perfect, and water applied rather liberally when the plants are growing freely, but sparingly during the time they are at rest through the winter,—just sufficient to keep the foliage from shrivelling. From the first, the side-shoots must be neatly tied out, to keep them in their places, and prevent their snapping off, which they are very liable to when shifting the plant about. Immediately the beauty of the flowers is gone, cut the plants down in a somewhat similar manner to the way pelargoniums are cut back after flowering. Give the plants a little extra warmth to induce them to break quickly; and, when the young shoots are about an inch in length, take the plants out of the pots, remove a portion of the old soil, and repot in a clean pot, the same size as that from which it was taken. No exact rule can be laid down as to how low each shoot is to be cut down; but they should be cut back to where the wood is firm, and a certain uniformity preserved, so, when the young growths progress and come into flower, the plant

is a nice shape, which is impracticable if the old wood is pruned irregularly. A close soil for growing these plants in must be avoided: it should consist of fibrous loam, mixed with a good proportion of leaf-mould and sand, and a liberal sprinkling of broken crocks. With the selection of half a dozen first-rate kinds we conclude, earnestly advising our readers to deal justly by these plants, and they will have no more necessity to raise the cry of there being nothing to decorate the conservatory with through July. The following are about the best; at all events, they are good and distinct, and we can recommend them with the greatest degree of confidence: *K. Boieldieu*, bright carmine; *K. coccinea superba*, fine deep scarlet; *K. Madame Desbordes Velmore*, fine rose; *K. Otto Deines*, rich velvety scarlet; *K. Sultan Achmet*, fine dark red. — *Floral World*.

LUMINOSITY OF THE FRAXINELLA. — When the daughter of Linnæus one evening approached the flowers of *Dictamnus albus* with a light, a little flame was kindled, without in any way injuring them. The experiment was afterwards frequently repeated; but it never succeeded: and whilst some scientific men regarded the whole as a faulty observation, or simply a delusion, others endeavored to explain it by various hypotheses. One of them especially, which tried to account for the phenomenon by assuming that the plant developed hydrogen, found much favor. At present, when this hypothesis has become untenable, the inflammability of the plant is mentioned more as a *curiosum*, and accounted for by the presence of etheric oil in the flowers. Being in the habit of visiting a garden in which strong healthy plants of *Dictamnus albus* were cultivated, I often repeated the experiment, but always without success; and I already began to doubt the correctness of the observation made by the daughter of Linnæus, when, during the dry and hot summer of 1857, I repeated the experiment once more, fancying that the warm weather might possibly have exercised a more than ordinary effect upon the plant. I held a lighted match close to an open flower, but again without result: in bringing, however, the match close to some other blossoms, it approached a nearly faded one, and suddenly was seen a reddish, crackling, strongly-shooting flame, which left a powerful aromatic smell, and did not injure the peduncle. Since then, I have repeated the experiment during several seasons; and, even during wet, cold summers, it has always succeeded, thus clearly proving that it is not influenced by the state of the weather. In doing so, I observed the following results, which fully explain the phenomenon. On the pedicels and peduncles are a number of minute reddish-brown glands, secreting etheric oil. These glands are but little developed when the flowers begin to open; and they are fully grown shortly after the blossoms begin to fade, shrivelling up when the fruit begins to form. For this reason, the experiment can succeed only at that limited period when the flowers are fading. Best adapted for the purpose are those panicles which have done flowering at the base, and still have a few blossoms at the top. The same panicle cannot be lighted twice. The rachis is uninjured by the experiment, being too green to take fire, and because the flame runs along almost as quick as lightning, becoming extinguished at the top, and diffusing a powerful incense-like smell. — *Dr. Hahn, in Floral World*.

POTATOES. — Having seen several extracts in your paper last year about the American Early Rose Potato, I wrote to New York for a bushel of them, which I received in due time. I now beg to hand you a sample of Early Rose, hoping that you will report upon the flavor. It is evidently a large and early cropper, and a very large-sized tuber. Even in their present immature condition, I think the flavor good. It is well to state that they were planted on Feb. 25, on a south border, of dry sandy soil, without manure. Climax, Bresee's Prolific, and Bresee's No. 4, as well as Early Rose, have magnificent smooth-leaved haulms. — *J. Muir Downie, West Kirby, Cheshire, in Gardener's Chronicle.* [Pretty-looking potatoes; but, when cooked, they were very watery. — *Eds. Gardener's Chronicle.*]

AMATEUR GARDENING. — There are many persons, who, like myself, are fond of gardening on the small scale practicable by amateurs of moderate means, some of whose flower-gardens may contain borders along walls or fences, and surrounding lawns or croquet-grounds, filled with shrubs, such as laurels, bays, laurustinus, rhododendrons, &c., and even trees; and which are particularly difficult to bed out in, or even to keep in a showy condition throughout the summer, on account of the drip and shade of the shrubs they contain. Such persons will be, as I have been, probably unwilling to widen these borders to any great extent, so as to afford room for a high background between the stems of their shrubs, and the flowers they wish to see encircling their lawns; for they will not like to encroach upon the grass (perhaps for fear of impeding croquet), and they find that a moderately wide border, say four or five feet from the stems of the shrubs, always looks ragged at the back, and is difficult to get on to trim or cut flowers from. It may be worth their while to try the plan of a detached border such as has suggested itself to me. Instead of having an earthen border of four or five feet wide, I advise them to grow grass as close to their shrubs as may be, filling up around their roots with ivy, periwinkle, St. John's-wort, or any other plants that will continue the green right through to the wall, and will also conceal the stems of the shrubs; then to cut their border for flowers out of the turf, so as to leave a foot of good sound grass behind it. The inner edge of this border will be not more than three feet from the stems of the shrubs, if they be well grown; and, if made two feet or two feet and a half wide, it will give ample space for a very bright display. The grass edge and ivy behind the border will improve the brightness of the flowers, and facilitate their culture; and the effect will be far greater than if a plain, uninterrupted border of five feet had been employed. I may add, that, during the extremely hot summer of last year, I derived great benefit from having turned into my flower-beds plenty of long litter. The ends of the straws peeping out were somewhat unsightly until the plants grew; but the aeration they produced, and the absence of surface-caking due to their affording free passage for water to the roots, was quite surprising. I found, too, that mignonette, sown broadcast over beds and borders, kept them cool and moist, and was especially valuable for calceolarias; and its quiet tone enhanced the beauty of foliage and flowers, while its sweet fragrance was no mean addition to their scent. — *R. E., in Gardener's Chronicle.*

FROSTED PLANTS. — “Whatever is touched with frost keep dark and cool, and damage will be lessened, if not entirely obviated.” The effect of frost on plants depends considerably on the state it finds them in. Soft-wooded greenhouse-plants are killed *instantly* if they are in a moist atmosphere and growing temperature with full enjoyment of light; but if moderately dry, and well covered so as to be almost in total darkness, very many even of the tenderest will bear a few degrees with impunity. This advice may be of use now; for we may have a smart time of it yet before the cowslips blossom. If frost gets into a house, and makes its mark on the minimum thermometer, draw down the blind, if you have one, at once, or cover the lights with tarpaulin, straw, or whatever may be at hand to exclude the light; and be particularly careful not to get up the heat in a hurry. To raise the temperature is, of course, essential; but it will be well to keep it at about thirty-three degrees for a day at least, that thawing may take place slowly. A few degrees of frost met in this way will do much less harm than is generally inflicted where the terrified cultivator heaps on the fuel, in the mistaken notion that fire is the proper antidote to freezing. The same remark holds good as to fruit. The frost gets into part of the store of apples and pears, and some are frozen hard. If they are allowed to thaw slowly and *in the dark*, they are not a whit the worse for the visitation. If thawed in full daylight, they would probably melt in the operation. — *Floral World*.

GREENHOUSE LYCOPODIUMS OR SELAGINELLAS. — The following selection will do admirably for growing in a conservatory. People very often fail in growing these beautiful and easily-managed plants through exposing them to the same amount of air and light as the hard-wooded plants. The delicate foliage will not stand rough treatment with impunity; for it soon assumes a brown, rusty color, to prove to the cultivator that the plant is not receiving the right kind of treatment. These plants are propagated by cuttings and division, and thrive best in pans about six inches deep, well drained, and filled with a mixture of fibry peat, loam, and leaf-mould in equal proportions, with plenty of sand. There are many more splendid kinds; but these are the most suitable for the conservatory: *Selaginella apoda*, a pretty little dense-growing kind, requires care in watering, otherwise it will go mouldy in the centre; *S. denticulata*, the old common kind, but very beautiful and free-growing, — one of the most useful we have; *S. formosum*, a fine kind, the habit close and massive-looking, very easy to propagate, and grows about a foot high; *S. Martensii*, a fine erect, close habit, same height as the preceding; *S. cuspidata*, a very beautiful growing kind, — foliage forms quite a bird's-nest; and *S. Wildenovii*, a fine spreading kind. — *Floral World*.

FINE HORSERADISH. — An English cultivator states that horseradish should be planted *two feet deep*; and adds, that it is the proper method for securing good, long, straight roots. The plants may not show their leaves till June, or even later; but those from the majority are sure to appear the first year. By the autumn of the second year, these will be fine roots.

ORNAMENTAL TOMATOES. — Few persons are aware of the great beauty, as decorative objects, of well-grown plants of some of the smaller-fruited tomatoes ; and we are therefore glad to see that especial attention is now being directed to them. The fruit of the Orange field and the Crimson Feejee Island is richly colored, showy, and attractive. In addition to these kinds, the following varieties are recommended as being worthy of cultivation for ornamental purposes, namely, the Yellow Plum, the Pear-formed, the Yellow Cherry, and the Currant Tomato.

The Yellow Plum Tomato has the fruits about the size and shape of a damson plum.

The Pear-formed is red, and sometimes yellow, and the fruit is rather larger than the plum-shaped.

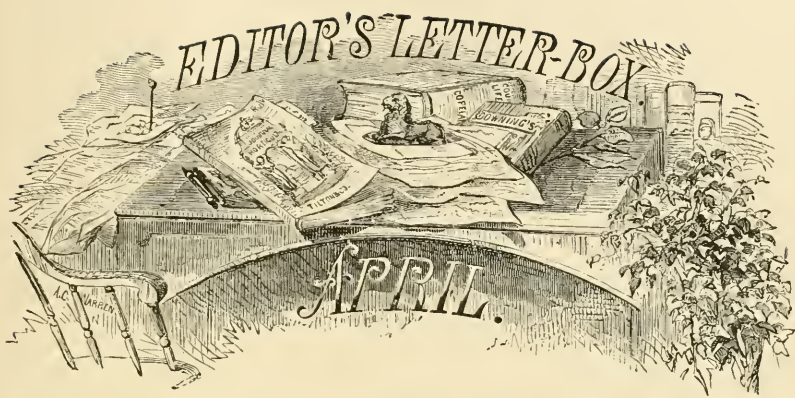
The Yellow Cherry Tomato has still smaller spherical yellow fruits, produced in great abundance, and very attractive in appearance.

The Currant Tomato is the most ornamental of all, producing long, drooping racemes, or clusters, of bright red fruit. Messrs. Vilmorin, by whom it has been distributed under the name of *Solanum racemigerum*, describe it as follows : " This most ornamental species is a veritable tomato, the sub-climbing stems of which are very much branched, and bear a profusion of simple or divided racemes from six to eight inches in length, composed of from fifteen to twenty-five smooth, round fruits, disposed in two rows, and of a very bright scarlet color, so as to give them a strong resemblance to clusters of red currants. It is a most interesting plant, and one which may be thoroughly utilized as an object of ornament, under the treatment given to the ordinary culinary tomato."

These varieties are especially recommended for the great beauty of the plants when well grown and full of fruit. They may be successfully cultivated in pots for house decoration, and their quality, from the utilitarian point of view, is quite equal to that of the larger sorts.

Gardener's Chronicle.

OBITUARY. — The Revue Horticole for Feb. 1 announces the death, at the age of sixty, of M. Dauvesse, of Orleans, the proprietor of one of the largest horticultural establishments in France. Of uncommon activity and intelligence, joined to a high sense of honor, his business had attained much extent and importance, every part of it being carried on in the most systematic manner, and his plants and trees were forwarded to all parts of the world, his orders from American customers, by whom he was highly esteemed, being very extensive. He was a very benevolent man, and always made a good use of the considerable fortune which he had amassed.



THE Editors of Tilton's Journal of Horticulture cordially invite all interested in horticulture and pomology, in their various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects, fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed; we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

J. G. N., Indianapolis.—The leaf enclosed in your letter was so dry and brown as to be wholly indistinguishable.

It is often difficult to name plants from leaves.

In sending a plant "for a name," correspondents should always give such information as they possess as to the habit and nature of the plant.

If it were allowable to suppose, we should say your leaf belonged to one of the variegated leaved amaranths.

MR. EDITOR: I notice in a horticultural journal an inquiry as to the derivation of the word "pippin," which is applied to many varieties of apples. There are various terms applied to classes of fruit of which I know the meaning, such as "Beurre," or butter; "Doyenne," signifying dean or deanery; "Bezi," or wilding, etc.; but I am as ignorant as the inquirer above mentioned of the meaning of Pippin, and, if possible, should be glad to have you enlighten me. *S. L.*

The word *pippin* is commonly derived from the spots or "pips" on the skin of an apple; but we are disposed to think the original signification was a seedling, as the seeds of apples, pears, and oranges are often called "pips." The word probably comes to us through the French, "pepin" being a seed in that language. This view is confirmed by the fact that "Pepin d'Or" is a French synonyme of the English Golden Pippin. We have also Pepin Cels, Pepin Flagellé, Pepin à Porte, etc., all names of apples; and in German the kindred term "Pippeling." We have heard a bed of pear seedlings spoken of as "a fine lot of pippins."

MR. EDITOR: I saw in the Journal, Vol. vii. No. 2, a communication signed by W. C. B., and headed, "Beat this who can." The writer says he picked forty-five pounds of Delaware grapes from a vine four years old, which, I think, is a large pick; but I also think I beat that some. I picked from a Concord vine, last fall, of the same age, sixty pounds of as good berries as I ever saw on a vine of that variety; the September gale destroyed quite a number of pounds, besides.

LYNN, MASS.

J. P.

We are much obliged to J. P. for his communication, but we think he will have to try again before he can claim to have beaten W. C. B., for sixty pounds of Concord is not any more, indeed not as much, as forty-five pounds of Delawares from a vine of the same age. We should like to hear from J. P. as to how his vine is affected the coming season by the heavy crop of last year.

INQUIRER: BEST WASH FOR FRUIT TREES. — A solution of potash in water is commonly used to destroy insects, and is effectual; but care must be taken that it is not too strong, else it will injure the tree. Just strong enough to be tasted will be sufficient for young trees with tender bark, but for old trees it may be stronger. A solution of sal soda in the proportion of one pound to a gallon of water is recommended to destroy insects and moss without injuring the bark; but we have not tried it. We would not advise whitewash, for we dislike the appearance, and we believe that the crust which it forms, by excluding the air, injures the tree. For old trees the best thing is the wash described in our vol. vi. p. 63; but if you have not time to mix this, you may plaster over the bark of your tree with fresh cow-dung. But don't fancy that you are going to make an unthrifty tree vigorous by merely washing the bark. It probably wants a generous manuring; and if you can't do both, you had better omit the washing than the manuring.

Mrs. F., Boston. — Your fern leaf is *Lygodium palmatum* — the climbing fern, one of our more delicate and beautiful native plants.

A NEW SUBSCRIBER, Russellville, Ky. — We would recommend the following pears for standards: Doyenné d'été, Osband's Summer, Tyson, Bartlett, Belle Lucrative, Buffum, Seckel, Lawrence. If a greater variety is wanted, add Madeleine, Bloodgood, Beurré Giffard, Dearborn's Seedling, Julienne, Rostiezer, Doyenné Boussock, Stevens' Genesee, Flemish Beauty, White Doyenné, Duchess of Angoulême, Louise Bonne of Jersey, Glout Morceau, Beurré d'Anjou, Easter Beurré. For dwarfs we would advise Osband's Summer, Tyson, Beurré Giffard, Louise Bonne of Jersey, Buffum, Seckel, Urbaniste, Duchesse d'Angoulême, Glout Morceau, Lawrence, Easter Beurré, Beurré d'Anjou.

We are unable to suggest any way to prevent your pears from blooming so early, except planting them on northerly slopes. The Paradise d'Automne blooms a little later than most kinds, and might therefore escape a spring frost. In localities subject to late frosts the fruit is often saved by building fires on the windward side of the orchard, so as to cause the frozen flowers or fruit to thaw slowly. The fires must be managed so as to produce as much smoke and as little flame as possible.

Your chip manure will be valuable for any of the ordinary fruit trees or grape vines. The fine, decomposed part may be mixed thoroughly with the soil when planting, and the coarser part will make an excellent mulch.

LEAVITT, Boston Highlands. — The best time to transplant evergreens, such as Norway spruce, arbor vitæ, and hemlocks, is about the middle of May, just as they begin to grow. If very large, they may be moved, in winter, with a ball of frozen earth.

Rank manure is injurious to evergreens because of its heating properties, but old, well-rotted manure is beneficial.

R. F. F., Indianapolis. — Is the flower of the shrub, of which you enclose a leaf, light blue or white in a branching spike? If so, it is a veronica. But the leaf may belong to a dozen different plants. You must send flower.

Mrs. I. A., Northampton, Mass. — Your plant is *Centaurea candidissima*. The gillyflower was fertilized in the half-open bud, and the object of the flower being attained in the production of seed, there was no necessity for the flower to open. Gillyflowers are biennials, and die after ripening seed; yours was probably one of the "Brompton Stocks," which are very popular in England, but are seldom grown in this country.

You are treating your house plants too well; they make such vigorous growth they fail to bloom; let them get a little pot-bound, and you will have bloom, the growth being checked. This check is given when they are planted out, and then they bloom.

E. B. J., Southport, Ct. — The pink sent is very good, and well worth growing, and will be valuable for bouquets, but it has none of the points of a florist's flower; the colors run, are not well defined, and the flower sent is under size.

G. P., Champaign City. — *Deutzia scabra*, *Philadelphus Gordoni*, *Cydonia japonica*, *Viburnum plicatum*, *Benzoin odoriferum*, any or all of them, would do well. If evergreens are wanted, try *Rhododendron Everestianum*, *R. album elegans* or *Kalmia latifolia*.

G. W. T., New Brunswick, N. J. — *Azalea pontica* and its varieties can be grafted on wild azalea.

A. calendulacea, *crocea*, *eximia*, *coccinea*, *flammea*, *Fama*, *Marie Verschaffelt*, *ignescens*, *flameola incarnata*, *prænitans*, are very fine.

Heroine, *Ophirie*, *narcissiflora* are fine double-flowered varieties. In fact all the so-called "Hardy Azaleas" would prove hardy, and do well with you, if properly treated.

MISS M., Schenectady, N. Y. — Mr. Rand's new book, "Seventy-five Flowers," will be published about the first of April.

Also a very complete treatise on Strawberry culture by Mr. Merrick, which will be sure to meet a great want.

T. P., Cedar Rapids, Iowa. — Names of Plants. No. 1. *Azalea phœnicia*. No. 2. *Myrtus communis*, small-leaved variety. No. 3. We cannot name a "shrub" from a fragment of a leaf. No. 4. *Fabiana imbricata*.

E. A. L., Williamsville, N. Y. — Your everlasting flower is *Statice Bonduelli*, a perennial, native of North Africa, a pretty, free-blooming plant, but requires winter protection. You can probably obtain seeds from any of our seedsmen.

TYRO, Harrisburg, Pa. — Do not think of pruning a pyrus hedge in the spring; you would ruin it. Cut it in well in August; then the check will cause it to set flower buds, and it will bloom finely the next spring.

A. P. BENNETT, "Oaklands." — The Prickly Pear (*Opuntia vulgaris*) is hardy in Massachusetts; will stand the winter, and when in flower is very pretty.

Its northern limit is, we believe, the Island of Nantucket, where it grows plentifully. The fruit is worthless.

At present this is our only hardy "cactus," but we have no doubt that some of the north-western species will stand our winters.

"OLD FOGY IN THE GARDEN." — We agree with you in liking "four-o'clocks," and we always plant them. Try the variegated leaved variety, which is very pretty.

MAY.



NOTES ON RASPBERRIES.

By GEORGE W. CAMPBELL, Delaware, Ohio.

“*De gustibus non est disputandum,*” I find, may be not less truly affirmed in reference to raspberries than to the mode in which their character and value may be regarded and treated upon by different individuals.

I am induced to make this remark by noticing in the St. Louis “Rural World,” of September 26, an article signed “Ozark,” commenting upon the “Notes on Raspberries” in the September number of your journal. The tone of this article seemed to me so unjust, in view of the fact that you expressly stated your recommendations of varieties to be made with reference to Boston market, and was withal so entirely wanting in the courtesy due from one journal, or one writer, towards another, I could not help feeling surprised that it ever found place in any respectable paper. I do not propose further to remark upon this extraordinary production. I am, however, inclined to think there is really

a greater diversity of taste and opinion in reference to the raspberry than to almost any other fruit.

Among my horticultural friends, while a few give preference to the Black Caps, others regard them very lightly, and consider only the Purple Cane, or the Antwerp families, worthy of cultivation. Occasionally, also, I find a person who cares for none of them, and "does not like raspberries." Indeed, representatives of each of their classes are to be found in my own household; and this fact teaches me that it is hardly safe to allow individual taste to be at all dictatorial in recommending or treating of this fruit for the benefit of the public at large.

A similar diversity of taste, I find, exists in communities or sections. I am informed by market gardeners from different localities that in some places the Black Cap raspberries are preferred in market, and they can scarcely sell any others; in other sections the reverse is true, and only the red, or Antwerp class, are valued.

Individually, I must confess a preference for the finer varieties of the Antwerp class, — Brincklé's Orange, Hudson River Antwerp, Fastolf, Knevett's, Giant, etc., — and although they *do* "sucker," and *are* tender in winter, and require extra care, I have nevertheless found them to pay abundantly for all the labor required, and in their cultivation have never had cause for regret, except when the necessary attention has been withheld or neglected.

Still I would not recommend these, or any varieties, for general culture, which require winter protection, for the reason that it is so often and so easily neglected, and so few persons will take the pains necessary to insure constant success. The most frequent objection urged against all this class of raspberries is their habit of "suckering" from the roots. And although this is Nature's renewal system, not only for producing new fruit canes, but also for perpetuating these varieties, if left unchecked and uncared-for Madam Nature seems disposed to overdo the business, and an excessive wood-growth, with comparatively little fruit, is the result. Precisely analogous to the runners of the strawberry are the suckers of the raspberry; and as the removal of superfluous runners is necessary to produce the best results in strawberry culture, so in successfully growing the Antwerp class of raspberries must a similar course be pursued.

In forming a plantation, they are usually planted in rows five or six feet apart, and about four feet between the plants. The growth of the tender varieties should be afterwards restricted to hills or stools; the hardy kinds may be allowed to form continuous rows. Their culture consists in removing the old or bearing-canecan of the current year as soon as the fruiting season is over, and then permitting only a sufficient number of new canes to grow to occupy the ground without crowding, hoeing or cultivating all others out with the weeds. With the hardier sorts, pinching or shortening in during the latter part of July or in August, induces a branching habit and stocky growth with the strong-growing kinds, rendering the use of stakes unnecessary, and with this treatment I have found them generally very productive. The tender varieties are necessarily confined to hills, and allowed to grow without shortening in. Before severe freezing weather they should be bent down to the ground, and covered lightly with earth or litter, which should be removed pretty early in spring, or as soon as the buds are swelling.

Of the red raspberries the hardiest and best suited for general culture in this region are the Kirtland, Clarke, and Philadelphia, and they are the only ones which have endured our severe winters unprotected.

The Kirtland is the earliest, and commences to ripen during the decline of the strawberry season, and is in full bearing when strawberries are past. When well cultivated, and not allowed to sucker too freely, it is very productive. Fruit medium to large; color bright and handsome crimson; tolerably firm; flavor sweet and agreeable; richer, but somewhat like the wild red. Perfectly hardy and healthy here, and in the west very reliable and highly prized. From the east and far south, reports are not so favorable.

The Clarke, though comparatively of recent introduction, has proved very satisfactory, and for the past three winters entirely hardy without protection. It is of very strong growth, and seems both in wood and foliage perfectly robust and healthy. On rich soils it suckers very freely, and requires pretty vigorous thinning to be kept in proper bounds, and in best condition for fruitfulness. It is a week or ten days later than the Kirtland, but is a much larger berry, higher flavored, and per-

haps of a little firmer consistence. In quality I regard it as the very best among hardy kinds, and little, if any, inferior to the finest of the more tender varieties.

The Philadelphia is highly commended for hardiness and great productiveness even on light, thin, or sandy soils. It does not sucker as freely as either the Clarke or Kirtland, but is, to my taste, inferior in quality. It is also, when ripe, quite soft, besides being dull and unattractive in color.

The Franconia, or Naomi, may be regarded as about half hardy here, and has some valuable qualities. In sandy or gravelly soils, and upon elevated situations, it endures ordinary winters without protection. It is very productive, and forms suckers sparingly. Fruit very large, quite firm; a little light in color; rather acid, but among the most valuable of its class.

Of the Black Cap raspberries I speak with some hesitation, for I am obliged to confess that I do not personally regard them with much favor. Still they are by many highly prized, and by reason of their firmness they have a commercial value, especially for shipping, by no means to be disregarded.

Until quite recently the American Improved, or Doolittle's Improved Black Cap, seemed to occupy nearly the whole ground, and is really an improvement upon its wild progenitors, being larger, more juicy, and rather sweeter and better flavored, as well as more productive. It still maintains its place as a general favorite with those who value its kind. Its greatest objection is found in its very sharp and abundant spines.

Davidson's Thornless, a more recent introduction, has the advantage of being very nearly smooth, and without spines, which renders the gathering of the fruit much pleasanter and less laborious. It is here a strong grower, hardy and productive, about a week earlier than the Doolittle, and scarcely distinguishable from it in size or quality.

For a later ripening variety than either of the above-named Black Caps, the large, or McCormick's Miami, which was originally found growing wild in the valley of the Miami in Clermont County, Ohio, is one of the most desirable, being of large size, very productive, and of excellent quality. It prolongs the season beyond the period of the

Doolittle, and fully supplies the interval between the strawberry and blackberry. Many of our Ohio fruit growers believe this variety to be identical with the "Mammoth Cluster;" but another season will be required to settle the question definitely.

There are several others, not generally known or tested, which may have some points of superiority—among them the "Surprise," discovered and brought to notice by George Husmann, of Missouri, and the Seneca Black Cap, recently introduced by Mr. Doolittle; but it is yet doubtful whether they are sufficiently distinct from the older varieties above named, to render them specially desirable.

There are also some of this class of raspberries called Monthly, or Ever-bearing, the type of which may be found in the old Ohio Ever-bearing, and from which, as seedlings, they probably all have their origin. Several have been named; among them Lum's Autumn-bearing, Miller's Daily-bearing, and Woodside Black Caps. Comparatively few persons appear to regard these varieties with much favor. So far as I have tested or observed them, they are much alike in quality and general character, and hardly productive enough in their late or fall bearing to render them very desirable or very profitable.

The yellow sorts, called Golden, Yellow, or White Caps, have some admirers; but I have seen none that were equal in quality to the Improved Black Caps—all being seedy, and deficient in juice and flavor; and although attractive in appearance, they are, to my taste, inferior, and scarcely worthy of cultivation.

A new class of raspberries, claimed to be hybrids, two of which are respectively named Red and Yellow Canada, originated by Mr. Charles Arnold, of Paris, Ontario, are well spoken of as hardy, productive, and of good quality. Should they sustain their present reputation, they will prove desirable acquisitions, especially the Yellow, which is said to resemble Brincklé's Orange in appearance and flavor.

This list and description of varieties might be much extended, but those named are believed to be sufficient for all practical purposes for the field or garden. The amateur, however, who wishes a greater variety, or to plant for experiment, may find in the various catalogues published, all his wants or tastes may require.

DECORATIVE PLANTS. I.

THE ARALIA.

By EDWARD S. RAND, JR., Boston, Mass.

THIS family, containing some thirty species, supplies us with some of the most charming decorative plants.

Some are hardy, but most require winter protection: a few are herbaceous, though generally the species are trees or sub-shrubs.

Very few are hardy in New England, but all are ornamental, and a large proportion of the species do well if bedded out in the summer, and housed before severe frost.

Though many of the species are very pretty in flower and fruit, it is chiefly the striking character of the foliage which recommends them to cultivation, and places them in the first rank as "foliated" plants.

Their cultivation is very simple, as they only need to be planted in rich loam, and grow rapidly without further care. In the greenhouse, attention must be given to secure good drainage, and to prevent over-watering.

Propagation is easily effected by cuttings of growing shoots, or by root cuttings, both of which soon form good plants.

Seed is also freely produced, from which it is very easy to raise plants. The flowers of all the species are green or white, and are followed by berries, usually black, and covered with a delicate bloom, and last a long time in perfection.

Our native species may be passed by with brief mention, for, with one exception, *A. spinosa*, they are of little value in the garden.

A. racemosa is the well-known "spikenard" of country people. It is a tall, herbaceous plant, with branching stem. The leaves are ovate or heart-shaped; the flowers and fruit are produced from the forks of the stem. A native of rich woods, it needs deep, moist soil in cultivation, and, while not a very striking plant, is not unornamental.

A. hispida and *nudicaulis* are known as "Wild Sarsparilla."

They are herbaceous, though the lower part of the stem of the former often survives the winter. They are common plants, with no special ornamental features.

A. quinquefolia, formerly PANAX, is the Ginseng, and is not a common plant. The flowers are small, in an umbel from the centre of a whorl of leaves, and are followed by bright scarlet fruit.

A. trifolia (Panax) is a delicate, pretty little plant, which springs from a small pea-shaped root. The flower resembles the last except in size, and is followed by yellowish berries. We have twice within a few weeks had this pretty plant brought to us to be named, it having come up in Wardian cases which had been stocked with plants from the White Mountains.

Both of these species would do well in a shady border of rich soil, and are interesting plants, but neither is very showy.

