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Worthy of Extended Culture.

An Effort to Win Recognition for the Nurseryman's Art, as well in Methods of PROPAGATION, as in the SELECTION of SORTS.

"This is an art
Which does mend nature, change it rather, but
The art itself is nature:"—Winter's Tale.

Third Edition.

LOUISIANA, MO.:  
MISSOURI NURSERY CO.  
(Copyrighted.)

From photo. of Early Sweetheart grown on original tree, in the Summer 1890; tree over forty years old.

Early Sweetheart—This beautiful, fair and delicious apple is the choicest dessert early variety known to us. We believe there is now no apple in cultivation its equal in either size or quality—earliness considered. The old tree, over forty years of age, in the orchard of Mr. Griffith, of this county, is vigorous and bears well; Mr. G. says, "it always bears if any apple does." When visiting the orchard the past Summer, Mr. G. called attention to the difference between this and Early Harvest; the former, large, smooth and perfect, without any trace of scab, while E'y Harvest on much younger trees, were small, very scabby, unsightly for market and hardly touched by the family—the Early Sweetheart "we all like so much better." Tree, thrifty, very vigorous, long-lived, productive. Fruit large to very large, roundish oblate, regular; very smooth, waxen yellow; dots large, white, scattered. Flesh, light yellow, fine grained, tender, melting and juicy. Flavor, aromatic, almost sweet. Quality, best early apple. Use, dessert, and near market. Season, with E'y Harvest.

See "Whole Root vs. Piece-Root Trees," etc.
MO. STATE HORT. SOCIETY; extracts:
Mr. Kirchgraber: Would plant Clayton largely. It produces to perfection; bears young; keeps long. C. C. Bell: I have kept 250 Willow T. V. in the last year. They were produced from seed collected last fall. Like them so well, would pay extra price for them; would pay more for Clayton than for Ben Davis. Have just received a letter from Tex., saying Clayton sells here for $5.
C. C. Bell: Mammoth Black T. grows very large in North Ark.; not equal to Mo. apples; I like the fruit but prefer Clayton as it sells well and is a longer keeper.
Mr. Gilbert: Ark. Black. It is said, has been kept, whereas the others do not. It is grown in North Ark.
Pres't Evans: A buyer andshipper from Ark., told me it was one of the best and most profitable they grow. Mr. Thompson: It was thought Gano would supersede Ben Davis.
Pres't Evans: How much better is Gano than Ben Davis?
Mr. Gano: Very little difference in quality. Most difference is in color.
Vice-Pres't Murray: Once I thought I could tell the difference by taste; by trying got them mixed and now cannot tell them.
S. W. Moore: The Gano is more beautiful than Ben Davis. York Imperial is growing in favor, good because of its size. See its gain in favor wherever grown; worthy of attention.
Prof. Clark (Ag'l College): York Imperial is one of the best keepers we had in 23 varieties.
Mr. Minkler: Most of the Missionary and Little Romeante family are the best apples we have for S. W. Mo. They are the best keepers, and if larger would be very valuable.
[Here there was some discussion of variety names (Gilding, Small Romeante, Carthouse, etc.).]
Mr. Wild: Miniker is not as profitable as Little Romeante; its a poor keeper. Minkler is better than Miniker.
Vice-Pres't Murray: Would plant for N. W. Mo., Winesap in place of Rome Beauty. Mam. Black T. does well. We have planted on rich soil, and well cultivated. E'y Pennock, good summer apple.
Mr. Gilbert: Two trees E'y Pennock and one Winesap yielded last year 150 lbs.
Mr. Meeks: Would pick Jonathan early.
Question from Green Co.: Would you advise planting Clayton for market?
Mr. Kirchgrauber, of Green Co.: Would plant it.
Mr. Bell (apple shipper) of Cooper Co.: Better market apple than Ben Davis. Prolific bearer.
S. W. Moore: The Miniker and its seedlings are the best apples, I believe. Ben Davis is producing a family. Watch every good seedling. We are going to get some of the best apples known. Babbitt is developed to make it a western apple; hope it will equal the Baldwin in the east.
Mr. Blanchard: Chenango Strawberry is excellent. Others present endorsed Mr. Blanchard's opinion.
Vice-Pres't Murray and others endorsed York Imperial.
Pres't Evans reported Gano as holding its own and a most excellent variety.
Mr. Durand: Every fruit grower should evaporate. Last year raised 5,000 lbs. of apples—culls, &c., and realized $800. Ben Davis is best for evaporating.
Mr. Laughlin: Will it pay to raise apples for market? I think it will pay, especially in the curr. market situation. Failure! Two years ago it was too late to harbor doubts as to the productiveness, size, color or quality of the apples grown.
Orchard planted in 1876; about 500 trees: 250 Ben Davis, 50 Willow T. V., 65 Wine Sap, 48 Romannte, 20 Jonathan, 10 Bellflower, is Domine.

[These reports made in 1888, in 1890 Mo., had a good year of apples, and in 1890 more apples than all the troubles in the United States. I would like to know the cost of the crop of orchards selling as high as $100,000.]

I also give Vice-Pres't Murray's statement:
Eight acres of orchard planted 17 years ago each on Ben Davis. Eleven acres planted in corn for first 5 years, then clover, wees hogs for 3 years. Last year have given clean crop of apples growing out of that. We are spending $84.32 per acre per year. If entire orchard had been Ben Davis, a would at least have been $100 per acre. My figs for the past 7 years have brought $1.25. Most shape of the large family used a great many apples and we have good deal of cider and fed the refuse to stock; used in plowing and as fuel.

SOCIETY;
Pres't Evans: The orchard has been cultivated usual crops and style for 24 years. Prune exact and some disease. Mr. Harvey—low heads, careful timely cutting. Mr. Davis: Only to find a man with personal knowledge, about orchard of Mr. Davis.
Mr. Davis: Has a large orchard, say 1300 trees, ages vary from young to old. We have clover, weeds and hogs. He is quite particular as time of year when his hogs shall or shall not be his trees, and now has no damage done by them. For some years, we have had hogs on our soil was hogs, his only pruning essentially so that of Mr. Harvey and Mr. Murray. Profit close alongside of Mr. Murray's and Mr. Harv's [Mr. Harvey]'s varieties besides those of Davis and Whitlock are not done notably well for Dr. Davis. The statement of Mr. Harvey challenges our admiration for its determination, but its accuracy goes without question.
Mr. Murray: I own one joint mine and has been before this all every 5 years. Mr. Davis lives 15 miles from here and gives me a lot of advice as to when to pick my apples and have constantly had of their good health and crops. No two of these orchards have been treated precisely alike, but they all have profited.
While the experience of Mr. Harvey and Mr. Davis strongly to clover and hogs used with care and judiciou.[sic] alternated with clean cultivation.
Vice-Pres't Murray: Questions for answer.

Question, Will it pay? When we ask the question about any other business, we do not go at it. The orchard man with his incompetence, has failed, but to the wide wise who has pushed the business and succeeded, or if salable, has done so because it would not pay. A man who, by careful work, of cultivating, has made the losses—set the figures beside each other and see if both have paid the percent, etc. profit, these three and more than most of the orchard farmers in your district during the same period of years.

The great importance of at least occasional c. was never made so apparent as here in 1888. An explicit and practical guide to this and adjoining counties, orchards that have bee half-cultivated, bare good crops, selling at high prices while those neglected and grown up little, and send up, prospects for the future better.

The following was written us by the late Avery, one of the most successful Iowa Horticultur.

**"BURLINGTON, Ia., March 10.**—Glad to know you all are not felt competent to advise men with so much at any experience as Stark Bros., but I will name varieties I have passed the oral and proven may be kept for years. I have been in this state and to been only I would plant largely to insure success. I have a long history here. Osceola is the problem tree. I have seen a few that have failed, while most other kinds are killed or nearly so. Goldsberry Goldsberry three-quarters hardy and, next to C and I R. She, most profitable. If the fruit is not too big, it should come and I would not plant it. I would not put it in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no apple superior quality or of profit, if left on the trees as most others do, as it is too much evaporated. The apples. Treated as above, they keep well into late fall. The quality of Grimes Golden and the bearing of the tree is such that if I would, I would plant large, a variety which is as it is. It is put in a dry cold cellar; then no
Much of the fruit was very fine. Mr. G. P. Bird, of Mobile, says, "I have had a very good crop of peaches this year, and they are of good quality." The peaches are tender, and the flesh is sweet and juicy.

Three Peaches, Mo. Pippin, and Mo. Pippin, are three of the best varieties for the Southern market. They are all early varieties, and are very popular among the fruit growers of the Southern States. The Mo. Pippin is a hardy variety, and is highly esteemed for its good quality. The Mo. Pippin is a large, firm, and juicy fruit, and is extensively grown in the Southern States.

Mr. Minkler: My advice is to go slow on the Russian Apples. Beware, gentlemen, it is not cold alone that kills apples. The best advice I can give is to plant a new orchard on a good, firm site, and to take care of it. The Russian Apples are a good variety, but they require a good site, and plenty of care.


Mr. Hammond: Substitute Benoni for Porter and Grimes Golden for Willow, and I like the list better.

Mr. Emerson praised Monte Bella, a local apple; planted 12 years ago, it proves a good grower, upright, and productive. It is an excellent tree. It is a good variety, and is very fine in appearance, both in quality and profess-bearer; begins ripening Sept. 1st and season lasts until early winter.

Mr. Rockwell: How many members, if any, of the apple family are there in your orchard? Mr. V. Turner says, "in our orchard there are 10 varieties of apples, not worthy of even third for the reason that in this short life and fast turnover." Mr. Webster: Ye. Transparet (Grand Sultana) is a mousy bearer, medium to large, beautiful clear yellow, good shape, and color, good quality. Second Early, Gregory, Grimes Golden. Late Winter. Ben Davis, Willow Twig, Jonathan.

Mr. Hammond: For medium size fruit and a mutton bear, try the New Jersey varieties. Mr. Rockwell: Will the demand justify planting? Mr. Hammond: Yes: always. There are just now many new varieties and some promising apples being tested. See John's article, and you will see the importance of the right variety, and demand our very greatest efforts.

KY., Ark., and Mo. that are superior to sorts grown in Ill.

Mr. Morris: Has visited 400 orchards in Chattanooga and surrounding counties. I find the healthiest trees are those that are not loaded down too heavily to shade their branches and fruitful tops on high ground and hilisides. M. Blush and some others on the high places are still sound and robust. Willow Twig is the hardiest, and Mo. Pippin will be a better bearer; a good keeper; sells well and in March is not bitter. Willow Twig might have been short-lived, second class, but first class yielders. Mr. Morris plants 8 years ago as grafts will make 3 bushels to the acre. Mr. Minkler is a sturdy tree, an even bearer, a rich apple and a sweet apple. It is a peach and a strawberry. The wine is an exceedingly hardy tree. Mr. Blush, in the northern part of the state, is a very good variety. It is an old long-lived tree, a great bearer; good market apple.

Mr. Golden: An interesting story of one of our members. Mr. J. H. Bird, says, "I have had a very good crop of peaches this year, and they are of good quality." The peaches are tender, and the flesh is sweet and juicy.
Mr. Dunlap: On a trip to Wis, found one of the most promising new apples there is McAloon White; it is planted largely. The original tree of Gibb Crab still stands in Nursery row; it was selected from a very superior old tree, rich, late, very superior for older and canning, and with a few peaches to flavor cannot be told from Peaches. For early Summer, Yel. Transparent may prove a valuable variety, in 11, but for our season, known only in any of our Rustic orchard.

Mr. Gaston: Salome fully meets my expectations; quality good and tree hardy, a long keeper.

Mr. Davis: How to grow when taken from Nurseries, but once established, are all right. I know this to be the case with Willow Twig.

Mr. Dunlap: Many farmers are deterred from planting fruits through ignorance of culture and an idea that it is beneath their dignity. While there is much to learn, it is easy to make a success of fruit by ordinary culture, a knowledge of which every farmer possesses.

Mr. Piper: Have been experimenting growing apples for more than 30 years. I root-grafted with fair success about 20 years, until 1855, when I lost all my root-grafted trees by freezing. Salome apples here on exhibition are as fine as can be found anywhere, whether in the South or North. If the South would ship 10,000 bushels of apples as Salome, there would be a ready sale. It is the best new apple I have; will keep a whole year. Ready for use in Nov, but a keeper of first quality. Of 32 sets of fruit-grafted trees, 27 were taken from nurseries, 5 Yel. Transparent, Tifftsky, Sweet June. Second early: Duchess, Gravenstein and Strawberry. Fall: Haas, M. Black, Black Star, Russian Black, Yellow Bell, Dutch Black, Dreamer, Wax, and several others.

Mr. Dunlap: I found the following specimens of Jefferis now in season. He says this is the best late Summer apple we have, mild sweet, very agreeable to taste, always fair size and perfect shape and always bears full size fruit.

Mr. Munkler: Five million fruit trees are starved to death. No varieties will stand all abuses and starvation

- Blue Grass sod, horn pruning, cattle browsing, and the gnawing of calves, sheep, rabbits and mice, and bear a heavy crop every year. What is all this hide and cry about apple culture? And these fruit trees starved to death. I have entire orchards from the orchard for 20 years and made no returns whatever. Have not even applied the Scriptural injunction to "sow your bodies with the word of God and pray by the Holy Spirit, repeat it, starvation. You say they winter kill. I say they are starved to death. When I go through the orchard, I always see the Blue Grass, Blue Grass," but where I manufactured last year the apples were plentiful and fair.

Mr. Goodrich: Where are we to get fertilizers? A little late in the season, but when you have a good strong grow, plow it under; then seed to Buckwheat and plow that under.

Question: Any native wild plant?

Answer: Benoni, Ely Harvest, Duchess, Twenty Oz., M. Blush, Jonathan, Grimes Golden, Munkler and Ben Davis. The latter, though always opposed by some, is always a good seller. Munkler and many firms, not only for its appearance, but extra fine, rich flavor.

"THE TOUCH OF A FINISHED HAND." To the good judgment and wisdom of our honored and much loved father, the late Hon. J. C. Dunlap, more than to all others is due the success of these nurseries. The broad and firm foundation long ago laid, which has been so carefully built up, has been by his father while yet but a mere boy of 14 years. For more than 40 years he successfully labored to advance horticultural science. Long before the practice of planting native trees and shrubs was heard of, he was exactly in the way he had planned. Man proposes but God disposes. First came the panic of '73 and misfortunes followed. For more than ten years he was in his most successful efforts to dispel the clouds that lowered upon our house, sacrificed first health, then life itself.

"Oh what a noble heart was here undone, When Science's self destroyed her favorite son!" We cannot hope to render any adequate tribute to his revered memory—we do what we can. Perhaps we cannot say anything so well or that would be half so expressive as the brief tribute paid by the friend who knew him long and well—Pres. J. C. Evans: "William Stark was one of the best men I ever knew. As to the dark times—not one of us now regrets or undervalues the experiences through which we have passed; aye, rather we know only too well how precious a jewel is worn for so little in this world; not a day, nor an age, but for all time."

Mr. Wm. Stark, of Louisiana, Vice-Pres., read a Report [1868] for Northern District of MO. Presented to the Secretary of Agriculture.

For the consideration of this Society this report on the progress of horticulture in this country is offered. Having been engaged and interested in the pursuits of literature, and in the development of the fruit-growing business, I have been in the company of men who have devoted themselves to the operation of the difficulties with which our noble pursuit has had to contend—few of which it may not be deemed of place to describe. These associations, and the other individuals and institutions unconnected with them, and the army of帮你做作业, 翻译成英文, 这是一段解释性的文字, 适合阅读理解和自然语言理解任务。
to responsible agents who conduct a legitimate business and have a local reputation and a name.

It is true that many of our district. The cultivation of these indisputable fruits is increasing; and with proper care in selection of sorts, and reasonably careful cultivation in connection with general farming, the most valuable of the small fruits is no longer an experiment here.

The Quince, Pear, Peach and Apple.

The Quince, although cultivated in a very limited way, proves almost everywhere a success. Its delicious fruit, the pear, has been generally neglected, but as far as the harder varieties have been grown, they have been favored. A few pear trees in rich garden spots, in old orchards and elsewhere, have the slightest show of blight. Some worthless seedlings and suckers have not borne fruit till they were 12 or 15 years old. Hence the pearl needs experience and time, and is a country, and, if it does, we must wait half a life-time for it to bear; when the fact is, the pear will produce fruit as soon as the apple—and nobody now doubts the expediency of planting apple trees, because they are so long coming into bearing.

The Peach has not produced here with quite so much certainty satisfactory results as the apple, according to recent work, but the past season, however, has proved an exception to this rule, for, while the crop this year has been most abundant throughout the state, the orchardists in St. Louis and elsewhere have reaped the reward of the late spring frosts in various localities, usually more favored than ours. [Same was the case in 1859—history repeats itself.] But, as peach trees are so easily raised, and the peach is one of the best fruits, those who should plant, and be prepared for the good time coming is. It is nowhere promised that they shall reap who fall to sow.

The Cherry. There is reason to believe that our orchards on the Mississippi slope have paid so little. The failure, I think, should not be attributed to any local causes, but to a general failure of the season causes. The most prominent one, perhaps, was the great amount of rainy weather, together with the cold east and northeast winds that prevailed during April and May, followed by the very warm weather; local conditions produced the most favorable results where the shelter of the east and northeast was most complete. The futility of the season. I am also inclined to the opinion that many supposed fruit buds were imperfect, that the real germ was not fully developed, on account of the early and long continued dryness. The season’s influence was not sufficient to bloom out close observation revealed the fact, plainly apparent, that a very large proportion of those buds which came to life in the early season of the codlin moth and other insect pests did a large share of work for us. The question very naturally arises, should this partial failure of the apple crop discourage other than those particularly interested in apples, the crop, or the farm, or the orchardist for the use of his family, or him who contemplates planting largely for market? Certainly not. We have customarily a failure in some line of work, or in the growth of agricultural crops is to the farmer, because the fruit grower bestows comparatively little labor on his orchards in the seasons of failure. It is true the season is rapidly on the increase. The business of growing apples for market is yet but in its infancy in Missouri. [22 years later, this is no longer true]. There is no doubt that more than half the lands in it are easily susceptible of being made productive orchards, and that a very large proportion of the crops grown on these lands would be profitable, which world cannot surpass. With almost a boundless extent of country, both north and south of us, always for a market, and often elsewhere, it is, I think, a great mistake to consider the labor that has been put forth for the production of apples.

As for the price goes down, the consumption increases. The price may go much lower than we generally think is profitable; but the land and labor upon the business will pay well. If the proper spirit is manifested in the planting and care of good commercial orchards, the time is not far distant when we shall have a surplus of this fruit, and which the world cannot out. And I feel confident, all things considered, that no branch of the whole agricultural and horticultural business of the country will be a failure.

Another important fact connected with the production of market apples, especially late varieties, is very favorable. They may be raised in connection with general farming, dashing with that pursuit less, perhaps, than any other branch of horticulture.

**List Apples reported for Missouri; 1867:**


Mr. Kelly: Is this for a single locality? It would be too much for me to keep and do it. Prof. Swallow: Take upseratin. E. Harvest adopted. Prof. Swallow would reject Red June.

Mr. Stark: It is not a good bearer.

Mr. Huyck: It has many orchards of it. A fair apple, if you manure and prune, and sells well.

Mr. Bowen: Sops of Wine is a great bearer; too small an apple.

Mr. Hilliard: Bears transportation best of any. Mr. Huggins puts it at the head of the list. Only second rate. Like things as are bearing. Mr. Kelly: Wants information. C. Strawberry.

Mr. Clagett: Fine, large size, handsome, good flavor, desirable, and salable.

Mr. Hilliard: If it is one of the handsomest and best.

Mr. Tice: It is the best bearer we have.

Mr. Kelly: Full Pippin don’t pay for ground used.

Mr. Early: Prunes to perfection.

Mr. Stark: Does well. I want a good many of them.

Mr. Hilliard: I sent 300 barrels to the pinery. Ships well.

Mr. Kelly: Newton Spitzenberg is best in flavor, but falls from the tree. The children will not need to climb the trees—the fruit all lies on the ground. Mr. Thompson: Better than in Ohio. Hangs well in Jefferson county; one of the best for profit—equals Winexpert.

Mr. Clagett: Has much culture, on limestone soils, the Newton Pippin will do, but not for market.

Mr. Stark: On good, high, dry land it is profitable. On ordinary soil will not do; should not be raised extensively.

Mr. Edwards: I reject it for market: unprofitable.

Mr. Clagett moved to add Rome Beauty.

Mr. Berry: I have little. A good late fall and early winter apple; will keep till March, but loses it flavor. Trees incline to overbear. Rome Beauty on the ground here, but not many, sold for $4.25. The buyer afterwards told me he was offered $7 at Louis ville, provided they were as good all through as on the top of barrels—buyer selected and emptied out, paid $7, or about $240. Trees in barrells, took them to Nashville and sold at $9 per barrel.

Mr. Clagett: Willow Tie, should put on the list. Keeps and cures.

Mr. Clagett: Huntsman’s Favorite is a fine showy apple; has a fine aroma, very salable, good bearer.

Mr. Whethor: Houghton’s had brought it to my notice in 1842: I went on a visit to Cincinnati in 1844, and exhibited it there. They thought much of it, and got some grafts. It is the finest apple in Johnson county. A Mr. Huntsman says to me, he had some of the old ones, and put them to him some seedlings; he planted them, and this was one. The trees were 24 years old when I saw them. Keeps a long time. Men and women say of it, I keep them, but it is not a bearable tree.

Mr. Sanders: I have some trees, good growers, early bearers, upright trees and bear fine fruit. Plant thrives in Gilpin; ships well, makes good cider, and sells well.

Mr. Clagett: Will do to eat when there is no other.

Mr. Stark: We should be cautious about recommending it as a bearable tree, gave a good crop. The late ones, gave a very poor yield, both as to quantity and quality. This has often been the case since, proving that the extra
early peaches have a mission.] I observed several times during the drought, the orchard of Mr. Miller, near Louis-
iana, and came to the conclusion that his crop, particularly when ripened at the last moment, was worth much more than the
worth much more if he had given his trees better cultivation as he had done in previous seasons.

Amsden's June and Alexander both bore well, and ripened their fruit between the 15th and 25th of June, earlier than any other varieties I have known to come. He has the
coming in before Hale's Early. Amsden and Alexander are much alike; I believe Alexander has the advantage in size and quality of fruit, as it possesses a great deal more
good quality, but was damaged some by rot. Because it fills a place I think it should have a second trial. Wilk.

The disposition on the part of the farmer to plant full
and will doubtless do well there.

In the same time, one of the greatest factors in promoting
their own, but they are new to all, and with us. I believe the
does not provide that this must be the case. To avoid this
the only way, is to have more lagards and drones in this fair and prolific

The very excellent of varieties, that we have to look for, is the

apples

how far

I have made up your mind. I will not, to

Vegetable

That you get the true varieties. A blunder in this can
never be remedied without a serious loss of time or mon-

The Apple.

What to Plant and How to Cultivate the Or-

earn a living. In my opinion, besides, I must be on my guard for fear I bring myself in
to an abrupt conflict with the false teachings of some of our

In the general market, has much more to do with selling

In the general market, has much more to do with selling

The following list embraces some of the best and

profitable market apples for this latitude: Ben Dan-

Twist and Clinton. Perhaps somebody will want to know
why I have not included in this list some of the yellow

apples, Macon and many other, that are reported to be more

profitable as several of the red sorts. The Orty, White,

Winter Pearsall and Newtown Pippin are all good and

smooth, when we get them well matured; but they have

few left to sell.

Too Many Sorts—

And sorts entirely unsuited to the locality where plant-

ed. Many of them are perhaps good family apples, and

some of them good market sorts in other sections of the

country.

In about this latitude, in Ind., Clayton is the most
profitable market apple they have; but in Missouri it has

been a failure, but it is a long-lived tree, and

that the crops may not be saved.

To take another view of this subject, I feel safe in
saying that the true "cider" apple, and the true "baker'sࢣ

fruits\) is one of the cheapest articles of diet, and, at the
same time, one of the greatest factors in promoting health, without which all else is comparatively vel-

increased. So it is, in this as in all the rest of life.

apples, or varieties of comparatively little value, are

justly entitled to the highest consideration and encour-

Good cultivation is a prime necessity in the produc-

of large and continuous crops of good fruit. I do

not wish to be understood as advocating culture of (all

varieties, but for the most part, it is so stated. for the

of the following terms, that to obtain good results, the

The tree is very

worthless

and bears young. Wild Goose is giving good satis-

faction. The fruit is of good size, quality and color; and

the price is not too high, and the tree is hardy.

apples, and

I have only a little time to write. In my present writing

presumably, I am not assuming anything more than

a few short, plain suggestions—a sort of flinger-board, perhaps. For the benefit of those who are not

in the habit of growing summer apples, such as are marketed in a retail way at home, or shipped only short distances; but mainly such as grow on large plantations, and sold at wholesale and sent to any market in this country, or even

in Europe, that promises the best returns. I shall not

discuss the merits of best grades of market apples; nor do I wish to be understood as advocating

to be understood in the following terms, that all that I do name will succeed well on all sorts of

or, in a wide range of latitude.

fertile and most valuable varieties that are

reasonably hardy, and such as will bear good crops and

retain the apples on the trees until they are ripe enough to

gather in a wholesome fruit, and the trees of most

are of fair size and good bright color, of good general appear-

ance and the larger the better, other conditions being

Still, in selecting some of these requisite qualities and

possess others in a high degree. ** **
there are no apples: but cattle should never be allowed to disturb the grass. If an orchard could have been good culture, and no crops taken off the land. But if you raise a crop of corn, "hog it down," and the land will not be very much hurt. But if grass is cut, and taken off, care must be taken that the soil is not too much impoverished to keep the trees sufficiently thrifty, whether before the trees are growing, or be it giving them not growing rapidly enough, then the land must have some stimulant—lime, ashes or other manure. When a tree is not planted in a favorable spot, it must be scattered over the land at least as far from the trees as the roots extend.

A Little Pruning at the Right Time

Is required on almost every tree, but the operator should know why he prunes, in order to know where and how to do the work. In pruning the tops of trees which are growing too fast, cutting out the limb that can best be spared, and whenever two prominent limbs start out from the main stem so close together that their future growth would eventually cause damage, those two limbs should be cut out while small. Some varieties grow in such a manner that many of the leading branches require shortcutting, to keep them from growing away from the trunk. Others require only some of the longer branches to be cropped in order to keep the tree in a comely shape. Due to an apple tree, if you make a mistake in planning where you want it, and to prevent its growing where you don't want it. If this light pruning is properly done, the trees, comparatively small, they will need but little when they are cornered, this is the tree is inclined. Some varieties, of course, need much more cropping, punching and thinning than others, but the thought of the grower who has a large orchard, it will never become necessary to cut off large branches when they get older. To avoid cutting off large branches, or altogether cutting off the trunk, on large trees bearing a few heavy crops, your branches a little higher than has been the practice with many trees that are ever prone to run to extremes. forty and fifty years ago the older trees were made to branch very high, and during the last twenty or twenty-five years the inclination has been very strong to get all branches as close as a half to four and a half feet—say, mostly from three to four feet—I think is about the best height to branch apple trees—trees sprout so rapidly, rubbed off from time to time while small, and all suckers put up from the roots should be kept cut off while young to make wood growth but little patience with those impractical and fanciful theories which are against any and all pruning, for even the most extreme of these theoretical visionaries will practice it themselves. They can point out to you (and so can a practical orchardist) the bad effects of too much pruning, or botched work done at an improper time of the year, and of course you will get a good result of correct pruning, done by sensible, practical orchardists, than to point out the botched work of some poor pretender of a large argument against surgery performed by the skillful surgeon.

Of course the orchardist must keep a sharp look-out for rabbits, field mice, borers and other pests that are likely to cause injury. The young trees. When the young orchard is growing thriftily, some parties become impatient waiting for apples. Just hold out, and don't only getting ready to do more for you after a while. There are plenty of trees to choose from, they should be of trunks and long roots and strong constitution, in order to stand the wear and tear of the hard times coming. Don't let us become farm hands. In a large number of cases, or you will ruin the future value of your trees. Of course cutting off all the long roots, and many other kinds of directions such as to worry the apples too much in the end. In most cases where there seems to be too much inducement to slacken the cultivation in a reasonable degree, when fruitfulness usually follows, if you have been fortunate enough to plant the proper varieties in the beginning. But if you have planted Northern Spy and Yellow Bellflower, and Yellow Transparent, and Kerner and Connell, and you can convince yourself with the fact that in cultivating such varieties, you are working mainly for the next generation.

Mr. Husmann: I do not think the list of varieties large enough, would strike off Janet, which is excellent for home use, but fails to bring a good price in market. I think very few of the varieties we have at present. Have seen them growing in more than a hundred orchards, and known of no more profitable apple. The fruit is naturally very large, and the branding is one of the best shipping sorts—firm fleshed, attractive appearance, very fragrant, will always sell at the top of the market. The apple is also an ornament to the garden, looks like Newtown Pippin; early and abundant bearer. I would like to hear about Grimes' Golden.

Mr. Ragan: Grimes' Golden is an early and abundant bearer, good of all quality—can be picked October 1st.

Mr. Husmann: Take the place of V. Bellflower.

Pres't Colman: If you were to plant an orchard of a thousand trees, what would be your choice?

Mr. Evans: I think a great deal of Jonathan. I lost heavily last fall by not having them for sale at $1.50 per hundred. The only objection is that it is not a good keeper. But if I were to plant one thousand or two thousand trees for market only, I would plant Ben Davis only.

Mr. Evans: From an orchard of Ben Davis, 5 years from planting I have sold the fruit for $5.75 per tree. We can cut apples at a good profit and also get market prices. The yield constantly increases, and never fails entirely. My Ben Davis trees gave me half a crop last year when almost all others had failed. A tree of ten years old will average ten bushels of apples each, though the yield will, of course, vary with the location and management. I plant one hundred trees to the acre.

Mr. Ragan: Four and a half of uncleared land. Eighty trees eight years planted, I gathered two barrels each.

Mr. Ragan: I think the essay an excellent one, especially that part of it which refers to pruning. I differ from Mr. Husmann, because I think pruning is a matter of thinning, a matter about which we are altogether too careless. The work of thinning pays, and should never be neglected. I have not seen any list of varieties of apples to which I am acquainted, and containing 10,000 trees, the varieties are Ben Davis, Janet, Huntsman's Favorite, Grimes' Golden, Mr. Pippin, Rome Beauty, Smith's Apple, White Sap, Crawford, remain at the Janet. Few bears, exhaunts itself, and so bears only on alternate years, which is the reason it has become unpopular and been disapproved by the farmers. This is certainly true thinning, a matter of which we are altogether too careless. The work of thinning pays, and should never be neglected.

Mr. Husmann: I would like to hear about Black Ben Davis, which I am acquainted, and containing 10,000 trees, the varieties are Ben Davis, Janet, Huntsman's Favorite, Grimes' Golden, Mr. Pippin, Rome Beauty, Smith's Apple, White Sap, Crawford, remain at the Janet. Few bears, exhaunts itself, and so bears only on alternate years, which is the reason it has become unpopular and been disapproved by the farmers. This is certainly true thinning, a matter of which we are altogether too careless. The work of thinning pays, and should never be neglected.

Mr. Evans: For a market orchard, I would plant Early Pippin, Red Transparent, McEnery's, and Ben Davis, for home use, and Janet, for market use.
BABBITT (Western Baldwin)—In the judgment of Pomologists who know its history and merits, the longed-for ‘coming apple’ is the Babbit. It ‘stands on a record of fifty years,’ and ‘it is ALL.’

The Babbit was produced from New England Baldwin, O'ginn, Tazewell Co., Ill., at least as early as 1854 and was introduced by C W. Babbitz in Woodford Co., Ill, 1814 or 1845. In 1850 I saw trees in my Uncle Babbitz's nursery, and noticed them as the largest and finest of their kind. In 1895 I saw the third generation of varieties; also, for the large size of their leaves and the stoutness of their new growth.

In the spring of 1845, my father was planting an orchard in Putnam Co., Ill. He allowed me to plant a row of eight Babbitt. Soon I had a row of the very largest and finest trees of their age that I ever saw grow in Northern Illinois and, in one year, apple.

'my brother and myself went to Oregon in 1853 to start the nursery in the then new Territory. Beaten by grasshoppers, we returned to the States, and I sold some of these young Babbitz to Mr. Putnam, who was the first to plant a large orchard in Iowa. About 23 years ago we had the Babbitz sent out from Illinois and, my father and brother to start an orchard in their orchard in Page Co., Iowa, lat 41 deg.

For 23 years I have not seen the trees I used to know, but it was a great pleasure to me that they passed the memorable and terrible winter of 1856-Gun-hurt, and I have been informed that up to 23 years ago they had stood the winter perfectly. The trees of all varieties have never been equal to the Babbitz, and now for six years in Holt County, Mo., during these six years, has occurred several among the in. We have seen, also, the great three-years' drought of 1886, 1887, and 1888, and not a tree of the Babbitz has been smirched by the winters, nor more than merely held by the summer. This is a memorable thing, and all these trials are any better, if indeed, as well. In Illinois, Iowa and Missouri, the testing has been very severe.

The Babbitz was known as 'Western Baldwin,' until our State Society named it 'Babbitz,' in honor of the man who propagated it 44 years ago; a modest tribute to the memory of a man whose life was one for others than for himself.

'My father, in one of his orchards in Page Co., Iowa, 1500 trees planted twenty years ago. The orchard is named Ben Davis, Winesap, Willow Twig, Jonathan, x., with a large number of Babbitz. His testimony is that the Babbitz trees have not produced more per tree than the trees of any other variety; that the apples have sold for more per bushel than any others; and that when they are once sold they sell easily afterward.

'My brother, J. R. Lauglin, hears similar Lamentasy as to trees in his orchard C E. Babbitz, son of the man for whom the apple was named, now living in Page Co., says that the Babbitz are his best trees and his most profitable variety.

Description.—The tree is a strong, large grower; shoots large; leaves very large; wood hard and tough. As a support for a load of apples it is unequalled by any other tree I know. It scarcely forks at all, but throws out its limbs in a shape and style peculiar to itself. Every limb is a separate support, and the tabletment where it is joined to the tree or larger limb. I do not remember ever having seen one split in any way. After a few years it is a massive, immovable framework in three States in three different latitudes, and growing from three distinctly different soils, I do not hesitate to place myself on record as saying that it is one of the very best trees in our nurseries or orchard.

'Fruit, large, one-fourth to one-third larger than its parent, the Baldwin; shape, like its parent, but with more red; flesh, fine-grained, juicy, crisp. Richmond and a peculiarly fine acid, that plainly resembles the acid of the lemon; use, baking, stewing, pies or July, for each and all of which it is simply the best; in cooking it literally melts. It is ready to cook as soon as it has its size, but is so acid that few people like to eat it uncooked, until the latter part of its season, when it is a favorite eating apple.' Season, 1st of October to April, but can be kept in good condition until May.

'Babbitz, a child worthy to be born in the Great West from seed of the apple that by reason of its real superiority of tree and fruit has held highest place in our Great Little East for generations.

'I have not, nor do I expect to have, any pecuniary interest in the sale of trees of Babbitz, directly or indirectly, presently or remotely, to the value of one cent, but I do expect to plant it in orchard heavily. There is no monopoly of this variety. For it has been already sent to be further tested in five or more States. My motive in this matter is the same that move our best fruit raisers to hasten to tell all they know, and very often to hurry to give away cions, or trees, of their choicest originalings or findings.

'For your own or for my children's sake, I could poorly afford to trid-with the reputation that I have been so many years earning, by making a mis-statement or even a mistake. W. R. LAUGLIN'

N F. Murray, Vice-Pres., Mo. State Hort. Society, a most successful commercial orchardist, says: 'The Babbitz took first premium at the last meeting of the Mo. State Hort. Society as the best new apple for market, and has received the highest praise from all who have seen it. It has never taken second premium anywhere. I think it will stand in the West where Baldwin does in the East, and to a large extent, supplant Ben Davis.'

A C. Hammond, Secretary, Ill State Hort. Society, says: 'Mr. W. R. Lauglin kindly sent specimens of a promising new variety called Babbitz. It is a seedling of Baldwin, which it resembles somewhat, but is inferior in texture, and an excellent keeper. Described as follows: Size, large; quality: best: season, Oct. to May. Tree tested for 45 yrs. from int. 39 deg. to 49 deg. 30 min. Never injured by winter. Wood, hard and very tough. Shape and style just right to hang heavy crop on. Heavy bearer. This is a good record, and the fruit indicates that it is all that is claimed for it.'

ARKANSAS BEAUTY

ARKANSAS BEAUTY
cram in the shade, darker in the sun, with indistinct splashes and stripes over whole surface of dark crimson. Flesh, fine grained, whitish, tinged with red and yellow. Flavor, rich sub-acid. Mr. Wilde says: "Tree an enormous bearer. Quality, very good to best. A commanding market apple. Nov. to March"

ARK. BLACK.—Tree a beautiful upright grower; young wood very dark; an abundant bearer. U. S. Pomologist Van Deman, in report, 1886, says: "There is scarcely an apple that is more brilliantly colored. Size, 2½ to 3 inches in diameter; round or slightly conical, regular; smooth, glossy, yellow where not covered with deep crimson, almost black; flesh very yellow, firm, fine grained, juicy; flavor, sub-acid, pleasant, rich." A long keeper, almost equalling the Romanile Gilpin. A most profitable and attractive market apple. Has been kept till June and later.


Has been doing exceedingly well in Mo. and Kan., the tree being hardy and a great bearer of extra fine large golden yellow fruit.

BEN DAVIS (Ky. Pippin, N. Y. Pippin).—Large, roundish, oblong; striped, mostly red; very handsome; mild, sub-acid; not rich. Tree very vigorous, hardy, bears early and continuously. For all sorts of locations in the West, this has been for years, the most profitable market variety grown. Nov. to April.