A. spinosa is the only hardy species which attains the dignity of a tree. The common name is Angelica Tree or Hercules Club, and the plant is generally grown in nurseries as an ornamental tree. The stem is covered with prickles, as are also the ribs of the leaves, which are large, compound pinnate. It is a very showy plant, and well worth growing. The soil should be rich, in order that the leaves may grow large. The plant has a tendency to produce many stems, but it is far handsomer if only one is allowed to grow. The foliage pushes early in May, and remains in good condition all summer, in autumn changing to a rich yellow. The plant is hardy, and requires no protection.

While by no means as showy as the exotic species, it is the only one of arborescent habit which will take care of itself, and as such it should be extensively planted. It is seen to best advantage standing alone, with plenty of space for the graceful spread of its foliage, but should be somewhat sheltered from violent winds, which are apt to break the leaf-stems, and thus disfigure the plant.

Of exotic species, *A. edulis*, of herbaceous habit, and somewhat resembling *A. racemosa*, is worth growing. The stems attain the height of three to seven feet, and the foliage is very ornamental, drooping slightly, which gives the plant a very graceful appearance. It is

a native of Japan, and is probably perfectly hardy. A fine figure of this plant is given in Siebold's *Flora Japonica*, plate 25, to which those interested in a fuller description may refer.

It is a plant of most luxuriant and graceful growth. In a mass by itself, or as a single plant, very few plants exceed it in beauty. It has, however, the fault of dying away rather early in the autumn, which, in the Southern and Middle States, may prove an objection; but in New England the frost comes too early, and the first frost kills the plant to the ground.

As yet this fine species is somewhat rare, but as all the aralias are very easily propagated, there is no reason it should remain so.

Another species, for which we are indebted to Japan, is *A. japonica*. A more graceful plant it would be difficult to find. In general appearance it resembles *A. spinosa*, but is a far more beautiful plant. It is an arborescent species, attaining eight to fifteen feet in height, and is beautiful in every stage of growth.

Unfortunately it cannot be considered thoroughly hardy in New England. We have had a plant which has, with slight protection, survived for five years, but three years it has been killed to the ground. This, however, is scarcely an objection, for it always shoots strongly from the root, and with us a shoot has grown nine feet high in a single summer, producing from the ground to the top immense compound pinnate leaves, which in graceful beauty surpassed those of any fern.

This plant has been the admiration of all who have seen it, and a more graceful and beautiful specimen it would be difficult to find. The largest leaves measured from the stem to the end of the leaves four feet, and were two feet across.

In autumn the foliage turns a golden yellow, and is very showy. The whole plant is covered with sharp prickles, and cannot be handled with impunity.

This species does best in a light, rich soil, in a rather sheltered but not very dry situation; but water must not be allowed to stand near the plant in winter.

THE JAPAN LILIES.

By FRANCIS PARKMAN, Jamaica Plain, Mass.

So the varieties of *Lilium lancifolium* are popularly called, though there are many other lilies equally entitled to the name, inasmuch as they also are natives of Japan.

Lilium lancifolium with its varieties is worthy to stand at the head of the whole race of lilies, for it surpasses them all in beauty, without even excepting the new and superb Gold Banded Lily. A few years ago there were doubts of its hardiness; but, in truth, it stands our winters better than our own native lilies, and is much less exacting in its choice of soil.

Now, as to its varieties: first we have the pure white, then the faintly spotted variety, *L. lancifolium punctatum*, then the so-called rose colored, then the red, and finally the deeper red or crimson.

The white variety, *L. lancifolium album*, is without spot or stain. It blooms a week later than the rest, has an excellent constitution, and is very hard to kill. This is not the case with *L. lancifolium punctatum*, which seems capable of withstanding severe cold, but, on the other hand, is more liable than any other member of the family to become diseased. It resents frequent removal, and should be allowed to remain undisturbed until the bulbs become too crowded.

L. lancifolium roseum is too often but a mere name, being undistinguishable from the red variety, from which, at the best, it differs only in a lighter shade of the same color. One of the principal Dutch bulb growers lately advertised *L. lancifolium roseum*, "true," selling those with this recommendation at four times the price of those which he did not profess to guarantee. Curious to see in what the "truth" consisted, I ordered some of them, but they proved no whit different from scores which were growing beside them. They were the common *Lilium roseum*, and nothing more. A great many, however, are sold under this name, which are entirely undistinguishable from the red variety, *Lilium rubrum*. This last is a superb flower, and is des-

tined to be as familiar in the garden as the beautiful white or Annunciation Lily.

Mr. Hovey has raised a number of seedling Japan Lilies, one of which, called by him Melpomene, is several shades deeper in color than the old red variety, and is a valuable acquisition.

Lilium cruentum is another deep red variety which I received through a friend from Japan six years ago, and which, from its peculiarity of form, as well as its color, is entitled to stand under a distinct name. The flower is very broad and flat, the petals being less recurved than usual, and the color is scarcely less deep than in the Melpomene.

Many other varieties will be found in the catalogues, but not one of them can be distinguished by the unpractised eye. *L. speciosum* is identical with *L. rubrum*, and *L. superbum* (not our fine native lily of this name) does not differ from it the value of a hair.

The only other members of the species requiring special mention are the red, white, and rose colored varieties of *L. lancifolium monstrosum*. These are, as their name imports, monstrosities. Their peculiarity consists in the merging of several small stems into one large one, which is flat and broad, and which branches near the top, so that the number of the flowers is greatly increased, though their size is apt to be diminished. They form at times a large, dense cluster, — white, red, or rose color, as the case may be, — and numbering from twenty to thirty blossoms. That figured in the plate, from a photograph, had twenty-seven buds and flowers. The effect is often very striking and beautiful; but these varieties with aggregated stems seem liable to a species of blight or rust, which sometimes spoils the flowering. The other varieties are also exposed to it in some seasons, though in a less degree. It is one of the few diseases from which this vigorous race is ever known to suffer.

These lilies will grow in any tolerably good garden soil; but to have them in perfection, it should be dug deep, — say eighteen inches or more, — and mixed with a good proportion of coarse sand and well-rotted manure, at least two years old. To this should be added peat, surface soil from the woods, or well-rotted leaves, either of which will

do as a substitute for the others. The autumn is a good time to plant



LILIUM LANCIFOLIUM MONSTROSUM.

the bulbs, which should be set four or five inches deep, measuring from

the top or crown. Cover the surface with leaves, tan, or pine boughs, to prevent heaving by frost. They will also do very well if planted in spring; and when once planted they may remain undisturbed for several years. For pot culture they are admirable. Plant them in six-inch pots, in a compost like that indicated above, watering very little at first, but abundantly after growth is fully in progress. When the flower-buds form, they may be watered at intervals with a solution of guano mixed with soot. Thus treated, they will flower superbly. Some cultivators adopt a more elaborate method—using a pot much deeper than the ordinary flower-pot, and filling it only to within about four inches of the rim, the upper part remaining empty. When the young flower-stem has risen as high as the rim of the pot, the empty space is filled up with any rich compost. Into this the stem emits roots in great abundance, which help greatly to nourish the flower-buds. Japan lilies grow well in the green-house, or in a warm and sunny window.

There is no doubt that a time is coming when these lilies will even surpass their present beauty. I saw the other day a bed of several hundred seedlings, blooming for the first time, in the garden of an eminent horticulturist. They were the results of cross-impregnation, that is to say, of fertilizing the pistils of the several varieties mutually with the pollen of each other, without introducing the pollen of other species. Some of the flowers were of a very large size, with petals two inches wide; and the varying shades of color, as well as the diversities of form, were exceedingly striking and interesting. This offers a flattering prospect of the improvement of the species within its own limits. As to the results of hybridizing it with other species, I hope to have a good deal to say at some future time.

THE BEST TIME FOR PRUNING GRAPES.

By ADDISON KELLEY, Kelley's Island, Ohio.

I HAVE read the various articles in Tilton's Journal of Horticulture in regard to the pruning of grape vines. I do not propose to *theorize* upon the subject, but to give the experience of twenty years for what it is worth. At first I supposed that it was improper to trim in the spring, when they bled the worst, the Germans, whom I mostly employed, having a prejudice against it. But sometimes some parts of the vineyard were trimmed at this supposed improper time.

The closest observation I was able to make discovered no bad result, and I have never seen that it made any difference when the vines were trimmed, from the time the leaves were ripe in the fall to as late as the 20th of June. I seldom get all my vines trimmed before the first of June.

Since we have had the rot, I have in some vineyards tried leaving the three canes the full length until August, when, if no rot appeared, I cut off the surplus wood, but if the rot set in, have left the whole vine, and got a larger yield than from vines short pruned. But where there was little or no rot, the shortest pruned vines have uniformly borne the best crops. I am clearly of opinion that the best time to trim is whenever it is most convenient after the leaf is dead in the fall to the first of June.

I have always root-pruned pretty severely, ploughing deep close up to the vine, and cutting the roots in the first hoeing in the spring in most of my vineyards; but I have also tried the reverse, and must confess I have not been able to see much, if any, difference in the results. There are now some seven to eight hundred acres here in bearing. Some persons think that spring trimming is best, but do not claim that they have any facts to prove it. It is true that some parts of vineyards have been trimmed in the fall, and did not bear as well as the part trimmed in the spring, but the reverse is also sometimes

true. It is quite common to have one part of a vineyard do better than another one year, and the case reversed another year. If Mr. Byington or Mr. Underhill will give us facts instead of theory, I think it would aid us more in the direction of correct conclusions than theorizing.

March 25, 1870.

THE CURCULIO.

THIS pestilent insect, which attacks all our fruits, especially stone fruit, makes its appearance while the trees are yet in bloom, and begins laying its eggs as soon as the young fruits are large enough. Measures for its destruction must be commenced about the time the fruit sets, and followed up every day until it is ripe. Experience has shown that only two methods of destroying the curculio are of any account: they must either be eaten by hogs turned into the orchard to pick up the fallen fruit containing the larvæ, or the insects in the perfect state must be shaken down and crushed. The latter way is the best. Get some cotton cloth and stretch it on frames so as to be quickly spread under the tree, and drive a large spike into the trunk, and give it a sharp blow with a hammer, which will cause the curculios to fall on your cloths with their legs all curled under them, when they must be collected and thrown into boiling water, or, which is better, into some kerosene oil. Where the number of trees is large, Dr. Hull's curculio catcher, which consists of a large frame covered with cotton cloth, in a somewhat concave or dished form, and mounted on a wheelbarrow, will be found most expeditious. There is an opening in the front part to admit the trunk of the tree, and the machine being propelled against the trunk shakes down the insects. A large spike should be driven into the tree for the barrow to strike against. The spike should be made with a shoulder, to prevent its penetrating too far. Don't be so brutal as to bruise your trees by running the catcher against them without this pre-

caution. What is wanted is a sharp, sudden jar, to shake the insects down quickly. The plan of destroying the larvæ in fallen fruit, by means of hogs, is effectual as regards next year's crop, but will not affect this year's, and is further objectionable, as it does not admit of growing vegetables between the rows of trees. Where there are only a few young trees, it is an excellent plan to dig out the egg of the curculio with the point of a knife; but this must be done before the larva begins to work towards the stem of the fruit so as to cause it to drop. Either of the methods we have named will be effectual if followed up with unremitting care and industry, and not without; but whoever has plum, or peach, or nectarine trees ought to destroy the curculios by one of them, if he has to take the sheets off his bed to do it.

SUCCESSFUL PEAR CULTURE. — II.

By T. T. SOUTHWICK, Dansville, N. Y.

PREPARING SOIL, ETC.

MR. MARTIN'S first soil was prepared by his own hand, by trenching, after the manner advocated by Field and others, with mattock and shovel, to the depth of three feet. This he found to be exhausting labor, and resorted to horse power. His present plan is to attach four strong horses to a plough, and run it beam deep. Following in the same furrow is a lifting subsoil plough, drawn by four more strong horses. The soil is thus made fine for about eighteen inches deep. The appearance of the land after this ploughing is like that of a newly-macadamized road. Eight horses and four men will prepare about an acre a day, making the cost about one tenth the cost of hand trenching, and quite as good. Mr. Martin would not plant standard pears save on land thoroughly and deeply trenched or subsoiled.

The ground is now ready for planting — after being harrowed over to make the surface fine and mellow. Each future ploughing brings

up the slate-stone, which, being disintegrated by sun and frost, produces a new supply of earth each year.

If manure was plenty, he would apply it broadcast; but not being so, he gives an annual top-dressing, enough to produce a good, healthy, but not rank growth. Barn-yard manure, street-scrappings, lime, and wood ashes, are all used. For both wood ashes and lime he has a high regard. He usually gives a dressing of two or three forkfuls of manure at planting, and more during fruiting.

The most careful and thorough cultivation is given from the day of planting onward, a cultivator being run six or eight times each season through the rows. He says he has yet to see fine fruit produced save where the soil has been well cultivated. He grows potatoes between the rows. He at the same time regards mulching under the tree to protect the soil from light and heat as vastly beneficial. A moderate spreading of some coarse material is better than a large amount of matter piled about the tree.

SELECTION OF TREES FROM THE NURSERY.

The distinctive and notable feature in Mr. Martin's system of pear culture is the training of his trees. On the proper training of the tree he considers the whole question of failure or success is largely dependent. He is radically and emphatically opposed to high-headed trees and high-trained trees, and has no faith in any plan or system that does not include low-trained trees as the distinctive feature.

He says, "If I could find good two-year-old standard pears, headed low, I should buy and plant them; but this I have so far found it about impossible to do, as nurserymen train trees high. Not being able to find properly-grown two-year-old standard pears, I purchase the best yearling trees I can find. I think the best stock a nursery produces — and good stock — cheaper at a high price than trees of medium quality for nothing. The superiority that trees show in the nursery exhibits itself in even a more marked degree in the orchard. I would rather have a stocky yearling two feet high than a slim one of four feet. One advantage, besides low freight, in using yearling trees, is, that few are lost in transplanting. With carefully-handled yearlings I make ninety-nine

per cent. grow. Judging from observation in my own section, I do not believe fifty per cent. of old high-trained trees live; and more than ninety per cent. of these fail ever to become fruitful and profitable trees."

He has in his orchard some trees that were two or three years old, and high-headed (bought because he could obtain no others), planted at the same time as some yearlings. They have stood side by side now for six years, and a single look at them shows at once the vast superiority of the trees planted as yearlings and headed low; and the difference will continue in their favor.

The chief advantage attending low-headed standard pears may be summed up as follows:—

The soil is shaded from the sun and kept cool—an important point, as no close observer has failed to note. The body of the tree is protected from the sun's heated rays. The tree, by low heading, is spread out so that the light penetrates all parts of the tree, and colors the fruit equally as well in the centre of the tree as on the outside (a colorless pear is flavorless and unmarketable), and the heat reflected from the surface of the earth aids in producing high flavor and color. Pears produced on low-trained trees are larger and finer than on high-trained trees. The trees bear at an earlier date and more abundantly. The old notion, that one generation must plant standard pear trees that the coming generation may gather the fruit, does not apply to properly-trained trees on proper soil. Mr. Martin brings standard pears into bearing from four to six years from planting yearling trees.

Low-trained trees only can and will be properly pruned and summer-pinched, and the fruit thinned when required. Economy in land is accomplished, for double the number of trees can be safely planted per acre. Low training allows close planting (ten by fifteen feet), and close planting is a protection against the elements. All orchardists understand that the centre of an orchard bears better than the outside rows. Few varieties ripen all their fruit at the same time, and as specimens require to be examined and gathered from day to day, this can only be comfortably and cheaply done on low-trained trees. In brief, every advantage pertains—either from the scientific, practical, or economic point of view—to low-trained trees.

I am well aware that nothing new is presented in the above views and facts, but most intelligent horticulturists sustain the position assumed. But this, too, do I know, that the people at large demand from the nurserymen large and high-trained pear trees.

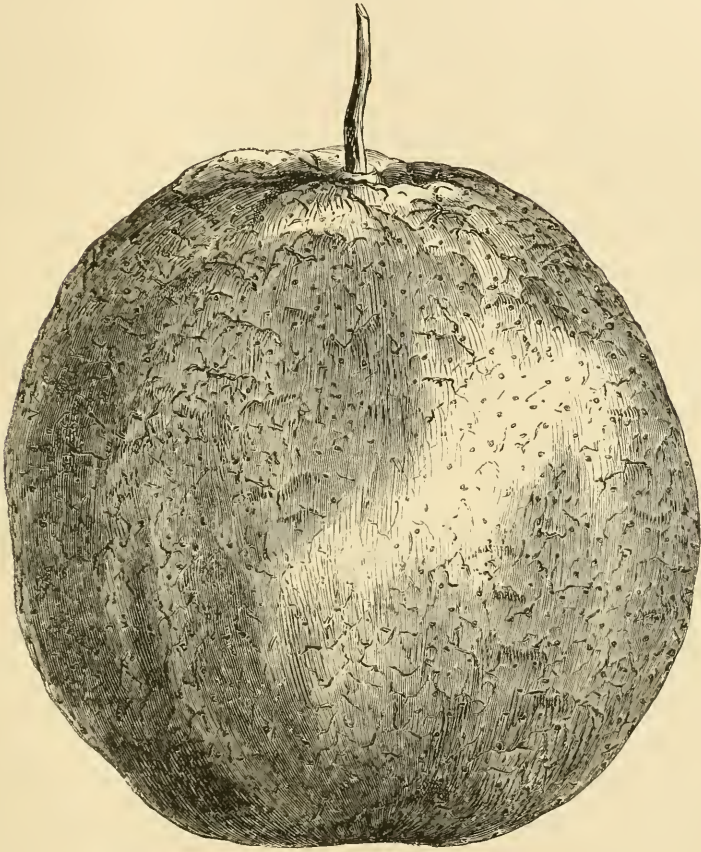
Any intelligent nurseryman understands that a low-trained standard pear tree, of stocky, thrifty growth and good form, is better than a high-headed one; but nurserymen being mortal creatures, with the glitter of the "almighty dollar" in their vision, quite naturally grow what their customers demand and will pay the most money for, viz., large, old, high-trained trees. Reform must come from those who buy and plant, rather than from those of us who grow standard pears for sale.

VOLUSIA ORANGE.

By H. G. LUNGREN, M. D., Volusia, Fla.

I BELIEVE I can present to horticulturists a new variety of the orange — a variety which possesses many good qualities. It originated near Volusia, Florida, and came from a chance seed. The tree bearing these oranges is quite young, never having yet borne its full crop. The orange seems to be an accidental cross between the wild or sour orange and the sweet or Chinese variety, having the large size, thick rind, and rough, oily skin of the sour, and the rich, highly-flavored, deep-colored pulp of the sweet orange. In taste it is quite sweet, yet with sufficient acidity to make it pleasant. The rough skin is free from warts or other imperfections, the oil tubercles being even throughout, and much raised above the surface; in this respect being so different from the sweet and Mandarin orange. The fruit is slightly oblong, measuring, on an average, about three and three quarters inches in height, by three and a quarter to three and a half inches in diameter, and is much flattened at the ends. Color, lemon-yellow; weight, about twelve or thirteen ounces, often one pound. The smell of the orange is delightful, being much more spicy, and the flavor of the pulp much finer, than

any other variety with which I am acquainted. It is hard to bruise,— and this makes it valuable for shipping,— and it possesses the good



THE VOLUSIA ORANGE.

quality of being long keeping. I have budded quite a number of young trees with this valuable variety. I believe it worthy of a place amongst the new varieties.

MASSACHUSETTS HORTICULTURAL SOCIETY.

REMINISCENCES. — No. III.

THE most important object accomplished through the society's influence, in its third year, was the establishment of the Mount Auburn Cemetery. General Dearborn had frequently urged the importance of an Experimental Garden; and Dr. Bigelow, Judge Story, and a few individuals outside of the society, were anxious to have a Rural Cemetery also laid out and embellished near the city. Nothing of the kind then existed in this country, of any note; Père la Chaise, near Paris, was the only one that met the views of the few who took any interest in the matter. As no progress was made by them, General Dearborn suggested that the society take hold of the enterprise, and combine with it an Experimental Garden, with green-houses, stoves, orangeries, hot-beds, etc., the fee of the land to be held in trust by the society; and, as our funds were too small to accomplish the object, it was proposed that a subscription for lots in the proposed Cemetery be opened at sixty dollars each; and if one hundred were subscribed for, there could be no doubt of its success. "Sweet Auburn," as it was then called, was the only place thought of. It was an undulating tract, with bold eminences and beautiful dells, and contained seventy-two acres (since enlarged), of which it was proposed to set apart thirty-two on the north-eastern and south-eastern borders, for an Experimental Garden, and forty for a cemetery. A "Garden and Cemetery Committee" was chosen, consisting of General Dearborn, Judge Story, Dr. Bigelow, Edward Everett, George W. Brimmer, George Bond, Charles Wells, B. A. Gould, and George W. Pratt, and without extraordinary effort, after the society took the matter in hand, one hundred lots were engaged. That excellent, generous, and public-spirited individual, Joseph P. Bradlee (of whom it was said that he always had his hat full of subscription papers), was particularly active in procuring subscribers. As some inducement to take lots, it was voted that every purchaser of one, upon paying for the same, should be considered a life-member of the Horticultural Society, without being subject to as-

sessments. A few persons subscribed for several lots each, some to secure the success of the enterprise, and some on speculation, anticipating an advance on the lots. This result was so encouraging, that it was voted to keep the books open till another hundred lots were subscribed for, so as to be certain of means to lay out and embellish the land after purchasing it. I think its cost was six thousand dollars; and it was said that the tasteful and public-spirited owner had bought and held it for some twenty years, with the confident anticipation that eventually the increase of population and wealth, and the good judgment and correct taste of the city, would require just such a spot for a rural cemetery; and that, for this purpose, he had transplanted there many evergreens and ornamental trees, which had acquired a stately growth. The spot was also covered with majestic oaks, pines, beeches, and walnuts, that had braved the storms of a century; in fact, a more appropriate location could not have been found near Boston.

At the September meeting of the society, as a sufficient number of subscriptions had been obtained, it was voted that the grounds should be consecrated with religious ceremonies on Saturday, the 24th, which was done, the Rev. Drs. Ware and Pierpont officiating as clergymen. The address was delivered by Judge Story, and an original hymn, by Dr. Pierpont, was sung by a thousand voices, in Consecration Dell. An unclouded sun, a clear, bracing atmosphere, the interesting services, and the immense crowd present from the city, combined to make it an occasion long to be remembered.

The season was too far advanced for accomplishing much that year in laying out the grounds, though a careful survey was made by Alexander Wadsworth. The land was divested of underbrush and cleared up, giving it the appearance of a park, so that a general view of the spot could be taken. The choice of lots was put up at auction, in November, to be selected, after the avenues and walks were laid out, in the ensuing spring. The first choice was sold to Samuel Appleton, for one hundred dollars; the second to Benjamin Adams, for sixty-five dollars; the third to Abbott Lawrence, for fifty dollars; and premiums of from ten to thirty dollars were given for many other lots, of which about two hundred were sold, each containing three hundred square feet.

Nothing further was done for several months. After all, no one exhibited any great personal interest in the matter, except General Dearborn. He took hold of it in the spring with as much zeal and efficiency as he had previously shown in raising the society at once to a high standing. As the funds at his command were limited, he hired only a few laborers, and superintended and worked with them himself. I remember seeing him, hoe in hand, day after day, at the head of his laborers, levelling and grading the walks (taking his dinner with him, which he would step into the Wyeth House, across the road, to eat). It is not too much to say that the ultimate grand success of this beautiful Cemetery, the first of the kind in this country, and of which Bostonians are so justly proud, is due more to the far-seeing, persistent, and personal labors of General Dearborn than to any other person whatever.

Here let me say a word on the preëminent services of another individual — Colonel Marshall P. Wilder — in building up the society, of which the Mount Auburn Cemetery is an offshoot. General Dearborn spent much of his time, and labored with his pen, to give it a respectable start, and served as its president for three or four years. While living at the West, I never lost my interest in it, and was a constant observer of its progress. After General Dearborn left the presidency, it seemed to have some internal difficulties, as I observed frequent, and sometimes wholesale, resignations of its officers. But in 1840 Colonel Wilder was elected president, which office he filled most admirably for eight or ten years. Before he was chosen, he had consummated, after long and difficult negotiations, in connection with the Hon. Elijah Vose and Judge Story, an important arrangement with the owners of lots in the Cemetery, whereby an annual and perpetual income of several thousand dollars was secured to the society. This afforded means and led to the erection of the first Horticultural Hall on School Street, in 1845, as well as the present magnificent structure in 1865, and may well be considered one of the most important and beneficial acts of his life. Under his presidency were held those magnificent triennial festivals in Faneuil Hall, in 1845 and 1848, that threw into the shade every exhibition of the kind that had preceded or has followed them. The public confidence in the usefulness and stability of the society, inspired

by his management, led to the munificent donations of Theodore Lyman (ten thousand dollars), John A. Lowell, Samuel Appleton, Josiah Bradlee, Josiah Stickney, and others. His disinterested labors in building up the society, until it now stands at the head of all similar organizations, and has become the most richly endowed of any similar institution in the world, can never be too highly appreciated. May our successors, in all future time, cherish the names of Dearborn and Wilder, as founders and pillars of the society.

The weekly exhibitions were kept up through the season with no apparent abatement of interest. At that early period, the library comprised two hundred volumes. Modern "Fruit-preserving Houses" were unknown; but in the latter part of August, Benjamin Guild exhibited russeting apples, in a good state of preservation, of the previous year's growth, which had been placed in a common ice-house in January. In August, a letter was received from Van Mons, of Belgium, in which he stated the curious fact that he once successfully grafted scions sent him from New York, which had been two and a half years in reaching him, and asserted the doctrine that a scion is never too old, or, rather, too dry, to succeed, provided it had been cut from a living tree, or from one that had not perished by a natural death; and that artificial death, such as that occasioned by deplantation, does not injure in the least the excellence of the scion.

Many kinds of native grapes were exhibited that we all tried to consider worthy of cultivation. But William Kenrick, who could see good in almost anything, slyly remarked, in one of his reports, that the character of all the native grapes of New England that had been exhibited, was "pretty much the same." Compared with the valuable kinds that have been developed within a few years, they were worthless, and are deservedly forgotten. The largest pear shown that season was by the old Secretary, Ebenezer Wight, though, as he is a bachelor, I will omit the "old," and say, the public-spirited gentleman who served the society so acceptably as Recording and also Corresponding Secretary, for fifteen or eighteen years. The pear was raised in Dedham, and weighed twenty-four ounces.

To show how little attention was then paid to the culture of the

strawberry, it may be mentioned that the annual premium for the best was but two dollars. Keens's Seedling and Wilmot's Superb (both now forgotten) were the most talked about, and for which Mr. Haggerston usually obtained the small premium. Mr. Sedgwick complained that one might travel from Boston to Buffalo, and scarcely see a dish of strawberries, or any other fruit, on his route, "whereas strawberries and raspberries might be grown and sold in every considerable village by the idlers that were dawdling about." No such sweeping complaint can now be made. At a weekly show, the last of June, one hundred and fifty varieties of roses were exhibited, of which fifty were by the Messrs. Winship.

The Third Annual Festival was held at Concert Hall, in September, and the address delivered by Dr. M. A. Ward, of Salem, at the Athenæum lecture-room. The show of fruit was not equal to the two previous occasions. Charles Lawrence, of Salem, exhibited four bunches of Black Hamburg grapes, the largest weighing twenty-four ounces. About two hundred persons sat down to a dinner, the sumptuousness of which made amends for any deficiency in the show of horticultural products; and there was quite as great a flow of wit and fun as on any previous occasion. Several distinguished gentlemen were present as guests, according to the hospitable usage that has always prevailed at "the Hub;" and besides the regular toasts, some eighteen or twenty volunteers were offered by gentlemen who have all passed away, except Dr. Bigelow and John C. Gray, and possibly one or two others. The doctor's toast was received with great hilarity at the time, and will excite a smile now. It will be recollected that the Bunker Hill Monument, after having been carried up thirty-seven feet, in 1828, was suspended a dozen years for want of funds. It was in this deplorable condition when the doctor gave, as a volunteer, "The Bunker Hill Monument: We regret to find it resembles in nothing the worthies it commemorates, except in having come to an *obstinate stand*."

And as circumstances led me out of horticultural pursuits, and to the Western States a few years after this, I will no longer abuse the patience of your readers, but come to a stand myself. R.

FROM THE OHIO TO THE PACIFIC.

By ROBERT BUCHANAN, Cincinnati, Ohio.

MR. EDITOR: You have asked me for an article on Horticulture; and perhaps I cannot do better than to give you an account of what I saw in California, in September last, on an excursion to the Pacific. Our party of fifty persons—eighteen ladies and thirty-two gentlemen—left Cincinnati on the 31st of August, in two palace sleeping-cars, with a commissary car—liberally supplied—and a baggage car. We crossed the Missouri River at Omaha, Nebraska, spending half a day in that new city of fifteen thousand inhabitants, having thus far travelled about eight hundred miles. Here we took the Union Pacific Railroad, and passed up the beautiful valley of the Platte River, five hundred and sixteen miles to Cheyenne, in the Rocky Mountains. At Sherman, thirty-three miles farther, we reached the highest elevation on the route, eight thousand, two hundred and thirty-five feet.

The railway route generally follows the old emigrant road, through what was called the "South Pass," and is an easy grade—on the plains and valleys, nearly level. The ascent and descent over the slopes of the Rocky Mountains is so gradual as to attract but little attention; but in passing around the sides of the Sierra Nevadas, it is altogether different, and sometimes alarming. To look out on a rugged peak, a thousand feet above and three thousand feet below you, as the road is winding around it, is rather startling. The mountains have but little timber, except a few pines and cedars on their slopes and near the summits. The Wahsatch Mountains are still more rugged, and less subject to disintegration; but the Sierra Nevadas, covered with evergreen trees, for wild and picturesque grandeur, are unequalled by any others on this portion of the continent. At Wintah, near the "Devil's Gate," a mountain gorge, we left the cars, and passed up the Valley of Salt Lake in stages, thirty-two miles, to Salt Lake City.

In this valley, for the first time since we left the lower part of the Platte, we saw signs of agricultural prosperity. We passed many fine

wheat-fields from which the crops had been harvested. The straw was of a very light color. Also, some pretty fair fields of corn. Pumpkins and garden vegetables were abundant. Their crops are irrigated by streams from the mountains.