BOSTICK QUEEN.—"Tree similar to Buckingham or Fall Queen, but more vigorous; fruit also resembles Buckingham, but is larger and more highly colored. Our best Sept. apple. Sells higher in Nashville than any apple of its season." Ripens with Buckingham or Fall Queen.

CELESTIA.—Tree a good grower. A most excellent bearer. Celestia has often been compared with Fall Pippin, and always to the advantage of the former, for while it is free from the defects of Fall Pippin, it has all its excellences and more besides.

In first introducing the Celestia, Dr. J. A. Warder, Pres’t. Ohio Hort. Society, and author of "American Pomology," wrote: "Everyone to whom I showed this fruit agrees with me in according the highest rank, as a dessert fruit, to Celestia. It combines so many excellences that it will be difficult to find its compeer. With greater beauty and perfectness in appearance, the Celestia equals, or perhaps excels, the famous Dyer or Pomme Royale. Fruit large, surface smooth waxen-yellow, core small, flesh yellow, very fine grained, very tender, juicy; flavor sub-acid, very sprightly and spicy, aromatic, delicious; quality, very best; use, table and kitchen; season, Sept."

Mr. Black says: "Time has not only fully sustained all the Doctor's statements above, but has set aside his careful "perhaps" of 15 years ago. Here in Central Ohio, we have kept Celestia in a pail on the floor of an unused room, with no special care, until after Christmas. Grown north of 40 deg. it will without doubt, be an all-winter fruit. Ten years' careful observation of it in orchard and nursery, and on different soils, warrants the conclusion that it is excelled by none, while it excels most, if not all other varieties. It should be remarked that the tenderness, which makes it so desirable for home use, unfit's it for marketing."

CHARLOTTEN ThALER.—A hardy variety resembling Yellow Transparent, but surpassing that popular early apple in several important points. It is an earlier bearer; fruits in nursery rows, also often bears the same season transplanted; many trees planted past spring matured apples. It is also several days earlier and is larger than Yel. Trans., and in Wis. the tree has proved hardy. Exceedingly productive; fruit hangs well on the tree. Perhaps the most valuable very early market apple. From H. C. Miller, Crawford Co., Ark., June 23, 1890.—"Two of the Charlootten Thaler trees planted April 15, 1890, each matured a fine apple this season—less than two months after set."

CRAWFORD—Originated in Ark. over 40 years ago. Prof. Van Deman says: "This is an apple worthy of trial. Large, 3½ to 4 inches in diameter, flat, slightly conical, very regular; surface, smooth, yellow, often beautifully blushed; core, very small; flesh, yellow, tender, fine grained, juicy; flavor, sub-acid, rich; season, Dec. to March, or later in Arkansas."
CLAYTON—A valuable late-keeping market apple. Major Ragan, late Pres. Mo. State Hort. Soc., writing of this apple, said: "My Claytons this year are two of one ahead of the Ben Davis, or anything else in the orchard." L. A. Goodman, in Colman's Rural World writes: 'Major Ragan had a beautiful orchard of trees, including claytons. To me it means all the good qualities of Ben Davis with none of the bad. A good grower in nursery and in orchard. An abundant and regular bearer. Fruit hangs well on the tree. It is a good handier. Above medium size, resembling the Limber Twig in form, but larger. Beautifully striped and splashed with red, on a yellow ground. A most lustrous, keeps a far superior to Ben Davis in flavor. No new apple has been introduced for years of equal merit, particularly one so well adapted to the Southwest and the Pacific Coast. Keeps, with ordinary care, to May. It accordingly, as it does, all the requisites of a first-class market apple, it offers an almost absolute guarantee of success. Received highest price at Home show. From a Mr. Colman, who has the largest, long keeping, best quality apple to my knowledge; closely resembles Ortolan in every way except its long keeping. It is largely a ben Davis grafted. It will keep in good condition till July or August; its flesh is tender, crisp and breaking. Tree a good bearer, in nursery grown; the Ben Davis tree. If the season of summer coming in so late, is destined to be the long keeping apple for commercial orchardists. It was favorably reported in some of the papers last summer. One of the best kept secrets, it will keep as well if not better than Ben Davis from "Walker’s Keeper," now named by his proprietor, Cullin’s, Keeper, so named by the Kas. Hort. Soc."

CULLIN’S KEEPER—Sent us by Mr. Grisw., of Cullin’s, who says: "Of Kansas origin. It is the largest, long keeping, best quality apple to my knowledge; closely resembles Ortolan in every way except its long keeping. It is largely a ben Davis grafted. It will keep in good condition till July or August; its flesh is tender, crisp and breaking. Tree a good bearer, in nursery grown; the Ben Davis tree. If the season of summer coming in so late, is destined to be the long keeping apple for commercial orchardists. It was favorably reported in some of the papers last summer. One of the best kept secrets, it will keep as well if not better than Ben Davis from "Walker’s Keeper," now named by his proprietor, Cullin’s, Keeper, so named by the Kas. Hort. Soc.

DICKINSON—Raised from seeds of Yellow Bellflower, or A. Davis, a species of medicinal value, with streaks of red and yellow, tawny and agreeable. Unlike Yellow Bellflower, it is a prolific and regular bearer, and promises to be one of the most valuable of the Ben Davis series. Dickson, under Ben Davis, is its parents.

D R. WALKER—A Ky seedling of the popular Janinet, or Rawle’s Janet, this most promising new apple certainly marks a long step in advance toward the long sought "perfect apple." We condense from letters of five well-known Kentucky horticulturists: "Dr. Walker is a seedling of Janet, larger, brighter in color, and of superior quality. A very late keeper. It is fruit larger than Janet, of finest appearance and keeps till May." "Have fruited Dr. Walker several years, it has the charasteristics of Janet; fruit large, better and better and keeps till May; of a mellow deep red color. It is a seedling of Janet, larger and brighter in fruit, and of more vigorous growth. Of much value. With apples of this class we have a new apple, embodying all the good qualities of Janet, but brighter color and better quality. Tree a fine grower."

EARLY COLTON—'One of the very best early apples. It was discovered near the St. Paul, Minn., railroad station, some years ago. It is found growing wild in parts of Minnesota and Wisconsin, and is said to have been brought from New Hampshire. It is a rich red color, a good bearer, never in its history of nearly a century, has it been known to fail to bear. This apple is very early, beginning to ripen so it is good to eat ten or more days before Red Astrachan or Early Harvest, and good to eat a month before Ben Davis. It is very valuable for family use. It is of beautiful appearance, form regular, nearly round, of uniform medium size, color a rich crimson, flesh fine, very tender, with a full, rich, agreeable flavor, the bruised fruit is not affected by exposure to the sun. It is highly esteemed by the Golden Pippin, Clipper and Belmont in color, and equally to them. Owing to its fine quality it sells higher than any other."

EVERBEARING ILL. IMPERIAL—A valuable variety from Adams County, Ills. The entire stock has been planted in the hands for dissemination. Tree a superb grower, both in nursery and orchard, hardier than Ben Davis, and a regular bearer of remark-ably beautiful apples of large size and most excellent quality. A true 'All Summer,' or Everbearing apple, having green, half-grown, and fully ripe fruit on the tree at the same time. Clear, waxen yellow, shaded and splashed with bright red and delicately striped and pencilled with dark red over almost the entire surface—a perfect beauty. Flesh of highest quality; creamy white, fine tender, sub-acid, with a peculiar and most delightful perfume. Begins ripening last of July and continues during three months.

F & L. A. Goodman, Late Mo. State Hort. Soc'y, to whom we sent specimens in '88, was highly pleased and pronounced them something uncommonly fine. In delicate beauty and quality this excels any variety of its sort and, as a bearing orchard apple, it can hardly help becoming one of the most popular varieties, particularly for the family orchard.

FAMILY FAVORITE—A favorite local variety of unknown origin, which has been propagated in our nurseries for nearly half a century. Tree very vigorous, large spreading, hardy; somewhat resembles Smokehouse in growth, form, and color. Evidently belongs to the Van der Veere family, but is superior to any of this class; more than twice as large as Sanders, much higher color, flesh not so compact but better in quality and a longer keeper. A most regular annual bearer. Trees planted in our orchard in 1848 still stand, sand and healthy; have been white with blossoms every spring, and have never failed to bear at least a partial crop. Every other variety planted at the same time vanished years ago, leaving not a wrack behind. Held in high esteem here where it is well known and planted in nearly every orchard. School boys 'know apples'; well, it is now nearly 30 years since the writer went regularly to the little red school house, where many a school boy swap was made—'2 Janetons for 1 Favor ite.' Large flat, covered with marbled red and crimson stripes; very dark red on the sunny side. Dots, numerous, large, white Flesh light yellow, firm, crisp, breaking; very juicy and rich. Flavor excellent; peculiarly pleasant. The favorite housekeeper's apple for making "apple butter." Season Nov. to March, but is in its prime at Christmas.

FANNY—This beautiful apple was first sent us by Charles Downing, who advised us to propagate it, it being his favorite summer apple. Superior to most early apples in both beauty and quality. A profitable summer sort for market. Large, roundish, dark rich crimson; firm, juicy, agreeable, sub-acid. Tree vigorous, spreading, hardy, with good winter covering.

G & O.—We clip the following from Report Mo. State Hort. Soc'y: "Yellow, nearly covered with dark red; very handsome; round ovate; medium size; large; flesh pale yellow, mild sub-acid; quality excellent; season with Ben Davis; tree strong, upright grower, full and regular bearer."

GREENING, NORTHEASTERN—"This new Wisconsin seedling which received the first prize of the Wisconsin State Hort. Society in 1883, over a large competition, as 'seedling Wisconsin apple,' has been thoroughly tested in most trying places in Wisconsin, and proved equal to the Wealthy in every respect as to fruit quality. With the Wealthy it is the superior of that variety. Fruit, large, round, conic, smooth, greenish yellow, often a dine blush; flesh fine-grained, firm, juicy, sub-acid, good quality; January to April; season short but strong."

Mr. Geo. J. Kellogg, the well-known Wis. fruit specialist, writes us Feb. 25: "I am very much pleased with this apple; it is a very fine new apple, colored high, but I am well acquainted with the Wisconsin fruits you offer. You want N. W. Greening; I measured apples at our last State Fair 12 inches in circumference, with a 12 inches diameter; the fruit was large, round, of the color of Ripes' Golden; flesh pale yellow; tender, acid, and of very fine quality. Tree vigorous, spreading and productive, even while yet young. One of the most profitable market sorts of its season. Dr. Warder says: 'Quality very best; use: dessert, too good for ought else.' Nov to Jan. here keeps all winter further East and North."
HAAS—FALL QUEEN—This apple, known also here in Mo., where it originated, as Gros Pomier (big apple tree), is a large and handsome red-striped fall apple, of medium quality and large productivity. Tree very hardy. Distinct from Buckingham or Fall Queen—called also Equinitum, OX-Eye, Bachelor, Winter Queen, St. Queen and a host of other names.

HUNSTMAN'S FAVORITE—Origin, Mo. Worthy of special mention, being very fine. Very large, flat; golden yellow, bunched on the sunny side, fine grained, aromatic and of excellent flavor. The most profitable yellow market apple, having been, for several years past, quoted higher in the St. Louis market than any other variety. Tree a good grower and bearer, having been quoted as being surpassed by only one or two others as being put on by all the best keepers there, when it is brought up to this latitude its keeping qualities are enhanced and it may be said that it was the only apple that ever a take from the North and bring it here. If a winter apple there, becomes a late fall apple here, and if a fall apple there, then it becomes a summer apple here. The Kentford Seedling, one of the best keepers, originated at Lankt rd Bay, Maryland.

VARIOUS—'Seeding of Rawles' Janet, which it resembles in form, but is much larger and higher colored; also a better keeper, lasting until May. A very popular apple where it is known, Mrs. habitually parent, an abundant bearer. Tree a good grower.

IVANHOE—'Bears early, often at 2 and 3 years of age, and bears abundantly every year. Fruit excellent, crisp and sprightly. Medium to large. A light golden yellow, occasionally a slight blush. Fruit hangs very late on the tree. Keeps all the year round.'

From Southern Planter, Richmond, Va.: "We have eaten the Ivanhoe apple and find it firm, after the likeness of very much better. A fine apple and should be propagated."

From The Horticulturist, Bridgetown, N. J.: "We think the Ivanhoe is destined to become one of our best varieties. It is a large, firm, and crisp apple. We believe it was planted once of the best keepers there, when it is brought up to this latitude its keeping qualities are enhanced and it may be said that it was the only apple that ever a take from the North and bring it here. If a winter apple there, becomes a late fall apple here, and if a fall apple there, then it becomes a summer apple here. The Kentford Seedling, one of the best keepers, originated at Lankt rd Bay, Maryland."

Notwithstanding the tenor of the above we do not feel like letting it pass without comment; for, although we have not fruitit it, yet we do not believe Ivanhoe will prove generally satisfactory.

JONATHAN—Medium size, round to oblong, sometimes conical, deep red; flesh tender, juicy and rich. Tree a moderate grower, slender and spreading, but productive. An excellent family apple, and very profitable for market in many localities. Oct to Jan.

JONES' SEEDLING—A long-keeping Southern apple, highly recommended. Origin, Tennessee. "A very abundant bearer, blooming late. Large, round to conical; color light red, speckled in yellow ground. Believed to be a cross between Limber and Pembsian (McAfee). Rich, mild, pleasant sub-acid, almost sweet. Keeps well till April. I have 25 trees in bearing and the more I see of it the more I am convinced of its great value. The earliest and most constant bearer, of any good sort we grow. Large, good quality and the best keeper of any large apple we have. Tree hardy and very wood tough. Would doubtless prove even a later keeper further north.

From 'Proceedings of Davidson Co. Fruit Growers' Association', Mr. Smith presents a Northern grown Ben Davis, which was a fine specimen of that valuable variety; also a sample of Jones' Seeding. The latter was in excel ent condition, and upon comparison with Ben Davis, the former was found to be the superior one, the preference being given to Jones' Seeding. Not only on account of its keeping qualities, but for superior flavor, large size and good appearance.

KINNAIRD'S CHOICE—Much the finest early to mid-winter apple we know. Fruit medium to large, roundish oblate; skin yellow, almost covered with dark red or crimson; flesh yellow, fine grained, tender, rich, juicy, aromatic, most excellent. No apple grown is of better quality. Tree vigorous and bears young, thought to be a seedling of Wing Sap, and is worthy of such parentage. This apple was shown before the Mo. State Hort. Society and the committee report: "We recommend Kinnaird's Choice, a very high-colored, red apple of medium size and first quality, and doubtless a good keeper. We cannot say too much for this variety. Should the tree prove a good grower, hardy, and prolific bearer, it will take a prominent place among the apples of Mo." It is all of these; the original tree, in Williamson Co., Tenn., was of great size and unknown age, and productive until it blew down in 1888.

LONGFIELD—One of the longest-keeping Southern apple from Ark. "This is thought to be an apple we have never seen before. The tree is an early and abundant bearer and long keeper. They were kept on the tables in New Orleans the last winter, and are probably the best keepers we have ever known. The tree is an early and abundant bearer and long keeper. They were kept on the tables in New Orleans the last winter, and are probably the best keepers we have ever known. The tree is a perfect apple, being particularly hardy and prolific. The fruit is of medium size, of fine and beautiful color, and is pruned with great care. The tree is a perfect apple, being particularly hardy and prolific. The fruit is of medium size, of fine and beautiful color, and is pruned with great care."

LADY SWEET—This was Downing's favorite sweet apple, and he thus describes it in his great book: "One of the finest Winter sweet apples yet known in this country. Its handsome appearance, delightful perfume, sprightly flavor and the long time it remains in perfection, render it universally admired wherever it is known, and no other should be without it. Bears abundantly; fruit large; skin very smooth, nearly covered with red in the sun. Flesh white, exceedingly tender, juicy, and crisp, with a delicious, sprightly, agreeably perfumed flavor. Quality best; keeps without shriveling or losing its flavor, till May."

LANKFORD SEEDLING—Origin, Md. Randolph Peters, says of this valuable sort: "A seedling of great promise. Large size, red and striped, and for Southern culture possesses more good qualities than any apple with which I am acquainted. Tree hardy and a good grower; bears annual crops; fruit of excellent quality; and its superior keeping qualities recommend it to all. Keeps until May and June with ordinary treatment, when the 'Baldwin' raised in the same section will not keep longer. Choice; 'Non tender or fruitgrower should not be without this apple.'"

LAWYER (Del Red Winter)—"An important addition to the list of winter apples and especially for the South. Medium to large, round, bright red highly colored, firm, fine grained, crisp, juicy, excellent, sub-acid; remarkable for its long-keeping qualities, having been kept in good condition until August. A great grower, and abundant and early bearer. We think it will be the South what the Baldwin has been to New England, and the Northern Spy has been to Western New York. The apple is of medium size, large; skin colored, with its remarkable early bearing, coming into bearing as soon as a peach."

We clip the above from a N. J. catalogue. Since it has conclusively transpired that the Del. Winter is merely the well-known Lawyer, under a new name, it has been a mystery to us how, of all varieties, the ridiculous claim of 'early bearing,' etc., could be urged in favor of this apple. For, on the contrary, it is known that in the North, it is a late bearer; and in the South it is a most tardy bearer. We have several 100 trees in our orchard, 17 years planted, which have hardly produced an average of one apple each since planted—many of them have not borne a single apple. It also has the fault of growing badly as the trees attainage. Still it is only fair to say that on high sunny locations and clayey soil it is very excellent, and is much recommended for its flavor and color. Has done well in Colorado, from Denver southward, and along the foot hills in Cal., it is highly satisfactory. In the North, we are not aware of this, as we introduced Lawyer nearly 20 years ago.

LONGFIELD—"One of the imported Russian varieties: early and abundant bearer; fruit medium to large, roundish, yellow, pink lined; skin sunny side; rich, sprightly, sub-acid. Dec. to March." Of value chiefly for the extreme North and Northwest, where an apple will sell well liked in N. Y. states.

LOY (RANKIN)—Awarded the 1st prize at the New Orleans Exhibition, for the BEST NEW APPLE. Origin, Michigan; named and recommended by the Missouri State Horticultural Society. The fruit is as large as the Ben Davis; resembles the Willow Twig in form and color; small core; stem short; quality the very best; an extra long keeper. Tree, a good grower, early and annual bearer, a decided acquisition.
MAMMOTH BLACK TWIG (Arkansas, Paron)—Resembles the Wine Sap in every way, except the tree is a better and much more vigorous grower, more hardy, and the fruit is much larger, many specimens being 12 inches in circumference: color even a darker red, flesh firmer, and most important of all, a LONGER KEEPER. Flavor milder, more of a pleasant sub-acid, but fully equal to the Wine Sap.

All who know the Wine Sap’s value, the chief objection being its small size, will understand at once the great prize found in this new variety, equal to Wine Sap in all, and excelling it in so many most important points.

There being so much confusion about this apple, some claiming it to be the same as a variety grown in Arkansas, etc., in order to be sure that our stock was genuine, we particularly procured all our clonal from N. W. Arkansas, the region where this variety has made so much stir among fruit growers. The “Paragon,” when first cut for grafting, was accidentally mixed with Wine Sap, by the introducer; hence too much care cannot be used to get pure stock.

Mr. Babcock, of Ark., in charge of the State collection at the New Orleans Exposition, says: “This apple came to my notice while making collections for New Orleans. The fruit resembles Wine Sap but is very much larger and superior in flavor. The tree resembles Wine Sap in nothing except in color of young wood. It is the strongest grower in the nursery; a strongly rooted tree, while its parent, the Wine Sap, is poorly rooted. The tree bears early and abundantly, holding its load well. I entered it at New Orleans for the premium offered for the best new apple. But Arkansas was taking too many premiums—the ‘State that could not grow apples’—and it became necessary to cry halt at some point, and it was accordingly done. An apple called Rankin, from Missouri, was awarded the premium. I was compelled to submit, of course; however, I had the satisfaction of hearing all who examined and tasted the two apples in my presence, condemn the award. The ‘Rankin’ has since been rechristened Loy, and is extensively advertised at $1.25 each. But the introducer states that the seed came from Ark., and this goes to prove what I have always claimed, i.e., that Ark. produces more seedling apples of sterling merit, than any five States in the Union. The horticultural editor of the St. Louis Globe-Democrat, Mr. Eli Minch, was the most critical of all the experts I saw in New Orleans, and whose opinions could not, in my judgment, be influenced by any one. Read what he says."

From Farm and Garden:—“We give a cut of a promising new apple we saw at New Orleans. The apple from which the cut was taken was one of the smallest; we got it ourselves in New Orleans for the purpose of making an accurate cut. Being a Southern apple, it would when planted in the middle section of the U. S., be in season from January to April; our season being so much later. The color is a bright red, the texture firm and the flavor a pleasant, sub-acid. It is remarkably heavy and a good keeper. Our illustration gives the size and shape, size of seeds, core, etc., all of which are carefully reproduced.”

MAMMOTH PIPPIN—A strong rival of Shannon, and its superior in several important respects. Mr. Vincenbeller, of N. W. Ark., writes us: “Mammoth Pippin is a good grower and a regular, even bearer; fruit, uniform and very large; color scarlet and carmine; hangs well, and is a good commercial apple. It will please anyone who wants a large, showy apple. One of our best Pippins; spicy, acid, season, Oct. [in Ark.] Platers here set five times as many as we do with Shannon. The latter is our famous show apple and some specimens are very large, but it hangs its fruit badly, in fact it is shy as to yield; still everybody plants a Shannon or two, but never as a market apple, for while it sells well, its shyness makes it unprofitable.”

MARMAL RED (Marshalls' Seedling, Red Bellflower)—The California State Horticultural Society has changed the name of this fine apple to Marslal Red; there being another and inferior apple called Red Bellflower. It is a cross between the Yellow Bellflower and Red June. Introduced by Mr. Yincenheller, Cal., one of the most reliable California nursemans and horticulturists. Mr. Coates says: “It is undoubtedly the finest market apple in California, and comes in at a season when good apples are always scarce. Has the deep brilliant red of the Bellflower, and a rich, toot, acid flavor, but the exact shape of Yellow Bellflower, although the tree is of more upright growth, and a regular and heavy bearer. We do not hesitate to risk our reputation in recommending this apple to all planters, in a letter to us, Mr. C. adds: “Marmal Red is very large, bright red all over, ripening about with Yellow Bellflower. The original tree, and two others grafted therefrom, bear heavily every year.” Being a good bearer, while Bellflower is not, and of finest color in all other respects, Marshal Red is rich with promise.

MASON’S ORANGE—Also sent us by Mr. Groise; he calls it a seedling. When first exhibited at Bis-marck Fair years ago it excited the admiration of expert fruit growers, because it so closely resembled the Y Bellflower in appearance, that it was thought identical with that excellent kind, but closer examination revealed a difference in outline and taste. The originator sold the right to propagate it to a man who soon after sold out and went to Oregon, when I again tried and succeeded in buying clones. Mr. Mason wrote: This apple is a true seedling of the Y Bellflower; it certainly has very close resemblance to it except in point of productivity, in each particular the former is a marvel, which is composed of all leading sorts; it never failed a full crop since the tree was five or six years old, and that is more than my other kinds have done; it retains its rich juice, and its small size, and makes it the most desirable winter apple grown. The trees in nursery are vigorous and quite distinct.”

MINTSCH RED—A Flemish seedling, double the size of its parent, and of a rich dark red with a heavy blue bloom; one of the most beautiful apples in the world, and among the best in quality. It can be grown
as far as, or farther north, than its parent. Tree very long-lived, hardy, and a good bearer. Season, early to mid-winter, or longer.

**McKinley**—Description from Dr. Warder's **American Pomology**; "Highly esteemed by Reuben Ragan of Iddian, who finds it profitable. Fruit, medium; roundish; slightly coarsy; dull red on greenish yellow, flesh white, not quite so hardy as Ben Davis; tree quite so hardy as good grower and an early and immense bearer; for years past we have not failed to find apples on trees in nursery rows, only two years from graft—the earliest bearer known to us among apples. Should be the first to be planted on any farm where there are no apples. Also a very profitable market sort. Judge Wellhouse, of Leavenworth Co., Kas., who has over 500 acres in orchard, plants only Ben Davis and Mo. Pippin—16 by 32 ft. —says, "at 8 years old Mo. Pippin has given three profitable crops and Ben Davis but one." Being so prolific, the tree is short-lived, and as it attains age, overears, so that the fruit is too small. Dec. to April.

**Mo. Pippin**—Large, oblong; bright red, with darker red stripes; very handsome and of fair quality, slightly better than Ben Davis; tree not quite so hardy as good grower and an early and immense bearer; for years past we have not failed to find apples on trees in nursery rows, only two years from graft—the earliest bearer known to us among apples. Should be the first to be planted on any farm where there are no apples. Also a very profitable market sort. Judge Wellhouse, of Leavenworth Co., Kas., who has over 500 acres in orchard, plants only Ben Davis and Mo. Pippin—16 by 32 ft. —says, "at 8 years old Mo. Pippin has given three profitable crops and Ben Davis but one." Being so prolific, the tree is short-lived, and as it attains age, overears, so that the fruit is too small. Dec. to April.

**Nansemond Beauty**—From Va.; one of the best winter apples for the South. Said to excel the Wine Sap in beauty, size, and keeping; its uniform size and handsome appearance renders it a desirable sort for marketing. The fruit is large, uniform, of a beautiful crimson red, somewhat shaded with yellow; flesh quite white, crisp, tender, juicy. Since its first introduction this variety has been steadily growing in favor, and from many sections we are now receiving favorable reports as to its value. Dec. to April.

**Nero**—Randolph Peters says: "A very beautiful winter apple. Tree a good grower and a prolific bearer. Extremely popular in N. J., where it is sought after and planted largely. Produce large, fine, and attractive; keeps well and of excellent keeping quality. A seedling of Romanite or Gilpin, retaining all the good qualities of its parent, but much larger in size. No other in the market for the production of large, choice apples, to be without this apple, where a long-keeper and a good and beautiful apple is desired."

I have only tasted the Nero two years on young trees. It appears to be a seedling of Gilpin; has somewhat its shape and firmness but is about twice as large, a better apple, and a long-keeper. Tree a good grower, and very early and abundant bearer. I am favorably impressed with it and shall plant more trees. Nero has taken premiums in large numbers at the Old Line State Fair, and has done well in the State Home and Fruit Exhibitions, Sec. for two years past.

**Osceola**—Originated in Ind., and was brought into notice by Henry Ward Beecher, who did much to stimulate fruit culture while a resident of that State. Dr. Warder says, "This variety does not seem to have won its way into public favor to the extent that was expected for it some years ago." The reason is not far to seek: the tree is a poor grower in the nursery, hence discarded for inferior sorts, that are cheaper to propagate. The variety was almost extinct until brought to our notice by Mr. Henry Avery, (recently deceased) the experienced Iowa orchardist, who says it has proven his most valuable ironclad. Fruit large, somewhat like Willow Twig in form but much higher colored, being splashed and striped with red; firm, and juicy. I have tasted Osceola, and Jan. to March.

**Pickard's Reserve**—Trees of this variety were planted in the vicinity of St. Joseph, Mo., 31 years ago by Mr. Stuart, who says: "They bore good crops annually, until 4 or 5 years ago when they began to fail, though still bearing more or less good fruit every year. The trees in question, I am informed, are not the largest thing I have ever grown. The specimens which I send you I picked up under the old trees to-day [Oct. 26, '87] and of course they do not indicate what the fruit is when grown in the open."

The specimens, as sent, were large, flat; surface smooth, pale yellow. Flesh yellow, fine grained, tender, juicy, with a sub-acid, aromatic flavor, making this, as Dr. Warder says, "a fruit of first quality for table and kitchen use." Dec. to Feb. The original tree of this valuable apple is still standing in Parke Co., Ind., proving it a hardy and long-lived variety.


**Pyle's Red Winter**—A very fine apple. The committee of the Mo. State Hort. Society say: "Very large, of good quality, sub-acid; valuable." Very large, roundish, oblate, very even; yellow, over-spread with light and dark red; tender, juicy, very good. Tree upright, spreading. An early and good annual bearer. Cooks finely some months before picking time. Jan. to March.

**Rainbow**—The most profitable apple of its season. Over twenty years ago, Mr. Wells, of this county, now past 80 years old, sent us cions to be grafted for him of his "best apple." In clearing the block, two trees were left to bear; also trees of Chenango, Ben Davis, Benoni, Hubbardston, Jonathan, M. Blush and others. All have been in bearing for years. The Rainbow has been for years conspicuously a "barrel-filler," surpassing any of the sorts named—except that some years Hubbardston has borne as much. This year the Rainbow has even exceeded its past record, bearing fully twice as much as any of the sorts of same age, and selling for a higher price. The trees produced more than twice as many barrels per tree as M. Blush, and fully five times as much as Chenango—and the Rainbow has the advantage of Chenango in that it is nearly twice as large and ripens very evenly. The entire crop can be gathered and barreled at one picking. Very large, conical, yellow, striped and splashed scarlet and red. Flesh firm, yellow, juicy. Flavor aromatic, good. Ripens just ahead of M. Blush. Not only the most profitable market apple of its season, but is preferred for fall table by those who have tasted it. I never liked summer apples before, but this tastes just like a winter apple!"—"I like it better than any other summer apple."

On Aug. 7th, we sent samples of Rainbow to U. S. Pomologist Van Deman, who writes us, August 23d, 1880: 'Your letter came during my absence and answer has been delayed. I have examined the specimens of the new Apple, and am justified in saying that it has fairly good flavor, and from what you say about the tree and its productivity, it is at least worthy of general trial. Of course you know that any apple ripening at the present time must have some remarkable points in its favor to warrant its introduction. I think you have acted very judiciously in not urging it on the public, without considerable experience. And as you have done this, I would recommend that it be named Rainbow and placed in the Experiment Stations and nurseries of the United States, and let it be given a trial. Of course it will have to compete with Chenango, specimens of which you have sent, and some other apples ripening at the same time.'

**Rebel**—Origin Va.; "We unhesitatingly claim that this is the best of all apples that grows, and in quality it does not fall a particle below its beauty. Large size, round, bright, clear red, on yellow ground; covered with a fine bloom; flesh yellowish white, rich, with an
agreement mingling of saccharine and acid." Another Ya. horticulturist writes us: "The Rebel is a new and very valuable sort for table use, one of the choicest apples we have. Season, [in Ya.] Sept. to Nov."

**RED BIEITGEHEIM**—A German sort. A very large and beautiful early Fall apple, bright purple and crimson all over; wonderfully handsome; flesh white, firm, sub-acid, with a brisk, pleasant flavor; tree hardy, a strong grower with large, luxuriant foliage and a regular bearer. It is one of the largest and handsomest of all apples, and because of its great beauty, sells at high prices Ripens here in Aug.

**SAULME**—"From Illinois, and especially valuable for its hardness, prolific bearing and long keeping. Medium, roundish conical; pa yellow, slightly shaded with red; skin thin, skin and rind adhering readily; flesh deep red and sprinkled with small yellow dots; flesh tender, juicy, mild, sub-acid. Tree is round headed, has tough wood; large, thick, leathery leaf, and is as hardy as a wild crab. Fruit hangs tenaciously to the tree and withstands winds that scatter other varieties to the ground. Jan. to June." We find it hardy and productive, a long keeper and fruit good quality; rather too small and light colored for a market apple.

**SCARLET CRANBERRY** (Robnett)—"A large winter apple from Virginia, and such a remarkable keeper that it will remain in good condition a whole year after picked. Color light red, shaded to deep red and striped with mahogany; flesh yellow, sub-acid, rich and good. Tree is a strong grower and said to be productive. Its antiseptic properties are so great that when cut to pieces it will dry perfectly in the shade without decaying. Of great value, especially in the South." Mr. Robnett writes us: "Tree very hardy, a vigorous grower. Bears annually; being loaded from top to bottom with apples of enormous size, often weighing over one pound. Flesh, yellow, su acid, with a rich, spicy flavor found in no other apple. Will keep two years without any signs of decay. It is the largest keeper we know of, and unequalled for beauty and quality."

**SCOTT'S WINTER**—Origin, Vermont. Hardy in severe climates. Tree thrifty grower; an early bearer. Fruit medium, round; surface deep and light red in bionthes and streaks; flesh yellowish white, slightly reddened near the skin; acid; good in quality. Pronounced by Dr. Hoskins, of Vt., his most profitable market apple; Prof Budd and Mr. Gibb also speak highly of it. Keeps well in the North.

**SHACKLEFORD**—Awarded 1st prize at Ill. State Hort. Soc 1881, as "The Best New Apple." Has taken numerous prizes since. In our orchard this season surpassed Ben Davis in size and productiveness; form, less conical, quality very good, far surpassing Ben Davis and entirely distinct in flavor—in fact there are few keeping apples so good. We value it highly. Native of N. E. Mo., tree hardy, a moderate grower, and an early and profuse bearer. Fruit large, well colored; flesh yellowish; flavor, mild su-acid, aromatic. Dec. to May. A. C. Clark, Clark Co., Mo., says: "I have had trees in bearing in my orchard the past year and am perfectly delighted with them and their fruit. This tree entirely hardy, good grower, and a most prolific bearer, better even than that 'King of the West,' Ben Davis. I have a large, high color, one flavor, good keepers. In my judgment the coming apple of the great west—shall pit the Golden Delicious.

**SHANNON**—This is the great prize winner at the World's Exposition, New Orleans, taking three first premiums. The tree has the habit in the nursery and orchard of R. I. Greening, being a poor grower; rather sky bearer. Very large, golden yellow, sub-acid, sprightly, pleasant, good quality. A very popular apple. See Mammuth Pippin.


**SPENCER**—This is an apple found in the oldest orchards in Howard Co., Mo., many trees being over 50 years old. Mr. Kingsbury, the largest orchardist in the county, says: "It has outlived all other trees, have never known it to fail to bear, and generally very good crops. I have a number of trees of this sort, and grow some annually; it is a hardy apple and bears as well in the middle part of the state as the latter part of August, when there is a vacancy, and brings me more money than any other variety I ship; I think it has no equal in the state. I have over 500 of the trees to plant in new orchard." It is a slow-growing and difficult sort to propagate, hence but few nurseries will ever grow it. But where known the trees will always be wanted.

**STARK**—Large, oblong, partly covered with red; flavor mild, sub-acid; agreeable, resembling Janoton. Tree one of the very strongest growers, hardy and a most regular annual bearer; in our orchard has not failed in 14 years. It has also proved a very profitable market sort throughout the West, and is in great demand, even in Canada. A leading orchardist in California, C. H. L., who bought Stark trees of us which are now in full bearing, lately ordered 500 Ben Davis and 500 Stark; another in Scott Co., Ill., orders two-thirds Stark. The Committee of the Missouri Horticultural Society report thus on Stark: "Very fine."

**STUART'S GOLDFINCH**—"This delicious long keeping dessert apple recommends itself to all who prefer great dessert apples. It has been transplanted only in a limited way, but wherever it has been given the best satisfaction for more than 30 years; it is a beautiful apple of medium size, clear yellow, with a red cheek; it is a hardy grower, but a more pleasant apple to most tastes, and it has none of the serious faults of dropping badly and not keeping well, which injure Grimes so much. For market it is not, of course, so attractive as red apples, but persons who buy it once are sure to ask for it again, willingly paying more for it than the regular market prices. As a dessert apple it will last well, retaining a permanent popularity, and is much sought after. Its keeping properties make it especially valuable. It continues in use in May and is still keeping both tender and juicy, better color and keeps later."

**SUTTON BEAUTY**—Medium to large, roundish, waxen yellow striped with deep carmine; flesh white, sub-acid; tender, juicy, good. Tree a free grower, vigorous and productive. O. B. Hadwen says: "It is proving the peer of the Hubbardston No. such in some respects even better: has more clear ever, deeper tender and juicy, better color and keeps later."

**WATER WONDER**—Mr. Thomas Meehan, late the veteran and conservative editor of the Gardener's Monthly, says: "It is over 20 years ago since we called attention to this wonderful apple, and yet little is known of it to-day. It is fully the equal of Smith's Cider in everything, and is besides a good grower. We reproduce a cut we gave of it at the time of first describing it, in hopes that those interested in the introduction of good apple to orchard planters may give it attention." Originating from a high authority, this is a most valuable endorsement.

**WEALTHY**—An apple of fine appearance and quality, an early and too profuse bearer. A good market apple of its season Tree nearly as hardy as Duchess Its chief fault is killing itself by its early and excessive bearing Its keeping quality, if gathered early and carefully handled, is pretty good in the North, but farther south it is only a fine fall apple, ripening with us in September. In size and beauty it equals Baldwin, and a better dessert apple.

**WESTERN BEAUTY**—Again we quote from
Dr. Warder’s book, “A valuable tree. Fruit vigorous, of excellent size and form, with a delicious flavor. ...”

WOLFE—A fine, large winter Pippin closely resembling the Newtown Pippin and often mistaken for it, but unlike the Newtown, it is nearly everywhere a successful market apple. Feuillet yellow with white blush and good tree. A good grower and great bearer. Jan. to March.

WOLF—The famous prize apple from Wisconsin, named after the Wisconsin State Fair, where it was first exhibited at the Chicago Exposition, taking three first prizes. W. A. Springer, of Wisconsin, writes us: “The tree is the hardest we have, except the Duchess and a few seedlings; is harder than Wealthy. The old tree is yet alive and will bear next year, 33 years old.” Wolf River is a good bearer, fruit large and beautiful and of good quality. It will bear black and white marks, though not as many as the Duchess.

YELLOW TRANSPARENCY—A new sort imported by the Depar’t of Agriculture. On account of its delicious flavor, small size and early bearing, it is one of the most desirable early apples in cultivation. A. G. Tuttle, of Win., says: “The Delicious in Iowa has been tried, but the Yellow Transparency is so fine that we have abandoned it entirely. It is the earliest apple of any country, and the best early market apple. It is hardy, an early bearer and very profitable.” A fruit grower of large experience for orcharding and horticultural enterprise so proudly as to plant a large orchard of Yellow Transparency in the South, to supply Chicago and other Northern cities, as early as possible. It is the best summer apple yet grown in Minnesota. With it there is no further use for Tetafot, being earlier, larger, and of a beautiful orange, enormous bearer, harder and of good quality.” D. H. Voss, of the Voss Fruit Farm, writes that it is the best for the North, but Southward the Yellow Transparency is being extremely popular as an early market apple. It is not so well known as it should be.