The young fruit trees looked remarkably thrifty, and bore large crops of fine, smooth, perfect fruit. No appearance of insects, except the ravages of the grasshoppers in June last, when nearly all the leaves of the apple, and some of the plum and pear trees, had been eaten off; but *not* the peach, whose leaves were not touched, and the trees loaded with fruit. The denuded apple trees had put out young leaves from the ends of the branches; but the apples could not ripen well, for want of sufficient foliage.

We spent a day at Salt Lake City. This city of twenty-five thousand inhabitants has a rural appearance. The houses are surrounded with ample garden room, and an abundance of shade and fruit trees. The clear mountain streams run in rivulets along the sidewalks.

Returning to the cars, we proceeded rapidly to Promontory, and from thence, over the Central Pacific Railroad, to Sacramento City, the capital of California. There we spent a day, as it was our good fortune to arrive during the State Fair. The Fair grounds, and the articles exhibited, compared favorably with some of our western exhibitions; but in fruits and vegetables they far surpassed ours in variety, in size, and in beauty, but *not* in quality, except the grapes. Their grapes are nearly all foreign varieties. They succeed better than the American. One bunch of the Victoria Muscat weighed eight pounds—several three and four pounds; some of the Bartlett pears, one and a half pounds; Easter Beurré, two pounds; apples, two to two and a half pounds; peaches and plums as large as our largest; quinces larger. All the fruits were perfect in shape, well colored, and without the appearance of mildew, scab, rot, or insects. Some fine lemons and a large black fig were much admired. In garden vegetables, the onions, beets, cabbages, and some other varieties, were much larger than with us, especially the onions.

On the Fair grounds we met an Ohio farmer, who had been in California six years, and asked him how he liked farming here. He said

well enough; but it was a *lazy* life to what it was in Ohio. The wheat and barley were sowed in the winter, with but one ploughing, and no irrigation is required; harvested in June by reaping and threshing machines, put in sacks, and piled up in the field until convenient to send it to market. It is fed to horses instead of oats and corn, which do not grow well there. Cattle take care of themselves, and but few hogs are raised; so that the farmer has much idle time to contend with, which sometimes leads to mischief. The dry season is from May to November, and the wet the other seven months.

Our party took passage on a fine steamboat down the Sacramento River, one hundred and twenty-five miles, to San Francisco, passing through an exceedingly rich valley, in many places well cultivated. The markets of San Francisco are profusely supplied with vegetables and fruits at cheap rates. Their meats and poultry are not equal to ours.

In two or three days we separated into squads of ten, fifteen, and twenty-five, to travel five or six hundred miles through the country, — some to the Quicksilver and the Gold Mines, others to the Geysers and Vineyards, and the largest party to the Big Trees and the Yosemite Valley. My party went to the Geysers — hot sulphur springs, bursting out of the sides of a deep ravine in a high mountain, on whose top is a small lake, once the crater of a volcano. One of the springs puffs up vapor like the escape pipe of a steamboat. We returned through the Russian River Valley, and the beautiful valleys of Santa Rosa and Sonoma, passing by hundreds of acres in vines, and stopping, for a day, to examine the wine-houses and extensive vineyards of the Buena Vista Wine Company, near Sonoma. This company owns some four thousand acres of land, and has several hundred in vineyard culture. It was formerly managed by the late A. Haraszthy, and is now under charge of Colonel Snyder. The wines we tasted, both still and sparkling, were excellent.

On our route to the Big Trees in Calaveras, we passed through several rich valleys, and saw large piles of wheat in bags in the fields, and at the railroad depots, ready to be sent to market. We met many wagons, loaded with wheat, drawn by eight to twelve horses or mules — the wagons in pairs, one fastened behind the other.

At last we reached the mammoth trees — those giants of the vegetable kingdom. The largest are from twenty-five to thirty-two feet in diameter, and three hundred to three hundred and sixty feet high. They are an evergreen (*Sequoia gigantea*), with leaves like the cedar, and wood of the same color, but without odor. The common Redwood of the country, so much used in building, is the *Sequoia sempervirens* — usually three to twelve feet in diameter.

On the return of our several parties to San Francisco, we visited the Mechanic's Fair — a very creditable exhibition. Many articles of furniture, made from the native woods, were really beautiful, especially those from the laurel.

Here also we found the same profusion of fine fruits and vegetables as we saw at Sacramento. The strawberries were of medium size, and not high flavored. This berry may be had every month in the year; but the main season is April to July. There was a beautiful display of flowers — some of them new to us. In the gardens of the city, we saw fuchsias, geraniums, and other green-house plants east, growing in large bushes, without protection, in winter, and also the broom and the whin of Scotland. In the warm valleys of California, we saw, in the same gardens, the lemon, orange, fig, olive, and pomegranate growing with the apple, pear, peach, plum, cherry, and quince — the fruits of the semi-tropical with those of the temperate zone.

We reached home in six days from Sacramento, — where we had spent a day, — passing by daylight over the road we had travelled by night going out, thus ending a delightful, exhilarating, and instructive journey of six thousand miles, in thirty-three days, without fatigue.

California is by far the best grape region in the United States, and perhaps in the world. The pure air and equable climate prevent rot. The vines are planted five by six and six by eight feet apart, and, with but little cultivation, produce five hundred to one thousand gallons of wine to the acre. I saw grapes selling at a cent a pound to the wine-houses in Sacramento; and twelve pounds made a gallon of wine. Their fruit trees are planted closer together than with us, and trained low, to prevent sun-scald of the bark.

APPLE BLOSSOMS.

IF any of our town readers — we do not think it possible that our country readers can — have ever failed to notice the beauty of that common and popular thing, an apple blossom, we commend to them what the late A. J. Downing said of it. “The apple tree has a flower that challenges the world to surpass it, whether for the delicacy with which the white and red are blended, — as upon the cheek of the fairest maiden of sixteen, — or the wild grace and symmetry of its cinquefoil petals, or the harmony of its coloring, heightened by the tender verdure of the bursting leaves that surround it.”

Although all apple blossoms are beautiful, some are, both in size and color, much more beautiful than others. The Bellflower takes its name from the beauty of its blossoms. The flower of the Dutch Codlin excels any other we have ever seen in depth and brilliancy of color, so much so, that we have grafted it on dwarf stocks for the sake of the flowers alone. And the Chinese Double Flowering apple, in our estimation, is more beautiful than any other of our “double flowering” fruit trees.

But some of our utilitarian friends may be disposed to inquire, What is the good of all these beautiful flowers? It would be a sufficient answer, that beauty is itself a good. But as this would probably not satisfy them, we will add that careful observation of the characters of the flowers of our apples will aid in identifying varieties, and also in tracing their origin. The Ben apple, for instance, has its flowers of a dull red, with a brownish tinge, entirely unlike that of any other we know of, so that the presence or absence of this color would at once mark the tree as genuine or spurious. Another advantage to be gained by observing the *time* of flowering would be, to note such as by blooming late are more likely to escape spring frosts, and are, therefore, eligible for planting where late frosts prevail. Such are the Hubbards-ton Nonsuch, Northern Spy, Rome Beauty, and Rawle’s Janet.

A very interesting paper on this subject was contributed to the Pro-

ceedings of the Alton Horticultural Society, about a year ago, by our correspondent Mr. Flagg. From an examination of the flowers of nearly a hundred varieties, he arrived at the conclusions (besides the points noted above) that varieties with white blossoms are generally early, and those with red blossoms late; and that the color of the blossoms, in the majority of cases, indicates the color of the apple — white apples having white blossoms, and red apples having red blossoms. The last rule, however (if, indeed, it can be called a rule), he remarks, has many exceptions; and we recollect one very striking one, where the Dutch Codlin, before remarked on for the deep color of its blossoms, was grafted into the same tree with the Red Astrachan, which has a white blossom. The fruit of the latter is well known to be of the deepest red, while the deeply colored flowers of the former produce a pale yellow apple, with a dull brownish-red cheek.

Further and more careful study of this subject is needed; and we hope that the many readers of the Journal whom this reaches before they are out of bloom will find time to give it, not only to the apple, but to other fruits, noting carefully all the particulars of the size, shape, color, time, etc., of inflorescence of the different varieties. We cannot doubt that such observations would afford much interesting and valuable information, and important aid in the classification of fruits. It would certainly be worth the while of any one of them, if it were only to be better acquainted with the loveliness of these common and familiar objects.

“ What plant we in this apple tree?
Sweets for a hundred flowery springs,
To load the May wind's restless wings,
When from the orchard rows he pours
Its fragrance through our open doors;
A world of blossoms for the bee,
Flowers for the sick girl's silent room,
For the glad infant sprigs of bloom,
We plant with the apple tree.”

SPECIALTIES FOR NURSERYMEN.

By EDWARD C. HERBERT, Boston, Mass.

THE amateur who examines the catalogues of our nurserymen and florists is not unfrequently lost in wonder at the number of species and varieties of plants and flowers therein enumerated. He can scarce conceive how such collections can be grown in any nursery or greenhouse of reasonable size, and thus derives an exalted idea of the magnitude of the establishments giving birth to such catalogues.

Two experiences are yet before the novice: the first, to visit, personally, the various establishments; we need hardly chronicle the disappointment which will be the result: the second, to order a moderately large list of plants from the catalogue, to which a reply will come, that a large proportion cannot be supplied.

Now, it is plain there is some fundamental error in the general plan of business, which is neither more nor less than the attempt, with small means, to do too much. There are establishments, employing hundreds of men, with acres of glass houses, that are able to do all they undertake; but such hardly exist in our country.

The mistake is, with limited means we attempt almost unlimited objects. With a greenhouse, or houses if you please, twenty feet by one hundred, we would grow a plant of everything which the earth produces. There can be but one result, and that is failure.

The remedy, or the way to success, is very plain — simply to confine our nursery culture to a specialty. Let one nursery grow fruit trees; another, evergreens; another, deciduous trees; another, small fruits. In the greenhouses let one grow New Holland plants; another, bedding plants; another, camellias, and so on; and let no one interfere with the other.

Among the trade an intercourse of exchange should be instituted. The plants, being a specialty, would be of the best. Amateurs would order evergreens from A, roses from B; and smaller buyers could easily

be supplied by nursery agents, who would themselves be supplied in greatest variety by the various dealers, or rather growers.

Each grower should have for exhibition on his grounds specimens of every tree or plant he has for sale, that buyers might see the full beauty and habit, and know the future, of the smaller plant they buy.

We have been led to these remarks by a chance visit recently made to the well-known establishment of Messrs. Parsons & Co., of Flushing, Long Island. To say we were greatly pleased would be too faint praise. We were impressed at once by the neatness, order, and beauty of all we saw. Messrs. Parsons are beginning to follow a specialty, or rather several specialties, as within the scope of their large establishment, and while not neglecting fruit trees, they propose to devote themselves chiefly to ornamental trees, evergreens, rhododendrons, hardy azaleas, and camellias.

Their rhododendrons are very fine. We saw magnificent specimens of all the varieties mentioned by Mr. S. B. Parsons in a recent article in this Journal; thousands of thrifty salable plants, and tens of thousands in fine growing condition. Of the varieties especially recommended by Mr. Parsons we obtained splendid plants. The evergreens are noticeable features, and of these and other ornamental trees there are fine specimens, as well as a large stock of salable plants in splendid order. Such lines of propagating houses filled with conifers, rhododendrons and camellias in process of propagation, such magnolias, such a weeping beech, so fine pines and firs, we have seldom seen. It is a dangerous place for the lover of fine trees to visit, for if he order only a small plant of each of which he sees a specimen, he will come away impoverished, yet rich withal.

We propose, at some future time, to describe the grounds and trees; suffice it now to return to our text, and urge attention to specialties, so that it may not be true, as it now unfortunately is, that we grow a little of everything, and nothing well.



CRITIQUE ON THE APRIL NUMBER. — *Thinning of Fruits.* — True, every word, and need enough there is, too, to enforce the necessity of thinning fruits; and I think that they should be thinned more, rather than less, severely than Mr. Wilder indicates. It seems to me sometimes, when fruit is very thickly set, as if we must remove nearer nine tenths than one half, or thereabouts. Mr. Hovey, in the *Journal* for January, estimates the proportion to be removed at three fourths; and I don't think this is too high, when fruit sets as fully as it sometimes does.

Fall and Spring Planting. — I thought Mr. Saunders would hear from some of the western cultivators, and it does seem to me that the circumstances of soil and climate, stated by Mr. Adams, are such as must render it impossible to fulfil the conditions required by Mr. Saunders, and of course to apply the principles which he has laid down, however correct these principles may be in themselves.

But what pleases me most in Mr. Adams's communication is the calm and forcible manner in which he has stated his objections to Mr. Saunders's position — never, for a moment, diverted by side issues, but going right straight to his point. If all horticultural writers were actuated by such a spirit and temper as Mr. Saunders and Mr. Adams, we should not be long in arriving at truth.

The Salvia. — What I like about Mr. Rand's flower articles is their completeness. I don't mean their completeness in a botanical point of view. It is enough for him to tell us that there are a hundred and fifty species of salvias, without describing them all; but I refer to the notice given to all those appropriate to a *Floral Magazine* like yours, Mr. Editor, and the fuller descriptions of the more valuable species.

Grafting Large Trees. — The article is timely, and replete with valuable suggestions, which those interested would do well in observing. The writer — perhaps I might say the Editor — remarks that "in grafting large trees, commence-

ment must be made at the *top*." Now, this is a truth I long since learned — to my cost, however. I began with the lower branches — I suppose because these were more accessible, for I can give no other reason. But season after season left its record of failures, the symmetry of my trees was more and more impaired, and I was discouraged. Whenever I strolled through my orchard, naked, projecting stumps, like bony fingers, pointed at me on all sides, and seemed to taunt me for my mismanagement and cruelty. More than this, I then began to think the evidences perpetual; for they appear to defy time itself. How I dislike their testimony!

But thanks to the suggestion of some friend or sensible writer, I have learned "a better way." This I find embodied in your excellent essay, but I shall repeat it here. "*The upper branches attract the sap more than the lower ones, and here the work of grafting a large tree should always be commenced.*" Acting on this principle, success is nearly certain; any other course will result not only in waste of labor and means, but of *years* of time.

For one, I engage in the work of changing a large tree with reluctance; and I advise those who find satisfaction in the possession of a healthy, full-grown, symmetrical tree — if the variety is anything above mediocrity — to be slow in making an alteration, which, under the most favorable results, will require years to complete, but which may quite as likely return you an unsightly object, or leave on your hands a feeble, sickly body, for which the woodman's axe will bring the only relief, especially if the stock has passed its "grand climacteric," and gives evidence of being on the "downhill of life." You see that I speak of my trees very much as I do of my friends; and truly I do not see how a man can expect his trees will do their best for him, unless he feels such a sympathy with them as to do *his* best for *them*.

Small Fruits in Central Massachusetts in 1869. — A capital article, just such as we want from every locality. Mr. Draper's statements of the qualities of his small fruits carry with them the evidence of their truth, as they have proved with him. His estimate of the Wilson differs from that of the majority, but I prophesy that there will be more who agree with him before there are fewer.

Successful Pear Culture. — I am glad to know, after all that has been said, that there is a place in Pennsylvania where pears can be grown, and a man who can grow them successfully, though I don't doubt that there are a great many of both. And I am glad that we are to know something through your pages, Mr. Editor, of this instance of remarkable success; and perhaps when the series of papers is concluded, I shall have something more to say about it.

New Strawberries. — Mr. Merrick has made a specialty of this subject with the greatest success. I wish there were more like him to test *all* the legion of new varieties as they are introduced from year to year. It is a discouraging task, I know, after cultivating perhaps a hundred kinds two or three years, to find but a single one, or it may be not even one, worthy of a permanent place; but it is not without its rewards; and certainly he who does it and warns his fellow-cultivators of the worthless, and commends the good, is a benefactor not only to them, but to the whole community.

How to Make the Most of our Gardens is what we all want to know; and if

there is a man who can't get some new ideas on that point from Mr. Philbrick's plain and practical directions, I think he had better give up gardening.

How to Grow Grape Vines without Glass.— I don't know that I can claim to be one of the learned of the craft, but I have known of excellent success in propagating grape vines by the method Mr. Miller describes; and I will vouch for the truth of all that he says, and add that he has set a good example to other cultivators in communicating the details of a valuable process, — though they might be previously known to experts, — for there are thousands to whom this method will be just as new as if it had been discovered yesterday.

Peas — Old and New Varieties.— Among the peas recommended by Mr. Burr, I do not find Laxton's Alpha. The variety is new, and probably is yet little known, but I think it should be included among those worthy trial. Please examine it as sketched — from a photograph — in the London Gardener's Magazine of February last. Such pods! at every joint a pair, from ground to summit! And then, too, it has the merit of earliness — is even described as a "first early;" and besides this, is a *marrow pea* of the finest character on the table — an advance on Advancer. Now, Mr. Editor, under our sunnier skies and dryer atmosphere, I do not look for the freshness and beauty of growth, neither do I expect much of the extraordinary productiveness portrayed in the illustration; but I shall try the "Alpha."

Looking over the peas at our seed-stores, I find that not only the new, but a large proportion of the older varieties are obtained from abroad. Why is this? Can our seed peas be imported at less cost than they can be produced at home, or are the seeds fairer, and therefore more salable than those American grown? Perhaps, however, they are preferred for the reason that they may succeed better. But this is by no means a settled question. My own experience goes far to prove the contrary; and I am inclined to think that a measure of the sturdiness, and even of the productiveness, common to our acclimated peas will be found wanting in the crops raised from seeds of foreign production.

About Pears.— I always make a point of reading all that Mr. Earle says about pears. His suggestions in this essay are most excellent, and the point of selecting the best trees is especially important — indeed, absolutely essential. But I am most pleased with the tentative, suggestive character of the whole essay, and its freedom from anything like the dictatorial tone which we too often hear. A man raises some good pears, and he presently informs the world that all they have got to do is to follow after him, placing their feet exactly in his steps; but somehow or other this doesn't always do, and then they are ready to cry out that pear culture is a humbug. Now, if such a man had waited a little longer, he would very likely have found out that he did not know everything, and have been more modest in his teaching.

Luminosity of the Fraxinella.— This is certainly a most singular phenomenon. The explanation of it given in the Journal seems to be very plausible, but I have lately been informed, on the highest authority, of the successful production of the flame from flowers in full bloom. Such a curious property is worth investigating; and I hope the readers of the Journal will try the experiment in both stages of the flower, and give us their report.

Bismarck.

REPORT OF THE COMMITTEE ON FRUITS OF THE MASSACHUSETTS HORTICULTURAL SOCIETY FOR 1869.

By W. C. STRONG, Chairman.

LESSONS OF THE YEAR.

WHAT are the experiences and suggestions of the year in respect to fruit culture in Massachusetts? In view of the fact that the total product has been below the average, and, at the same time, that prices, instead of being higher, have actually been lower; in view of the large quantities and in some fruits the fine specimens which have been brought to our markets from abroad, there may possibly be a feeling of discouragement among our cultivators in regard to future prospects. We notice the enterprise of planters of small fruits in the Middle States. We receive large quantities of strawberries and other fruits at prices below the line of profit to us. Of peaches from the South we have had an unprecedented supply, and at very low rates. Pears from Virginia, from Kansas, and from California have been equal, and some kinds superior, to any we have ever produced. The grape season has been favorable with us, but not so in other sections. Still we have received a fair supply from the West, and judging from specimens sent from California, we are inclined to think that, in future years, we shall have larger quantities of grapes from the Pacific slope, and at rates quite below those to which we have been accustomed.

PRICES OF FRUIT.

It is said that thirty dollars per ton is the full price for the best of the European varieties of grapes in the California vineyards. As these vineyards are now but about a week's distance from us, and as we know the product is likely to be immense, beyond anything the world has heretofore seen, can we doubt that our markets will receive a large supply, and be considerably affected thereby? Beyond question, fruit culture has received a stimulus throughout our vast domain which gives promise of highest results. Can we in Massachusetts hope to maintain our rank? Have our cultivators reason to expect that their enterprise will be rewarded with profit? We still think so; we believe there is reason for a hopeful enthusiasm in this field. In the first place, we are to keep in mind the fact that within the next thirty years our population is to advance from forty millions up to one hundred millions. What a stimulus to effort is given by this simple fact of increase in demand! We shall have need to put forth all our energies to feed this vast multitude.

ADVANTAGE OF A NEAR MARKET.

Again, local producers of fruits must always have a disproportionate advantage over distant producers. Teas, silks, woollens, cottons, even the more bulky products of agriculture, may be shipped from continent to continent. But fresh fruits deteriorate, and though, as we said before, we must expect competition

from beyond our state borders, yet the home producer not merely saves the cost of forwarding and of commissions, but, in the case of many fruits, he has the much more important advantage of their fresh and healthy condition. He should be encouraged, therefore, to contend against serious odds in soil and climate. We do not rest here. For our most important fruits our stern climate and soil are no discouragement. We acknowledge no inferiority in the capabilities of Massachusetts for the culture of fruit adapted to this latitude. Let us briefly pass the list of fruits in review.

ADAPTATION OF STRAWBERRIES TO OUR CLIMATE.

Strawberries are admitted to be at home with us. In all respects our soil and our climate are adapted to the perfect development of this valuable fruit. In ordinary seasons our beds make vigorous growth during the burning months of July and August, producing large and firm crowns, which are a sure index of a large crop, of superior size. In warmer sections and dryer soils the beds become more or less burned in midsummer, and consequently the fruit will be smaller. It is only necessary to give generous culture, and hold in check the tendency to make a superabundance of runners (an evil not sufficiently recognized), in order to secure the best results with a remarkable degree of certainty. It is the testimony of visitors from abroad, that our exhibitions of this fruit are superior in quality to any they have seen in other parts of the country. As to the profit of growing the strawberry, there can be no question. It is true our markets are affected by the low price of the crop received through New York. Yet our fruit is so superior that it bears its own price, to a good degree. Even the present season, when the small fruit business has been confessedly overdone in the Middle States, when besides the large quantities, picked at low rates and sent to us at a loss, there were still left other large quantities to perish in the fields, our growers, on the other hand, have been amply compensated. Our fruit was a little later, it was better in quality, it brought better prices, and was a remunerative crop.

PROFIT OF CHERRIES.

Nothing but wise culture is necessary to make the cherry a success. It is liable to injury in winter; but this, to a great degree, is owing to over-luxuriant growth, which can be checked. It is liable to the sting of the curculio; but this is an evil which we can and must overcome, however laborious the task. We have not had cherries, of late years, as in former profusion, for several reasons. Most of our orchards were seriously injured, some years since, by a peculiar and excessive winter. It is a long process to reëstablish a cherry-orchard, and our cultivators have sought for quicker returns. The price of labor is higher in our state than elsewhere, almost without exception, throughout the world, and our children are largely, not at work, but at school. Consequently the labor of picking the cherry is a serious drawback to its profitable culture. Also we have been injudicious in the selection of varieties, planting the most tender kinds, and those most subject to the curculio and the rot. But the cherry can be grown to perfection — there is no inherent difficulty; we can, we do, so grow it. Let us do so more abundantly.

OUR SOIL CONGENIAL TO THE RASPBERRY, BLACKBERRY, AND CURRANT.

Confessedly we have a genial soil for the raspberry and the blackberry. The autumn vigor of our canes indicates that the entire season is favorable for the retention of foliage and the maturity of the fruiting canes. The same may be said of the currant. We know that in some sections of our country the sun is too parching, for the foliage of these fruits ripens and drops long before the season is ended. With perfect health, we invariably have the perfection of fruit upon our tables. If it is asked why we have so little in quantity, compared with the hundreds of acres devoted to this purpose in Vineland and other sections south of us, we reply, confessing that there is a lack of enterprise in this direction among us. Other profitable employments and the high price of labor have diverted from this interest. But here, again, let all our cultivators be assured there is no inherent difficulty; remunerative crops are sure to follow skilful culture, independent of all competition from without.

VARIETIES OF GRAPES ADAPTED TO OUR CLIMATE.

Other sections can undoubtedly produce grapes of better quality than we. But varieties as hardy as the Concord produce abundantly, and are remunerative. Especially early kinds, which come before the Catawba, are profitable. We continue, indeed, to have upon our tables Isabellas equal to any to be found elsewhere. But the growth is not spontaneous, and for profitable field culture we must rely as yet upon the Hartford and Concord. The fact that one of your committee has, during the past fall, extended his vineyard by planting four acres with vines, is an indication that intelligent cultivators have confidence in the grape as a source of profit.

SUCCESS OF PEAR CULTURE IN MASSACHUSETTS.

Of the pear we speak with more confidence, and we do not hesitate to differ from the conclusions of Mr. Houghton, of Philadelphia, who, in a recent essay, has pronounced pear culture unsuccessful in the vicinity of Boston. We think this is a great error. That there have been failures is not to be doubted. That many mistakes have been made, that there has been much neglect, that great numbers of trees have died, is beyond dispute. On the other hand, we are bold to say that wise culture of the pear is as certain of success, with us, as it is possible to be anywhere in this uncertain world. The crop is never a failure; our tables are always filled. There are seasons of superabundance and of comparative lack. But we never have an approach to a failure. It is true that we ought to have more of this fruit in our markets, and at lower rates, though it is now a common and comparatively cheap article in the autumn months. That it can be produced in vast quantities, with little cost of labor, with more than ordinary certainty, and that the crop can be sold so as to yield a good profit, is beyond dispute. We have cultivators who have demonstrated this problem. That we have not many witnesses is simply because most of our citizens direct their main energies to the factory, the warehouse, or the exchange, as the source of largest profits. There is a possibility of gains, there is an activity and a fascination in

business pursuits, which make men impatient of the slow but certain rewards of terraculture. With us no one has planted a pear orchard at all approaching that of Dr. Houghton's in magnitude. No one has selected a spot with special reference to its fitness, and cultivated it with an undivided and unflagging interest. In a moral and social point of view, it is well that every homestead among us is supplied, to a good degree, with the complement of fruits, and that the public supply comes mainly from this large aggregate. Yet it is desirable, in many ways, that we should have some prominent examples in the culture of large fruits, such as we have among the small fruits. We cannot name the examples of our ex-presidents, because their culture has been either incidental or for the purpose of testing varieties. We can name no one who has pursued pear culture with a single eye, as men pursue other occupations. Yet we are persuaded that very few long investments promise more certain returns, with honorable distinction, than do the careful selection of localities and the extensive planting of a half dozen varieties of pears with sole reference to the market.

THE APPLE IN MASSACHUSETTS.

We spoke of the apple in similar language last season. It is, par excellence, a Massachusetts fruit. We have thousands of slopes precisely adapted to its most successful culture. The only want now is of men of clear foresight, who can discern the wants of future millions, who have a considerable capital, and who can in patience possess their souls during the tedious years of preparation for a sure return to skilful culture. To such men the canker-worm and the whole horde of evils will prove only as a healthful stimulus to activity.

Gentlemen, we are too much disposed to congratulate ourselves upon what we *have* done. We have but just begun; we are like children paddling by the shore. It is time we should launch out with a bolder stroke.

MARKETS AND PRICES.

We are inclined to dwell upon the condition of the Boston market, as exceedingly prejudicial to the interests of fruit culture in this vicinity. Cultivators have the impression that the market is well supplied, that fruits are rather slow of sale, and that it would be an easy matter to cause a glut, by a slight increase in quantity. Indeed, dealers will tell you they have pears kept back which they let go to waste rather than overstock the market and reduce the price. The producer's price is low enough; and yet he must keep his supply at a moderate limit, lest he should cause a decline in prices. Now, instead of this, the truth is, that we have not made any approach to a test of the capacity of our market for fruits. The price of most fruits to the consumer is altogether too high to admit of their free use by all classes. We have only to call to mind a surplus crop of any fruit, — the peach of this season for example, which compels a moderate retail price, — to notice the vastly increased demand which seems to absorb all that is received. It is, then, manifest that the *price* governs the demand. Make the price reasonable, and there can scarcely be a danger of overstocking our markets with really good fruit. But we have before said that the producer's price is low enough. The difficulty is with the retail price. For example, the average price

of native grapes to the producer was ten dollars per hundred pounds in September last. Day by day dealers were supplied at this rate, they not disguising, but rather advertising, with large placards in their windows, the same fruit at twenty cents per pound. Thus they received, with scarcely any shrinkage, and for the mere trouble of weighing, exactly as much as the cultivator does for his months of toil. Could we sell grapes by the ton, ten dollars per hundred pounds would be regarded as a sufficiently rewarding price to the cultivator. And if, instead of the extortionate advance of a hundred per cent., they were retailed at a moderate profit, does any one doubt that the quantity required for consumption would increase to a point fully equal to our capacity to supply? It is the pernicious influence of our Boston market, extending to all our adjoining large towns, which checks enterprise and prevents a large expansion in fruit culture. The grape is instanced as possibly a strong case, and yet it indicates the fact that a much larger commission is paid to produce dealers in Boston than is the case in New York, Philadelphia, and other large cities. This fact operates in two ways. It makes the cost of living in Boston comparatively high, and thus injures the interests of the city. It also limits the demand and circumscribes the profits of the producer, and thus discourages enterprise. Plainly we need more open markets, and more direct methods for the delivery of our fruits. But our space is too limited for the discussion of this subject. In noting the objects of interest on exhibition during the season we have again to pass the fruits in course.

STRAWBERRIES.

Jenny Lind took the lead as the best early kind, seeming to be about a week earlier than Hovey, or Triomphe. On this account it is valuable, and it is certainly deserving the attention of amateurs. For winter forcing, Triomphe de Gand has given the best results, superior specimens of which were exhibited by James Comley, March 20, and subsequently. Davis & Bates exhibited, June 16, a plant of Jucunda, pot culture, showing a remarkable abundance of fruit, indicating that this variety may force well. Mr. E. P. Wheeler, of New York, presented two seedlings, through Mr. B. K. Bliss, on the 16th of June, one of which resembled the Hovey, but was darker in color. It was of good size and flavor. Its value depends upon its characteristics in the bed. The other was light-colored, resembling the French, was soft, and lacked character. W. J. Underwood again presented his seedling strawberry, which sustained its reputation of last season, and in quality it may be marked among the "best." A dark, obovate strawberry, of large size, full of juice, and of good quality, exhibited by J. B. Moore, was not recognized by your committee. Possibly it may be the Golden Seeded; it deserves attention. The President Wilder appeared to as great advantage as in previous years, and we can but hope will prove as superior in other grounds as it has with Mr. Wilder. The Lady of the Lake strawberry was not on exhibition, yet it came under the notice of some of your committee upon the land of Mr. Scott, its originator. It is a very productive variety, exceeding the Wilson in the number and uniformity of berries, light in color, deeply indented, with long neck, and of fair quality. Mr. Scott, who raises largely for the market, thinks it is altogether the most profitable kind he has. Seth Boyden's Seedling

No. 30 is of large size, and has a long neck; was not especially attractive. *Jucunda* is held in high and growing esteem by many cultivators, and is undoubtedly a valuable variety. *Wilson* is gaining steadily in our market, and this is a certificate of merit which is not to be overlooked. It is a profitable crop, and succeeds everywhere. On the other hand, *La Constante* finds friends among amateurs, as heretofore. It ripens late in the season, and yet *Jucunda* seems to continue equally as late, a fine dish of which was exhibited July 17. Still later, July 24, James Comley exhibited *Triomphe de Gand*, indicating how well this variety holds out to the end of the season. *Dr. Nicaise* is a monstrosity, so gross in form as to be undeserving of admittance into our goodly list. Owing to its immense size, it is frequently green on one side when ripe on the side nearest the sun.

CHERRIES.

Black Tartarean and Black Eagle are our leading prize kinds. Other varieties, such as *Downer*, *Elton*, and old *Black Heart*, are more hardy. It is suggested that in the case of fruit trees which tend to excessive luxuriance of wood, it is well to allow the grass to grow around the trees, and thus hold the growth in check. In this way the wood matures, and hardens so as to endure the extreme cold of our winters. Our honored president has mentioned the case of an orchard of cherries, the wood of which is never injured by cold, and the crop of which is almost sure to be good, and this orchard is in a field of grass. It seems to be clear that in our rich garden soils both the peach and the cherry will make too rank growth, and are very liable not only to the loss of fruit buds, but also to the destruction of immature wood and the poisonous influences which result therefrom. A lower diet is recommended for the cherry and peach than we have been accustomed to give. A seedling cherry presented by C. E. Grant resembled *Downer's Late*, but was more tender and juicy, and was of sufficient merit to receive the silver medal.

CURRANTS.

La Versaillaise is becoming the recognized prize kind and the leading market variety. *Dana's White* is very large and beautiful in appearance. No new kinds have appeared on our tables the past season.

RASPBERRIES.

Remarkably fine specimens of the *Hornet* were exhibited by William H. Barnes, July 17. This is a very large, long, and pointed fruit, firm enough for carriage, of clear bright red color, and is said to be prolific. It promises well. J. B. Moore exhibited superior dishes of the *Franconia*, large and of better quality than *Knevet's Giant*. The absence of the *Clarke* from our exhibitions will be noted. The impression prevails that it is not productive. Another season will decide. J. F. Jolls, of Providence, R. I., exhibited a variety under the name of *Narraganset*, which he said was not up to its usual size. It did not appear to advantage, in comparison with other kinds on the table. The *Philadelphia*, *Catawissa*, and the *Black Caps* are not often seen on our tables, because they suffer by compar-

ison with other varieties. Yet the Philadelphia is so hardy and prolific that it has a value for the family that requires *quantity* as the first condition. Catawissa, on the other hand, is one of the most tender and high-flavored of any on the list, and by proper treatment can be made to yield such a bountiful crop in September, when all other small fruits are gone, that it deserves a place in every garden. For a fall crop, the canes should be cut back nearly to the ground in April, and the late crop will be upon the new growth. But what can we say for the Black Caps? In good conscience, not much. They are hardy, they are very productive, they are shining black and very pretty, they have an agreeable wild flavor. But they are small, seedy, dry — they are almost beyond the power of sugar and cream to help them. The open market is a rough, but it is a pretty sure, test of value, and our Boston market refuses to take the Black Caps. We speak the more decidedly in regard to this fruit because of the extravagant praise which the so-called Doolittle's Improved has received in the Middle States. We have had on our tables white, or yellow, varieties of the Black Cap; but they are not an improvement, either in quality or color. Davidson's Thornless is an improvement in the respect of being comparatively free from thorns. We have not fruited the Mammoth Cluster, in this section, and we can only hope that it will so far fulfil the descriptions of size and juiciness as to redeem the class.

[We think the summary of fruit culture in Massachusetts during the last year, contained in Mr. Strong's report, of even more than usual interest. We shall give the remaining portion next month. — ED.]

THE BRITTLE SWEET APPLE. — This apple is of unknown origin, and but little cultivated. Mr. Downing says it is very valuable, and deserves more attention, being in beauty and quality among the first. The tree is moderately vigorous, but very productive. The fruit is above medium size, roundish, approaching conical; color pale yellow, nearly covered with shades, splashes, and marblings of light and dark crimson red, and having also many small gray and white dots. Flesh yellowish, crisp, juicy, tender, with a peculiar honeyed sweet and slightly aromatic. Ripe in October and November. Quality very good.

THE CRANBERRY AS AN ORNAMENTAL PLANT. — I do not see how any one, who has ever noticed the delicate foliage and flowers of the cranberry, even when wild and uncultivated, could fail to be struck with its beauty. But my object now is to call the attention of your readers to its value when cultivated in pots, in the house, or, still better, in hanging baskets. When thus grown, the long, slender stems, drooping from the basket, together with the rich fruit, form a most beautiful object. Let those who mourn that they cannot afford to purchase foreign novelties, make a rustic basket, and put a few cranberry plants in it, and hang it in the window, and they will say they never saw anything more beautiful. *O. A.*

The Mechanics' and Agricultural Fair Association of Louisiana will please accept our thanks for a card of admission to the Fourth Grand State Fair.

THE SOLANUM CAROLINENSE. — MR. EDITOR: We find in the St. Louis Journal of Agriculture some comments upon our mention of the *Solanum carolinense*, or horse nettle, in an article upon "The Solanum as a Decorative Plant," which appeared in your March number. We are at a loss to see in what way the writer disproves our statements, unless, perhaps, in the greater height of his specimens — a fact easily accounted for by the superior fertility of western soil.

We stated it to be "a very pretty plant;" the writer calls it "a very hateful plant." In the garden it might be the former; but if sufficiently abundant to become a weed, it might be the latter.

We should be under obligations if our western critic would send us some of the seed.

But we must settle his doubts as to our knowledge of the plant by directly stating that we know the plant well, having grown it ourselves and frequently seen it growing elsewhere; and while he may be glad to be rid of it, we should be glad to receive it.

While at the South and West it may become "a troublesome weed, if not kept within bounds," as we plainly stated, we have little fear of its ever becoming common in New England.

E. S. R., Jr.

GLEN RIDGE, April, 1870.

PREPARATION OF GRAPE BORDERS. — We see in some of our exchanges directions for making borders for grape vines, by forming a bed of rich mould, elevated above the surrounding ground. This can only be necessary where the ground is wet, and no means of draining exists. For all the strong-growing varieties of grape, there is more danger of getting the soil too rich than otherwise. Such weaker-growing kinds as the Delaware may have a richer soil.

Another fallacy in the article alluded to is, that the large foliage of the grape absorbs moisture from the air. Exactly the contrary of this is true, the evaporation being in direct proportion to the leaf surface exposed to the air.

HOW MANY APPLES AND PEARS DOES DOWNING DESCRIBE? — The Horticulturist says three thousand four hundred and twenty apples, and two thousand seven hundred and eighty-six pears. We find about half as many apples, and one third as many pears; and we suspect that our contemporary has counted the names in the index, including *synonymes* as well as *standard* names. Count again, and see if we are not right.

MOUNTAIN AND VALLEY FRUITS. — The Scientific Press says that the mountain fruits of California are universally superior in both quality and flavor to those raised in the valleys.

OLIVES AND LEMONS IN CALIFORNIA. — Los Angeles is the centre of the olive-producing section in California.

There are ten thousand lemon trees in California, and the fruit sells at from forty to fifty dollars per thousand.

FRUIT ITEMS FROM MARYLAND. — The prospects for fruit in this section of the country are very good indeed. The pear, peach, and other fruits are just budding forth, promising a generous yield of Nature's choicest gifts — good fruits.

The gooseberry and currant leaves are peeping forth, warning us that spring has fairly opened, bringing with it its never-failing share of labor and vexations to the enthusiastic and thorough culturist.

The peach and pear buds are very forward, the mild winter giving them an unusually early start; but the cold snaps since have backened them a little, although almost imperceptibly. It injured some of the earliest and most forward buds, which, I think, is rather an advantage than otherwise, as it lessens the quantity of fruit, and in the same ratio increases the quality; for an overburdened tree will not produce as fine specimens as one that has set a moderate quantity of buds and matured them all; and peach growers who marketed their fruit last year can fully testify that it was one of the least profitable peach years that has been known for several or many years, owing to the crowded state of the market, and, as a matter of course, a general depression in the prices for all grades, even the best paying but poor and hardly adequate returns.

The apple blossoms indicate a moderate amount of fruit for the coming year, and no doubt will yield a fair return to the careful planter, the one who has given his trees the most attention reaping a reward accordingly.

No very definite prospective fruit opinion can be given in regard to the grape, as they have not yet grown sufficiently for us to do so knowingly; yet, from the vigorous look of the vine, and from the buds beginning to swell with regularity and seeming healthfulness, I should judge that there need be no apprehensions of a scarcity of this really excellent fruit, nor need any fear be entertained that they will not yield bounteously, those which have been properly attended to giving the best returns of crops, and, as a matter of necessity, of cash profits.

In this state, wherever the grape has been tried, it succeeds admirably well — so well, in fact, that those who have given it a fair, though small trial, are continually increasing the size of the vineyard to their evident profit.

This country is very well adapted to the growth of this fruit, surpassing the *best* of the famous grounds in Missouri; which is rating it high, although a truthful comparison.

All the different sorts of fruits throughout Maryland indicate good crops, and from that to large, the size of the crops depending upon the care, culture, and other important observances.

David Z. Evans, Jr.

"CECIL FRUIT AND TRUCK FARM," CHESAPEAKE CITY, MD., April 4, 1870.

AGRICULTURAL SOCIETIES. — There are said to be eight hundred and nineteen agricultural societies in Prussia. The books of the United States Agricultural Department record the names of more than thirteen hundred agricultural and horticultural societies.

THE DUNCAN'S FALLS BLACKBERRY is said to be one of those most deserving of trial among new kinds. It is described by Downing as of upright, vigorous growth; fruit large, black, moderately firm, juicy, sweet.

EFFECT OF SOIL ON FRUITS, ETC. — MR. EDITOR: Allow me to say how much pleasure and profit I derive from a reperusal of my bound volumes of the *Journal of Horticulture*. When a youth, I acquired that intoxicating passion for novel and romance reading which only those who have experienced it can realize; but I can truly say that the pure, pleasurable emotion in going over the articles of special interest in these volumes is equal to that of youth, while the benefit and approval of a satisfied conscience are immeasurably greater.

If any of your subscribers have back volumes unbound, let them try my plan, and see if the result is not pleasant and profitable.

I consider that the truest test of merit in any book or periodical is the interest or profit with which it may be read as years elapse from the time of its publication. By this mark judge the *Journal of Horticulture*, and it can lose nothing of esteem.

To be sure, we find that one article may conflict with another, one pet theory is overturned by another, and that in its turn must stand its chance of being finally replaced. But this is a world in which we are to dig, and seek for light, each in his own best way, and compare results, to be gathered up, classified, and fitted for use.

Now, I am doing my part in the horticultural work, only in a very small way; yet I think I find some truths, and sometimes those that clash with the views of others.

Is there not wanting more light, especially on the causes that produce such a difference in the quality of the same kind of fruit? I have an Israella vine in bearing that gives the sweetest and every way the best fruit I have ever tasted of native American production. A near neighbor has one of the same lot (from Dr. Grant), the fruit of which is perfectly disgusting. The owner described it as "catty," and explained that it tasted as a cat smelt.

My vine was planted in an artificial bed, composed mostly of old bones and ashes (a long time soaking together) and garden loam. His was in a very rich black loam garden. My vine is not so stout as his, and has had more pruning, though not so close as some. It is protected on the north and west by a brick building, getting less of easterly rains, and also much less sun, than his.

Now you have all that I can see which essentially varies the condition of the two vines; and can you tell what makes the great difference in the fruit? I do not state these facts as anything unusual; but a solution of them may be of material service.

My neighbor has been longer in the grape line, and has a variety of bearing vines. I tasted of them all—Concords, Rogers's Hybrids, Hartford Prolific, Northern Muscadine, Delaware, etc., but not one besides the last that I considered eatable.

It is easy to see that if he were to write about grapes, he would pronounce the Israella the poorest of them all, his others being all eatable, in his estimation, if not fine.

I am persuaded that nothing is more fallacious than forming an opinion on the merits of fruit, etc., by one trial, or under only one set of circumstances. And a remembrance of this fact would often save the sometimes amusing, if not

wrong, contentions of horticultural writers, and the pertinacity of their ipse dixits.

Having gained a little experience of my own, with some smattering of "book-learning" in the fruit line, I am beginning in a small way to test the question whether open garden grape and pear culture will succeed in this far northern clime to advantage. The results may give some lessons for others.

In strawberry culture I think we can equal any Atlantic state. The fruit grows wild here much better and larger than in Massachusetts, though it may not follow that it will be the same in artificial culture. Is it a rule that all kinds of plants and fruit will grow better in their native clime than elsewhere?

WATERVILLE, MAINE.

Kennebec.

We have known of great differences in the quality of the same variety of fruit from two trees or vines in neighboring gardens, or even in the same garden, but so great a difference as "Kennebec" describes in the fruit of the two *Israella* vines is very unusual. It is well known that the fruit grown in a very rich loam, especially if moist and cold and manured with animal manures, is not as high flavored as that produced on a light soil fertilized with mineral manures; but *why* this should be so is one of the most obscure points in horticulture, though we do not despair that it may some day be explained.

As a general rule, it is true that all plants flourish better in their native clime than elsewhere. The strawberry is essentially a plant of a *cool* climate, which accounts for the superiority of the wild strawberries of Maine to those of more southern regions, and the excellence of the cultivated varieties. In such climates the plants are not subject to the burning by the sun which injures varieties of English origin in the Northern States and almost all kinds in the South.

THE BEN DAVIS APPLE. — Dr. William Howsley gives in the St. Louis Journal of Agriculture a history of the origin and synonymes of this apple, which, for commercial orchards, now stands at the head of the list for profit, and is more generally sought after and planted than any other single variety in the West and North West. The synonymes given are Virginia Pippin, New York Pippin, Kentucky Red Streak, Carolina Red, Funkerhouser, Hutchinson Pippin, Baltimore Red, and Joe Allen. Besides these Mr. Downing gives as synonymes Victoria Pippin, Victoria Red, Red Pippin, Kentucky Pippin, and Baltimore Pippin.

FOREST PLANTING. — As the production of trees and plants is, so far, the *only* means known by which man can to any appreciable degree influence the meteorology of a country in his favor, the question of timber production rises to the proportion of one of the grandest of our industries. *Western Farmer.*

RECLAIMING MARSH LANDS. — The salt marsh lands of New Jersey comprise two hundred ninety-five thousand four hundred and seventy-six acres. Of this twenty thousand acres have been reclaimed, at an average cost of about twelve dollars per acre, and are now the most productive in the state.

NEW APPLES. — Mr. Charles Downing describes in the American Agriculturist the following new, or little known apples: —

Milo. — Originated with Jonathan Bailey, Milo, Yates Co., N. Y. Tree a very strong, upright grower, and profuse bearer, ripe in September and October. Full medium size; skin whitish, with shaded, striped, broken splashes of light and dark rich red; flesh quite white, crisp, tender, juicy, with a very pleasant vinous, sub-acid flavor; quality "very good."

Lord Suffield. — This new English apple is briefly described in the recent edition of the Fruits and Fruit Trees of America; but the fruiting of the tree last summer allows a fuller description. It is a promising variety for market and culinary purposes. Tree vigorous, somewhat spreading, an abundant bearer; fruit large, roundish, slightly conic; skin whitish yellow, with sometimes a shade of red in the sun; flesh white, crisp, juicy, brisk, sub-acid. Ripe through September.

Somerset. — Origin unknown, but supposed to be Somerset, Niagara Co., N. Y. Specimens from C. L. Hoag, of Lockport, N. Y., who values it highly as an amateur and family fruit. It may possibly be some old variety under another name. It is a delicious eating apple, ripening the last of September and first of October. Tree vigorous and very productive; fruit below medium, roundish conical; skin whitish-yellow, with sometimes a few nettings of russet, and sparsely sprinkled with brown dots; flesh quite white, tender, juicy, with a rich aromatic flavor; quality "very good," or "best."

VALUE OF LAND FOR FRUIT GROWING. — Fruit lands in the vicinity of St. Joseph and Benton Harbor, Mich., are sold at from three hundred to five hundred dollars per acre, and some have been held as high as one thousand dollars.

SALT FOR CABBAGE PLANTS. — "G. W. T.," Rahway, N. J., writes to the American Agriculturist that he considers salt necessary to the best development of the cabbage, especially in places far from the coast. He finds them more crisp, of better flavor and to keep better, when salt is used than without. A few days after setting out the plants, and when they are damp, either after a rain or when the dew is on, he takes a small dish of fine salt, and walks along the rows, sprinkling a little *pinch* of salt on the centre leaves of each plant; when the leaves begin to grow, he repeats the salting; and when the centre leaves begin to form the head, applies salt again, scattering it over the leaves; after this, he looks them over occasionally, and if he finds any plants that do not head well, or appear diseased, sprinkles salt over freely. This will save all such plants. A quart of salt is sufficient for five hundred plants in a season, though more can be used with safety.

We have known a good cultivator on the sea-coast who deemed it beneficial to give his cabbages and cauliflowers an occasional watering with sea-water.

FOREST GROWTH. — It is calculated that in Iowa every three years not less than five million trees are planted, and that within considerably less than half a dozen years the forest area has been increased by twenty-five million trees.

GRAPE CULTURE IN CANADA. — Few people are aware of the extent to which this new branch of agricultural industry is now being carried in Canada. The wonderful success of the vine on Kelly's Island, and other islands on Lake Erie, has set thousands of farmers on the shores of that lake, on both the Canadian and American sides, to the cultivation of the vine, and the consequences cannot but be beneficial. All round the shores of Essex and Kent farmers are waking up, and cultivating the vine largely. In the township of Gosfield alone, a few neighbors met, a short time since, and clubbed together to give such an order for vines as would, from its extent, reduce the cost to the lowest wholesale rate. The consequence was a subscription of eight hundred dollars, which accompanied the order to one of our leading nurserymen for vines alone. Thus between five and six thousand vines were set out, in that immediate neighborhood alone, in one season; and as vines are the most easily propagated fruit tree we have, by cuttings and layers, it may easily be supposed, that when once a plantation is established, our thrifty farmers will become their own nurserymen. Grapes, throughout the Niagara peninsula, are becoming as common as apples; and this may well be imagined, when one man this last season had *fourteen tons* of grapes so injured by the frost, that he (not knowing that they were really not injured for wine) sold them at two or three cents per pound, for the manufacture of either wine or vinegar. Throughout the present vineyards of Kent and Essex the Catawba comes to perfection, as do also most of the sorts grown at and about Cincinnati, which was the cradle of vine culture in America. The sweet kinds, such as the Delaware, and others of that class, yield good wine without additional saccharine matter; but to grapes more redundant in acid large quantities of sugar are added, so as to give body and strength to the wine. The demand for grapes in their natural state is now so great, however, and they carry so well to market, that most of the crop is boxed up in small parcels fit for the retail trade, and sent off to the nearest city markets. And this will continue until the quantity produced becomes so great as to flood the market; the chief part of the crop will then be made into wine, and other things which naturally spring from that manufacture.

Canada Farmer.

TANNIN for curing leather is a product of sumac, and nearly all of it used in this country is imported from Sicily. But the sumac tree is a natural growth, and in the mild climate of Virginia yields twenty per cent. more of the astringent principle than the imported article. The crude sumac in Virginia, manufactured this year, amounts to forty-one hundred tons, worth eighty-two thousand dollars — a large product from an unorganized and shiftless industry, which is of as little account as picking berries.

THE PECAN TRADE is lively in Western Texas. The Victoria Advocate has heard of one merchant paying out five thousand dollars in less than one week for this spontaneous product of the forest. The average price paid is three dollars, specie, per bushel.

PEAS IN JANUARY. — A Waterbury (Conn.) woman picked green peas from her garden for her New Year's dinner.

THE STRAWBERRY AND ITS CULTURE, with a Descriptive Catalogue of all Known Varieties. By J. M. Merrick, Jr. Boston: J. E. Tilton & Co. 12mo. pp. 128. Illustrated. Price \$1.00.

This little book will not, nor is it intended to, supersede the excellent works of Fuller and others, on the same subject. Yet none of these are perfect; and as every new author endeavors to supply the deficiencies of those who have gone before him, and as new information on this subject is continually accumulating, we feel confident that an examination of it will show many new ideas of which no cultivator of the strawberry can afford to be ignorant. The book is divided into chapters on manures and preparation of the soil, on planting, on methods of cultivation, on winter protection, on propagation, on insect enemies, on forcing strawberries, on the production of new varieties, and on the question of taste, all of which are written in a compact style, so that, though short, they contain much valuable information. These chapters occupy sixty pages, and the remaining and larger portion of the book is filled with a catalogue, which is intended to contain the name of every known variety, and to do for the strawberry what Downing has done for the larger fruits, but with even more fulness. This catalogue, which is accompanied with descriptions, longer or shorter, according to the importance of the variety, is the novel feature of the book, and must be invaluable to every cultivator, as, by reference to it, the worth of every variety that has ever been in cultivation, new or old, can be at once ascertained. More than eight hundred sorts are noticed in it.

Since writing the above, a friend, who, like John Gilpin, "has a pleasant wit," has handed us the following notice of Mr. Merrick's book, which we append, in the belief that our readers will enjoy it as much as we have:—

Your valued contributor, Mr. J. M. Merrick, Jr., has burst out in a new place. He appears this time as a star of some faint brilliancy in the horticultural firmament, his book on the strawberry having just been published.

Without believing that this book will cause all the other luminaries to pale their ineffectual fires, we predict for it a considerable measure of popularity.

The author is thoroughly familiar with his subject, having made strawberries and grapes an especial study, and having tested, on a small scale, a great number of varieties within a few years.

His position as one of the fruit committee of the Massachusetts Horticultural Society has helped him to inspect and examine most varieties here cultivated, and to learn many valuable facts from the strawberry growers and contributors. On the whole, we think he has produced a creditable book, and one which will become a standard work, especially as a catalogue of varieties.

More than half the work consists of an exhaustive descriptive catalogue of varieties of the strawberry, arranged alphabetically. The incredible labor of preparing and verifying the references in this list, of reconciling discordant descriptions and conflicting opinions, can be estimated at its correct value only by those who have had experience in similar work.

"The writer of dictionaries," says Dr. Johnson, "has been considered not the pupil, but the slave, of genius, the pioneer of literature, doomed only to remove rubbish and clear obstructions from the path through which learning and genius

press forward to conquest and glory, without bestowing a smile on the humble drudge that facilitates their progress."

Lest the parallel should be too complete, we take space enough here to bestow a smile on the humble catalogue-maker, and say that we have found his book extremely accurate, so far as we are able to judge. Like all amateurs, Mr. Merrick has his pet varieties, on which he bestows high praise; but we think his favorites are such as will bear praising. We notice that he considers the Ripowam to be identical with the Rivers's Eliza, and coolly snuffs the Boston Beauty out of existence.

The Mexican Everbearing people, we think, will put a rod in pickle for him, and the admirers of the Wilson will call him a man of no taste.

But one of the best chapters in the book is that on the question of taste, where the duties of amateurs to the general public are well set forth.

In brief, we may say that the book contains chapters on manures and the preparation of the soil, on planting, on methods of cultivation, on insect enemies, on forcing strawberries, and on the production of new varieties, together with a descriptive list of nearly a thousand kinds, making a more complete and exhaustive catalogue than any before published.

We learn that the author submitted his manuscript to the revision of a judicious horticultural friend, who pruned the luxuriance of the style, and cut out a good many feeble jokes, which disfigured, rather than embellished, the work.

More illustrations drawn from actual specimens are promised in future editions, and the work will thus gradually become more and more complete.

SEVENTY-FIVE POPULAR FLOWERS, and How to Cultivate Them. By Edward Sprague Rand, Jr., author of "Flowers for the Parlor and Garden," "Garden Flowers," "Bulbs," etc. Boston: J. E. Tilton & Co. 12mo., pp. 204. Price \$1.50.

This little book of Mr. Rand's, though of less pretensions, and displaying less botanical learning than his former works on flowers, will, for that very reason, be more widely acceptable to the class for whom it is especially intended, viz., amateurs who have not time to study the more elaborate and fuller works on the subject, and who seek for a few plain, practical directions how to make their gardens gay from the time when the hepaticas appear in spring, until the chrysanthemums close the autumn scene. I have no hesitation in pronouncing it the best book of its class ever published, and would particularly note the fine full-page illustrations, of which there are about thirty figuring the flowers.

I do not think it would be possible to speak more highly of it than by saying that the flowers described in it are truly *popular* flowers. Just why there are seventy-five of them, I cannot say any more than I can tell why Bryant published "Thirty Poems;" but suppose it "happened to come so." The flowers are not all "popular," it is true, in the sense of being hardy; but a large majority of them are, and the remainder are bedding plants of simple and easy cultivation, even without the aid of a frame, green-house, or the protection of a cellar in winter. I am glad to see that Mr. Rand has included among his seventy-five favorites the hepatica, bloodroot, trillium, and others which have not

generally been recognized among cultivated flowers, but are quite worthy to be. The different flowers are described under their botanical names ; but the common names are also given ; and though I wished, at first sight, that one of the latter could have been placed at the head of the descriptions, the very fact that there are often several common names, but only one botanical name, is a sufficient reason for the plan adopted ; and the common names being all given in the index, any flower can be found with perfect ease by those not familiar with the scientific name.

If I were disposed to criticise Mr. Rand's style, I might wish that when he described the bloodroot as being of short duration, he had used some other word than "fugacious," of whose meaning one is not quite certain without turning to the dictionary. However, there are not many such instances as this ; and to balance it, he gives the common name of the peony as "piny," which, though we all knew, nobody ever had courage to put in print before.

The plain and simple directions "how to cultivate them" are given in the introductory portion of the book ; but special suggestions in regard to cultivation of every species are given for each flower under the proper heading ; and besides the more prominent species, those less known are briefly noticed, and their value in the garden is stated.

On the whole, we may say that whoever will procure this book and cultivate its seventy-five flowers according to the directions given, will have a flower garden which ought to satisfy any man ; while those who have not room for all, can easily make a selection, larger or smaller, from its pages which shall be adapted to their circumstances.

Bismarck.

THE SULPHUR CURE. — Mr. William J. Flagg, the author of the very pleasant and instructive *Three Seasons in European Vineyards*, has just published a little work of about one hundred pages, entitled *Handbook of the Sulphur Cure as applicable to the Vine Disease in America*, which we have examined with some little care and attention. We feel deeply interested in all that relates to the cultivation and to the welfare of the vine in this country ; and if we must fight oidium and mildew, we wish to be at once forewarned and forearmed. The disease, as Mr. Flagg says, sad experience teaches us to believe in. Too many yet have doubts about the remedy. When a sick man has been brought to admit that he is sick, he is one step advanced towards recovery. So with the vignerons in this country : they are compelled by ruined vines and lost crops to admit that there is a serious and disheartening disease at work, and they are now about ready to listen to such counsel and help as Mr. Flagg offers.

For three or four years, the oidium in Europe swept everything before it. For the last fourteen, the grape growers have fought it with sulphur with perfect success.

Mr. Flagg's first chapters discuss the history of the oidium, its effects on different parts of the vine, the identity of mildew and oidium, the black rot and its effects, and the succeeding chapters treat of the reasons why the sulphur cure has not been practised or has failed here, the effects of sulphur on the vine, on wine, the different sulphur preparations, the implements, bellows, etc., in use in

Europe, the weather suitable for applying sulphur, the cost of applying it, with a multitude of useful hints and suggestions.

The unhappy experience of the French growers has enabled them to lay down definite rules for sulphuring vines, which Mr. Flagg gives, with instructive comments, reducing their directions to the simple maxim, "Sulphur your vines as early as the disease appears, and as often as it reappears."

It is well settled, so far as anything in vegetable physiology can be settled, that sulphur, whether acting *per se*, or slowly oxidizing in the air and forming sulphurous acid, is a direct and specific remedy for mildew. It kills the fungus wherever it touches it, and perhaps even where its vapor extends; and it only remains for us in this country (if we adopt Mr. Flagg's melancholy views) to learn the best method of sulphurizing our vines. No situation, no exposure, the author thinks, can insure us from the attacks and ravages of the *oidium*. If not this year, then next; if not very bad now, then worse hereafter. It attacks the Delaware every season with more or less virulence, and is fast getting a strong hold on what we call our most hardy kinds. Mr. Flagg has succeeded perfectly in curing with sulphur a diseased Catawba vineyard; and all we can add to what we have said is, that if we must fight, we should now be making preparations to meet the enemy; and our readers cannot do better—if they care for the future of their vines—than to take counsel of Mr. Flagg's very readable book.

We notice only one striking error, viz., where the value of the French gramme is given as twenty-three grains. It should be fifteen and one half.

We take this opportunity of again calling attention to Mr. Flagg's work on the Vineyards of Europe, a book not so well known as it should be, and one we can safely commend to all who are lukewarm in the matter of grape culture, or who doubt that we shall some not very distant day rival Europe in the production of wine.