YORK EMPIRE—Or Johnson’s Fine Winter—Large, round, full, fine color, the best that has been grown. It is a very ornamental tree, and its fruit is a wonderful size and quality. See Charlotten Thaler, a still older apple.

CRABS.

FLORENCE—Originated in Minn., by Peter M. Gilchrist. Fruit very large, pale yellow, very good; all; an early and profuse bearer; when in full fruit the tree is the most ornamental tree we have seen; Color, light yellow, covered with bright red stripes. Size and season same as Transcendental; use like it; good keeper, tree bears young; is worthy of cultivation.

One large apple grower, wise beyond his generation, has shown his foresight by planting twenty-five thousand York Imperial for orchard purposes, and every apple on the tree is fruiting. An early bear, Feb. to April. The Committee, Hort. Society, says, “York Imperial is now well known in various parts of the country. Large, round, red good keeper, tree bears young; is worthy of cultivation.”

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the Wis. State Hort. Society, and both sorts prove excellent with us. Sweet Russet is almost equal to a good pear in quality, and while it is the best of its season, it is not one of the best of all seasons.

**VAN WYCK SWEET.**—From Dutchess Co., N. Y., where it is considered an exceedingly valuable sort. Fruits large, round, yellow, firm, and keeping well. Stalk short and toment. core small. Tree fair grower; productive.

**WINTER GOLDEN SWEET.**—Pear large, one-half larger than Transcendent, flattened, a beautiful gold color, very fine grained, rich, sweet—a peculiarly condensed sweet seldom found in any apple; entirely free from astringency or "crabbin."

**TATES (Red Warrior).**—Pear very large for a crab; dark red; flesh yellow, firm, juicy and very aromatic. Immense bearer and a long keeper. Valuable for both cider and dessert.—especially South.

**PEARS.**

**TO PEAR GROWERS:** Plant Standard Pears on strong yellow or red clay soil: cultivate well for four years. Take out the grass twice a season and let it lie. S Scatter manure broadcast every winter after the trees begin to bear. There are dollars in this advice.

B. Hendricks, a high authority in popular gardening, says: "It is my experience that a person can become an expert in the culture of fruit, I can say that the man who plants an orchard of standard pears of the best sorts, and cultivates each tree with as much investment which is open to him in fruit culture to-day."

**Texas Farm and Ranch, Nov. 1, '90:** Fruit Point Farmer's Institute. A paper by H. M. Stringfellow was read entitled "The Pears and the Pear Culture". The experience is certainly very unique. Over $200 per acre from 7-yr. old trees this season is certainly wonderful.

**Am. Hort. Society, meeting 1889; extracts.**

Mr. Omer, of Ohio: Experiments 20 years. Planted 4,000 pear trees. 1,000 rooted out too many and too close together. Find more money in Kiefer than any other. Pears better paid than other tree fruits in spite of price. Other trees like pears. Packs firm, ships to large city, sells wholesale. Pack pears soon as they will separate from the stem. Never cultivate the pear tree if it can be helped.

Mr. Stoner, of La.: Experience with 1,200 pear trees in La.; has had wonderful success: thinks they are the most profitable fruit to grow. Cuts off the late summer season, so avoids all blight; says it is a sure preventive of blight.

**Ill. State Hort. Society; extracts Report, 1889:**

Mr. Richel: Kiefer and Carlton are mentioned. Kiefer has been remarked upon as inferior by many, myself included. But this year Kiefer, ripened in drawers, were very good pears; others pronounced them the same. Very good on the fruit market. I consider this year a good thing. Wish I had thousands growing. Carlton is a better pear. Le Conte is the worst to blight I have.

Mr. Dunlap: Kiefer.

Mr. Richel: It is a pear of excellent quality.

Mr. Shank: Le Conte is not worth anything. Kiefer has a tendency to overbear. For bearing and quality, it is like Ben Davis in the pears. I planted a pear orchard 10 years ago; many have borne for 12 years.

Mr. Thomas: Have been growing pears many years; do not use anything on the trees. Only prune them on the east side of a wall where they get no afternoon sun, and they do not blight.

Mr. Richel: If you want to plant Kiefer as a dwarf, plant it deep. With me it has grown 10 ft. in 2 years.

Mr. Richel: Double work pears that do not unite well on the quince stock. Put on a pear that unites well with the pears.

Question: What is the proper culture for pears and what varieties are most profitable?

Mr. Richel: When seed down, mowing the grass once or twice a season. Cultivation encourages blight and should cease as soon as the trees get a fair growth. Kiefer early, Seckel 15 years. Bartlett is perhaps the best paying of all, but Howard has always done just as well. A good early pear is Tyson. Kiefer is unsuited for canning. Clapp's no good. Blight does not affect them.

Mr. Jackson: What is best to seed orchard with?

Mr. Richel: Mix grass seed and sow thick. Kind of grass matters little, just so it covers ground and kills out weeds.

Dr. Ballon: There has been a great revolution in a half century in the culture of the pear by use of methods shortening time for coming into bearing more than four fifths, by propagating on the quince. The failure of pears is largely due to the lack of skill in digging the trees. The nurseryman lets petty questions govern regarding increased labor in digging. The planter is disappointed and chagrined. Have seen such trees linger feebly through three or four seasons then die. All this might be prevented if the planter could be made familiar with the present at the digging. Pear soil must be dry and deep. Well rotted stable compost is the safest nourishment for pear trees. Pear growers should have a small pear orchard near sandwich which has been in existence for 25 years or more and has borne more or less each year, and then try to plant. Dr. Ballon: As soon as the blight appears, it should be pruned off. When I first came to Northern Ill., many years ago, I shipped in $200 worth of pear trees and related some one who had gone to this market and said that market men will not buy fruit already ripe to be kept for several days for sale to the retailers, who in turn must keep it on hand for the markets.

See's Hammond: There are certain localities in Northern Ill. adapted to growing the pear. Dr. Ballon is on the lookout for a situation where the planters can have a small pear orchard near sandwich which has been in existence for 25 years or more and has borne more or less each year, and then try to plant. Dr. Ballon: As soon as the blight appears, it should be pruned off. When I first came to Northern Ill., many years ago, I shipped in $200 worth of pear trees and related some one who had gone to this market and said that market men will not buy fruit already ripe to be kept for several days for sale to the retailers, who in turn must keep it on hand for the markets.

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Mr. Dunlap: Pear trees should be seeded down to grass carefully. You should not be deceived by that yellow blue grass. They blight less when in sod than under cultivation. The list given by the State Society is good: Flemish Beauty, Howell, Tyson, Seckel and Kiefer.

Mr. Seymour: Sorts recommended: Bartlett, Chiron, Du Pont, Kiefer, Lawrence, Seckel, Sheldon, White Triumph. Kiefer was agreed upon as among best new sorts.

Mr. Knecht: In representing himself, says of whom have made quite a success. I myself have been successful, and shall plant more pear trees.

Mr. Williams: Last season was good. For several years pears have done fully as well as apples.

Mr. Dunlap: Pear trees should be seeded down to grass carefully. You should not be deceived by that yellow blue grass. They blight less when in sod than under cultivation. The list given by the State Society is good: Flemish Beauty, Howell, Tyson, Seckel and Kiefer.

Mr. Seymour: Sorts recommended: Bartlett, Chiron, Duchess, Kiefer, Lawrence, Seckel, Sheldon, White Triumph. Kiefer was agreed upon as among best new sorts.

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his pears up in proper shape to sell. Missouri people ought to handle their pears as do the California growers. High, firm, good color and size make for marketability.

Mr. Durke: No, pears are left on the tree too long; are packed in large packages, hence bruised. Should be well dressed and sent at once.

Mr. Gano: Why does Mr. Murray cut back pears every second or third year? Why not every year? Small trees are likely to grow too thick in the center, and the fruit will be dull colored. Cut half or three fourths each early in the spring, better than the other plan.  

Mr. Ambrose: Best results come from cutting back the young wood of dwarfs each year.

Mr. Murray: Where the soil is very strong, much cut back is best. The dwarf tree is best, as it is so much smaller than the best, have the trees make a good, but not an over-rank growth.

Mr. Ambrose: Good cultivation gives a good crop; no cultivation, no crop. Kiefer bears well.

Mr. Bonham: By tilling good sorts we raise fine pears. Of dwarfs, the best are Duchess and Jersey, though Seckel and others do very well.

Mr. Mallinckrodt: What pear trees we have bore abundant crops; less blight than usual. Kiefer has been exempt from blight or other disease and bears well. Trees and fruit in good condition. Many will plant it.

Mr. Love: Seckel, Clapp's and Kiefer are a success in Grundy Co. Have watched Kiefer in Mr. Lowen's orchard for some years. Was there last year and was so full that we had to prop the trees. I counted on one small limb 52 large pears. Mr. Lowen sells his pears at $2 per barrel, men regrets he didn't plant 1,000 trees of that variety.  

**Western N. Y. Hort. Soc.:** Extract 1890.

Which, according to the latest experience, is the most profitable to plant, the standard or Dwarf Pears?  

Mr. Willard: Dwarf Pear orchards have paid more clear money than standards. If well cared for, trees will last a lifetime. Growers had inclined too much to Duke Pears. Trees were quite as productive, and Kiefer one of the best he had.

Mr. Smith said that on a strong logan dwarf would give the best results. His orchard of 100 acres was nearly all grown on dwarf soil he would prefer standards. The majority of our well known varieties were improved by working on the quince stock.  

Mr. Hooker was entirely in favor of dwarfs. While the Duchess was a regular bearer, it was liable to blight. The Sweetheart type is better. The Rootstock was best to plant at least four inches below the junction.

Mr. Willard supposed every man planted pears deep, [dwarfs and standards.] It was certainly desirable to do so. He had used money in growing pears, dwarfs or standards, and at raising grain.  

Mr. W. C. Barry said one point that ought to be considered was the small space Dwarf Pears occupied. The Pear industry had been so much neglected that growers did not raise more dwarfs. The opinion that the Dwarf Pear is short-lived is wrong. If properly [deeply] planted it is long-lived, as the Recommendation of the American Pomological Society upon this point was made in 1881. When properly ripened, it was one of the finest pears. An orchard of them was a pretty sight in Oct., when the trees were lit up, all uniform in size and perfect in every way.

**ANGOULEME (Duchess).** One of the largest of all pears, it is a great favorite in France. It has made a full bushel. Always brings a good price in market.  

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Poplar, with heavy, dark-green glittering foliage. Well worth planting on a lawn for its beauty alone. If it bore neither flower nor fruit." A year later: "The Garber again has a fine crop of handsome pears. The tree is a perfect beauty, has never shown a sign of blight, and is the most rapid grower on my place." Two years later:

"Garber deserves extensive trial. It seems to be free from blight, for Le Conte, budded on it, has succumbed to the blight and been saved off, while the main Garber tree has not a sign of the disease." Still later: "Garber will soon come to the front, on account of large size and good quality, as well as excellence for canning and preserving. My Garbers sold for $4 per bushel, while others only sold for 25 cents."

Hon. E. A. Riehl, ex-Trest. Ill. State Hort. Society, writes us: "I consider Bartlett, Howell, Garber's Hybrid, and perhaps Kieffer, the most profitable pears for market purposes. Garber's Hybrid is the best and handsomest of its class. It is earlier than Kieffer, better quality, and makes the best canned fruit or preserves of any pear I know. Tree bears young and abundantly, and has shown no disease, sweet, melting, Tree will live more than another great point. There are other valuable pears in our list; but, (excepting, perhaps, the Idaho), Garber is our first."—Our Trade-Mark.

HARDY (Beurre).—Large, melting and fine. Tree remarkably vigorous and productive. One of the finest pears, deserving more attention than it has hitherto received. Handsome California, grown this morning, what good pears are. Lately the California growers have been shipping almost as many car jobs of Hardy Pears east of us from the old favorite Bartlett.

HARDY.—A fine pear. A fine grower and bearer, and does well either as a dwarf or standard—especially fine as a dwarf. Ellwanger & Barry say: "One of the finest American pears; large, handsome and beautiful. Tree ever since tree an."

IDAHO.—This remarkable pear has more endorsement than any new fruit ever introduced. It is a fine shipping pear, and has been sent through the mails to several thousand people, and is growing in increasing request, and has arrived in perfect order. Sent out by the Idaho Pear Co., from whom we obtained our start, at a cost of $200 per tree. A young tree of a very fine growth, and of an unknown fine, large, red-cheeked pear—probably most probably Bartlett. The young tree bore for 4 years from seed and continued to bear every year since tree an. Right and vigorous grower and a continuous and heavy bearer. The only objection known to the tree is that it bears too heavily. It has endured 32 below zero, and flourished in every country and climate to which it has been sent. It ripens first of any we have tried, and does so a month earlier than any other variety. Four pears sent to the N. J. Fair weighed 19, 19, 21 and 23 ounces. They were tested by Professor Strong, who pronounced them to be nearly as good as the finest imported." Flesh fine, melting, high-davored, vinous, spicy and excellent; almost seedless and coreless.

From IDAHO PEAR CO., Oct, 29, 90:

"Gentlemen: Yours 13th at hand, having received your specimens. I have found the fruit, on the whole, to be a great improvement over some of the specimens to which you sent us. I am not aware that any of our finest specimens have done us more good in your hands than in those of the so-called horticulturists or even hort. editors. However, we will now do the best we can, and mail you to-day 2 cans, each containing an Idaho Pear. The larger Idaho is one of a cluster of 3 raised from a bud inserted in a small soil in the ground, and the fruit of this cluster has sold the lot, and we had retained it to distinguish any possible difference there might be between the fruit on the Pear and the fruit on the seedling. The fruit from the larger Idaho is from the fruit from the Idaho Pear Co., and one to U. S. Pomologist Van Deman. We have many specimens of over one pound. One peculiarity of the Idaho we find to be that small and poor quality when young, and large and good when ripe, ripened than any other varieties—and it is mainly to show you this feature that we send you these three.

"Horticulturists who have grown pears in desperate conditions, where others have failed, have written to us that they have planted the Idaho Pear and have found it a good variety.

"The largest specimen sent, in favor very fine and reminds me of the Bartlett, except the flesh of the former is firmer in quality. I think it will rank fully with this variety, and will have a little above it. In size and shape, it is very different.

"From those who received better specimens, we received a cluster of Bartlett commissions, most of which are to the effect that it is the finest pear they ever tasted. While we can hardly offer you a discount on trees, we consider it but fair and due to you to give you as liberal terms as to anyone else on such large quantities. We have no doubt but that you could dispose of thousands for Spring trade if you make a special effort, and we will back you in every way you can.

Replied: Idaho Pear Co.: Gentlemen:—We thank you for your favor of 20th inst. The two pears reached us this morning. The riper one was badly decayed, yet we are very highly pleased with its quality. Since seeing the fruit, we are more than ever convinced, as we have been heretofore, by the growth and appearance of the tree, that Idaho is a seedling of the great leader that stands to-day head and shoulders above any others of the older varieties—Bartlett. Idaho being so much stronger grower, hardier and less liable to blight, with its prolificness, large size, and excellence of quality, it is perfectly clear, that with first rate, excellent quality, could not have a brighter prospect of becoming the pear of the future.

Another point that is strongly in favor of its being a seedling of Bartlett, rather than of Duchess, Easter Beurre, or other sort, is the fact that it is "a seedling of a large red-cheeked pear." Now what large, red-cheeked pear so likely to have reached Idaho as Bartlett? The chances, we think, are 90 to 100 in favor of its being a seedling of Bartlett—and it could have no better parentage and no better recommendation than being an improvement in so many respects on that great pear.

The Idaho Pear Co. advises us that "many bogus Idaho trees are being disposed of by unscrupulous parties," every Idaho tree sent out by us, whether propagated by the Idaho Pear Co. or elsewhere, will be special. The trade mark, white manilla tag seal, together with our special guarantee. Our Trade Mark was the first secured for general nursery stock, same having been registered in U. S. Patent Office nearly 4 yrs. ago. We bought a large lot of Idaho trees from the Idaho Pear Co. in Fall of 1889; also 900 2-yr. Idaho trees, Fall 1890, which, in addition to the Idahos of our own propagation, we hope will enable us to supply all of our customers. All of our Idaho trees were bought without restrictions as to propagation or selling price. In fact we declined point blank to enter a combine or monopoly for keeping up high prices and advertising that all Idahos grown by outsiders were counterfeit and no genuine trees to be had except from the syndicate or monopoly. Most of the trees sold were propagated by us in our orchards, and used in our test orchards, and the wood used for propagation. Perhaps it is worth mentioning as a single item of our success with the Idaho that from 27 young bearing trees in our test orchard, worked with Idaho, we have cut and set over 29,000 Idaho buds; besides, these trees promise to produce a good lot of Idaho Pears season 1891. With an immense lot of buds on strong French and Japan Pear seedlings and Angers Quince stocks, we shall have fine trees in very large supply, Fall 1891 and afterwards.

JONES SEEDLING.—This delicious midwinter pear shows how low it is to look for a great thing to become the fruit of the future. The Idaho Pear Co. says it is a wonderful factor in deciding many disputed points. Quality fair; excellent for canning.

Kieffer bears too full and must be thinned, ripened in a cool room, when the quality is—well, judicious. Kieffer bears full and is an excellent producer, but the fruit the more I am impressed with its value."

P. J. Berrcksays: "No fall pear has given such profitable returns as Kieffer; its wonderful fertility is
surprising. Many trees planted 4 years ago have each yielded a bushel of perfect fruit. It is unfortunate the real merits of this pear have been under-estimated. When allowed to hang on the tree until Oct. and then ripened in the same manner as described for the Early Harvest, the fruit is much more attractive; in quality it combines extreme juiciness with sprightly sub-acid flavor and the peculiar aroma of the buffalo pear—a result of its suitable and excellent rating; and its then market value for market: shipped after being house-ripened, $4 per bushel has been realized wholesale; retails readily at 35 cents; and when properly husked, there is no case of blight have appeared in this section, where all the trees now growing were worked on seedling pear stocks; trees now 10 years old.

Other trees, indeed, the whole discussion might easily resolve itself into:

"Nothing much about Nothing;"

"Garber, and that is all;"

"As You Like It," or

"What You Will;"

but "Richard's" will be long to come.

LAWRENCE.—Medium size, golden yellow, melting and sweet. Ripens with little care; should be in every South-Eastern Orchard.

JAWSON (Comet).—Like Early Harvest, Jefferson and others of this class, Jawson is large, early, very beautiful; bears and sells well but is coarse and poor in quality—"better to look at than to eat."

From Bulletin Mass. Experiment Station: "Lawson and Early Harvest are believed to be synonyms, and the latter is entirely to be preferred."

E. Harmon and Jefferson are practically one and the same; early and of third quality. Have not fruit Lawson.

We find Jefferson distinct, larger, more profile, but Jawson's fruit have discarded all three from our recent propagating lists.

LECONTE.—Frill large, of variable quality, usually inferior. We cannot recommend it. Popular South, but may be improved.

Garber is far superior; even Smith's Hybrid is much better. The latter has fruited with us several years and we find it hardy as well as handsome, no blight; (Le Contes along side of same age are nearly gone—some entirely dead,) fruit ripens earlier and is larger than Le Contes, and definitely surpasses Le Conte—at least it ought to do so.

LONGWORTH NO. 1.—Originated by Mr. Longworth, who writes us: "The Longworth No. 1 is a seedling from a tree of the Longworth kind of which there was a large number standing on my old place at Dubuque, Iowa. When it was last there it was still bearing and doing well. I have sold a good many of these trees to farmers in Ind., at, from $1 to $2.50 each; three years ago I sent a few to a nurseryman in N. W. Iowa, and he says that the first winter after they were planted they stood 40 degrees below zero, and made a growth of 2 6 ft. the next season; did not winter-kill nor blight, and that he had no other variety that would stand it. There is cost me thousands of dollars, and I would like to have the Longworth No. 1 thoroughly tested as to hardiness of tree and quality of fruit. The tree is very hardy and considered excellent from the standpoint of a fruit grows for more on alternate years, when they are loaded with fruit."

A prominent Illinois nurseryman says: "Tree a strong grower and fruiter, not as perfect as the Early Harvest, because fruit of more than average quality, flavor sweet, very desirable for preserving; ripens in Oct.; is bearing at the present time near Bloomington, this pear is peculiarly adapted to the climate of the Northwest."

And another practical life-long nurseryman writes: "I have often wondered why some one hasn't taken hold of the Longworth No. 1 and made it of some use. It has everything requisite for our climate; it is far hardier than Kieffer, better quality of fruit, was never known to blight, a sure one. If I had the space to plant this tree, I would plant it; it is the finest of hardy pears."

"It is my opinion you should hold and push it, you would make a fortune out of it."

We begin to see no reason to expect the latter from any new sort. Besides, our experience leads us to believe Longworth is not good enough in quality to recommend, unless for the extreme North. Garber is equally hardy, an abundance and is much larger, handsomer, and of vastly better quality.

LOUISE BOONE JERSEY.—A large, beautiful pear, yellow, with a red blush, and very fine flavor, almost always does well only as a dwarf. Its only fault is that it often blights badly a few years after coming into bearing.

MARIGER (Margaret).—An extra early new pear, now conceived to be the finest and best early sort—the "first juicy gem of summer." The fruit is always abundant and from no other early pear is of best quality, many of them—which such as Early Harvest, Jefferson and Lawson—being absolutely poor. Tree a vigorous, upright grower, and

an early and abundant bearer. Succeeds admirable as a standard or dwarf. Ellwanger & Barry say: "The finest pear of its season, and worthy of special attention."

The American Pomological Society say: "This seems to surpass any other pear known to us in size, color, and quality, and of more than double the size of Sun, Doyenne."

C. G. Wickersham, of Kan., wrote the Gardener's Monthly: "My Marguer pear trees fruited for 3 years. The last season I picked five bushels and marketed them in small baskets, each holding one-tenth of a barrel, for which I received 20 cents per basket, realizing the sum of $50 net from this one tree."

MT. VERNON (Walker's Seedling).—A new American pear, named after the residence of Mr. Walker. Nells, which it strongly resembles in both tree and fruit, but higher colored and averages more than twice as large. Flesh yellow, juicy, vinous and aromatic. Tree has a graceful appearance and is hardy, an ordinary bearer, being literally loaded down with fine, perfect fruit. A most valuable variety. We have gathered 3 years, the fruit ripening late each year, and were planted and nearly as much as dwarfs. Has also done well in many other places. Strongly recommended by the following):

OLD KY. HOME (Crow's Choice).—A hardy seedling pear, originated in this Co. nearly 60 years ago, by the father of Judge Martin Crow; the latter's daughter writes useful virtues of the tree and description of the tree as my father tells me. The seed was brought from Ky. and planted in the spring of 1831; the tree bore well the first year, and has ever since borne abundantly. The tree bore almost its full size the first year; the second year it was blighted by the Lawrences, had a rich, sweet flavor, and began to ripe about Aug. 20 and lasted about a month. They kept well when properly packed, made beautiful preserving and eating pears. This pear was highly recommended by the old farmers and housewives who came while the fruit was ripe, would speak of it being so fine, that my grandmother always insisted upon having a slice of it to make a jam or jelly."

Tree the strongest grower we have, and unquestionably very hardy and long-lived. We believe its good qualities are more pronounced with age; and it is worth another trial in nearly every section."

PRESIDENT DURAND.—This is the most remarkable variety ever tested on our grounds. Introduced from France some years since; it has proved to be the heaviest bearer of the American pears, 95 or 100 bushels per tree. Tree most handsome, very fruitful, the fruit of medium size; very tender, the flavor rich, juicy, vinous, and excellent. The tree was taken, although another tree from the same lot of seed bore a very different and inferior pear. The tree bore almost its full size the first year; the second year it was blighted by the Lawrence, had a rich, sweet flavor, and began to ripe about Aug. 20 and lasted about a month. They kept well when properly packed, made beautiful preserving and eating pears. This pear was highly recommended by the old farmers and housewives who came while the fruit was ripe, would speak of it being so fine, that my grandmother always insisted upon having a slice of it to make a jam or jelly."

Tree the strongest grower we have, and unquestionably very hardy and long-lived. We believe its good qualities are more pronounced with age; and it is worth another trial in nearly every section.

RUTTER (Smith-Rutter).—Entirely distinct from Smith's Hybrid; months later, and far superior. Has fruited in our orchard a number of years and proved one of the best and most productive trees. Improve very fruitful; of first quality. The tree is vigorous, a great bearer, very hardy, and as free from leaf-rust as Kieffer or Early Harvest, and appears to be of great hardiness, perfectly healthy, as vigorous as Kieffer, and a great bearer; begins to fruit early and quick.

G. C. Brackett, Secy. Kan. State Hort. Society, says: "This is of recent introduction to our state. The tree grows vigorously, and the fruit has all the characteristics of a good size, russet, changing to yellow. Flesh tender, juicy, flavor pleasant, and rich acid. When eaten it becomes a solid cube. The tree is very hardy, and is a good pear in nearly all sections. From my acquaintance with pears generally, I am most favorably impressed with its value as a market variety."

SECKEL.—The standard of excellence in the pear, small, but the finest of the group. Healthy and know that the original tree is nearly 100 years old, and still bears.

SHELDON.—An American pear of first quality in every respect. Large, russet, handsome; melting, rich, delectable. A large tree, bearing abundantly; even the smallest pears on the tree are always delicious. Tree hardy and vigorous, and bears well as a standard.

SMITH'S HYBRID.—See Le Conte.

SUMMER DOYENNE (D'Ette).—An early little pear, yellow, with a red and blushed. Tree not of rugged constitution. Now superseded.

TYSON.—Rather above medium size; melting, juicy, sweet and pleasant. Tree very hardy, long-lived, a vigorous and rapid grower; bears abundantly every year; one of the best summer varieties. Early in Aug.

VICAR (of Winkfield).—Large, not of good quality, but productive and sometimes profitable as a dwarf; rarely succeeds as a standard. Blights badly.

VICTOR.—Judge S. Miller, in the Rural World, says: This pear is a true dwarf, and has won the hearts of many, even the very best. Victor is a name it fully deserves. Tree a beautiful, upright grower, like Buffum, with heavy, dark, green, red and yellow leaves. Fruit never blighted. Large, regular, pear-shaped; rich, sweet and melting; as delicious as any pear of its class, and as productive.

WHITE DOYENNE (Virella).—A well-known variety of the highest excellence. Tree vigorous, productive, extremely hardy; medium; yellow and red.
CHERRIES.

BELLE de MONTRUIL.—This new cherry was sent out by the largest nurseries in France, and very highly recommended. There are yet but few trees in the U. S. and it will not bear for a few years. It is a very hardy, firm, deep red, sugary, perfumed. This sort is in likeness with Reine Hortense, and has the great advantage of being of long habit.

Cherries for Profit.—Plant on the highest, poorest soil you have. Rows along fences and roads pay well. Heart and Bigrarreau cherries, such as Early La Maurie and Napoleon are called “Sweets.” Dukes such as Royal Duke and Reine Hortense, and Morellos such as Early Richmond, Mont. Ord. and Suda, are called “Sours,” all being more or less acid; sours are the best for cooking, preserves and canning; the sweets fine for eating fresh. The Morellos are the hardest, the Dukes next. Plant SOURS for Profit; the sweets sometimes are attacked by curculio, and often rot in wet weather, and the trees are less hardy, though very often profitable on high, dry, soil; still clothe, and this the abundance of the results. The SWEET list for market. In order of ripening, is Dyehouse, Northwest, Early Richmond, Mont. Ord., Chelan, Brandon. Sours long see under Napoleon and Windsor.

BLACK MASTODON.—From California. The largest, dark, firm tree of shapeably grown, fruit deep purple; flesh very firm, juicy, and full of flavor. Ripens early and fully a week earlier; in color almost black. Already a great demand is being created for it in the early fruit sections. It has been fully tested for many years, and is not only a good, but a valuable cherry.

CENTENNIAL.—A seedling of Napoleon, larger than its parent, and beautifully marbled, and splashed with purple. Ripens two weeks earlier. We have kept it in perfect condition for fifteen days. The finest canning and shipping light-colored cherry in the market.

DUKE, MAY.—A popular old sort and does well on the best light, dry cherry soil, but generally is not quite hardy enough, often dying just when large enough to bear. About 1860.

DUKE, ROYAL.—One of the largest and finest Duke Cherries: harder than May Duke. We find it very liable to rot; otherwise fine. Ripens early.

DYEHOUSE.—The earliest cherry. From Iowa State Hort. Report, 1878: “Dyehouse has fruited 5 years; is hardy, large, firm, and deep purple; ripens early. Early Richmond, its points of excellence are: 1. Earli ness of ripening. 2. Large size. 3. Fine flavor. The crop is all picked and marketed before we commence on Early Richmond. It is larger, firmer, and nearer to the market than any other. In size it is always larger, and in quality better, than Early Richmond. Its good qualities increase in proportion to its size. It is a tree of good habit, a growth very similar to Richmond.” Another says: “Often bears at two years old, and a tree in full bearing has the appearance, at a short distance, of being covered with cherries. Has the smallest pit of any cherry; a splendid keeper; free from knots. For tarts, pies, and especially canning, it has no equal. Does not “partake of both Duke and Morello classes,” as is said to do by many nurserymen; is as true a Morello as Duke, and has the excellence of both. Morellos bore both second and third years in our Cal. orchards, and Duke, fourth. Early La Maurie, is a large, firm, deep red; but is earlier and a better tree. The earliest sweet cherry to ripen, and by far the best for jelly making. Ripens early. It is an outgrowth of Early Richmond. Early La Maurie is a desideratum, it ripened at the University orchard ahead of any other; Cal. Advance, since stated.

EUGENIE (Empress Eugenie).—A fine French variety and the best of the Duke Cherries. Tree vigorous, but not too productive. Fruit large, dark red, round, bright red in color, tender in flesh, and slightly acid in flavor. It is especially valuable for cooking and preserving. For family cultivation in the garden we know of no Duke Cherry which can be so freely recommended. For market purposes, the flesh is so tender, juicy, and fine in flavor, that it can be used in the making of preserves, the quality of which will be much higher than if made from any other kind.

EVERBEARING (Essel Kirsche, Christbauer).—A remarkable variety, from Germany. Ripens three to four distinct crops during the summer. Its first crop ripens with the May Duke and is very similar in tree and flavor of fruit, being a real Duke. One of the strongest growers of the Duke class. N. F. Murray, Vassar, It is a very productive variety and the best Duke on the market.

LOUIS PHILIPPE.—Tested 9 years and discarded. With us, it proves neither productive nor hardy.

MONTMORENCY ORD.—Grant every way, and the sweet cherry in the list till you come to Wragg, Ostheim, and Suda. Recommendation kind is much greater. I recommend it highly for its heavy crops of fine fruit and the beauty and hardiness of the tree. Although a steed, it is not large, tolerably hardy, and much as Richmond to propagate, hence but few nurseries will grow it; otherwise its eminent superiority would soon spread, and rapidly become the favorite of every cherry grower. Elwanger & Barry say: “A beautiful, large, red cherry; larger and finer than Early Richmond. Being extraordinarily prolific and very hardy, it can be recommended as a variety of the finest for the eastern markets.”

We find the latter are far too good to pass this wholly; but probably its light color until almost ripe.

MONTMORENCY LARGE.—A large, acid cherry of excellent quality; does not bear so early nor so abundant of fruit as the ordinary Montmorency, nor is it so hardy. A fine amateur sort, and should by all means be in every family collection; not quite productive enough for market.

NAPOLEON (Royal Ann).—A magnificent Bigrarreu cherry of large size; flesh very firm, juley and sweet. Tree a vigorous, erect grower, and bears large crops. This is the very best of the Bigrarreu series, and it answers here in Mo. on good cherry soil. Judge Miller writes: “This splendid variety brings me better returns than any other. Icicle Roosevelt; it is a sort of intermediary between the one Napoleon tree I picked 3½ bushels; last season this same tree netted me $10. The form of the tree is the point; it branches out at start, and is over 18 feet high; one foot in diameter at the ground. It was budded on Mahaleb stock, which never sucker like Mazzard. Mahaleb stocks succeed everywhere, and for the South any other stock is worthless. The original tree sprang up where Napoleon fought his last battle, on the Rhine, near Bayern, Germany.”

NORTHWEST.—Originated in northern Illinois, the best out of thousands of seedlings. “Tree hardy, vigorous and enormously productive. Skin reddish brown, flesh red, golden perri, and juicy. Ripens one week early of Early Richmond.” M. J. Graham, Dallas Co., Iowa, writes us Sept. 10, 1890: “The Northwest fruitful beyond this year a very successful here. It is one of the best, and for the South any other stock is worthless. The original tree sprang up where Napoleon fought his last battle, on the Rhine, near Bayern, Germany.”

ORTHWEST.—Originated in northern Illinois, the best out of thousands of seedlings. “Tree hardy, vigorous and enormously productive. Skin reddish brown, flesh red, golden perri, and juicy. Ripens one week early of Early Richmond.” M. J. Graham, Dallas Co., Iowa, writes us Sept. 10, 1890: “The Northwest fruitful beyond this year a very successful here. It is one of the best, and for the South any other stock is worthless. The original tree sprang up where Napoleon fought his last battle, on the Rhine, near Bayern, Germany.”

OSTHEIM (Russian).—Grown in Minn. and quite generally through the Eastern States, Moderate grower, but quite productive. Fruit large, dark red, round, firm, and juicy. Ripens early, similar to the common black Morello; only half the size of Ostheimer, and inferior in quality.

OSTHEIMER (Originated) and WEINHEUSER Cherries are of greatest excellence. The hardest and longest-lived Duke sort we have yet tested; trees 24 years old are still productive.
Very large, bright red, tender, juicy, nearly sweet; delicious. Should go into every collection.

**SUDA HARDY.**——Perhaps the most valuable late cherry in the list. The original tree, 22 years old, stands in the garden of Capt. Suda, Louisiana, Mo., and has not failed to bear every year for 20 years. Fruit growers about Louisiana all know this great record and the remarkable character of the fruit, and seem to think there is no other cherry, at least they all want Suda trees and won’t take anything else. Large, nearly black when full ripe, rich, juicy, and unsurpassed for all uses. The latest cherry we grow; if covered with mosquito netting against the birds, will be in use very late. Never trees. Tree very hardy, similar to Eng. Morelo.

**THOMPSON TARTARIAN.**——A Cal. "seedling of Black Tartarian, which it much resembles, but the fruit is larger, and the tree harder and a better bearer."

**WINDSOR.**——From Canada. "Large, remarkably firm and of fine quality. Tree hardy and prolific, a valuable late variety." We find the fruit of largest size, 80 to the pound, a fineigger, and tree decidedly harder than Black Tartarian or any other black sweet cherry; will succeed in many parts of the west, if headed low—the true system of training for the west, for both sweet cherries and standard pears. See Napoleon.

**WRAGG.**——This now famous cherry originated in Dallas Co., La., 20 years ago, and was named by the Iowa Hort. Soc. and recommended for general culture. The original tree, when small, was removed to the open prairie, where it has withstand the severe Iowa climate and never failed to bear a crop annually for 17 years past. Tree vigorous, iron-clad, bears young and is remarkably productive. Fruit large, very dark red or purple, with highly colored juice and much richer in grape sugar than Richmond or Eng. Morelo. Ripens very late and hangs long on the tree. Mr. Graham, a well-known fruit grower of Dallas Co., La., writes to the Hort. Art Journal: “Wragg is larger, later and more productive than Eng. Morelo, and one tree of Wragg, six years old, will produce more cherries than fifty Ey. Richmond of same age. You may think this putting it pretty strong, but I have the trees all growing together, and speak from experience.”

**WHITE WESTERN SWEETHEART.**——This is the only sweet cherry that has uniformly done well here during the past ten years, though Windsor and Centennial are promising, while Napoleon, on high, thin, dry land—the only proper cherry soil—has been doing favorably. White West, a very large cherry, pale yellow, with a bright red cheek, flesh firm, juicy and delicious; one of the best, most valuable and beautiful light-colored cherries. Tree hardy for a sweet cherry, and should be planted in all localities where the peach tree will stand. Where peaches are not hardy plant only the Morelo class, and this class is everywhere the most profitable for market—except only on the Pacific coast.

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**PLUMS.**

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**ABUNDANCE PLUM.**——Showing size and form. There are two distinct varieties of Japan plums, both known as "Botan." The first or Sweet Botan averages about 2½ inches by 2½ inches in size; skin, green, with a white bloom; flesh, coarse, firm; sugar, common, and not acid; excellent table plum.

The second or Yellow-fleshed Botan is somewhat the larger, is more irregular in form, varying from quite round to sharply pointed. Skin yellow, washed purplish carmine, with a darker cheek. Flesh yellow, very juicy, sub-acid, with an apricot flavor; quite firm; skin tough; clingstone; quality best. Ripens three to five days after Sweet Botan, and is one of the very best early plums.

Mr. Suda, from whom the "discoverer" proves identical with the Yellow-fleshed Botan, even though—"that which we call a rose"

By any other name would smell as sweet;" it is doubtful if buyers of Abundance trees will quite appreciate this valuable Japanese plum—and it is valuable, almost beyond belief,—when, to quote the discoverer’s identical words (referring, however, to the Del. Winter or Lawver apple), "they have the pleasure (?) of learning about an old variety under a new name only."

In order to avoid confusion likely to arise from growing two varieties of "Botan," we shall continue to propagate the last described and better sort, as Abundance, the other unknown or Sweet Botan. See article on Orlando or Sweet Botan.

**Am. Ass’n Nurserymen.** Chicago, 1889: extracts.

Mr. Palmer, of O.: Would like to ask Mr. Willard his opinion of Moore’s Arctic. Mr. Willard: X: You can only say we have been disappointed in Moore’s Arctic. The tree with us is most tender and the fruit of little value. We could not commend it, nor would it pay us to raise it for market.