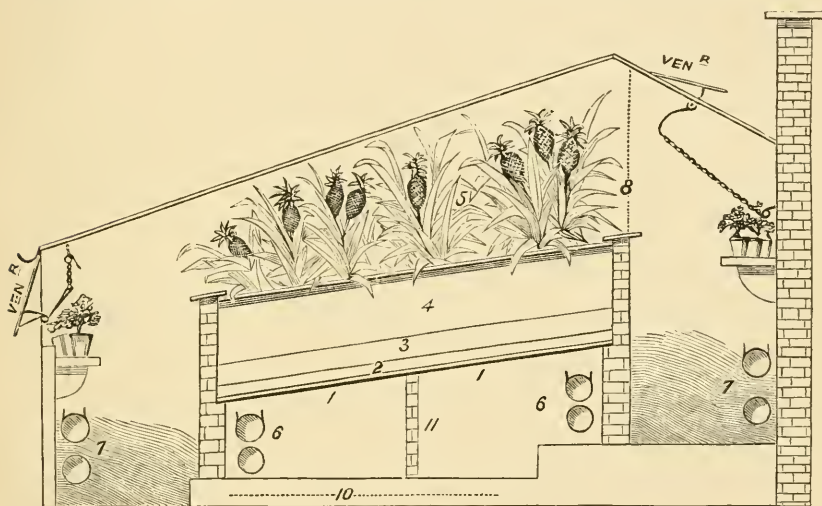
M.

OBITUARY.—Mr. Seth Boyden, the originator of the Agriculturist, Boyden's No. 20, Green Prolific, and Boyden's No. 30 strawberries, died a short time since at his home in Clinton Township, Essex Co., N. J. He was a quiet, unobtrusive, gentle-hearted man, but with such force of brain, such endurance, ingenuity, and marvellous constructive skill, that, in spite of himself, he made the world his debtor, not only for his new fruits, but for many valuable mechanical inventions. Young-hearted, simple, and unpretending to the last, with God's blessing he carried his eighty-two years of noble life gracefully and well unto the end.

Hearth and Home.

NOTES AND GLEANINGS FROM FOREIGN EXCHANGES.

PINE GROWING SIMPLIFIED. — I will now endeavor to comply with the expressed wish of yourself and others, by giving a detailed account of my system of pine culture. I send the end section of the pine stoves, and beg to add to the information upon the card, by stating that there are two small doors in the back wall of the pine pit, so that a man can enter the hot chamber, and pass right round the hot-water pipes when needed. The middle wall is pigeon-holed, and places left for a workman to pass through. The four-inch pipes pass on two



REFERENCES TO THE PLAN.

1. Rough flags which cover the hot chamber. 2. Three inches of brickbats. 3. Three inches of red sand. 4. One foot of pine soil. 5. Pines growing, planted without pots. 6. Four-inch pipe for bottom-heat. 7. Five-inch hot-water pipes. 8. Pine stove, nine feet high. 9. Front of stove, six feet high. 10. Inside stove, thirteen feet six inches wide and thirty-one feet long. 11. Brick wall, to bear the flags in the middle.

End section of the pine stove under my care at Swinton Park, wherein I grow the seventy-five pounds eight ounces weight of pines from pine plants grown in this stove alone; and let no one try to grow pines without a stove something like this.

sides and one end of the hot chamber; likewise the five-inch pipes in the paths; a half-inch lead pipe runs along the top four-inch pipe, to fill the dishes with water, by means of a stop-tap, in front path, and fixed to a water cistern.

It will be seen by looking at the plan sent, that upon the rough flags there are three or four inches of brickbats, and then three inches of sharp sand, then filled up with pine soil: the whole depth from top of flags to top of soil is eighteen inches. The soil used consists of two parts chopped sods one year old, one part rough rotten leaves, one part horse droppings fresh from the sta-

bles : these materials are well mixed together, and the arrangements completed by filling the pit with good fruiting pines, planted as thickly together as possible. I use no pots, but plant them out into the soil, and the pines thus planted are now ready for work, and must not again be disturbed for at least two years, and not even then if there be head room for them to grow and throw up their fruit. I always let them alone as long as possible, and when I am compelled to lower some of the pines down for head room, I only do two or three at one time, and at the time I cut the fruit off. I then take the old stem up, which will have one or two strong suckers upon it. I take the old soil out, and cut off the bottom part of the old stem, and the suckers, with the top part of the old stool, I let down as low as I can. I then fill up with fresh pine soil. The suckers, thus let down, I grow on, and fruit ; crowns and other suckers I thin out. I keep planting amongst the larger plants, and I give them head room as soon as possible. By these two methods I keep up a constant supply of fruiting plants. To the *let alone* system do I attribute, in great measure, my success in pine growing. I find the pines make finer fruit the second year than the first, and some of my plants will fruit next spring, the third time since I planted them, and will swell off Montserrat pines near four pounds each. I may state here that all the pines I grow, except two or three plants, are Montserrats. It is an easy matter with me to fruit pines the year round.

Temperature is a matter of importance. The following are the temperatures I find best : October, 75° to 80° ; November, 70° ; December, 70° ; January, 75° ; February, 80° ; March, 80° ; April, 85° ; May, June, July, August, 90° to 100°, and September, 80° to 85°.

I give the pines at times a little warm water in the months of November, December, and January. In the month of February I begin to push them on, and give them two good waterings of liquid manure. The first week in March I begin to give the pines liquid manure every week until the end of September ; in October I give them it twice.

The liquid manure I prepare thus : I take the garden engine, which holds five large watering canfuls ; I fill the engine half full from a cesspool which receives the water from the house, stables, etc. ; into this, from time to time, a quantity of soot is thrown ; I then fill up the engine with warm water and strong liquid manure made from fresh horse droppings. At times I add a little guano. I always water with a syringe.

Syringing is next to be spoken of. I never syringe on cloudy days, but steam the stoves well ; but throughout spring and summer, whenever the day is bright and the sun hot, on week days I go into the stove at noon, and thoroughly syringe the pines, and every other plant in the stove ; and again in the spring at three o'clock, and in summer at half past three, and then shut up close. Success is certain to any pine grower who will treat pines as above described. The cultivator may cut at least one third more pines at one third the trouble which tan pits and succession pits entail. — *James Walker, Gardener to James Radcliffe, Esq., Swinton Park, near Manchester, in Gardener's Magazine.*

CUPRESSUS LAWSONIANA ERECTA VIRIDIS. — No one who saw the examples of this new Conifer exhibited at South Kensington, by Mr. Anthony Waterer, — still less any one who has had the good fortune to inspect the parent plant growing in the nursery at Knaphill, — will, for a moment, dispute the assertion that it is one of the finest — ay, one of the very finest — hardy coniferous evergreens which have been introduced to our gardens. And, as indicating one of its most prominent characteristics, we must reiterate that it is, in every sense, an evergreen; for, despite any amount of cold or heat, damp or drought, it maintains throughout, from the circumference to the centre, a hue of the freshest green. This constancy in a plant of this character is one of the highest recommendations it can bear.

But its truly evergreen character is not its only merit. Its narrow, erect, slightly pyramidal, almost columnar mode of growth is quite unapproached, for symmetry and beauty, by any other plant we know; while the slender ramifications of its close-set, compact branches and branchlets give it a degree of refinement which is not seen in any other variety of this grand, hardy species, numerous and varied as are its forms, and elegant as are some of their number. Unlike some other choice conifers, this Knaphill cypress, though dense as an Irish yew, is moreover green to the very stem — a circumstance which is perhaps attributable, in some measure, to the regularly radiating character of the flattened spray of which the columnar mass is made up. We have ourselves watched this plant for several seasons, and can bear testimony to the fact that in the Knaphill climate, where araucarias have perished by thousands, it is utterly unaffected, both as to vitality and hue, by the severest frosts.

The history of this valuable introduction, as we learn from Mr. Waterer, is as follows: It was a seedling raised at Knaphill, and selected from the original batch of *C. Lawsoniana* imported from California. The original plant, which is consequently about sixteen or seventeen years old, was grown on for several years, with the object of fully testing its merits before it was distributed; and eventually, when its character was satisfactorily established, it was propagated and partially sold under the name of *C. Lawsoniana erecta*. Of late years, however, and especially since the destructive frost of 1867, its great merit has been more distinctly recognized; and examples of it submitted at the last meeting of the floral committee were unanimously awarded a first-class certificate. On this occasion, and in order to distinguish it from some other dissimilar forms which bear the designation of *erecta*, the committee gave it the name we have adopted at the head of this notice, as marking one of its most distinctive features of merit.

The parent plant is about nine feet high, and three feet through its widest part. The growth is strictly erect, and so close and dense as to form a solid mass of branchlets, which are flattened, and set in a direction radiating with remarkable regularity from the centre or axis of the plant, the wood being perfectly clothed, and the branchlets green to the very centre. This tree has never been protected in the slightest degree. In the symmetrical outline of the tree itself, in the regularly radiating vertical ramifications, in the slender, graceful character of the everywhere erect spray, there is about this plant an air of refinement rarely met with, and which, combined with its bright and enduring verdure, stamps it as a gem of the first order amongst hardy evergreens. *M., in Gardener's Chronicle.*

FINE PLANT OF *LILIUM AURATUM*.—Who can say that we have even yet produced *Lilium auratum* in all its beauty? Certainly the specimen shown on the 17th of August, at South Kensington, by Mr. Goode, gardener to the Dowager Lady Ashburton, Melchet Court, Romsey, Hants, was by far the grandest which has yet been seen in public. This noble specimen was originally bought as a single bulb, at the price of three guineas, and has not since been disturbed, but has been potted on as one entire plant. It had this year eleven fine, strong-flowering stems, each about eight feet high, and bore on the whole one hundred and fifty-two blooms, of which about one hundred and thirty were fully expanded when exhibited. The specimen was universally admired, no less for its perfect cultivation than for the beautiful condition in which it was shown, not a flower being bruised or pollen-stained, even though the plant had been brought a distance of eighty miles on an open railway truck. This plant was worthily awarded a Lindley medal.

Florist and Pomologist.

THE VICTORIA REGIA.—M. Van Hulle, chief of the Botanical Garden of Ghent, says the diameter of some of the leaves of the *Victoria Regia* have now reached nine feet, and the circumference twenty-seven feet. He recently piled bricks on one of the leaves, not until it was crushed down beneath the weight, but only until a slight rent had commenced. The weight was then put into a scale, and found to be two hundred and forty-six pounds.

Gardener's Magazine.

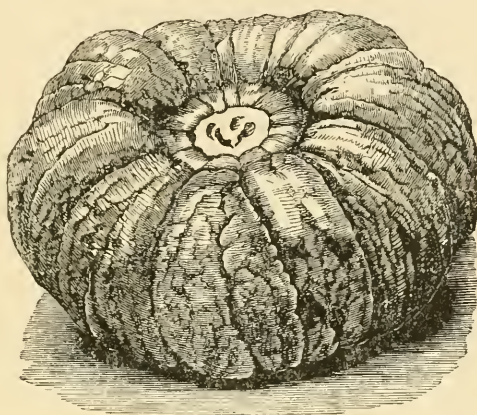
THE GROWTH OF PEAR TREES IN 1869.—A very peculiar feature in our pear trees upon walls this year is, that they have made very little growth. Those that have in previous years been most prolific in young wood, are this year quite remarkable for its absence. We have only three or four trees that I may call heavily loaded with fruit, so that it is not their fruitfulness which has caused a less vigorous growth than usual. With the exception of one tree upon a west wall, we have had scarcely any late summer pruning to do. I can only account for it through the excessive drought of last summer, which did not permit the trees to lay up their usual store of nutriment for this season. I do not know that I need confine this remark to pears, because apples and plums are about on a par with the pears in the matter of growth. Our pear crop is above an average. Plums, which were so promising on the 8th of May, are now scarce, owing to the cold weather which occurred after that date. Apricots, which had set abundantly before that time, all dropped from the trees during the last week in May.

J. C. C., in Gardener's Magazine.

COVERING SEEDS.—I may have missed seeing it recommended, but I have never found any covering for small seeds equal to short grass mown from the lawn. This is strewn over the seeds to about half an inch in depth, and then the usual watering given. It soon shrivels and becomes light, so that the seeds come through it freely. The birds, at least here, never attack them, and my crops never fail. At this cabbage-sowing time it will be found most efficient.

T. R., in English Journal of Horticulture.

PATERSON'S SUBERB MELON. — The extraordinary melon represented by the accompanying wood-cut (prepared from a photograph, for the use of which we are indebted to Messrs. Wheeler, of Gloucester), was raised, during the summer of 1869, at Pontypool Park, by Mr. Paterson, gardener to Mr. Hanbury Leigh ; it weighed twenty-four pounds, and measured forty-two inches in circumference.



PATERSON'S SUBERB MELON.

It was raised from the *Netted Scarlet-flesh*, crossed with the *Black Rock*. The fruit is of exquisite flavor, and very handsome, with fine rich scarlet flesh, and, as seen by the dimensions given, of extraordinary size and weight. It produced one hundred and sixty-nine seeds, which is all the stock of it.

Gardener's Chronicle.

THE CHINA FLAT PEACH. — This singular and little known variety, the very existence of which has been doubted, has lately been fruited in France, where it was re-introduced from China in 1857. It is figured and described in the *Revue Horticole*. We fear, however, that it will be of little value for out-door cultivation in this country, as the vegetation continues nearly to the time of flowering, so that in southern climates it is almost ever green ; and in the climate of Paris, it flowers so early, that nearly all the blossoms are destroyed by frost. We suspect that this would be apt to be the case, even in the more southern states of the Union. Still, we would recommend a trial of it, as the fruit is of fine quality. The summit is much depressed, and has a five-angled opening, containing some feathery, scaly, foliaceous appendages, the whole resembling the calyx of the apple, pear, medlar, etc., and forming a connection between them and the peach family.

THE PROCEEDINGS OF THE AMERICAN POMOLOGICAL SOCIETY are noticed by several English horticultural journals in terms of the highest commendation, and expressions of regret that there is nothing to compare with it in Great Britain.

LANTANAS. — These are so commonly grown as annuals, that few cultivators are aware of the stately dimensions to which they attain when treated as ever-green-shrubs, and grown on from year to year. Lantanas are usually regarded as stove-plants: yet most gardeners can grow them well in a warm greenhouse; and during the height of summer they may be safely planted in the open ground, or used as pot-plants for the decoration of balconies, &c. The soil required is a light and rather peaty mixture: the exact composition is of no consequence; half peat and half loam will do; so will a mixture of nice friable yellow loam, with a third part, or even half part, of leaf-mould. To be well drained is essential; and, while growing, they require abundance of water. The principal difficulty appears to be the keeping of lantanas during winter. What they require is a certain degree of warmth: if kept too cold, they become mildewed and miserable, and perhaps die at the collar; but if never in a temperature colder than forty degrees, and averaging not lower than forty-five degrees, will take no harm: and it matters not whether the situation be a sunny window, or a shelf in a greenhouse heated with hot-water pipes; for, in truth, lantanas are very accommodating as window-plants. The following are eight beautiful varieties: *Adolphe Hwass*, gold yellow; *Crocea superba*, orange and red, and a capital bedder; *Delicatissima*, pinky-lilac, a good bedder; *Fillioni*, rose-violet, yellow centre; *Fulgens mutabilis*, yellow, changing to orange-tinted crimson; *Monsieur Rendatler*, shaded rose and salmon; *Victoria*, pure white; *Xanthina superba*, yellow and scarlet. — *Floral World*.

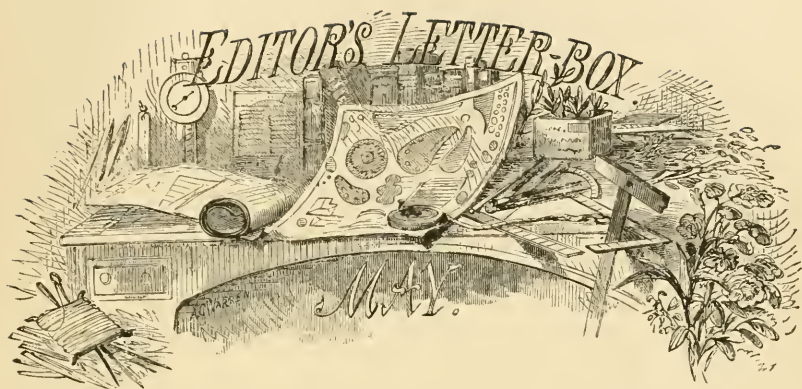
CULTURE OF THE CHINESE PRIMROSE. — In preparing the earth for sowing, let the pots or pans have plenty of drainage; and, in filling them with soil, allow an inch or more from the brim of the pot to remain unfilled. The surface of the soil should not be too fine, nor yet too coarse. Give the soil a good soaking before you sow the seeds; after which let it remain for a few hours, when it will be sufficiently settled to permit you to stir the surface with a pointed stick. Then scatter the seeds over the whole, and let the same have a slight covering of silver sand. The great evil to avoid is depositing the seed too deep in the earth. Another essential is to endeavor to maintain the earth containing the seed in a constantly moist state, without having to supply it repeatedly with water. The best way to do this is to tie paper or any similar material over the pot, somewhat after the fashion the cook does with the preserving jars or in roasting a fowl. They should then be placed in a shady part of the house or frame. That you may assist in keeping the earth moist, occasionally pour water on the covering in such a way that it will gradually penetrate through. Directly the seed shows signs of vegetating, remove the covering, or the seedlings will quickly be so lanky and weak as to be worthless: in fact, in such a state, great numbers of them will die off. Still, let them be shaded from the sun's rays, although exposed to the influence of the light. In the earlier stages of their growth, they require much care to prevent them damping off. My method of watering them while they are as yet in their seed pots or pans may be considered novel; and that is, to dip my hand into a can of water, and then allow it gently to drip from my fingers among the young seedlings. It quite repays you to

practise this little piece of coddling till they become strong enough to bear watering in the usual way. When you consider they are ready for the purpose, prick them out singly into thumb-pots; after which place them in a box-frame or any similar construction, let them be kept shaded from the sun's rays, keeping them rather close, and affording them very little air. Here I would observe, that nothing is gained by sowing your seed too early; because, as a rule, the plants do not commence growing till the middle of July, and then it behoves you to give them all the encouragement you possibly can, as from that time till the latter end of October they will grow very fast. If they begin to throw up flower-stalks before they have completed their growth, pinch them out. The most suitable-sized pot to grow them in for ordinary purposes is a five-inch, or 48-size: for later flowering, use six-inch, or 32-size pots. The soil in which they thrive best with me is leaf-mould thoroughly decayed, mixing with it about a fourth of mellow loam and silver sand. Let the plants be potted firmly in the soil: be careful not to allow water to lodge in the crowns of the plants. The white varieties especially suffer from an excess of moisture. — *Floral World*.

POTATO IMPROVEMENT. — I would suggest that the following mode of treatment may very probably give rise to new and perhaps unusually productive varieties of the potato; and, as real vigor of growth appears to be the best preventive of disease, it may also be hoped that varieties raised by such a process will resist its attacks better than any of those hitherto grown. The potato selected should be the largest sized one of the variety that can be procured. All the eyes but two should be cut out; or, if that is inconvenient, it should be allowed to sprout before planting, and all the young stems but two broken off. When it comes up, more than two stems will, in the first place, appear; and of them all but the two largest should be pulled up, care being taken not to injure the plant, to avoid which the knife may sometimes be necessary. Many small stems will continue to come up for weeks, which should be removed soon after their appearance, so that only two stems are allowed to grow. Some time before the flowers open, those parts of the stems which are above the peduncles should be cut off, and also the branches from the axils of all the leaves. The places of these branches will be quickly supplied by others for weeks; but these should be removed about once a week: also before the flowers open, and as soon as it can well be done, all but the two or three largest should be removed. It may be expected, when the fruit has ripened, that some of the seeds will be found to be of larger size than usual. Of these, the larger only should be planted, and the most productive seedling raised from them selected to proceed with the experiment, which I should expect might be advantageously carried on to the third or fourth generation at least. What would be the consequences, I cannot conjecture; but I believe that varieties of more vigorous growth would be raised, which might, perhaps, prove to be much less liable to disease, and more prolific. Having made the experiment but once, I am unable to give complete directions; but the principle will be sufficiently obvious. — *Cor. Gard. Chron.*

RHODODENDRONS. — Rhododendrons may be increased by seed, layers, and cuttings. In the month of May, scoop out a little hollow under a branch suitably placed for layering, and fill it with sandy peat or half-rotted moss, well chopped up with silver sand; bend the joint down, and fix it with a hooked stake, so that there will be no fidgeting with it after the branch is cut. Then loosen it from the peg, and with a sharp knife cut half through the stem and upwards an inch and a half towards the top of the shoot, taking care to leave sufficient wood and bark on the side not cut to maintain the branch in health. Insert a small pebble or slip of wood to keep the incision open; bend the branch down again, and bring the head of it upright, or nearly so, without breaking it at the cut part, and fix it firmly under the hook to the stake. Press the peat firmly about the tongue; and lay a bunch of moss over, with a stone or tile to prevent it being blown away; and leave the rest to nature. The branch will not be sufficiently rooted for removal for a year, when it may be cut away, and carefully planted, with others similarly treated, in a nursery-bed of peat, and well supplied with water. — *Floral World*.

PROPAGATION OF CENTAUREA RAGUSINA, CANDIDISSIMA, GYMNOCARPA, &c. — These are considered very difficult to propagate; but, like many other subjects that are reputed difficulties, the propagation is a very simple matter when you know *how to do it*. As the centaureas are the grandest of all the silvery-leaved bedders we possess, and among the most aristocratic plants known, a paragraph on their propagation will probably be acceptable both to private growers and to many in the trade. One difficulty is to get shoots long enough for insertion in the soil of the cutting pans. This difficulty is to be got over by taking the plants from the greenhouse to the stove in February, ten days before making the cuttings. The heat will lengthen the shoots; and, as soon as they are long enough to cut, take them. The soil for the cutting pans should be peat *without the fibre* one-half, silver sand one-half: mix this thoroughly, and then put it in an oven, and *let it bake, but not burn*, till completely desiccated. Dibble in the cuttings, and put bell-glasses over; keep on bottom heat; give no water for three weeks; then wet them moderately, and they will throw out shoots immediately, and, a week after, may be potted in thimbles or thumbs. — *Floral World*.



THE Editors of Tilton's Journal of Horticulture cordially invite all interested in horticulture and pomology, in their various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed; we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

B. J. P. asks our advice in regard to heading down some old peach trees, which have never been pruned, but neglected until the long limbs are bare, with the exception of a little young wood at the extremities. Our experience is not in favor of the course proposed. We have headed down many such trees, and though they generally throw out some good strong shoots, and look very promising for a year or two, in almost every instance they have failed before bearing fruit. We would, therefore, recommend rooting up such *old* trees, and planting

young ones ; but these must have a new location, and not be placed on the site of the old ones. When, however, trees of only a few years' standing have been neglected, so that they begin to present a lean appearance, the tops may be headed in to advantage by removing, say one half the length of the limbs, or enough to cause a new growth of wood to start out, not only from the ends of the branches left, but sufficiently near the centre of the tree. It must not, however, be thought that after thus heading in they will need no more care. The young wood must be thinned and shortened every year, or else they will soon be just as bad as ever.

In the Editors' Letter Box, on page 191, R. L. U. writes of having found some black grapes on a Catawba vine, and at the same time mentions the fact that a Concord vine stood within seven feet of the Catawba. Well, we are inclined to think that a cane from the Concord ran in and "mixed itself up with the other," for we have sometimes been slightly "obfuscated" in a similar way, but have always succeeded in unravelling the mystery through perseverance.

We no more believe that grapes ever sport thus, than we believe that barley can be made, by feeding down or otherwise mutilating, to turn to oats, as we have seen it affirmed. "'Tisn't natur." It is nonsense. A. C.

F. L. — It is not too late to prune your blackberries. Shorten in by removing the weak, slender tips, as the best fruit is produced on the stronger wood, which will remain. If the canes are too thick, thin out with a pair of long-handled shears, or with a hooked blade on the end of a pole. During the summer the ends of the young shoots should be pinched, so as to keep the plants in a compact, accessible form. It will also be more fruitful when thus pinched. We have known a cane of the Dorchester blackberry, in a rich soil, when the summer pinching was neglected, to grow to thirteen feet in length, which was somewhat inconvenient, to say the least.

R. R. T., Muscatine, Iowa. — The flower and leaf which you send are from the *Achænia mollis*.

MR. EDITOR : In the Journal for February, 1863, you speak of the barberry as a hedge plant, but truly remark that it has the fault of throwing up suckers, and spreading like the lilac. Now, this fault would be avoided if we could raise it from cuttings with the eyes removed, as we do currants when we wish for plants with clean stems. I have succeeded in raising lilacs thus, and to great advantage, having several of the finest plants of *Josikæa* that I have ever seen ; but a similar attempt with the barberry was wholly without success, and my object in writing this note is, to inquire whether you or any of your readers have been more fortunate. T. G.

We have received from Mr. H. A. Cheever, Provo City, Utah Territory, a dozen plants of Cheever's Seedling Strawberry, No. 2.

"AMATEUR on Hudson."—We also saw the notice in *Hearth and Home* of "Gaultheria Shallon," "Shrubby Wintergreen." Sorry we are not to be able to indorse the writer's views; for, as he truly says, "we have far too few evergreen shrubs." We fear, however, his new-found favorite from our north-west coast will not, even with the facilities offered by the Pacific Railroad, do much to supply the want.

Plants from our north-west coast are not generally hardy in New England. Whether they can be acclimated is yet a problem. The plant in question is no exception. We have had dozens of them, and in spite of every care have not one left.

They are not hardy unprotected, and with every care, and variously protected, not one has survived a second winter.

The plant is a native of thick pine forests. Its greatest altitude is eighteen inches, not "three or four feet." The leaves are seldom more than two inches, not "three," long, and hardly of a "deep glossy green," but coarse appearance. The flowers are by no means "small," but quite large, and are followed by an abundance of purple berries, which have a very agreeable taste.

For ornamental purposes, except as a cover in woods or shrubberies, in the Middle States, where it may possibly prove hardy, the plant is of no value. It will not stand sun or drought, and needs a moister atmosphere than our seasons afford to live at all.

If any wish to try the experiment of planting it, they can import it from England in large plants, all set with bloom, for about four dollars a dozen, freight and the outrageous duty of thirty per cent. included. It is a very pretty plant, and it is worth the cost to see the flowers and fruit for the one summer it will live.

Editor *Journal of Horticulture*.

I NOTICE in the *Germantown Telegraph* an interesting communication from Mr. J. B. Garber, giving the history of the Fallwater apple, as Downing has it or Fornwalder, as Mr. Garber calls it. But what I particularly wish to ask your attention to is his remark, that "while my trees were young the fruit kept in fine condition till April. At present the old trees bear but few apples, and what they do bear drop from the trees in August and September. None can be kept till Christmas." Can you, Mr. Editor, account for this change in the season of ripening? I have noticed it in other varieties. O. A.

It is well known that as a tree acquires age the season of ripening is accelerated; but this is quite insufficient to account for so remarkable a change as is described above, and which we, as well as our correspondent, have noticed in several varieties. Fruit from a weak or sickly tree will ripen before that from a healthy one, and we think that the symptoms denote a general enfeeblement of the tree; but when asked to go a step farther, and explain the cause of this enfeeblement, we are unable to do so. There is a general complaint of the deterioration of the apple in the older, and indeed in some of the newer parts of the country, and much thought and discussion is being given to the subject, which we trust will result in discovering the cause, but at present it is extremely obscure. We should be very glad to learn the views of orchardists, on this subject.

I HAVE a natural curiosity on hand, in the shape of an onion grown from seed sown in the spring, which produced a fine bulb and seed-ball at the same time. I have preserved the seed, which is of an excellent quality, and shall plant it another season, and shall watch with a good deal of curiosity for the result, as to whether here, as elsewhere, "like produces like."

Yours truly,

W. T. C.

HAMBURG, N. J., November 17, 1869.

[The occurrence described above is not unusual with biennial roots, such as the beet and carrot, but is less common with the onion. If the growth is impaired by drought, or any other cause, and afterwards resumed, they are very apt to run up to seed. New varieties are produced in this way, as the seed is more apt to vary than when produced the second year, especially if there are several varieties growing near together. — ED.]

MR. EDITOR: I have seen in the columns of scientific papers an account of a method of grafting strawberries on roses. Have you ever seen this operation performed; and what is your opinion of its possibility?

L. R.

We have never seen the operation, but we have seen the account of it. It is not grafting at all, but simply training a strawberry runner up the stem of a rose-bush, when, if neatly done, the plant which forms at the end of the runner might, provided it was not too closely examined, present the appearance of a graft growing out of the rose-bush. It is true we are told that the roots of the strawberry plant are cut off, and the plant grafted into the stem of the rose-bush; but it is simply impossible that they should unite, as any one who is disposed to do so may convince himself by a very few trials.

MR. EDITOR: Can you inform me whether the various fungous growths which infest the skins of apples and other fruits are injurious when taken into the stomach in eating the fruit?

Y. Z.

[We have never known this question raised before, and we certainly never knew an instance where injury was even suspected to have arisen from this cause. Every species of fungus seems to have its favorite *nidus*, and we advise our correspondent to dismiss all fear that those which thrive on the skins of apples will propagate on the coats of his stomach, and to enjoy his apples as much as he did before ever hearing of fungus. — ED.]



ON THE CULTURE, TREATMENT, AND VARIETIES OF THE CHINESE AZALEA. I.

By ROBERT BUIST, Philadelphia, Pa.

THE collection of Chinese azaleas here exceeds one hundred varieties, and comprises many thousands of plants in all stages. We have visitors, enthusiastic culturists of this plant, who pay us a periodical visit, to see the new sorts and to add to their collections. A few weeks ago we made a promise to a lady from New York to send to "Tilton" notes on their culture, habits, and general treatment. This simple introduction brings us to the point.

The Chinese azalea proper is far from being a new plant. Plants of it several feet high were shown before the London Horticultural Society, in bloom, fifty years ago; and, strange as it may appear, about that time plants of *Azalea indica*, *A. indica alba*, and *A. purpurea pleno*, appeared about Philadelphia, and were slowly propagated by layers in one of the then nurseries, all efforts at rooting by cuttings having failed. Not so now; their multiplication is yearly tens of thousands.

Treatment. — As soon as the plants are a few inches high, we put them in the open air, about the middle or end of May, fully exposed to the sun, and water twice a day all over, unless rain prevails. As soon as a growth two inches long is made, it is pinched at the point, to make it branch; unless we wish to train in a conical form, the leading shoot is not stopped. We do not pinch after the first of July; by that time the flower buds begin to form. This pinching, or stopping, is practised on all plants, whatever the size. If the pots are small, they are plunged to half their depths in any light material, such as sawdust, old tan, sand, or ashes, to prevent the great evaporation that small pots are subject to. When the pots are large, we are not particular about plunging, but freely expose every part of the plant to the sun, which is the great secret of successful bloom.