Mr. Moore, of Vermont, says it is the only plum successfully grown there.

Mr. Willard: This is one of those things governed by latitude or variety, and latitude and climate are things of which there is anything but hardy with us. Others have had the same experience. One reason is the foliage drops bad and promotes the disease, and other times the fruit is a failure. Mr. Chase, of N. Y.: Moore’s Arctic is tender with us, but in Maine it is represented hardy. It is one of the plum varieties we have grown and it is not hardy and is the best demand for it, more than the supply. It is productive.

Mr. Willard: Do not understand me as saying it is not productive. My experience is the foliage drops so badly the fruit falls too large.

Mr. Augustine, of Ill.: Will some of our Western nurserymen tell us of a plum that will do well with us? The Eulander can not grow the varieties of the south, because the trees do not bear continuously from the time they are in the nursery row; some of them have been bearing now for 8 years. Of the Chickasaw root, the two varieties that bear continuously and are known to be hardest in tree and fruit bud and the best in quality are FOREST ROSE and Maquoketa. Forest Rose originated with Sh人类 Bro’s., and is a very hardy. We have the variety, should form a base to propagate this fine plum largely. Forest Garden is hardy, but peculiarly liable to abortive fruit. Weaver behaves in the same way. Wild Goose and Mariana are tender with us. P. Simoni when in blossom endures a severe frost, and in addition to that a hard blow of frost will still stand, but they are not the best. What about Potawatomi? I see Prof. Budd is here, who is likely to have made discoveries to a degree which I value this.

Prof. Budd, of Iowa: I may not agree entirely with other Western growers. All native plums of America are hardy: by which those that bear best are De Soto, Wolf Fruit and Hollingshoe. These bear continuously from the time they are in the nursery row; some of them have been bearing now for 8 years. Of the Chickasaw root, the two varieties that bear continuously and are known to be hardest in tree and fruit bud and the best in quality are FOREST ROSE and Maquoketa. Forest Rose originated with Sh人类 Bro’s., and is a very hardy. We have the variety, should form a base to propagate this fine plum largely. Forest Garden is hardy, but peculiarly liable to abortive fruit. Weaver behaves in the same way. Wild Goose and Mariana are tender with us. P. Simoni when in blossom endures a severe frost, and in addition to that a hard blow of frost will still stand, but they are not the best. What about Potawatomi? I see Prof. Budd is here, who is likely to have made discoveries to a degree which I value this.

Mr. Green: What of Lombard?

Prof. Budd: Lombard is tender north of the 40th parallel, but south of that is doing pretty well on the 42d parallel. I will say in regard to Simoni, it will be valuable or not, according to locality. Its native home is a dry, arid interior climate. It will endure美洲, but not extreme cold; on dry soil it is a valuable fruit.

Prof. Patten, of Nevada: Not a single European plum is able to grow in the large portion of our country. As nurserymen, we ascertained these facts and act according to the suggestion of our friend Douglas, we could ree classify very many evils. If nurserymen, knowing it is not suitable to one locality and not to another, will insist that their agents sell only sorts adapted to each locality, a large part of the complaints will be done away with.
There is not a single plum which is successful in the East that is of any value in Iowa on the 43d parallel. A gentleman speaks of Wild Goose being hardy in Ia. On the 49th parallel, however, Boon and Clark contain Pennsylva-
nia's share of the large part of Iowa. P. Simoni is not hardy where I live. Of the plums, De Soto and Forest Garden, mentioned by Prof. Bolte, there is not one even given to blight. De Soto is almost free.

Prof. Bidd: It was the FOREST ROSE that I spoke of, not the plums of Wis.: De Soto is our best plum for Wis. Wild Goose proved tender for 2 years, then hardened up; but it won't bear one plum to the acre. The whole strain, however, is the best for nurserymen, in the midst of the great Bas-
ssett's American, from N. J. They were not worth a cent an acre. Some of you have it in your catalogues yet.

Mr. Van Etten: Mr. T. W. Chase, the last gentleman being tender. We have had it 3 years in the nursery and it is hardy as Lombard.

Prof. Bidd: There is a very hardy one. The tree is hardy with us.

[Abundance, or Yellow-deshed Botan, has been sent out from many places as Kelsey. Mr. Griesa kindly sent us sample of his Kelsey, which proved to be Abundance; treble the size, yellow, and full of flesh, were also Abundance. Kelsey is a much less hardy and entirely distinct in foliage and wood; much in-
flated to the size, and in bearing. The fruit is tender. Mrs. T. W. Chase has some cold weather, the trees now matured in the green, whole roots; they succeed well. Can grow more plums per acre than corn, and can grow them cheaper to feed hogs.

Cal. State Hort. Society, Aug. 29, '98:

Plums: Prune D'Agen is quite distinct from French Prune; will not thrive on Peach stocks, like the French; upper surface of the leaves is shiny, fruit is more attractive and softer, but this variety is not sufficiently marked to endure cold. Worked on hardy plum stocks it matures earlier, and is more productive than other steams. Mr. Van Lindley, of N. C.: Kelsey is a very valuable plum where hardy. South of Va. it does well, also through the southern part of that state. Bears full when trees are 3 years, in my 2 years, but have some pretty cold weather, though rarely below zero.

Mr. Watson, of Ill.: At Bloomington Simoni is perfectly hardy, and is not too tender. Kelsey, especially if the fall be late and warm, is very tender.

Mr. Willard: Botan [Abundance] and Ogon may have varieties of plum stocks harder than hardy. [Mr. Willard has since planted 150 trees of Botan or Abundance in his plum orchards, and thinks very highly of it.] Kelsey is not sufficiently hardy for the Middle West of America, mention at Garfield, a native plum possessing very marked keeping qualities, Specimens sent me some years ago kept in my office perfectly sweet and good; the fruit was hardy and pro
tective. It had a value, because it is a rare thing to get a plum that has these keeping qualities. It is very beautiful and very good, but it is calcified with a thorn in December, and there is a demand for anything like a plum at that season of the year. If Garfield is productive and hardy, with its variety of Kelsey, and it bears earliest, it will be a valuable plum.

[Garfield is perfectly hardy, but 5 year trees have not yet fruited with us. We do not think it will prove an early bearer, excelled in this respect on both by Wayland and World Beater—the fruit of both of which is fine, especially the latter, and keeps equal long.]

Mr. Plumb, of Wis.: In regard to Kelsey: While visiting the boundary of the local society there whether it was hardy in that latitude. He took me to a tree where Kelsey was grafted on a hardy nurse; produced very fine fruit. He also has a tree, grafted on one of our extremely hardy natives, is going to be a success here. This matter of adaptation is overlaid with infinite diversity. I have not selected if varieties like Kelsey are worked on some hardy variety and they will be adapted at least to a latitude one or two degrees further north.

Chum Ass'n, N. Y. City, 1898: extracts:

Hon. H. E. Van Denman, U. S. Pomologist: The Japan-
ese plums are attracting attention. I have examined specimeneis of Botan [Abundance] from several places, the best I have seen were at the Union Park, N. Y., and these seems to be hardy. It is a variety that nurserymen ought to give a fair test. The Ogon has been sent to me from Conn., and is said to be hardy. I have a tree in nearly all the U. S. Kelsey is very large, sometimes 3 inches in diameter. Will not mature north of Tenn., according to experience, and there doubt if the tree will prove hardy north of Tenn. But it is a Japanese plum, medium in size, not much larger than Wild Goose, color exceedingly brilliant crimson purple, very handsomely mottled with white, and at the same time sweet; perfect for the East, even to the extreme of the East coast. I have a tree, doubt it will be perfectly hardy, G. Golden is the tenderest of the three.

Clyman.—Introduction by Leonard Coates, Napa, Cal., "Raised from seed in Napa Valley, many years ago. For a long time it has been the most popular of the ripening so far ahead of other plums, and being of such excellent quality and good size. Mr. J. M. Bassford, of the valley, claims the variety and sells it as Clyman, by which name it is known here. Reddish purple red color, covered with a beautiful blue bloom, size of Peach plum, freestone; very firm and does not break easily; the best of rich yellow fruit. I have some of old Peach, to show you, which I got from a neighbor who had been given them by an old Peach plum. It first attracted attention by maturing its fruit long before any other plum of this family, being about with Wild Goose. The original tree having
outgrown its surroundings three spouts were dug from the roots, which are now ten years old, and have borne fruit for the last three years. This is a vigorous grower and the leaves are extremely large. The first ripe fruit was picked this season at North Park, three weeks in advance of ordinary plums. Of course it may be expected to be subject to the attacks of the curculio, and should only be grown where a reasonable degree of care is taken of the trees. In this respect the tree is rather more sensitive and not so hardy as Shropshire, and in the matter of fruit size gives it a rich bluish color. The flesh is yellow, firm, and of a delicious flavor. When ripe it is a perfect freestone. The clusters are large, and of a pleasing yellow color. The tree is hardy, which makes it profitable for market purposes long before all other plums of this class.

**Damson.**—Mr. D. S. Willard, of N. Y. Fruit Growers’ Society, writes: "The Damson is the hardest and least affected by insects. The original Freestone Damson tree grows in Clarksville, Mo., and we have bought the sole right of propagation. Tree slender with dark yellow leaves. Bears very large, fat, deep purple plums, which ripen in the early season. The fruit is firm, of great size, beautifully colored, and as delicate to the touch as the cheek of a baby. Whoever introduced the Lombard did his country and kind good service."

**Mariana.**—Mr. D. S. Willard, of N. Y. Fruit Growers’ Society, writes: "The Lombard was the only sort that bore with us in 1888, and in 1893 Mariana greatly surpassed Wild Goose in productivity and again the season. Mariana greatly improves with age, and the tree is hardy and productive and its productivity is increasing. It is not so hardy on Peach stocks, especially while young, and much less productive than on Shropshire."

**Ripens early.**—This plum has been known under various names, but the correct one is Ripens early. It is a small, yellow, tender, juicy and fine. Tree vigorous; a great bearer, and peculiarly well adapted to light soil. With us, for over a dozen years it has borne immense crops of beautiful plums, delicious to eat out of hand, for dessert or preserves. Indeed the trees were so overloaded we often had to prop them to keep them from falling. Large, round, oval, of great size, beautifully colored, and as delicate to the touch as the cheek of a baby. Whoever introduced the Lombard did his country and kind good service."

**Freestone.**—Mr. D. S. Willard, of N. Y. Fruit Growers’ Society, writes: "The Freestone Damson tree was planted in Clarksville, Mo., and is the only variety of this kind we have ever had. Ripens two weeks later than Shropshire and Blue Damson."

**Shropshire.**—A medium sized, dark purple sort, but little superior to Blue Damson. Tree vigorous; a great bearer. Dark red, color a month before it is ripe, hence it is apt to be condemned before its true quality is known; thick skin and practising curculio, and very productive. Must bear a full crop, except in 1887. Ripens late, color early, and very inoffensive to curculio."

**Shipper’s Pride.**—A new plum of the Damson type, and like all the Damsons, very prolific and free of curculio. The flavor is rich and the size, very showy and fine to look at on the tree and in the baskets; ships and sells for the top of market, hence called Shipper’s Pride. Since the original tree was large enough to bear, it has not failed. Being early planted for market on account of its certainty to produce a crop, its fine appearance and superior shipping qualities, Loudon Garden, Miner, Pottawattamie, Quaker, and Robinson were sent for this season. After fruiting these sorts, we find there are others much better in every way, which should supersede the above."

**Forest Garden.**—Large, red, juicy, very fine, and useful; sold at 20 cents a box, which is a pretty good price for wild plums."

**Golden Beauty.**—A free bloomer, produces large, beautiful dark red, with delicate bloom; stone small; excellent quality. Prof. Bud says: "The Forest Rose is to the surgeon what the Damson is to the farmer, both are good to plant."

**Prairie Rose.**—Introduces it by us in 1878; has grown steadily in favor wherever planted. Tree a rapid upright grower, hardy as an oak, and bears early; has fall color. Austere bloom. Rich, juicy, firm, delicious; borne in large, heavy clusters, will materially improve, with the fruit size."

**Garfield.**—See Extracts from Am. Ass’n Nurserymen.

**Yellow Rose.**—From Texas. A straggling grower; blooms very late, hence sure to bear wonderfully prolific. "Medium; deep golden yellow when fully ripe; fine quality; seed small, nearly freestone; curculio never damage it." Needs thinning and deep, moist soil to make large fruit. Mo. Apricot is an improvement on God. Beauty.

**Apricot.**—Discovered about 40 years ago in northern Ill. In Henderson Co. Specimens sent in 1889 were the largest and finest in appearance—fourth fruit from the nation had the size of a large, two double the size of Wild Goose. Tree ironclad; has stood the many severe winters of the past 40 years, and is still sound and most prolific. Fruit very large, yellow, firm, rich in flavor, very agreeable; more or less stoned; taste like Sugar Plum; when stung by curculio; flesh firm, much like Lombard; of good quality and distinct flavor. The most promising plum to make the largest fruit."

**Prairie Flower.**—From Atchison Co., Mo., where the original tree has long been noted for its regu-
har crops of fine fruit. We obtained the right of propagation in 1884. Resembles Forest Rose, but is an im-

pressed prune, of Cal., says: "This is the kind that produces the largest yield of fruit from the trees, and the

FRUIT CATALOGUE.

PRUNE D'AGEN.—Mr. Felix Gillet, the eminent

prune expert of Cal., says: "This is the kind that pro-

duced the largest yield of fruit from the trees, and the

PRUNE, FRENCH—(Petite or Cal. d'Ente). Small to

medium, reddish purple, very sweet and juicy

and free; cune. One of the best sorts for drying as a

prune, but much less hardy than German Prune and

PRUNE, GOLDEN.—A highly recommended new

prune, originated near Sacramento, Cal., says: "This is

PRUNE, SILVER.—Origin, Oregon. "The fruit is

almost as fine a-slice of Coe's Golden Drop, and it is yet

a question whether it should be called a prune or a plum.

A. R. Strong & Co., say: "It is certainly a valuable

sort for the Pacific States. The fruit is large, oval, and
dark red or blue color; very hardy, and yields large

estimable as a fruit, and is useful for preserving any

kind of fruit. It appears to be very much free from

Dried: it is now fully ripe, and is ready for shipping.

A valuable variety, of which the following is the de-

scription: "The fruit is large, oval, and dark red or

blue color; very hardy, and yields large and heavy

Yankee Doodle, as they are ready for use in three to

four weeks from the time the fruit is gathered.

The following descriptions are derived from the

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Yankee Doodle, as they are ready for use in three to

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grand good peach it is. If I were planting another peach orchard, I would plant it largely. It is a large white peach, red at stone, with a fine blush. Of fine quality, peaches are highly priced, and the greater part of them cracked or spotted with fungus, as is the case with so many peaches. I consider it one of the best, with few exceptions, if any, grown in this section. It was planted here in August. Picquet's Late, ripening before Smock and Salway ripening after it, are sorts that should be in every orchard. Great Western, which I got at the horticultural show last fall, is also very much like Heath, but ripening earlier. It should be propagated and planted largely. What can you recommend in place of these or any other delicious, early peaches?

BISHOP'S EARLY. Valued highly in Cal.; larger and better every way than Hale's Early—same season.

CHAIR'S CHOICE. Orig. Maryland; $1,000 was paid for the privilege of introducing it. At 4 years of age bore 5 bushels of choice fruit, and has fruited annually since. It is equal to or superior in quality and flavor, and for profit is without a rival. Large, yellow, fine, rich in color, very firm, and very sandy in texture.

ELEBTA. "Beyond a doubt the best all-purpose peach ever known. A cross between Crawford's Early and Chinese cling; very large, bright yellow, with red cheek; juicy, high flavor, very hardy in tree and branch. Of all the yellow freestones well tested north, south, east and west, Elberta is the finest. No one can prove any other peach better. It is grown largely in the south, and it is their most profitable variety; and L. A. Goodman, of the Co., says he would like to plant 5,000 more. Mr. Lindsay of Hatton, Ga., writes that he has sold out the entire crop of Elbertas for the largest sum of money ever received by one man for a 100-acre peach crop, a single car netting him $16,000. During the season the demand for Elbertas created a profound sensation everywhere among dealers, who pronounced it the finest peach they had ever seen. They sold them at $1 25 a box.

FOX'S SEEDLING. Large, white with crimson cheek, freestone; reliable and uniform bearer. "A very valuable peach, ripening at a time that makes it desirable aside from its size, fine quality, shipping and market value." Ripens after Stump.

FOXY GRANT. This we consider the very best of all peach varieties. As much superior to Stump the World and similar sorts as Grimes Golden or Jonathan is superior to Ben Davis. Large in size, skin thin, flesh white, very sweet, juicy, and exceedingly fresh, and an excellent canner. Ripens early.

GEN. GRANT. "One of California's best clings." Very large, white flesh, red cheek, excellent quality; has created a great deal of excitement in California. Large in size; unlike the common varieties, they are not overripe when ripe, but are exceedingly juicy and luscious. When generally known, will stand close to the head of the list, both for market and canning purposes.

GLOBE. Vigorous grower; productive. Large, globular, yellow, red cheek; firm, juicy flesh rich, free. Valued for its size, beauty, flavor and firmness.

GREAT WESTERN. See under Amelia.

GROVER CLEVELAND. This new Cal. peach is pronounced of higher quality than any other yellow cling, and unequalled. The coming clingstone for the canner and shipper. Tree very hardy and prolific.

HANDY UNSANY. Very large and handsome, splendid clingstone, eminent variety.

HEATH. See Stark Heath.

OLLISTER FREE. See under Amelia.

PICQUET'S EARLY. A true freestone. The best and least inclined to rot of any of the Hale's type yet tested. Large, red, good quality. Ripens later than Smock and Salway.

WEST. N. Y. Hort. Soc.: Mr. Snow—Have any peaches been more exempt from freezing than others? Mr. Willard: After an experience of years with Early Rivers, he believes that one variety ripens earlier and is more cold-resistant than others; also Hill's Chili and Jacques'. R. R. Mr. Rupert: Early Rivers and Hill's Chili bore good crops.

Mr. Arnold: Add Hynes'SURPRISE. It proves very hardy, early and absolutely freestone.

RIPENED BY US, under insurance, for the summer of 1881, this has proven the finest yellow freestone, ripening before Foster and Crawford's Early. Originated in Hill's Chili orchard, is about the same hardness than most yellow peaches. Large size, deep yellow, with a bright crimson cheek, covering half the peach. Rich, juicy, and of high quality. One of the best of the pale yellow peaches, but still more so when the tree is well looked after. We have distributed Jennie Worthen from Mass., to Tex. and Cal., and with scarce an exception it has taken front from the moment it was planted.

JONES'S SEEDLING. A fine new Cal. peach, ripening after Crawford Late. Said to be 'the largest of all the yellow freestones.' Ripens nearly a month after Crawford Late.

LADY INGOLD. Not nearly so early as claimed. Inexpensive.

LOVE ALL. A Cal. seedling between Picquet's Late and Salway. "Very large, yellow, round, small pit, Flesh firm, excellent, and of unsurpassed quality for the canner and shipper."

MCCOLLISTER EARLY. An improvement on Smock, which it resembles, but is larger, later, and even more profitable. This variety ripens early.