Soil. — For small plants we use sand and decayed leaves, the sand predominating; for large plants, our soil is one third white sand, one third loam, and one third leaf mould; these are about the proportions, and can be obtained anywhere; fine river sand will do as well as any other. They are not by any means particular about soil; they must have good drainage, and regular supply of water, with very frequent syringings; every evening is our practice; if you allow them to get severely dry repeatedly, and then give severe waterings to bring them up, you will be sure to have death.

Dropping their buds. — Casual observers cannot discover this. “Why do my plants not bloom?” Merely because they have been kept too much in the shade, or dropped their buds. When blooming plants become severely dry a few times, you will observe in December a little brown spot, pin-head size, in the centre of each shoot, or many of the shoots, which are the remains of the flower buds, and have been caused by want of water. A well tended, healthy plant never loses its flower buds.

Forcing, or bringing forward in a high temperature, is readily practised upon all the varieties, but most easily upon white colors, or those where white predominates; next this, lilac colors. A temperature of fifty to sixty degrees during night, with air and sunlight during the day, not overlooking a free use of the syringe or water-pot over the foliage, will insure a full and profuse flowering.

Constitution. — We do not know of a flowering plant so completely under the control of the gardener or amateur as the azalea; it will bear from ten to twenty degrees of frost, with dryness of atmosphere, or seventy degrees of heat, with moisture. It will succeed in a pit, green-house, plant-cabinet, or flower room. Give it sunlight if above freezing, and darkness if frozen. The old Indian white bears planting out here as well as the rhododendron. In more southern latitudes they are planted out as garden shrubbery, being more hardy than the camellia, and not so particular in soil.

Training. — “My plants are so rugged, how can I make them like yours?” This is an oft-repeated question. As soon as they are done blooming, cut them with the knife into any form you desire, give a fresh repotting, reducing a part of the old soil, and they will soon push forth with a freshness of vigor; as they grow, tie them into form, giving one pinching, and they will bloom freely the coming season.

Young plants can be trained into any form we prefer them — on stems of about one foot, and then trained into an umbrella shape, or even a cone shape. Those half standards can always be obtained at any well-appointed green-house nursery.

(To be continued.)

THE DOG TOOTH VIOLET.

LOOKING over my bound set of the *Journal of Horticulture*, I notice in the first article that your correspondent, Mr. Parkman, to whom I, in common with many others of your readers, am under deep obligation, remarks that “the American yellow dog tooth violet is very shy of flowering in the garden.” Now I remember, when a boy, digging up some of the bulbs and planting them in my little garden, where they flowered without care for several years. They were planted in a light loam, without special preparation.

O. A.

THE VINEYARDS OF VINELAND.

By PHILIP SNYDER, President of the Vineland Horticultural Society.

So much is said and written about grapes, — and very justly, — that something as to their success in Vineland will naturally be of general interest to the readers of the *Journal of Horticulture*.

First, it should be remembered that before 1862 there were *no* grapes here except wild ones. In the second place, it should also be remembered that this is not, in general, a settlement of *experienced* fruit growers. On the contrary, the majority were without experience until they removed here. Not many — at least of the earlier settlers — brought any large amounts of capital with them, though now this fashion is somewhat changing. As a consequence, the conditions, so far as they relate to individuals, have not been entirely favorable to the earliest possible development of the grape growing capacities of the place. As no land was sold before October, 1861, the earliest planted vineyard must date its first growing season not farther back than the spring of 1862. But there was little emigration then, and not many could have been planted before the seasons of 1863 and 1864. Even these were quite few, as most of the vineyards with which I am acquainted, and which are now most prominent for their success, were planted as late as 1866. These, consequently, have been cultivated during four seasons only. Of course no one knows what may be their success in the future, but so far the results are every way encouraging, at least for the Concord. The other varieties are sparingly planted, because not proved to be so profitable. The Hartford does fairly; the Catawba fairly in some seasons only; the Clinton always well, and is really a palatable grape here, making a good wine without sugar, and yielding heavy crops.

Mr. J. S. Warren made thirty gallons of Clinton wine in 1868, and during the next season, on the recommendation of one of our physicians, he sold it all in the place for medicinal uses at from three dollars to three dollars and a half per gallon. In 1869 he made three hundred

gallons, also without sugar, which promises to be of good quality. In some cases the Clinton is reported to rot, in others to crack from the exceeding compactness of the clusters; but, when marketed in good condition, it has sold in Philadelphia at about the same rates as the Concord. Fair specimens of the Iona have been shown, but it is entirely unreliable — unless we class it as a reliable failure. Mr. Sydney Sweet planted a thousand vines of this variety in 1866, at a dollar each, and they are all dead. Fortunately he could afford such an experiment. I do not know how well they were treated; I only know the result. Of the Ives I hear a good report; Mr. J. C. Parsons, one of our best judges of grapes, informs me that he ate them last fall in the vineyard of Captain A. S. Hall, and he thinks both fruit and vine superior to the Concord. So well is he pleased with this variety, that he intends to plant five hundred of them the coming spring. It ripens after the Concord. Some growers are very much pleased with Rogers's Nos. 4 and 15, and it is probable that more of them will be planted next season. The newer varieties are being cautiously tested; the Eumelan and Salem with good results as to growth. Of the Walter I do not know of any, and probably few will be heard of while the price remains at five dollars.

The Concord being here, as elsewhere, “the grape for the million,” when I speak of grapes I refer to that variety, unless otherwise specified. We do not stop to discuss its merits with those who cavil at its quality; for profit, it is, so far, No. 1 for vineyard culture, and until we can afford to be amateurs, we shall not invest largely in what has not been proved to be profitable. The Concords of Vineland, in sweetness and vinous qualities, have proved superior to the same grape in more northern states. This is very generally conceded, and commission men have not been backward to acknowledge it. The wine from the Concord is also very palatable. I should speak more emphatically of its merits did I feel qualified to pronounce an opinion on such a point; but I feel safe in saying this much of some made by Mr. Parsons last fall, though still wanting in age.

The following facts I have obtained from the individuals named, all gentlemen of my acquaintance, and whose vineyards I have visited.

Mr. Parsons, mentioned above, made his first planting, of two hundred and fifty vines, in the spring of 1863. The second season thereafter, 1865, these vines bore an average of about six pounds each, his sales returning him one dollar per vine. It was too good a crop, as one might suppose; for the next year they gave only about half as much, and rather moderate crops in 1867 and 1868. But last year they bore heavily, averaging twenty pounds per vine. In 1865 he planted two hundred and fifty more vines, and the total amount in 1869, from these and those first planted, reached eight thousand pounds. This was additional to what he used in the family, made into wine, and gave to friends. He is testing three different systems of training — the fan system on the common trellis (Husmann's, I think), the low trellis system, recommended by Mr. W. C. Strong in his work on grape culture, and that of the *arbor*, a system which I think originated here, by Mr. J. L. Carpenter. It consists of posts seven feet high, standing nearly or quite on the surface of the ground, but connected very firmly above by poles and braces, so that only a hurricane or time can bring it to the ground. It has two important advantages over most other plans: one in admitting of horse cultivation in every direction, thus economizing labor; and, second, in allowing the vine any amount of expansion overhead — which certainly ought to satisfy those vineyardists who are so anxious to train the grape so that its *natural* disposition to roam shall not be repressed. On this system it can travel at its own sweet will — at least until it reaches the outer line of the vineyard; but, even then, if "Nature" isn't sufficiently humored by that time, it can be turned back again, and sent around the vineyard. It is not designed, however, to allow everything to grow overhead; the system contemplates such an amount of pruning as the owner may deem necessary to health and profit. Along the uprights spurs are grown, but above there is a chance to prune or not, as judgment, experience, or time may dictate. The artistic effect, when loaded with fruit, is very fine; but what will be the effect of a continual shading of the ground through all the season of foliage, is questionable. One disadvantage will probably be, that of a stiff neck to the party who gathers the fruit, or who does the pruning; but possibly this will not be

worse than to get a lame knee in picking from a low trellis. This system is somewhat expensive, but is gaining in favor.

The Vineland Horticultural Society has for two years past awarded the first premium for the best vineyard, all things considered, to William A. Simmons. It consists of seven hundred vines, planted in the spring of 1867, on land which had borne sweet potatoes one year, and fertilized with muck compost. The oak stumps Mr. Simmons extracted with a machine; the pines were allowed to rot — which result generally ensues in about two years. The holes he dug two feet deep, and three in diameter. The vines were planted eight feet by ten — a few rows ten by twelve — and *eighteen inches deep*. With the soil, as he filled the holes, he mixed about one third of a common barrow load of muck, not composted, but which had been pulverized by the action of summer and winter weather. The first year he trained to one cane, and gave them clean cultivation. The vines were one year old when planted, grown by himself from open-air cuttings. The growth was superior. The next spring, 1868, he gave each vine two shovelfuls of marl on the surface, and the growth was extraordinary — in some cases twenty feet. He trained to double arms, on a low trellis, as recommended by Mr. Strong, and from each vine he that year took about one and a half pounds of fruit of very superior quality — hardly a cluster being other than perfect. The growth of wood, he thinks, was excessive, as, deeming it necessary to cut back severely, the best buds were cut away, and he got less fruit than ought to have been the case with such strong vines. Still his crop exceeded three thousand pounds; the quality, as before, very superior.

Mr. L. W. Smith, in 1868, picked eleven hundred pounds of grapes from eighty-eight vines, which netted him one hundred and thirty-five dollars, or at the rate of nine hundred and seven dollars and fifty cents per acre. The vines were planted by a previous owner, and Mr. Smith thinks in 1864. In 1867 they yielded only thirty-six pounds. All the manure Mr. Smith applied was one shovelful of unleached ashes to each vine. In 1869, the yield from the same vines was something over twelve hundred pounds.

In 1866, Captain William T. Ross planted six hundred vines (one

year cuttings) on a piece of new land near my residence. The ground had no preparation whatever, except that of grubbing and ploughing once, the stumps being left to decay at their leisure. The holes were small, as will be inevitable where stumps remain, and the work was done rather hastily and late in the season. To each vine he gave three fourths of a pound of ground bones, and between the rows, which were ten feet apart, he planted three rows of strawberries. He did not reside on the land, and the cultivation was inferior, the strawberries also soon occupying most of the ground. But in spite of these drawbacks, the vines made an excellent growth; he picked a few clusters the second season (besides a crop of berries on the same ground), and in 1868 two and a half pounds per vine, bringing him one hundred and eighty dollars, or about four and a half times the first cost of the land. In 1869, Mr. Chauncey Paul, the present owner, gathered from this and an adjoining vineyard of eight hundred vines planted in 1867, six thousand five hundred pounds of fruit. Reckoning the yield from the younger vineyard the same as from the others at their age, the rate per vine from the oldest vineyard will be seven and a half pounds, which, under the circumstances, was certainly very creditable.

Walter Robbins, of South Vineland, planted eleven hundred vines in the spring of 1867, on new land, not stumped, and of course without subsoiling. The holes were dug "about two feet square," eight feet by eight apart, depth not given. He applied no manure directly, but between the rows he planted round potatoes for two seasons, fertilizing these with four hundred pounds of flour of bone and phosphate to the acre. The vines made an excellent growth; but seven hundred of them, grown by a local dealer, Mr. J. W. Cone, did considerably better than the balance, purchased from a western nurseryman. The potato crop each year yielded about one hundred and twenty-five bushels, the first of these bringing him one hundred and sixty-six dollars and twenty-five cents in the spring of 1868, when prices were high. He had a few grapes in 1868, and last season a crop of seven thousand pounds, which netted him about five hundred dollars. It will be a matter of surprise if such a crop, from so young a vineyard, does not materially weaken the vines for several years to come.

A very successful and attractive vineyard is owned by Seaman R. Fowler. It has an arbor trellis, and was planted in 1867. It occupies a piece of land which formed part of a large farm brought under cultivation about four years before the inauguration of the Vineland settlement. I regret that at this moment I am without the details as to the mode of planting, distances apart, fertilizers, etc.; but the number of vines in bearing last season was about seven hundred, and the yield about four thousand pounds of superior fruit. The artistic effect of the arbor trellis was universally remarked by those who saw this fine vineyard last August and September. To heighten the effect still more, Mr. Fowler had thrown a graceful rustic arch of cedar poles, some fifteen feet high, over a drive-way through the centre of the vineyard, leading from his house to a grove; and up and over this arch the vines were rapidly climbing, and in a year or two more will, no doubt, completely cover it. Along the uprights and braces supporting the trellis, and everywhere along the horizontal poles overhead, and to a considerable distance up the central arch, were depending thousands of clusters of the very finest proportions and coloring, which, contrasted with the healthy green of the foliage, formed a picture not easily forgotten. Previous to removing to Vineland, Mr. Fowler had been engaged in business in New York city for twenty years, and his success in fruit culture is evidence additional to much already furnished, that when a business man applies business principles to the cultivation of the soil, his success is almost certain. Mr. Fowler's success in pear culture has also been marked; his Bartletts at our fair last fall taking the first premium without hesitation, and winning universal admiration.

My own vineyard consists at present of eight hundred and eighty vines, planted in eight rows, nine feet apart, the vines seven feet in the rows. Of this number, two hundred and sixteen were planted in 1866; twenty-four of them were Delawares, one dozen each of Rebeccas and Dianas, and the rest Concords, two years old. The ground had been cultivated to round potatoes, buckwheat, etc., in 1864 and 1865 (before I owned it), and fertilized to some extent with marl. These vines occupied thirteen thousand six hundred and eight feet of land, — less than one third of an acre, — and, after pulling out the stumps, I applied

twenty one-horse loads of stable manure on the vineyard ground *and* an adjoining area, covering altogether about one acre and three fourths. I was without experience in grape culture, crowded with work, and planted the vines hurriedly, digging the holes with a hoe, and of course they were not planted very deeply, perhaps about four inches. Between the rows of grapes I planted three rows of strawberries, and these occupied the ground pretty fully until in July of the next year. The vines were not staked at all the first season. The Concords bore a cluster now and then the first year; the next, perhaps ten pounds in all; the third season I allowed them to bear only about one pound per vine. The growth of wood was healthy, but not at all rampant nor remarkable. I staked them the second season, and trellised to four wires the third. They covered the trellis very fairly in 1868, and to its full capacity in 1869. I attempted little or no thinning last year, and they bore about six pounds per vine. The other varieties planted with the Concords received exactly the same treatment, and proved a total failure: most of them are now dead and replaced, and the few that remain ought to be.

In the spring of 1867 I purchased one thousand more Concord vines, one year old. The ground designed for the vineyard being only partially cleared, I planted about half of them temporarily by themselves, but put four hundred and eighty on the vineyard ground, ploughing once, making the holes three and four feet across by about eighteen inches deep, taking out the stumps only where they came in the way, and using no manure. About half of this ground had been cleared and ploughed the previous season, but had had no crop upon it, and no manure; the rest had been cultivated one season with sweet potatoes, and sparingly fertilized with muck compost. The vines were planted with care, and set ten inches deep; the growth was only moderate, and generally the new land showed the poorest result. Some were quite poor; these I dug up and replaced in the spring of 1868. At that time I also extended the rows, adding one hundred and eighty-four more vines. These were all on new land, stumps extracted, and lightly subsoiled. To make the subsoiling more effective, I ploughed a ditch in the line of the rows, making it fully eighteen inches deep, and giving

the subsoil as thorough a stirring as I could with one horse. The vines were the best of those which had been temporarily planted the previous spring, and about the roots I put five shovelfuls (Ames's round shovel) of uncomposted muck, which had been thrown out the previous fall, and was well pulverized by freezing and thawing. They made a good, and, generally, a uniform growth, and now average rather better than those planted in 1867. The yield from that part of the vineyard planted in 1867 and 1868 (six hundred and sixty-four vines) was about two and two fifths pounds per vine; and for the whole vineyard the amount sold was two thousand six hundred and one pounds. This was less than the yield of most of the others named; but I am satisfied, as I prefer the heavy crops when the vines are fully established. In the fall of 1868 a light dressing of marl was applied to about three fourths of the vines, and some stump ashes — amount indefinite, but small. In future I hope not to be so sparing of fertilizers.

The conclusions so far taught by observation and experience here, may thus be summed up: —

First. That the Concord is healthy, reliable, and profitable, and will thrive on treatment which kills more popular varieties.

Second. That ground bones and muck are among the best fertilizers, and that these can be economically applied at the time of planting.

Third. That subsoiling is not essential, but that clean cultivation *is* most important.

Fourth. That the soil of Vineland is well adapted to grape culture, and that grapes are likely to be among the most profitable of her fruits.

Fifth. That although much of our cultivation has been crude and imperfect, the results have very fully proved the capacity of the soil and the adaptation of the climate to this profitable and pleasant branch of fruit culture.

The comparative shipments of grapes in 1868 and 1869 indicate how rapidly the cultivation is extending. In the former season the total fell a little short of 26,000 pounds; last year it increased to 254,203 pounds, or over one hundred and twenty-seven tons. The

season, on the whole, was favorable; only the tenderer sorts mildewed to any extent, and the operations of insect enemies were limited. The first shipment, of eighty-two pounds, was made August 19. The next day 360 pounds were forwarded; on August 24, 1070 pounds, and August 31, 6690 pounds. On September 3 this last amount was more than doubled; but for the succeeding week the daily amount was less than half this figure. On the 10th, however, the season reached its height, and 25,663 pounds were forwarded, about equal to the entire marketed crop of 1868. The great bulk of the shipments ceased with September, but a few were made nearly every day until October 13, and stray lots until November. It is not safe to predict what the footings may be five or ten years hence; but it only requires the proportionate increase of the past year over that of 1868 to send it up among the millions.

I believe that none of the gentlemen of whose vineyards I have written — Mr. Parsons excepted, and possibly Captain Ross — ever cultivated grapes before coming to Vineland. It was almost inevitable that they should make some mistakes, and particularly the very common mistake of allowing the vines to overbear at first. After all, in comparing their success with others, who had had experience to guide them, I do not see that they stand at a very serious disadvantage. A determination to succeed, aided by an enthusiastic interest in the work, will go a long way towards achieving success.

VINELAND, February, 1870.

THE BERGAMOTTE PARTHENAY PEAR.

THIS variety, which we were once disposed to reject, we now consider one of the most valuable late cooking pears. The tree is vigorous and productive, and the fruit of good size and quality, easily keeping until late in spring.

ROSE VICTOR VERDIER.

By FRANCIS PARKMAN, Jamaica Plain, Mass.

THIS vigorous and handsome hybrid perpetual, though not among



ROSE VICTOR VERDIER.

the newest roses, well deserves notice for qualities which adapt it,

above most other perpetuals, to general cultivation. In this respect it may be classed with those excellent old roses, *La Reine*, *Baronne Prévost*, and *Souvenir de la Reine d'Angleterre*, with others of more recent origin, like *Maréchal Vaillant* and *Madame Clémence Joigneaux*, whose robust constitutions, and large, well-formed, showy flowers give ample assurance that they will not soon be superseded.

Victor Verdier is said to be a seedling from *Jules Margottin*, which it resembles in form and color, though it certainly does not surpass it in either, the parent flower being as near perfection in its way as any rose probably ever will be. The offspring is, however, of still stronger growth, with thicker petals; and, if not so well able to bear the highest test of criticism, is even more effective as a garden flower.

SUCCESSFUL PEAR CULTURE.—III.

By T. T. SOUTHWICK, Dansville, N. Y.

TRAINING IN THE ORCHARD.

MR. MARTIN gives about the same general training in the orchard to the standard tree on the pear root as to the dwarf on the quince. That is to say, he trains them both as dwarf pears should be trained. He usually buys two-year-old dwarf pears, as they can be obtained headed low. If he buys yearling standard pears, he plants them out, and has a careful man follow after the planters with a measure, and cut each tree uniformly two feet high from the ground. Should he plant two-year trees, either of standard or dwarf, he cuts back the new growth of limbs to within three or four buds of the body. The second year he cuts the new growth to six or eight inches, according to the vigor of the trees, and cuts less and less each succeeding year, merely enough to keep the tree in shape. Strong, straggling growers, like the *Vicar*, require closer knife-work than weak growers. *Buffum* and similar upright growers want cutting to outside buds to spread the tree out.

After the first couple of years, during which the trees are severely pruned, to give shape and produce vigorous growth (the pruning-knife is the poor man's manure), he chiefly relies on summer pinching to develop the fruitfulness of the tree as well as to shape it.

He regards summer pinching, after the first two years, as being better than depending on winter pruning, as it does not create the large mass of small, wiry twigs that long-continued winter pruning produces. By careful summer pinching, all the ends desirable in winter pruning are reached, with the addition of strong limbs, well-ripened wood, and early fruitfulness.

He trains standard pears to branch low down, so that they shall be much in shape like a well-grown Norway spruce. It will be found that on the end of the limb summer pinched a knob forms; this should be removed in early spring, together with the second growth that often starts after pinching.

COMPARATIVE VALUE OF STANDARD AND DWARF PEAR TREES.

Mr. Martin has had the best of success with dwarf pears, and values them highly. While the standard pear will eventually become the more valuable, yet the dwarf produces fruit so soon that he advocates the planting of them. His dwarfs have produced four or five large crops, and promise to be fruitful for many years to come. High-trained standards do not produce as good fruit as dwarfs, but as between low-trained standards and dwarfs he sees but little difference in the quality of the fruit. His total loss by blight for ten years, of both standards and dwarfs, has been but two per cent., and the account stands in favor of dwarfs. Root pruning of those on pear roots is resorted to, should they not be fruitfully inclined.

He plants ten feet by ten feet when dwarfs and standards are planted together, and ten feet by fifteen feet when standards alone, and on thin soil, sometimes standards ten feet by ten feet, and then trains low. He does not believe in the uncalled-for practice of converting dwarfs into standards.

FRUITING.

Pear trees often blossom profusely, and, without any apparent cause, drop the flowers, leaving the tree barren. Mr. Martin has found a remedy in rubbing off the surplus fruit-buds before blossoming, thereby retaining the vitality of the tree to perfect what remain.

There are two things that it is hard to persuade the mass who plant trees to do: to use the pruning-knife boldly, and to thin out fruit when a tree sets too full; but in no other way can large and fine specimens be grown. The sooner we, as a people, learn that pear culture is an art (easy to practise), and that one cannot let a pear orchard alone and expect fine, large fruit, the better it will be. Next to low training, the notable practice in Mr. Martin's system is a rigid and relentless thinning of the fruit.

One dozen large, fine pears will bring more money than half a bushel of common fruit. The trees are examined when the fruit is as large as cherry stones, and the weaker sets are picked off. Again, when the fruit is as large as hickory nuts, another thinning is given, leaving no more on than the tree can bring to perfection and not exhaust its vitality. Later, as the codling moth begins to work, the stung fruit is removed. The end achieved by this thorough thinning is regular annual crops of fine, large specimens, that command a high price.

PRESERVATION OF FRUIT AFTER GATHERING.

By Dr. J. S. HOUGHTON, Philadelphia, Pa.

I HAVE tried many experiments in keeping fruit, and especially pears, after they have been gathered from the tree; but none of the common expedients have seemed to answer the purpose. A very low temperature, and a dry, pure atmosphere, present the only sure means of preserving fruit. No sort of packing, such as sawdust, charcoal, dry sand, or land plaster, has proved even moderately successful.

Packing in air-tight vessels, so far from being useful, is rather fatal to long keeping; I do not even like close drawers or boxes. In barrels, with numerous openings for ventilation, I think pears *may* keep well, in a cold, dry atmosphere, but I am not sure of it. My objection to packing in barrels is, that it jams and bruises much of the fruit, which will be disfigured and injured by this process. No bruised pear will ever ripen satisfactorily. Hence, when pears have been packed in barrels, and carried any distance on railroads, etc., they will probably never keep well afterwards.

There is another objection to packing pears in barrels. If, after being packed, they are subjected for a few days to a temperature of seventy-five to eighty-five degrees, they will be so heated that *fermentation* will take place in their tissues, and the cells of the fruit will be partially ruptured, while chemical changes will be induced in the juices, which will be fatal to long keeping afterwards.

The result of my experience in keeping pears may be stated in a very few words.

I think pears intended to be kept for a long period of time, say six months or more, should be carefully hand picked, when well *matured* on the tree, and put immediately into a fruit-room at a temperature as nearly down to forty degrees as possible. They should be placed in shallow boxes or on shelves, in such a manner that the air can reach them, and so that they will not be bruised or crushed. The fruit-room should be kept constantly at about forty degrees; the air should be dry and pure; but no fresh air should ever be introduced into the apartment with a view to ventilation, as such ventilation would introduce fresh supplies of oxygen, the destructive agent of the atmosphere.

In such a room nearly all perishable fruits will keep for an incredibly long period of time. The most delicate pears, such as Bartlett, nearly tree-ripened, will keep for three or four months, if not longer, while the later pears, with tougher skin, will surely keep for six months, and some of the winter pears, I have no doubt, perfectly sound for a year. In keeping grapes, native or foreign, I believe not so much success has been achieved as in keeping most other fruit, though instances of great success are reported. Singularly enough, peaches, which are gener-

ally very perishable, keep surprisingly well in a cold, dry fruit-room; and, when brought from such a fruit-room into a warmer atmosphere, are not much affected by the change.

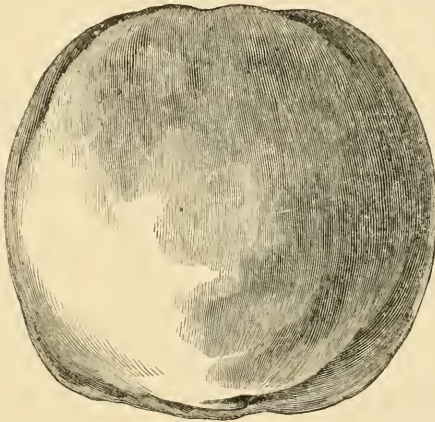
The great difficulty about keeping winter pears sound and plump which we find in this climate is, that it is almost impossible, without the aid of a cold fruit-house, to carry even winter pears through the hot weather in October, when the thermometer frequently shows seventy-five degrees of heat, and no cellar or vault can be found sufficiently cool and dry to keep the fruit from passing into a state of partial decay. It requires a temperature nearly down to forty degrees to keep pears for a long period of time, and in this part of the country no cellar, rocky vault twenty-five feet deep, or rocky well seventy-five feet deep, has ever shown a temperature lower than fifty degrees, or thereabouts; generally the coldest lager beer vaults (rocky caverns, thirty feet deep) stand constantly at fifty and fifty-five degrees.

Such a fruit-room as I have described, cooled with ice to an unvarying temperature of forty degrees, and even lower, in a simple and inexpensive manner, with a perfectly dry and pure atmosphere, without the aid of any artificial absorbent or dryer, I have had in operation at my fruit farm for three years with the most perfect success. This house was examined by a large number of pomologists last September, during the session of the National Pomological Society, and was reported upon by a committee of that society. The report will be found in the published proceedings. This house was invented by a practical man, who has had twenty years' experience in handling ice, and can be had by any person who desires to make use of it, without any of the extravagant sums which have been charged for similar houses. There are some ten or twelve houses of this kind, which have been in successful operation in the city of Philadelphia for three years.

The use of ice for the preservation of fruit I regard as an imperious necessity; and a simple, practically successful method of doing this, without costly machinery, or constant attendance, must be regarded by every fruit grower as an achievement worthy of attention.

MOUNTAIN-ROSE PEACH.

WE are indebted for the specimen of this fine new peach, from which our illustration was made, to Thomas J. Pullen, Esq., Hightstown, N. J., who, in a note accompanying it, says, "The Mountain Rose is a decided acquisition. It is a large white flesh freestone, early, a good grower, and very productive. The color is fine, and the quality excel-



MOUNTAIN-ROSE PEACH.

lent. I think its time of ripening will be very near that of the Troth's Early. It is a fine variety for the orchard-house."

The description which we made from the specimen sent is as follows: Form roundish, depressed at summit, the two sides slightly unequal; suture distinct; mamelon slight, and sunk in the suture, so as not to project above the general surface; skin white, nearly covered with red, on the shaded side dotted, towards the sun forming a red cheek; flesh white, juicy, and fine flavored, parting freely from the stone. The glands of the leaves are globose, small, and obscure.

THE CHINESE WISTARIA.

By W. H. NOBLE, Bridgeport, Conn.

I HAVE not seen in your Journal deserved notice of the versatile capacities and eminent merits of the beautiful Chinese Wistaria. There are several varieties, among them a white. There is also an American species, less vigorous, and less profuse in bloom, than its foreign relation.

As a graceful climber, of wonderful luxuriance, all lovers of floral elegance render tribute to its unrivalled charms of foliage and bloom. It is also very hardy and wonderfully vigorous. When once established, it readily drapes a hundred feet of wall or veranda with its green and azure mantle. This luxuriant loveliness it brought from its wild-wood homes in the flowery land, and, were it capable of only this lavishness of vegetation and charm, would be a peerless plant.

But it adopts educated habitudes quite as unique and exquisite. You can dwarf and subdue its native vigor into the modest stoutness and stature of a low shrub or bush, or the more ambitious stateliness of a small tree, or you may train it into the graceful droop of a weeper. To these forms, once adopted, it patiently adheres, exacting little care, and forgetting the rampant habit of its nature.

Much of that native vigor, which shoots up into wood and leaf in these adopted forms and habits, expends its force in the bloom which veils the plant in a cloud of azure. In the variety of a weeping tree it has no rival among that graceful form of plants; nor is the work of culture to induce these acquired shapes either tedious or difficult. You must, indeed, pinch or prune down its luxuriance, and for a few years stay its trunk by some support. But in that time it will acquire a robustness and stout stature, able to lift, six, eight, or ten feet from the ground, its graceful drapery of leaf and flower. No ornament on the lawn can be more charming than one of these subdued aspects of the plant. I have seen each of them arresting the delighted admiration of crowds. Why will not some of our nurserymen make a speciality of these educated forms of the Chinese Wistaria?

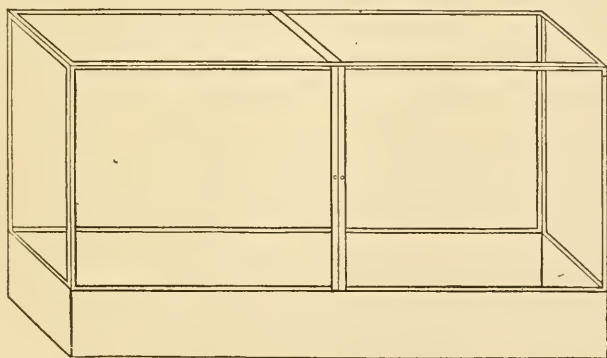
WARDIAN CASES.—No. II.

CONSTRUCTION.

By JAMES L. LITTLE, Jun., Boston, Mass.

THE principle upon which a case should be constructed are these. 1. Have no apparatus or arrangement for drainage. 2. Make your case air-tight as possible, allowing for no ventilation.

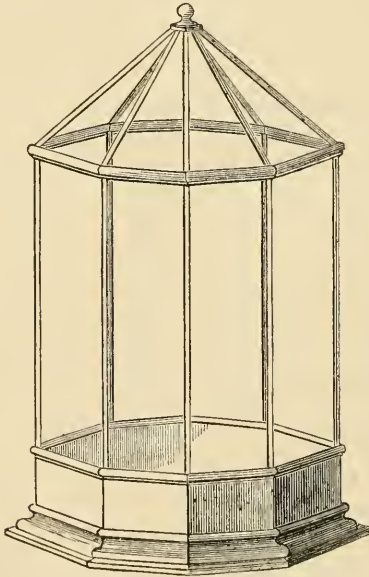
These are simple rules, and may seem to some to mean nothing ; but they cover the whole ground, and, if you wish success to be the result of your labors, follow them. It must be understood that any opinions or directions



RECTANGULAR WARDIAN CASE.

given here for the construction or management of Wardian cases, are the result of experience, and relate only to them as proper and successful articles in which to cultivate *ferns*, and not other plants of an ornamental kind ; as it is the opinion of the writer that cases constructed on *different* principles from those of the Wardian case are necessary for their culture. Let us look at the first rule given for making a case, and ask, Why should we provide no drainage ? It is unnecessary, and the reason is this : we have no ventilation. If we have no ventilation, or give no access to the air from outside, we keep the atmosphere in our case constantly charged with moisture, provided we water our plants well at the start. Now, what do ferns

require for their growth? *Shade and moisture*: upon the former, in a great degree, depends the latter. A northern or eastern aspect, where the morning sun reaches the case, we think is best. As regards *moisture*, we have the principle of self-support in an air-tight case; for, if you allow the sun to reach the case for an hour or so in the morning, you will find that the moisture needful for the growth of your ferns is extracted from the earth; and, when evening comes, this same moisture will condense and fall. Each day, this process of extraction and condensation takes place, and your plants flourish under a necessary and sufficient moisture. Now, this being the kind of air we want, we must not, of course, ventilate our case, and allow



OCTAGONAL WARDIAN CASE.

it to escape; otherwise the dry air of our rooms would enter, and a watering of the case become a necessity. This at once upsets all the benefits derived from these cases. The temperature, also, must be much more even in an air-tight case than in a ventilated one, where the constant opening and shutting of doors and windows would affect it. If we have no watering to do, we have no water to run off, and consequently require no drainage in the bottom of our case. Now, in this air-tight principle we get at the secret

of a Wardian case. It is a companion for all the year round, especially the winter season, when ice and snow cover every thing, and the temperature is such outside that we cannot give air to window-plants without their being frost-bitten. When things are in this apparently dead state without, *then* it is we cherish our green spot, our miniature conservatory, as it were: we can here sit down and spend hours watching the graceful forms and delicate fronds as they come up; or with the microscope, that wonderful instrument which leads us as it were beyond the beautiful into the mysterious workings of Providence, we can examine the fern-spore, the origin of the plant, which to the naked eye is the veriest dust, but now brought out clear, and its organism defined. Who would not exchange their bare stalks and a few tufts of leaves for a case so easily made, so easily taken care of? A few words on the material for their construction. Wood, glass, and zinc are the best articles. A case made from pine-wood varnished, with a zinc pan for the earth, will answer the amateur's purpose as well as an expensive or elaborately-carved one. A good proportion for a Wardian case is, length twenty-four inches, width eighteen inches, height twenty inches: this will allow five inches for the depth of the zinc pan, and give fifteen inches for the glass. The simplest and perhaps best form is the double cube; but cases can be made square, octagonal, or round, ornamented to suit the taste or means of the person. A glass shade placed over an earthen pan will answer as well as a large or ornamented case; although the latter we think more entitled to a place in the drawing-room or library than much of the furniture of the present day. The case, certainly, would be ornamental, and who can doubt that it would be instructive? Start with the right principles, and you can choose your own form and size.

In England, where the Wardian case had its origin, and at Kew Gardens, that monument of skill and enterprise, they follow out these principles as a general thing; and I am sure experience will prove them to be correct. The raising of ferns from the spores is easily accomplished in an air-tight case, and of this and other points relating to the "stocking and management" of these cases we shall speak in another number.

THE CALADIUM AND CALOCASIA.

By EDWARD S. RAND, Jr., Boston, Mass.

AMONG the most showy ornaments of our hot-houses, are the many plain and variegated leaved Caladia.

Within the past few years great additions have been made, both in species and varieties, to the former, by the discovery by collectors of the many showy species of the hot regions of the Amazon and Para, and to the latter by the skill of the hybridist.

A few years ago a score of kinds was all that the best collection could boast; now very few care to cultivate all that are really worth growing.

In all the species the foliage is hastate, but varies greatly in size. The green leaved kinds differ greatly in shade and in lustre, some being very light and glaucous, others very dark. The markings of the variegated kinds vary much, and naturally the plants divide themselves into two classes — those with white and those with red or rose variegation, and these again into the kinds in which the markings are distributed over the surface of the leaf in regular or irregular patches, and those where the variegations follow the midrib or the leaf nerves, either in narrow or broad bands.

The root of all the species is a flat or irregular shaped rough tuber. From this the shoots proceed, the leaves generally on long footstalks, and are followed by the flowers, which are usually hidden by the foliage. The flowers, however, have no beauty, and as they exhaust the plant, they should be nipped off as soon as they appear.

The beauty of the plant is in the foliage, and often in the spotted leaf stalks, and therefore the better the leaves are grown the more showy is the plant.

Most of the species are better for a few months rest; indeed, some will take it in spite of all efforts to keep them growing; others, however, may be kept in growth by heat and plenty of water, but the foliage is never as fine as on those which have been duly rested.

During growth they require plenty of water, — indeed, some species may be grown in water, — a rich soil, and a good degree of heat.

The foliage, especially when young, should be shaded from the direct rays of the sun, but plenty of light should be given, that the leaf-stalks may not become drawn.

Propagation is readily performed by dividing the tubers, and each portion with an eye will make a plant. It is not a good plan, however, to divide the roots too much, unless desirable to increase the stock; for the larger the plants the more effective they are.

Indeed, it is a good plan to plant several tubers of the smaller growing kinds in a pot. Some of the best specimens we ever grew were from many tubers planted in broad pans. While most of these plants partake of the acrid properties of the Arum family, the leaves and roots of some of the species are in tropical countries used as articles of food.

The tubers should be potted in January, in a light, rich loam, and, if placed in bottom heat, soon begin to grow. They speedily attain their growth, and develop the beautiful foliage, which retains its markings, and lasts in full perfection for many months. On the approach of autumn it is best to allow the plants to go to rest, by gradually diminishing the supply of water, until the foliage turns yellow, when the pots may be placed under the green-house stage, and the tubers kept dry until wanted for growth. While in a state of rest the roots should not be allowed to shrivel up, but any moisture should be carefully guarded against, as the tubers are liable to rot.

Frost is fatal, for the plants being natives of hot regions, are very tender.

We have thus treated of the caladium as a stove plant, and such it properly is, and as such only have we been able to grow it in full beauty.

There have been many paragraphs going the rounds of horticultural journals, recommending caladia as bedding plants for decorative planting, but our experience is not favorable in this respect. In spite of every care, the foliage has been poor, the markings dull, and the whole aspect of the plants anything but ornamental. We have yet to witness the successful employment of caladia as bedders, and should be delighted to learn the details of any successful experiment.

A far different plant, in its uses and availability, is the *Calocasia*, although the two genera are closely allied — indeed, are regarded as identical by botanists, and both are merged in *caladium*.

The best known species are *Calocasia aborescens*, *odorata*, and *esculenta*. The two former are very showy stove plants; of these *C. odorata* is the more desirable, and is a tall growing species, with delightfully fragrant flowers. The species most useful in the garden is *C. esculenta*. It is a stout growing plant, bearing huge leaves, of a rich glaucous green, and is unsurpassed as an effective bedding plant. The treatment is very simple. In May the tubers should be potted, and plunged in a gentle hot-bed; where there are green-house facilities they may be started much earlier. Plenty of water should be given after the plants begin to grow, and the glasses of the frame should be drawn on every night, and in chilly weather. About the first of June the plants should be set out in a rich soil, and be plentifully watered. They will soon develop their immense leaves, and increase in size all summer. After the first slight frost the plants should be taken up, and the roots preserved until spring in dry loam in a frost-proof cellar.

The plants increase rapidly, and each bit of root will make a plant.

We know of no better or more effective plant for decorative planting.

In good moist soil the leaves attain enormous dimensions — frequently measuring two feet in diameter. Plenty of water is, however, necessary to produce very large foliage.

As an edging to a bed of cannas or castor oil beans, this plant is particularly fine, and grown as a specimen, it makes a marked feature in the lawn. The flower is of no value.

We consider *Calocasia esculenta* as one of the best-foliaged plants. A few years ago it was scarce, but now good plants may be obtained for about fifty cents each. So every garden can boast a specimen *calocasia*.

We have said the roots should be started in a hot-bed; that is not necessary; they may be brought forward in a cold frame, or even planted out in the garden, after the soil becomes warm; but in this case the foliage will not attain great size, as our season is so short, that to develop its full beauty the plant needs to be well advanced when planted out.



CRITIQUE ON THE MAY NUMBER. — *Notes on Raspberries.* — A capital supplement, Mr. Editor, to your article of last September. Mr. Campbell is right, as he usually is, in the belief that there is more difference of taste in regard to raspberries than other fruits, — at least my observation coincides exactly with his. I have known a person who “didn’t like strawberries;” but for every such one I think we should have no difficulty in finding ten who “don’t like raspberries;” but I do not know that I have ever seen this difference in taste noticed before.

One word of advice to those who prefer the “tender” kinds, like Knevett’s Giant and Brinckle’s Orange, enough to take a little pains to secure them. Plant them in a poor, or at best a moderately rich soil. This is better than a strong, rich soil, for two reasons; first, the canes will not grow so rank, and therefore will be much more easily covered; or if by any chance you miss of covering them, the wood will be better ripened, and so will stand the winter better.

The Japan Lilies. — Mr. Parkman states that there were formerly doubts with regard to the hardiness of these noble flowers. Judging from the remarks not unfrequently made at our public exhibitions, the idea, even now, appears to be generally entertained, that they are unsuited for open culture, and are only the productions of the green-house or conservatory. Nothing can be more untrue. The fact is, we have few herbaceous plants which really withstand the winter better, and I am glad this point was not omitted in the article. I speak from experience when I affirm that though the bulbs be frozen to the centre, and though they be sealed up in the solid, frozen soil for three, — yes, four months, — without the softening influence of the warmth of scarcely a single day, they

will not fail to come forth healthy and vigorous in spring, and, in due season, be crowned with the gorgeous, almost tropical, beauty for which the Japan lilies are everywhere so justly prized.

Besides this, when once established, they increase rapidly by natural growth, while the small scales which may be accidentally separated in the process of cultivation soon develop into perfect flowering bulbs.

For exhibition or for specimen plants, high culture and a degree of extra care and attention will be required, as Mr. Parkman suggests; but the Japan lily may be grown, with a good measure of success, almost anywhere. It is never fastidious, — at least I have not found it so, — and I have even gathered a pretty spike from a bulb that had escaped from my border and found a home in the sward adjoining. Even when neglected and almost forgotten, left to struggle against weeds and drought, it not unfrequently imparts to the garden a generous, though undeserved, measure of beauty and fragrance.

In the hands of skilful growers, I doubt not “the time is coming when these lilies will even surpass their present beauty.” Let it be hastened.

The best Time for pruning Grapes. — This matter of pruning grapes has been pretty thoroughly discussed, both as to the time and the method; and now we have to go to work again, and try the different seasons and plans. No doubt there are vines enough whose owners didn't find time to prune them in fall or winter, which will afford fine opportunities to test the question of pruning after vegetation has commenced in summer.

But there is one point on which Mr. Kelley must allow me to differ from him, and that is, when he asks Mr. Underhill to give him facts instead of theory; for if I have read Mr. Underhill's articles rightly, he *has* given us a good many facts of the most interesting character. And as to theory — what is it? Simply the ideas, which, reasoning from observation, have been formed as to the best probable method to be pursued. Now, when I get such ideas from a man of common sense, and at the same time a careful observer, I think the chances of success are much greater in carrying them out than in working at random. For, after all, *some* theory we *must* have, and the choice lies between that which circumstances may suggest at the moment of action and that which has been carefully thought out beforehand, — the result, perhaps, of years of observation.

The Curculio. — I am sorry to say it, but the curculio has proved an overmatch for everything I have been able to bring against him. Defying man and the elements, his work of destruction goes on almost unchecked, and he must be regarded as a calamity second only to the canker-worm, or the mysterious black knot, of which he is sometimes accused of being the origin.

Thirty years ago, I had upon my place most of the varieties of the plum then under cultivation. The trees were models in form, and in health and vigor were everything one might desire. A “Washington” measured fully ten inches in diameter, and other varieties were correspondingly large and well developed. Some of these trees yielded a barrel of fruit each in a season. I remember the beauty of the Jefferson, Lombard, Cruger's Scarlet, Smith's Orleans, Diamond, Coe's Golden Drop, and others I have not space to mention, but shall probably never look upon or taste the like again.

For years I slaughtered the curculio whenever he could be found; my pruning-knife became a scalpel for the extraction of the excrescences from my diseased trees, but all to no purpose. The ground was strewn with premature fruit, and wherever I cut away the unsightly black knot, hydra-like there appeared another to fill its place. Looking at the whole subject, I must pronounce the curculio a success, and the plum a failure.

The wheelbarrow remedy may be applied to advantage on small trees, and patient hands may save a small portion of the fruit by extracting the egg of the insect; but plums will never find their way to the mouths of the million until the black knot and curculio shall disappear, or some method, at once efficient and practicable, shall be discovered to check them in their work of destruction.

The Volusia Orange. — The orange is a rare fruit to find described and illustrated in a horticultural journal; but I am glad to see the products of every part of our country brought to the notice of your readers. There is no reason why they should not be, and certainly you have secured a noble specimen.

Reminiscences of the Massachusetts Horticultural Society. — Now that this series of papers is finished, I may say, Mr. Editor, that I concur most fully in the belief with which you introduced them, "that the labors of this society have had a widely beneficial effect, and that a corresponding interest will be felt in its history." Certainly it must be most encouraging to those who are now founding horticultural societies in different parts of our country, to look back and see from what a small beginning this most prosperous society has grown. It is true, that in the multiplication of thriving and active horticultural societies those of Pennsylvania and Massachusetts, the oldest in the country, have lost something of their *comparative* importance, as has also the London Horticultural Society, the prototype of both; but the true lover of horticulture, while losing nothing of devotion to his favorite society, will never feel a single emotion of envy or regret at seeing it even overshadowed by younger associations, as these old societies may some day be by the vigorous and energetic, though youthful organizations of the West.

I could wish that the modesty of the writer of these interesting Reminiscences had not been so great as to induce him to withhold his name, for it would at once be recognized as that of one more active, perhaps, than any other, at least in the preliminary measures for organizing the society. *Bismarck.*

TRANSPLANTING RASPBERRIES. — The raspberry is very easily transplanted. We have set them successfully when they have made shoots two inches in length, though we would prefer to do it earlier. It is best to cut the tops well down; and care must be taken not to injure the young shoots, just pushing from the roots, which will form the bearing canes for next year, especially of the Black Cap family, which seldom has more than one such shoot.

ORANGES IN CALIFORNIA. — Oranges are so cheap in California, that the crop is hardly worth gathering. The yield is very large, but the fruit is of smaller size than usual.

PREPARATION OF SOIL FOR FLOWERS.—We take from Mr. Rand's new book, "Seventy-five Flowers," the chapter on the preparation of the soil, which will be found to answer many questions that puzzle beginners. The book in question is published at the office of the *Journal of Horticulture*, and contains much information of the highest value, especially to amateurs, for whom it is particularly intended.

"This is a subject upon which most works on horticulture contain much needless mystery.

The beginner, who has only a small plat for his garden, finds that to grow a few flowers he must become proprietor of a peat meadow, a sand bank, and a wood, or, at least, of a component part of each, in order to supply himself with the necessary peat, sand, and leaf mould which the authorities prescribe as necessary to the culture of the few flowers, which, in his ignorance, he fancied could be easily raised in his garden.

The result is, he is discouraged before making the attempt; regarding the limited supply of time, money, and available land at his disposal altogether insufficient for a pursuit which he fears will be a task rather than a pleasure, a source of anxiety rather than a recreation.

Now, peat, meadow mud, savanna, leaf mould, well-rotted turves and silver sand are all-important ingredients in potting and in plant culture. They are even necessary to secure the best results in many cases; but in general out-door gardening, while they may be useful in particular instances, they are not necessary, and most flowers may be grown to perfection without any of them.

It is true, all plants will not grow in the same soil; but there are plenty that will do well, and give full satisfaction in common garden soil. But what do we mean by common garden soil? Simply good black loam; it varies much,—being light or heavy as it approaches nearer to sand or clay respectively,—but it is the common soil of our fields, and what we find in most gardens. It need not necessarily be black; in New Jersey it is red, and plants grow no less freely in it.

In the pages of the present volume seventy-five genera of plants will be described, and these, with very few exceptions, are such as will grow freely and bloom well in common soil.

The depth of the soil is, however, an important element of success. Many plants root deep, and draw much of their nutriment from the subsoil; therefore to make this of good quality is necessary. Where only a few inches of loam cover a subsoil of sand or gravel, the heat of summer will parch the ground, and comparatively few plants will thrive. And again, where the subsoil is a heavy clay, there is danger of too much moisture in winter and spring, and the plants may suffer from rotting, or be thrown out of the ground by the frost, and perish.

The best way to prepare a flower border is, to excavate the soil eighteen inches to two feet in depth. If the subsoil is gravel, fill in a few inches of leaves, pine needles, old straw, or any coarse litter, and then fill up the bed with good loam, raising it slightly above the level of the surrounding ground, to allow for settling, and that surface water may run off.

If the subsoil is a close clay, fill in three inches of small stones or gravel, on these lay a thin covering of leaves or litter, and then fill up with loam.

It is advantageous to manure the bed, but all manure used should be well rotted. A liberal supply, dug into the bed when first made, will keep it in good condition for years.

It is not generally advisable to apply manure to the surface if the garden has been properly made, though it is often beneficial, if used as a top-dressing in the autumn; the finer portions will then be incorporated with the soil, and the coarser may be raked off in the spring.

Bulb beds are benefited by a covering of two or three inches of fresh horse manure and litter, as it comes from the stable, put on just before the ground freezes up, and raked off early in April, or earlier, if the bulbs start into growth.

In the preparation of a bed for bulbs, an addition of one fifth common building sand may be made with advantage.

The general error in bulb culture is, that the soil is made too close, causing the bulbs to rot, or be thrown out of the ground by the frost.

Very few garden plants require a peat soil, and none need the elaborate combinations prescribed for pot plants.

A garden bed, once well made, will last many years in good condition, and will require no other attention than forking over with a digging-fork (a spade should never be used) in spring, occasional weeding, and sometimes slight stirring of the surface soil in summer.

With such attention, all the plants we have mentioned will do well. The particular culture required for each—be it perennial, biennial, or annual, if such there be—will be found prescribed for each in our pages; but the best culture usually is, once well planted to let the plant alone.”

GRAFTING GRAPE VINES.—We find in the Scientific Press, of San Francisco, a description of a method of grafting grape vines, practised with success by Mr. George G. Briggs, of Oakland. A groove is cut in the side of the stock, with an implement made for the purpose. This tool is hook-shaped with a cross handle, and can be used in one or both hands. In using it the man stands over the stock, and cuts a groove into the side of the stock from the bottom up, drawing the hook towards him so as to make the groove a little the widest at the top. The scion is then cut to fit the groove and pressed in, melted wax is applied, and the earth drawn round the graft, and firmly pressed. Five men will graft about one thousand a day. The scions are cut in the fall or early winter, as usual, and kept in a cool, damp place; the grafting is performed when the vine has fairly commenced to leave out in the spring.

The same correspondent, speaking of the best varieties for California, says,—“Immediately along the coast, where the cool and damp sea breezes prevail, the White Malvoise is an excellent variety, as it is early, and less subject to mildew than most other sorts. The White Muscat of Alexandria is probably the best raisin grape known, and it is also of superior excellence as a table grape. The Black Hamburg and Black Prince are superior black table grapes. The latter stands transportation well. Among the rose-colored varieties, the Flame Colored Tokay stands ahead as a market grape. For high mountain districts, the Concord, Isabella, Iona, Diana, Delaware, etc., are worthy of trial.”

FRUIT ITEMS FROM MARYLAND FOR MAY. — We have received the two following notes, describing the appearance of the crops in Maryland, written on two successive days, the second of which presents a most lamentable contrast to the first. We are sure that all our readers will sympathize with the cultivators whose hopes were so suddenly disappointed.

“The pears have now almost all lost their blossoms and set their fruits, of which there is a very flattering prospect of the largest kind of a crop, unless disease or insects commence their ravages; but Maryland, at least this portion of it, has been very little, if any, troubled with either insects, or the different diseases to which this most excellent fruit is subject in some unfavorable localities. The Duchesse, Bartlett, Louise Bonne, and others, are particularly full of miniature pears, many, in fact most of which, will have to be removed in about a month, so as to increase the size of the fruit, as well as to preserve the tree, for many years, in its pristine health and productiveness.

The profit from pear culture, in this locality, is not at all problematical, but is a “sure pop;” it is so much so, in fact, that, although we have a good-sized orchard in bearing of the popular sorts, we intend to set others out, to a large extent, next year.

Grapes have grown to the length of six or eight inches, and, owing to the rather wet weather lately, are very easily brushed off from the vine, requiring us to use great care in tying up the young shoots. They have advanced sufficiently for us to see the great wealth of blossoms, which a propitious season will develop into an abundance of delicious, healthful, and inviting fruit.

The grape seems to have found its home here, for almost all varieties flourish, and bear large and remunerative crops; even the most tender of our native grapes do well, and promise a rich reward of golden gains, with a systematic course of treatment.

Gooseberries and currants are filled to overflowing, and here have proved to be exceedingly profitable, not being troubled with insects, mildew, or other diseases to any noticeable extent.

Of strawberries there will be an abundant harvest,—except in localities where the “weeds took ’em,”—the berries having already set on the vine, in great quantities, and the plants have that peculiar freshness and glossy-green color which indicates healthfulness and vigor—its attendant.

On carefully examining the buds of the peach, on trees in some of the large orchards in the state, I find that very few, if any, of the buds have been injured; and there will be an enormous crop of this fruit shipped from the States of Maryland and Delaware,—the great peach states; but, as a matter of course, the majority will be of an inferior quality, and will bring corresponding prices.

The raspberries and blackberries will, on an average, produce a good crop, the yield depending upon the careful cultivation bestowed upon them.

The apple trees are just now shedding their blossoms, which are in such quantities as to cover the ground with a white mantle, resembling, from a distance, a slight fall of snow. If they mature but half of the fruit, which *we* do not intend they shall, there will be an ample supply in this portion of Uncle Sam’s domain.

The cherry tree seems to outdo itself, in producing fruit without stint ; its cultivation here has proved it to be a success for profitable orchard culture. We have set out a young orchard this season, mostly of the Early Richmond variety, which is one of the best paying sorts.

In a few words, this section of the country is particularly and peculiarly adapted to fruit culture ; and those who are sceptical on the subject, and wish to satisfy themselves in regard to this matter, why, just "step around" to Maryland, where you will be treated with the utmost hospitality, — a truly Southern characteristic, — and, if you see fit to call on us, you will be received with welcome by us and brother horticulturists.

David Z. Evans, Jr.

"CECIL FRUIT AND TRUCK FARM," CHESAPEAKE CITY, MD., May 9, 1870.

"GREAT HAIL STORM IN MARYLAND. — We have been visited to-day with one of the greatest hail-storms that it has been our misfortune to be pelted with for many years ; and the damage done by it is very great, at least with and near us, and I suppose it has visited a large extent of country in the same hurried manner, leaving destruction and blighted hopes in its wake. It commenced at or a little after two o'clock, P. M., lasting for about twenty minutes or half an hour ; and, although of such short duration, an immense amount of hail fell, — most of the stones larger than a pigeon's egg, — the hail being accompanied by a most violent and dashing rain.

Immediately after the storm we went over our grounds, examining the fruit trees, truck, &c. The first place we visited was the hot-beds, and other beds, etc., and out of many hundreds of panes of glass in the sash, we were able to count the enormous sum of twenty-five unbroken ones. The rain first broke them, and then pelted down with merciless fury on the young plants, vines, etc., under them, destroying almost all, amounting to hundreds : the loss therefore not being very slight.

We next visited the grape vines, both around the house and in the vineyards, and it is really very discouraging to see the damage done here ; for the weather being so wet for several days made the shoots very brittle, and they were broken off or mangled to an alarming extent.

The cherries, pears, apples, etc., now took our attention ; and under all of the trees we found large numbers of young fruit or buds, and great quantities of leaves, which the hail had stripped from off the trees with its rude fingers.

The peaches have been thinned out very materially, and if the storm has been general, as there is no doubt it has been, both the price and quality of the fruit will be improved, owing to the wholesale expeditious thinning process. By carefully examining the fruit, we find that those that did manage to stick on the tree are almost all badly bruised, which will eventually succeed in reducing the crop of this and almost all other fruits to a fine point, whittled down.

The truck of different sorts has been badly cut by this unseasonable and much-to-be-regretted storm, which, like a pestilence, carried death and destruction with it, one on each arm. The tomatoes, cabbages, sweet potatoes, etc., have been cut up, as well as down ; and I do not see how such a storm could pass by without inflicting a greater damage than it did ; for the hailstones made

holes in the ground an inch and over in depth. I would like to send you one by mail as a "specimen copy," but I am afraid it would run off before it reached you.

In my next — perhaps in time for the July number — I will try to give a more general view of the extent and amount of the damages, which have, I think, been general; and the townfolks can just make up their minds to be compelled to pay a good round price for their peaches for "doin' up."

David Z. Evans, Jr.

"CECIL FRUIT AND TRUCK FARM," CHESAPEAKE CITY, MD., May 10, 1870."

SPECIALTIES FOR NURSERYMEN. — We do not doubt that the necessities of the case will soon bring about the division of the nursery business spoken of by a correspondent in the May number of the Journal. In England there have long been nurserymen who have devoted themselves to the business of raising stocks for fruit trees; and the tendency of things in this country is shown by such establishments as Messrs. Robert Douglas & Sons, at Waukegan, Ill., who grow annually from seed from three to five million evergreens, one to two million apple seedlings, half a million to a million pear seedlings, and a hundred thousand mountain-ash seedlings, besides smaller items. Most surely every part of this work, from the procuring the seed, through sowing, shading, weeding, etc., to the final packing and shipment, can be better done, than if the same care were divided among a hundred different objects, though they should occupy no more ground.

WILL THE CURCULIO DEPOSIT IN FRUIT WHICH OVERHANGS WATER? — At the meeting of the Pomological Society in Philadelphia, Dr. Underhill, the well-known grape grower at Croton Point, N. Y., asserted that the fruit on his plum trees, planted so as to lean over the water, was never stung by the curculio. In the February number of the American Entomologist, Dr. Trimble takes up this subject, and proves conclusively that trees overhanging the water have their fruit just as badly marked by the curculio as those where its ravages are most extensive.

THE CORN-PACKING BUSINESS in Maine is getting to be immense; and though it is principally done in Cumberland County, there are branch establishments at various other points. One factory in this county put up over twenty thousand cans per day in the best of the season.

STRAWBERRIES. — The San Francisco markets received, about the first of May, six thousand pounds of strawberries daily, and they sold at from ten to fifteen cents per pound.

NOTES AND GLEANINGS FROM FOREIGN EXCHANGES.

DIPLADENIA BOLIVIENSIS. — Allied in many respects to *Dipladenia urophylla*, the new species, which we now introduce to the notice of our readers, is a perfectly distinct plant, and a welcome addition to our stove climbers. It differs from the species just referred to in its leaves, which are less strongly acuminate, and its flowers, which are white, and have a more slender tube. It is, in fact, a



DIPLADENIA BOLIVIENSIS.

white *Dipladenia*, with flowers corresponding in size with those of the species above named.

Dipladenia boliviensis forms a compact, climbing, glabrous shrub, with slender stems, oblong acuminate, smooth leaves of two or three inches long, subterminal or axillary racemes of three or four flowers, which are almost salver-shaped, smaller than in *D. crassinoda*, and of a pearly-white color, with a golden-yellow

throat. The plant is of very free-flowering habit, and will therefore be an acquisition. It is a summer flowerer.

We owe its introduction, as that of so many other choice novelties, to the Messrs. Veitch and Sons, of Chelsea, who obtained it from Bolivia, through their collector, Mr. Pearce. It flowered for the first time in June, 1868, when it was exhibited, and gained the Royal Horticultural Society's prize medal, as the finest new plant shown in flower.

M., in Florist and Pomologist.

HOW TO RAISE NEW PEARS. — I feel that I can recommend to the young pomologist no occupation more interesting than that of raising pear trees from the pips of our finer kinds of pears. The operation is very simple, for he has only to save the pips of a favorite pear, and at once to plant them in a flower-pot, say six inches in diameter, filled with fresh mould, using his finger and thumb so as to press them into the mould to the depth of an inch, and in the centre of the pot, in a circle four or five inches in diameter; the pot should then be plunged in sawdust or cocoa-nut fibre, and the surface of the mould covered to the depth of three or four inches with the same material. Early in March this should be removed, and the young trees will soon make their appearance. To add to the interest of these young things, a label should be placed in the pot at the time of sowing, stating the name of the pear whence the pips were taken. In the month of April the young plants may be potted singly into small pots; when they are fully established, they may be planted into a rich border, about a foot apart; they will make vigorous growth, and after two years may be planted where they are to remain till they show symptoms of coming into bearing. This final planting should give a distance of from three to four feet apart.

I have to-day (January 20) amused myself with looking over my numerous seedling pear trees, from one to twenty-five years old. There are many hundreds of them, yet no two are exactly alike, either in foliage or shoots. It is, however, the latter that we must, at this bare and lifeless season of the year, look at and find some interest in, for there is not a thorn or a twig but has some interest in it to the eye of the cultivator. It is also gratifying to observe, or to fancy you can observe, *n'importe* which, the marks of race in seedling pear trees. My attention, this morning, was first called to a row of seedlings, about a dozen, from the Chaumontel pear, from unfertilized * flowers, the trees five years old. Now, in this row the mark of race is apparent, as there is a sort of family resemblance; yet every tree differs in minute characters, one being thorny, another without thorns, and so on. The next two rows are trees raised from Williams's Bon Chrétien, the flowers also unfertilized. These trees are most robust and distinct, with yellowish bark, prominent buds, erect habit, and altogether a most marked and distinct race, with some curious exceptions, such as two or three being formidable thorny bushes, and one or two of delicate growth. I confess to having a leaning to thorny seedling pears, they look so robust and independent, and they generally produce the best fruit; this is, I think, contrary to some continental theory, which has now passed away. The next batch of seedlings are from Williams's Bon Chrétien, from flowers fertilized with pollen

* This term is used throughout in the sense of not fertilized artificially.

of Glout Morceau. These trees are most interesting, from their divergence from those above mentioned ; some of them have stout, robust laterals, tipped with a sharp thorn, reminding one of *Gleditschia horrida*. Of these I have great hopes. A row of trees raised from Grosse Calabasse next attracts notice, by the robust habit of the trees, many of which, although at the utmost but six years old, have formed incipient blossom buds. These trees, now two dozen in number, seem to adhere to the habit of the parent sort with but slight variations. A row of trees raised from the Seckel, crossed with Duchesse d'Angoulême, is interesting on account of the strange mixture of habit, — for no two are alike, — some inclining to the weak habit of the Seckel, and others partaking of the robust habit of the other parent. It is curious to observe the adhesion to race in seedlings from the Doyenné d'Été ; they seem all alike, with a dwarf habit and thornless shoots, while some of the same kind, raised from flowers fertilized with Gratioli of Jersey, are so distinct in habit, and are thorny and robust beyond belief. I have, however, seen nothing more marked in its departure from the parental habit than some seedlings raised from that magnificent pear Van Mons Léon le Clerc, one of the largest and finest pears known : its habit is, as a rule, feeble, and it seems to require a fine soil and climate. The seedlings from flowers fertilized with those of Poire Prévost, and those from unfertilized flowers, are alike thorny and robust. Winter Nelis has given birth to trees all rather delicate in growth, and some among them little thorny bushes very unlike pear trees. In contrast to these are some trees raised from Gansel's late Bergamot (of the late Mr. Williams). They are stout, with large spines, and most distinct.

There is something most marked and interesting in Josephine de Malines pear, it is so perfectly distinct, not only in its fruit, but in its habit ; it was raised by what may be called chance, in contradistinction to what was then called the system of Van Mons,* by an old soldier, Major Esperen, then living at Malines, and who, about the same time, raised that fine late pear, Bergamotte Esperen. As far as I recollect, the old soldier prided himself on raising these two pears by chance, thus beating the system of Van Mons (reminding one of George Stephenson beating Paxton in cucumbers), by which no such distinct and good pears had ever been produced. Several seedlings from the former sort have been raised in England and in Belgium, all much resembling the parent, but, as far as I yet know, all ripening earlier. The uncrossed seedlings raised from it here very much resemble the parent in habit ; but two batches, one from Josephine de Malines crossed with Beurré Diel, and another crossed with Grosse Calabasse, are very remarkable for their deviations. I fear I am spinning out my pear seedling yarn to a tiresome length, but I cannot help noticing some

* The theory of Van Mons was, that pears raised from seed, after several generations became improved, and inclined to give fruit when quite young, so that after a sixth or eighth generation of one variety the seedlings would commence to bear at five or six years old ; so that, by parity of reasoning, seedlings from one of the latest of his seedlings, should produce from its pips trees that would bear when two or three years old. Prince Albert is one of the latest of Van Mons' seedlings ; but my young trees raised from it, now some five or seven years old, give no sign. The truth is, it was an illusion ; for I have found seedlings, raised from the Autumn Bergamot and the Brown Beurré, the oldest of our garden pears, come into bearing at the same age as those raised from the seventh or eighth generation of the Van Mons pears, which ought to have borne fruit at three years old, according to the theory of Van Mons.

seedlings from the unfertilized or uncrossed flowers of the Seckel pear, so smooth in its shoots and so upright in growth, which are as full of thorns as the common hawthorn; and also some from Beurré d'Amanlis and Beurré Hardi, both vigorous growers without the least spiny tendency, yet all the seedlings from them are beset with long, sharp, thorny spines. It has been often questioned if a young seedling pear tree could be brought into giving fruit prematurely by grafting a scion from it on an aged tree. At one time I thought this quite feasible; but from having been lately more careful in my experiments, I am inclined to think that both the seedling growing on its own roots, and the graft taken from it, advance step by step — their culture being equally cared for — towards bearing fruit. Some few years since I had some choice seedling pears placed in pots, and when they were one year old I had their leading shoots cut off, and grafted into some pear trees on quince stocks, two or three years old, also in pots. These trees, their pots plunged, stand in a warm position, and seem to advance *pari passu*. No difference whatever can be seen in the formation of their buds, now large and apparently incipient blossom buds. The two most noticeable sorts are seedlings from Prince Albert and Josephine de Malines.

I have thus far described a few, a very few, of the seedling pears here that have not yet borne fruit, and I may now perhaps be allowed to devote a few words to trees of various sizes, from ten to twenty years old and upwards, that have borne fruit in abundance. They are trees raised from good kinds, from unfertilized flowers, and have proved of much interest, although not of much commercial value. Good kinds of pears may be raised from seed with great facility, but it is not an easy matter to raise better pears than we already possess; the great advance to be made will, I think, be in seedling pears raised from flowers judiciously crossed. This has been done here by growing the trees in the orchard-house in pots, and then, under the direction of some one careful and calculating, by having the different kinds crossed. This has been done here, not by my own head or hands, but by one young and full of pleasant enthusiasm as I once was. Reflecting on the culture of pears in pots, under glass, till their blossoms and young fruit are safe from atmospheric influences, I venture to prophesy that, ere many years are passed, it will be found to be the only safe mode of cultivating choice pears with perfect success in England.

I will now proceed to describe some of the seedling pears alluded to that have borne fruit here. The first group deserving attention consists of about one hundred trees, about fifteen years old, all of most vigorous growth. They proved, last season, of great interest, for, in spite of the severe frosts at the end of May, nearly all of them bore large crops of fruit.

The first rows of the above group are seedlings from the Louise Bonne of Jersey, and are full of interest, for not only is their habit robust and distinct, but their fruit was remarkable for its beauty and goodness, — all like the parent sort, none better in quality, but differing in their seasons of ripening, so as to prolong the Louise Bonne season for some weeks; and they were all apparently more hardy than the parent; for while the May frosts destroyed all the fruit on three thousand trees of the parent sort, the seedlings were unscathed. One tree of this batch attracted my notice to a great extent: it is about fifteen feet

high, with fine bright leaves and bark, and upright growth, reminding one of a young Cumbrian in vigor. Its fruit was large, handsome, and good. I was so taken with the seedling that I at once adopted it, and called it the Rivers's Louise Bonne. It must have further trial.

Another tree of the same group was so loaded with fruit as to make it pendulous, and its branches are at this time thronged with blossom spurs. The fruit was like the parent sort, not quite so large, but melting and excellent. Several others of the Louise Bonne seedlings bore well, and have been distinguished by letters, so as to be recognized; some few years must elapse before their qualities are fully known. Among this group of trees are seedlings from Winter Nelis and many other good kinds, all chance seedlings, by which I mean from naturally fertilized flowers; all bore good crops, but none were superior to their parents. M. Carrière, in "Revue Horticole," calls such pears "*fruits du hasard*," and adds that "*un bon hasard est préférable à une mauvaise certitude*." Judging from such chance pears as Doyenné du Comice, Josephine de Malines, and others, chance or "hazard" has done much for pears, but we have still to learn the results of careful crossing. In the group above described is one seedling from Knight's Monarch, which, till last October, was a most interesting tree; its shoots were smooth and vigorous, and it seemed as if it would prove an improved Monarch. Alas for hope! It bore a full crop, which ripened on the tree in October, and was like an inferior Swan's Egg, one of the reputed parents of the Monarch. In looking over numerous seedling pears, from twenty to twenty-five years old, I was struck with the adherence to race of the Beurré d'Aremberg. There are here many seedlings from this fine winter pear, which have borne fruit, and good fruit, but not one later or larger than the parent sort. I hoped to obtain one as large as a Catillac, which is an old and unrivalled *fruit du hasard*, but I have hitherto been disappointed; it may come, as may a Josephine de Malines, of the Catillac size, and with its present fine quality.

In raising seedling pears, hope and disappointment, and disappointment and hope, run a race, which to the observant horticulturist is of never-failing interest — an epitome of life; but I can safely recommend the pursuit, for it keeps the mind in a pleasant state of unrest, hoping to the end, and smiling at disappointment.

Thos. Rivers, in Gardener's Chronicle.

NEW FRUITS AND VEGETABLES. — Good fruits and good vegetables are fully as important as good flowers — if not, indeed, more so; hence, we are not disposed to join in the chorus of complaint which is often heard as to the overwhelming supply of novelties, or supposed novelties, by which, it is affirmed, the unwary are not unfrequently taken in and mulcted. Good old things are not, indeed, to be lightly cast aside; they should be held firmly till something better is safe in hand; but in these progressive days there is, and must be, a striving everywhere for improvement, and it is the efforts thus made towards progression — not always, it may be true, crowned with success — which give us the flood of novelties complained of. From amongst these, however, it is indeed odd if some real gain is not annually secured, — a mere gradation it may be in most cases, as to size, quality, or productiveness, but here and there showing that an

entirely new vein has been struck. The past year has not been so prolific of novelties, in the way of fruits, as some of its predecessors. This may, in some degree, be accounted for by the uncongenial nature of the spring of 1869, which had a most disastrous effect upon fruit crops generally.

Commencing with the grape, the king of fruits, we have to welcome as a standard late white grape, Mr. W. Thomson's White Lady Downe's, a variety possessing all the good qualities of its black parent, the well-known Lady Downe's Seedling. Mr. Pearson, of Chilwell, may also be complimented on his success in hybridizing the scented strawberry grape with our better-flavored European varieties — an important preliminary step, though the hybrids obtained are not large either in bunch or berry — since they possess the true strawberry scent of the parent, and are very pleasantly flavored, especially one which is now called M. de Lesseps. Then we have, from Mr. Melville, of Dalmeny Park, another scented grape, called the Perfumed Muscat, which in appearance somewhat resembles a small Muscat of Alexandria, and is very pleasantly flavored. A curious sport from the Citronelle, with striped berries, resembling, in the peculiarity of its coloring and marking, the old Aleppo, or variegated Chasselas, has been seen at one of the Kensington meetings.

New melons are generally plentiful, but there are few more finely flavored or more distinct than Mr. Gilbert's Burghley Green-fleshed has proved itself to be ; while the new Italian variety, Triomphe de Nice, is also of fine quality.

Among stone fruits, we have acquired, of apricots, Golden Drop, a small, very early sort ; and New Large Early, a very decided improvement on the old form. Peaches yield a good useful variety in Large Early Mignonne, ripening about a week earlier than the Early Grosse Mignonne ; and of nectarines, Lord Napier is an early sort, of first-rate quality, raised from a stone of the Early Albert peach. These all come from Mr. Rivers's establishment. Of plums we have a valuable addition, as an early dessert fruit, in Dry's Seedling, a large, roundish-oval, reddish-purple variety, very pleasantly flavored.

Dessert apples have yielded little novelty. To Mr. Lawrence, of Chatteris, we owe a very pleasing addition to winter dessert fruit in Mrs. Ward, one of the most sprightly-flavored, pleasant, and beautiful little apples yet introduced, having the appearance of a Court of Wick, with the color of the Scarlet Nonpareil, from which it was raised. We may also notice, as a pretty ornamental sort, rivalling the Pomme d'Api in beauty, and of good quality into the bargain, an accidentally-crossed seedling of the Red Siberian Crab, raised by Mr. Jennings, and to be called the Fairy Apple. In pears, though many varieties have been brought forward, all have fallen short in point of flavor, for which, perhaps, the season is mainly to blame.

Small fruits have furnished M'Laren's Prolific raspberry, a double-bearing, large red variety, producing enormous crops on the young shoots ; its chief merit thus being its lateness. Black currants have given us, in Lee's Prolific Black, a sort larger and better than the Black Naples, and one which possesses the merit of hanging firmly on the bushes for a long time after getting ripe. Finally, to wind up with a *bonne-bouche*, we gain in strawberries the Ascot Pine-

apple of Messrs. Standish & Co., a very highly-flavored early sort, having all the characteristics of La Constante, but being much earlier.

In the vegetable department, improvement has hitherto been mainly effected by careful selection of the general stock; but now the hand of the hybridizer is upon them, and in peas especially, a great revolution has been effected. In Messrs. Carter's Cook's Favorite we have one promising addition. In potatoes, Mr. Fenn's Rector of Woodstock, an early, round variety of first-class excellence, is a sterling acquisition; and Mr. Turner's Beaconsfield Kidney is a large and beautiful, clear-skinned tuber, of fine quality. The American varieties, of which so much was expected, have proved of but little value. In salad roots, Messrs. Veitch and Sons' Chelsea beet has rarely been surpassed for uniformity of growth and sweetness of flavor. In lettuces, the sugar-loaf is an improved variety of the Brown or Bath Cos. In cucumbers, the winner of the past year's race was Blue Gown, a long, handsome, black-spined variety, of fine quality and prolific habit, now in Mr. Turner's hands. *Florist and Pomologist.*

"JORNAL DE HORTICULTURA PRATICA" is the title of a new periodical devoted to horticulture, and intended more especially for Portuguese readers, as the exponent of the practice and necessities of gardening in Portugal. The first number, dated January, 1870, contains articles on *Aralia papyrifera*, *Hibiscus speciosus* (accompanied with colored plate), Cabbages, *Coleus*, Portuguese Agriculture, with a Calendar of Operations, Chronicle of News, etc., etc. The business office of the Journal is at 6 Rua do Carmo, Oporto. We heartily wish this new venture a speedy and a great success. *Gardener's Magazine.*

NEW PLANTS. — *Androsace pubescens* (Bot. Mag., t. 5808). — A lovely Alpine native of the Pyrenees and Swiss Alps, often occurring near the glaciers. The plant forms an elegant tuft, and produces its white flowers in the utmost profusion.

Blandfordia aurea (Bot. Mag., t. 5809). — A fine liliaceous plant, perhaps identical with *B. nobilis*. The flowers are a fine deep orange, the three outer segments tipped with green spots.

Gladiolus cruentus (Bot. Mag., t. 5810). — A splendid species from Natal. The flowers are four inches in diameter, brilliant scarlet; two of the segments have curious lanceolate white stripes. "Considerably upwards of one hundred species of *Gladiolus* have been cultivated in Europe; indeed, upwards of one hundred and ten reputed species have been figured from living specimens: the greater proportion of these are, no doubt, lost to cultivation, and probably no horticultural establishment boasts more than a fraction of them. The genus belongs to that immense class of South African and other plants which were the favorites of our forefathers, were suited to the atmosphere of their plant-houses, heated by currents of dry air, and the cultivation of which is not understood by the generality of gardeners of the present day. It is greatly to be desired, now that such amateurs as are disposed to leave the beaten track of ordinary green-house and stove culture, should take up the culture of these and similar tribes, which would well repay all their care, and advance our knowledge of some of the most interesting and beautiful of our colonial floras."

Rhapis flabelliformis foliis luteo-vittatis (Flore des Serres. 1844-5). — An extremely beautiful variegated palm, also figured in plate 28, Hibberd's Beautiful-leaved Plants. As we have but few variegated-leaved palms, this is a veritable



RHAPIS FLABELLIFORMIS.

prize, the more to be valued (at all events, by amateurs) because it grows slowly, and does not, when mature, attain to any great size. The leaves are elegantly variegated with yellow stripes.

Cucumis anguria (Bot. Mag., t. 5817). — Dr. Hooker says, "This, the plant which produces the fruit long and well known in commerce as a principal ingredient in West Indian pickle, is much less well known than might be supposed, and its history, even at the present time, is obscure. Though a reputed native of the Antilles, it is known there, I believe, in cultivation only; and being the only species of the large genus to which it belongs, which has hitherto been regarded as a native of the New World, its claims to being really indigenous are, as Monsieur Naudin hints, very suspicious. For my own part, after a careful

study of many African species of *Cucumis*, I am strongly disposed to regard *C. anguria* as a cultivated annual state of some one of them, and originally brought by the negroes from Africa, though so altered by cultivation that it may not be possible to say of which. It clearly belongs to the group including the bitter perennial *C. prophetarum* (L.), which inhabits the drier parts of Africa and Arabia, and is conspicuous for its scabridity and its ashy white hispid pubescence, but which, in moister parts of Africa, is represented by the perennial *C. Figari*, which is green, and of which the foliage and fruit are very similar indeed to those of *C. anguria*; all these have ovoid berries covered with soft spines, and striped with white, and their floral characters are identical. The specimen described flowered at the Horticultural Society's Garden at Chiswick, in August of the present year, and the fruit ripened in November. There is an excellent description of it, by Naudin, in the *Annales des Sciences Naturelles*, where it is stated to be abundantly cultivated in New Granada, and latterly in Algeria. M. Naudin ably discusses the affinities of *C. anguria*, but pronounces against its possible identity with *C. Figari* or *C. prophetarum*."

Vanda Denisoniana (Bot. Mag., t. 5811). — A fine Vanda, resembling, in many of its characters, *V. Bensoni*.

Aloe (Gasteria) Croucheri (Bot. Mag., t. 5812). — "The handsomest *Gasteria* of the kind that has hitherto flowered at Kew." The racemes are numerous, and bear great numbers of flowers of a pale pink color tipped with green.

Ferdonia indica (Bot. Mag., t. 5814). — A curious little plant, which may be likened to a cyclamen in leafage, and a violet in flower. The leaves are a fine deep green, with gray veins, the flowers palest lilac, streaked with blood-red. A charming plant to grow in the stove, and the more valuable as it flowers in October.

Phalænopsis Parishii (Bot. Mag., t. 5815). — A lovely little orchid, native of Burmah: the flowers are white; the large terminal lobe of the lip deep purple.

Drymonia turialvæ (L'Illust. Hort., t. 603). — A fine gesneriaceous plant, with large, richly-mottled leaves and large clusters of elegant white flowers, which issue from ample calyces of a rosy-purple color.

Cattleya superba v. splendens (L'Illust. Hort., t. 605). — A splendid variety of this fine *Cattleya*: the flowers are of the richest rose-pink; the lip a fine vinous purple.

Epidendrum ambiguum (L'Illust. Hort., t. 606). — A charming species, most neat in habit, producing clouds of flowers of a pallid green hue; the lip delicately dotted with pink.

Centrosolenia bullata (L'Illust. Hort., t. 607). — A fine gesneriaceous plant, with large leaves, which are finely mottled, and clusters of short-tubed, pale-yellow flowers.

Chirita (?) lilacina (L'Illust. Hort., t. 608). — A beautiful herbaceous stove plant, bearing on a single stem a number of ovate velvety-textured leaves and pretty gloxinia-like flowers, which are pale blue with white throat.

PLANTING GRAVES. — Graves may be made to look very neat and pleasing by planting an edging, within the stone coping, of a small dark green ivy, such as the smallest-leaved helix, or the purple-leaved variety called *minima* in our classification, but in trade catalogues *Helix minor donerailense*. Any other very small-leaved ivy would answer nearly as well. In the angles, right and left of the point where the graves meet, small Irish yews or Chinese thujas would be appropriate. Within the ivy edgings plant some neat tufts of double white and double yellow primroses, with tufts of crocuses and *Scillas ibirica* between; but polyanthus are too coarse. Also plant a few hardy herbaceous plants, as it so frequently happens that those who plant graves live too far away to take proper care of them; and in such cases ivy and hardy herbaceous plants are invaluable, because a little weeding comprises pretty well all that is needed afterwards, and this can soon be done, when the graves are visited, as a labor of love. The best herbaceous plants for the purpose are the following: Double white, double yellow, and double crimson *primroses* (single ones are not good enough, and, besides, are coarse); *Saxifraga pulchella* and *S. hypnoides*; the early forget-me-not, *Myosotis dissitiflora*; the starry sandwort, *Arenaria cœspitosa*; the pink thrift, *Armeria dianthioides*; the (so-called) purple alyssum, *Aubrietia grandiflora*; the white and blue varieties of *Campanula carpatica*. More plants might be named, but no one can want more than half a dozen sorts for this purpose. *Floral World.*

PREPARATION OF MANURE. — The degree of decay to which it is desirable that manure should be brought before it is used, depends upon the condition of the soil for which it is in preparation. To a damp heavy loam it is best to apply the manure in as rough a state as possible, as every straw would serve for a time to keep the soil open and admit air; but in almost every other case, manure in an advanced state of decay is the most valuable. Horse dung, by its stimulating quality, is best adapted to cold clayey soils, while cow dung, from its colder nature, is admirably suited to hot sandy soils. Pig's dung is considered the most powerful stimulant of the three; but whatever kind is used, it is of equal importance that it be thoroughly incorporated with the soil, so that its nourishing constituents may be as equally distributed as possible. *English Journal of Horticulture.*

SKELETON LEAVES. — Having seen an inquiry relative to making skeleton leaves, I think it may be a help to the inquirer to state the plan which I have found to succeed very well, and which is as follows: Select mature and perfect leaves, steep them in rain-water until the pulpy part separates readily from the fibres; this generally takes several weeks, and succeeds best in warm summer weather. When all the soft part has been carefully removed (by the aid of a soft camel's hair brush), steep the skeletons in a weak solution of chloride of lime to bleach; the more delicate may become white in a few hours, but some will require a day or more. Next, place those that are flat, such as ivy, between sheets of blotting-paper, and press them with a moderately hot iron. I have found the leaves of holly, ivy, poplar, and pear suit best for making skeletons. A strong cement made of isinglass and vinegar is useful in setting them up.

S. Grubb, Glenam, Clonmel, in Gardener's Chronicle.



THE Editors of Tilton's Journal of Horticulture cordially invite all interested in horticulture and pomology, in their various branches, to send questions upon any subject upon which information may be desired. Our corps of correspondents is very large, and among them may be found those fully competent to reply to any ordinary subject in the practice of horticulture. Any questions which may be more difficult to answer will be duly noticed, and the respective subjects fully investigated. Our aim is to give the most trustworthy information on all subjects which can be of interest to horticulture.

We would especially invite our friends to communicate any little items of experience for our "Notes and Gleanings," and also the results of experiments. Such items are always readable, and of general interest.

We must, however, request that no one will write to the contributors to our columns upon subjects communicated to the Magazine.

Any queries of this nature will be promptly answered in our columns.

Anonymous communications cannot be noticed; we require the name and address of our correspondents as pledges of good faith.

Rejected communications will be returned when accompanied by the requisite number of stamps.

T. P. D. — It is said that the worm that destroys the foliage of the currant may be destroyed by syringing with carbolic acid soap-suds, as well as by dusting with powdered white hellebore. We should be glad to hear from any of our readers, who have already or may hereafter experiment with carbolic acid for the destruction of these or any other insects, as to the method and result of their experiments.

GRAFTING CLAY. — It would be timely to call the attention of the readers of your Journal to the fact, that in all cases where grafting-wax is generally used, it is better to apply instead a clay paste, tempered with fresh cow dung, to make it more adhesive. The least excess of tallow or oil in the composition of the grafting-wax is very deleterious, — it kills the wood as deep as it strikes in; besides, it is thus a worse than useless expense, and is very tedious in application.

When the surface of amputated stumps is large, or a young tree nearly broken off, or the bark on a tree bruised or sunburnt, besides using the paste, the parts should be loosely wrapped in with refuse cloth or rags, thus shading them, and promoting the flow of sap to the wound. It is the best unguent for all kinds of sores, and is always handy.

MARTINEZ, CAL.

J. S.

We are obliged to our correspondent for his note, but we must say that, having tried the clay for grafting purposes, we have long since given it up for wax, which we have found far less bulky, much more easily applied, and entirely free from the objectionable qualities which our correspondent attributes to it. We print his note, however, for the benefit of those, if any there are, who have met with the same trouble in the use of wax as he describes.

As an application to a tree broken off, or stripped of its bark, we can recommend it as superior to any other application. Directions for preparing it will be found in any of the old books on gardening, but as these may not be accessible to our readers, we will say, that the method is to mix equal parts of common yellow clay from the brick yard and cow dung, adding water sufficient to bring it to about the consistency of common lime mortar. If the clay has been worked and tempered, the proportion of cow dung may be somewhat greater. It is better prepared some time beforehand, and worked over a little every day. In case a tree is stripped of its bark, with no clay ready, and no time to prepare any, there is nothing better than to wrap it right up in fresh cow dung, which appears to be a great promoter of the healing of such wounds.

B. S. A. — The reason your pop corn “won't pop” is, that the variety is not pure. You have no doubt allowed it to become mixed with other varieties by planting it too near. In our experience we have found no kind of corn so liable to deteriorate by mixing with others as the small flint corn used for popping, and corresponding pains must be taken to keep it pure. Get some fresh seed from a source where you are certain of its purity, and plant it so far away from any other corn that no other pollen than its own shall reach it. It is difficult to do this in a small garden, but it is the only way. The pollen is borne in the staminate flower, at the top of the stalk, commonly called the “tassel,” and fertilizes the seed by falling on the “silk,” which is in reality the styles of the pistils of the fertile flowers.

FRUIT PROSPECTS. — From nearly every part of the country the reports which reach us are of an uncommonly favorable prospect for the fruit crop.

DESTROYING CATERPILLARS. — J. B. The method we have pursued with the insects is to clean them from the limb and crush them: this may be done by hand, or with the spiral brush invented for the purpose; and by placing it on the end of a long pole, they may easily be brought down from high trees. They may also be destroyed by a strong solution of whale oil soap, applied freely with a swab. We have seen a recommendation to burn them with coal oil, but this we have not tried. It is done by taking paper or cloth, saturated with the oil, fastening it on the end of a pole, setting it on fire, and holding it under the nest. Whatever method is adopted, must be early in the morning or late in the afternoon, when the caterpillars are in their nest. They will also be found at home on dull rainy days. The earlier they are destroyed the better; it is ten times easier to kill them as soon as they begin to spin their web, than after they have got their growth.

MORUS. — You will find some account of Downing's Ever-Bearing Mulberry in our Volume VI., p. 191. As far south as Philadelphia it is perfectly hardy, but here it is not. If you wish to plant it where its hardiness is doubtful, select a dry soil, and not so rich as to cause a late, luxuriant growth of unripe wood.

SCION. — The care of grafted trees the second year is very simple. Go over them all and press the wax into place where it has been raised by the growth of the grafts, supplying additional when needed. Then cut out clean all the suckers, if any have been allowed to grow (as is the best way on large trees), saving such as are in a position where a limb is needed. Then, if the grafts have grown very vigorously, it will be best to shorten them in, as otherwise, they are apt, when the wood is soft and the foliage abundant, in June, to be loaded down with rain, or to be broken by the wind, greatly injuring the future shape of your tree.

CALIFORNIA FRUIT. — We are under obligations to a correspondent for the following correction of some statements in the February number of the Journal: —

“I do not think the correspondent of the Boston Daily Advertiser knows much about the productions of California, or he never would have stated that ‘Oranges, lemons, and limes grow only in the southern part of the State — Los Angeles County and vicinity;’ and that ‘figs are raised in favored localities within thirty or forty miles of San Francisco.’ There are orange trees growing in Marysville, fourteen years old, also on General Bidwell's farm at Chico. Lemons and limes grow as easily as a plum tree, and figs are as common as any fruit we have; many families dry them the same as peaches or apples for winter use. One of my neighbors has over fifty fig trees, six years old, and they bear *three full ripe crops a year*. I send you an orange raised in Dr. Reilay's garden, Marysville, Yuba County. The tree had about two hundred and fifty on it. They commenced to ripen in November, and many of them remain on the tree yet. It will blossom again in a few weeks.”

J. T. S.

E. C. K., Elgin, Ill. — We know no reason why ivy should refuse to grow over an iron door. Plants grow freely on wire or iron trellises. You must look further for your reason. Are there any special draughts near the door, or any foul air?

D. S. H., Macomb, Ill. — An article on caladia appears in this number. The plants you send are No. 1, with white flowers, — *Solanum jasminoides*. No. 2, a young shoot of *Lonicera brachypoda*.

C. G., Cedar Rapids, Iowa. — The plants sent are, No. 1, undistinguishable from a single leaf. Send all information you have of the plant; the leaf sent may belong to a dozen different plants.

No. 2. is *Habrothamus elegans*.

No. 3 came as a single dry, broken leaf, and is undistinguishable. In sending plants for a name, tell all you know about them, — their habit and nature, whether hardy or tender, — and send flowers or fruit with the foliage.

MRS. D. C., Erving, Mass. — Your rose must be very fine; the "insects" are red spiders, and your treatment of showering is the right way to get rid of them. The editors or publishers have no slips, plants, or seeds for sale. Washburn & Co., Joseph Breck & Son, or Hovey & Co., of Boston, can supply all you want.

MRS. J. T. S., Yuba City, Cal. — The plants you send are, —

No. 1. *Platystemon californicum*.

No. 2. *Nemophila insignis*.

No. 3. *Dodecatheon Meadia*, the California variety.

No. 4. *Entrichium fulvum*.

No. 5. *Lithophragma heterophylla*.

IDEM. — Box is best propagated by cuttings or by division. Pull the plants all to pieces, and every bit with a root will make a plant; the low kind used for edgings is *Buxus sempervirens suffruticosa*.