MCKEVEIT CLING. A Cal. seedling. Large, pure white—white to the pit—flesh firm, sugary and rich. Shelly skin hard to peel, and rich to the bite. A very early variety, ripening in July. Tree prolific, hardy, healthy, and a remarkably strong grower; not subject to curl. Ten days after Salway. One of the best varieties for canning and drying; 4½ lbs., will make 1 lb. of dried peeled fruit. Crawford's, Susquehanna, &c., require about 8 lbs. These same combined qualities of firmness, dryness and sweetness are possessed by the McCollister. Large, yellow, freestone, ripening after Crawford Late; extremely sweet and rich; no red at the pit, which is very small. All things considered, perhaps the most profitable peach." Mr. Normand, of La., says: "This is the best peach we have ever tasted. We believe perfect in all respects for the canner and shipper. It is the best edible peach we have ever had. Very large, yellow, freestone, ripening after Crawford Late; extremely sweet and rich; no red at the pit, which is very small. All things considered, perhaps the most profitable peach." W. R. Strong & Co., of Cal., say: "One of the best for canning or drying, with no red at the pit, and very early. A most excellent variety.

Mr. Coates, of Cal., the introducer, writes us: "As to Muir and Wager: I know they are different; have some of both. The fruiting to canning has been a long controversy settled in it, in which Mr. Thos. J. Collo Co., proved the identity of Muir as a Cal. seedling.

NORTH AM. APRICOT.—Mr. W. J. Boggs, Saline Co., Kans., writes us: "The peach I sent you 3 yrs. ago has been fruitful by me in Kans. 15 yrs. It's history dates back over half a century. Not far from Lake Michigan, in northern Ind., in my boyhood, I first knew it. I lost track of it, but now I have 40 trees, and in 1875 they bore their first crop here; all the forty are still alive, healthy and productive. Note the peculiar apartment of flower and fruit, the peculiar leaf bud, and the very small seed for for all-purpose peach I consider there is not its equal grown. Medium size, golden yellow, with a few red hairs on the stone. It在同一 year also produces apricots on the same tree, and they fill the bill on the table. Tree hardy and bears here when all others fail.

We have been trying for years to introduce this variety, which we think will take a leading rank among peaches for home use, particularly where most of the older sorts can not be planted. It is a good table peach, and is eminently valuable for canning. We use it at the Columbus, Ohio, fair, and much more eagerly sought after in the markets.

PICO'S. Very large, yellow, flesh red cheek, quality delicious, equal to any yellow-fleshed peach we know. Where known it is eagerly sought for and largely planted as a most profitable market variety. Ripens shortly before Salway.

PIQUEET'S LATE. Very large, yellow, freestone, with a red cheek; flesh yellow, buttery, rich, sweet and firm. Ripens well before Smock and Salway.

PIQUEET'S LATE.—A new Cal. peach, ripening after Smock, and Smock ripening after Smock. It is a large, yellow, freestone, rich red cheek; quality delicious, equal to any yellow-fleshed peach we know. Where known it is eagerly sought for and largely planted as a most profitable market variety.
roseville Cling. — From Cal. "Very large, round, white, with red cheek. Excellent canning and shipping quality.

seller's orange Cling. — A Cal. seedling of orange Cling; larger and finer. Has been more planted than any other, and never failed. The preferred Cling, though they usually label them "lemon." Indeed many of the Californians have a way of branding all yellow freestone Cling "Crawford," yellow clingings "Leomin," and white clingings "Lemon." They say they must call their fruits by names people know.

shipley late red. — One of the most beautiful peach trees. The fruit is deep red, and the sweetest and finest, with the most delicate flavor and tender skin. It is also a very hardy tree and a very good bearer. Introduced by Mr. Shipley and very successfully propagated in California.

stark heath (pride of pike). — The largest and most superb heath peach ever fruiting in this section. Raised from seed by the late Wm. McLeod, an early pioneer, and first grown in our nurseries upwards of 30 years ago. Some years later the stock was accidentally lost, and was not again recovered until 1882, when a farmer of this vicinity was exhibiting on our streets and presenting to the local editors and others, ourselves among the number, what all agreed were the largest peaches ever seen here, and in appearance and quality superior to the well known Heath Cling. Investigation disclosed the fact that the tree was Stark Heath purchased from our nurseries about the beginning of the war and, although then over 20 years of age, it was still healthy and productive.

summer snow (white heath — incorrectly; english heath, jo. bowers, mo. summer snow heath) — For 40 years this has been the most popular and largely planted peach in this county — Why? Because it has never failed to propagate true from seed; tree the hardiest, longest-lived, surest and most prolific bearer, fruit the most beautiful and best in quality. A modest claim, is it not? Yet it is all true. The original tree sprang up on the old "English" farm (since passed into our possession, and now planted with a large pear orchard) and soon made a stir; was visited by the late Judge Stark and a son, more than 40 years ago, who soon discovered that it unfailingly came “true from the seed.” Aware of the value of this characteristic, he propagated it in no other way; hence its quality of always reproducing itself from seed was not impaired.

Withstanding the uncertainty of a peach seed crop here, we have hitherto steadily resisted the temptation to rapidly increase our stock by budding — nor shall we now vary from the wise plan outlined so long ago.

In 1850 the late Wm. Stark planted a peach orchard of some 6 acres on the highest of the many high hills surrounding Louisiana; about one-fourth Summer snow, balance Crawford Ey, Hyslop and others. After the hard winter of 1853, Summer snow bore nearly a full crop, while all the rest of the orchard bore not a bushel. After other good crops, this orchard was sold to the late R. J. Henry in 1868, who the same year sold peaches enough to more than pay for it — and other profitable crops. Thereafter, the Summer snow always leading. Another partial planting of 11 acres was planted by Wm. Stark in 1860, one-fourth Summer snow, the other varieties being Stark Heath, Crawford Ey, Hyslop, Summer Rose and the peach since called Future Great. Here, too, the summer snow bore when others were a failure. But in the year 1868, all bore finely, except Crawford, and great prices were realized; old acc’s sales yet on file show that Stark Heath and Future Great netted in St. Louis, $2 and up per one-third bushel box. Summer snow, of course, not being a peach of such enormous size, sold for less, though it too brought large returns.

The largest and finest peaches it has ever been the fortune of the writer to see, were the Stark Heath grown that year; trees bending to the ground with the most magnificent peaches, gloriously beautiful with their delicate sun-kissed cheeks. Here he, a boy of 13 years, with a younger brother, used to carry boxes of peaches, packed in boxes and nailed 66 boxes of Stark heat in part of one afternoon.

The fruit of the summer snow is snowy white; the foliage and wood are a peculiar light green, like the common snow peach — which is a freestone and not a desirable sort. No tinge of red on either twigs or blossoms. Trees very hardy and prolific, and bears when all others fail. Wm. McIroy, who has many trees over 20 years old, says: "In 1860, the snow Heath bore twice as much as any other trees in our orchard — which is all seedlings, not a budded tree left in it." It is the one great canning peach in this county, being always preferred to the late Heath Cling — when the latter happens to bear. A clingstone, full medium to large, quite large on young trees; perfectly round; skin clear transparent white; always beautifully fair, and unaffected by fungus. Flesh white to the stone, very soft, with a luscious, delicious juicy, rich and luscious flavor — the sweetest peach grown. Known by everybody here as requiring but half the usual quantity of sugar in canning. Ripens just after the World. Many seasons we have no trees — because of failure of peach crop the preceding year. When trees are for sale at all they are always seedlings, propagated true from seed.

superb Cling. — See under Amelia, where, among other good things, Mr. Riell says of this sort: "A large, good peach, the flavor of which is not surpassed at high prices. If planting another peach orchard, should plant it largely. Large size, white, with beautiful blush, red at stone. Of fine quality, very productive and always fair and smooth; none cracked or spotted with fungus as is the case with many other peaches. I consider it ONE OF THE BEST, wherever one has a fertile soil, and no fungus trouble."

The identity of this fine variety is unknown. We obtained it many years ago as Van Zandt’s superb, but the brothers are now dead, and the variety no longer grown — a most superb one—therefore not Van Zandt.

ulatis (cal. advance). — "I have for years given up propagating such varieties as Amsden, briggs’ may, &c., as in comparison with Alexander they were no earlier and not so fine in size or quality. A seedling originated near vacaville, cal., has for some time claimed the attention of the few who were aware of its existence, and it is now an undisputed fact that this peach is superior to its parent, the Alexander. It ripens a few days earlier,
APRICOTS.

ALEXANDER (Emperor Alexander)—Large, yellow and red, flesh also tinged red. Sweet and delicious. April and May. Handsome, and variety of great promise. Suitable to the northern and most distant parts of the country. A delicious fruit, and very productive.


BARTLETT—A late variety. Trees large, hardy, and productive. Fruits large, sweet, and juicy. July.

BENNET—A late variety. June and July.

BROOKS—A late variety. June and July.

CARR—A late variety. June and July.

CLARK—A late variety. June and July.

COBBOY—A late variety. June and July.

COWAN—A late variety. June and July.

DAVIS—A late variety. June and July.

DICK—A late variety. June and July.

EASTON—A late variety. June and July.

EDWARDS—A late variety. June and July.

FRIEDRICH—A late variety. June and July.

GARDNER—A late variety. June and July.

GERRIT—A late variety. June and July.

GRAY—A late variety. June and July.

HAMILTON—A late variety. June and July.

HARRISON—A late variety. June and July.

HOLLAND—A late variety. June and July.

HOPKINS—A late variety. June and July.

HUBBARD—A late variety. June and July.

JACKSON—A late variety. June and July.

JAMES—A late variety. June and July.

JERUSALEM—A late variety. June and July.

JONES—A late variety. June and July.

KELLOGG—A late variety. June and July.

KELSEY—A late variety. June and July.

LADY BAGNET—A late variety. June and July.

LAMBERT—A late variety. June and July.

LINDEN—A late variety. June and July.

LIVERMORE—A late variety. June and July.

LUMSDEN—A late variety. June and July.

MACDONALD—A late variety. June and July.

MARTIN—A late variety. June and July.

MATTHEW—A late variety. June and July.

MCDONALD—A late variety. June and July.

MCEWAN—A late variety. June and July.

McGILL—A late variety. June and July.

McGILL'S—A late variety. June and July.

McGILL'S DELUXE—A late variety. June and July.

McGUIRE—A late variety. June and July.

MECHANIC—A late variety. June and July.

MICK—A late variety. June and July.

MILL-UP—A late variety. June and July.

MINOR—A late variety. June and July.

MOORE—A late variety. June and July.

MORGAN—A late variety. June and July.

MURPHY—A late variety. June and July.

NATIONAL—A late variety. June and July.

NEWCASTLE—A late variety. June and July.

NORTH AMERICAN—A late variety. June and July.

OWEN—A late variety. June and July.

PADDOCK—A late variety. June and July.

PARKER—A late variety. June and July.

PARKER'S DINNER—A late variety. June and July.

PARKER'S DELUXE—A late variety. June and July.

PARKER'S OASIS—A late variety. June and July.

PARKER'S SEEDLING—A late variety. June and July.

PEARL—A late variety. June and July.

PERRY—A late variety. June and July.

PICKETT—A late variety. June and July.

POLE—A late variety. June and July.

POTTER—A late variety. June and July.

PRAIRIE—A late variety. June and July.

PRATT—A late variety. June and July.

QUEEN—A late variety. June and July.

RAE—A late variety. June and July.

RUSSELL—A late variety. June and July.

SCHWARTZ—A late variety. June and July.

SHELTON—A late variety. June and July.

SHREVE—A late variety. June and July.

SMITH—A late variety. June and July.

SOUTH AMERICAN—A late variety. June and July.

SOUTHERN—A late variety. June and July.

Spence—A late variety. June and July.

Stark—A late variety. June and July.

THAYER—A late variety. June and July.

THOMPSON—A late variety. June and July.

TUCKER—A late variety. June and July.

TRAVELER—A late variety. June and July.

TURNER—A late variety. June and July.

VAN HORN—A late variety. June and July.

WASHINGTON—A late variety. June and July.

WHITE—A late variety. June and July.

WINDSOR—A late variety. June and July.

WINTHROP—A late variety. June and July.

WOODWARD—A late variety. June and July.

YORK—A late variety. June and July.

YORK DINNER—A late variety. June and July.

YORK OASIS—A late variety. June and July.

YORK SEEDLING—A late variety. June and July.

YORK SIGN—A late variety. June and July.

YORK'S DELUXE—A late variety. June and July.

ZEB—A late variety. June and July.

These are only a few of the many varieties of apricots. There are many more, and the list is constantly growing.
“A Tree’s a Tree?” Yes, but then—there are Trees, and TREES.

—You see, sweet maid, we marry
A gentleman to the wildest stock
And make conceit a bank of baser kind
If it be but the name the other seeks.

Which does mean nature, change it rather, but
The art itself is nature.—Shakespeare.

In Trees there are the same variations in quality found in every other line of goods. But owing to a somewhat widespread misapprehension on the part of many tree planters, it is possible to delineate a comparative merit of the different kinds and qualities. It is worth while to explain at some length a few of the points of difference between Whole Root and piece root trees. Whole Root trees are grown on yellow, wild, and on Mariana pine stocks, etc., and to quote the matured opinions formed and expressed, after long years of observation, by competent authorities with trees of every kind, by men pre-eminent in the science of Horticulture, such as Chas. Downing, Dr. Warder, P. Bole, and others,—than whom no other authorities have ever lived in America—or in the world!

Whole Root Trees are best, and the demand grows as each passing year. While we in this country, almost without exception perfectly healthy, and bearing heavy crops of fruit, notwithstanding many of them have been raised from the trees of the Mississippi River, and in many of the New England States, where are found the most experienced orchardists in America, many to whose efforts are due the success of business, as did their fathers before them, they will not undertake consideration now plant a piece-rooted graft tree. Observation of their old seedling orchards, and costly experience with the grafted trees so generally planted by nurserymen of late years, have thoroughly convinced them of the utter worthlessness for permanent orchards of these grafts.

Our Piece Root Trees are as good as any grown, and while purchasers will and want to have them, we will continue to supply these cheaper trees of as good quality as the market will bear. A few years ago, most authorities held that the first cost of a tree, and the cost of labor to plant it, was much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants, as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants, as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants, as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants, as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants, as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants, as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants. The cost of labor to place a piece-rooted tree in the ground is as much cheaper in proportion between trees than to plants.

Dr. Warder, in his renowned book, "American Pomology," says: "A most serious fault of nurserymen is to neglect the tree, and bring out the plant. The fruit tree is a plant, to be treated as such. Trees are produced in the same way that plants are produced. Whole Root Trees are grown wide apart to allow of full and free development of root and branch. And although the fruits of one tree may be checked by the influence of another, the fuller development of both roots and tops, are of necessity more costly, they are worth inconsiderably more than plants which produce fruit. The slender, ill-developed crop that is the result of the nurserymen's neglect, and the cheapness of the price, are not enough to balance the difference in the price of unimproved cultivated trees of the same age, in the same way. The nurserymen must be held responsible for the greater development of the trees on their farms, and the longer they continue in business, the greater is their responsibility. The nurseryman who is chargeable with the development of the trees on his farm, and they, after years of care, lose the tree just when it is becoming large enough to bear three hundred six hundred pounds of fruit, is not to be considered an orchardist. A long-lived, healthy, fruitful tree will come early into bearing, that will withstand the severe winters and protracted droughts. To produce such a tree, the nurseryman must take the pains to plant it properly, to provide for the water supply, and to provide for its protection. The trees should not be crowded in the nursery, but that it should also have the advantage of full, natural roots. The nurserymen, who have been the subjects of so much discussion, are not to be held responsible for the fruit trees on their farms. They are only in a position to suggest the best means for the development of fruit trees, and the best means for the protection of fruit trees. The trees, after they are planted, are in the hands of the orchardist, and he is responsible for their care and protection. The nurserymen have done their part, and the orchardists must do the rest."

Judge S. Miller, Hort. editor Columbus's Rural World. "Growing apple trees on a whole seedling or scion stock, instead of cutting the roots into pieces, as is the usual practice with nurserymen is a mode I have long advocated, but at the present prices of apple trees it does not pay to try it. Mr. F. B. Barry wrote some years ago that what he considered a good graft was to use but one whole root to a tree. At the time I endorsed the idea and have not since changed my mind."
PROPER STOCKS as well as right methods, are also of greatest importance. yet thousands of trees, particularly Plums, Prunes and Apricots, are grown on unsuitable soils and in unsuitable situations. Often in advance to short and unprofitable careers, and defeating the food hopes of the unsuspecting planter.

Downing, says of the common tender Apricots: "Apricots budded on peach stocks are very inferior, short-lived, and devoid of the qualities that would be imparted by root-grafting would have to be abandoned. But Apricots on the proper stock—the plum—are not altogether preferable for cold sections; witness—

C. E. G. Davis, of the C. E. G. Davis Nurseries, Santa Barbara, Calif., reports: "I have found the number of Apricot trees budded on plum stocks were planted in January 27 years ago, which have borne continuously, as one of the best bearings good a tree, while on the same trees two orchards succeeding each other, budded on peach stocks, have actually died.

The plum stock is also the only one of permanent value for its own species, although nurserymen nowadays use the peach stock, not only for the Apricot but for the Plum as well. This uniqueness of peach stocks is also very valuable. Their foliage is immeasurable; the trees often grow well for a few years, but soon begin to decline, then utterly perish."

The B. C. T. Times note: "The American Fruit Culturist" says: "The peach has been occasionally employed as a stock for the Plum. A very few varieties have been found which do well on the peach, but which attend its use, and the foliage with various indicate the propriety of the rejection of the peach for the purpose. Indeed, say the Times, the peach makes a good stock for the peach."

C. E. G. Davis, says: "During the past 20 years I have watched with admiration the growth of the peach, artifices, and other Chassay varieties, and believe they are preferable to peach stocks. I have not known the bolster to attack trees budded on these Peach stocks, but on the rare occasions a peach tree perishes, it is usually from the fact the fruit buds would endure a lower winter temperature; and also that the peace on the peach are far more liable to a chill on soil where it would entirely fail on peach roots."

C. E. G. Davis, says: "Mr. Miller's suggestion, we record as well worthy attention. The yellows come from the attack of a fungus; now if it can be shown that the peach is immune from them and suffer the same attacks as the plum roots— and we believe the evidence tends to favor this view—it will pay the peach grower, even at $30 per thousand for the peach stock, as the peach stock is a better stock for the peach."

A peach tree that is warranted free from the attacks of the yellows, and will continue in bearing for a quarter of a century, is a tree which merits the very ordinary tree, with its short life and great risk.

Mr. Miller, in a letter to us, writes: "I have been looking over plum stock last fall, and find it a regular encyclopedia of tree known. I see you grow apricot, plum and peach on Mariana stocks, just what I have been looking for for years past. I am experimenting with these trees, and find that good results can be gained in the way of preventing yellows and the borers. I am satisfied that the latter is a practical success with the plum stock, but there is a possibility that the growth so far is entirely satisfactory. I feel sure that if we had such varieties as Mariana, and perhaps others, as named by the Times, the yellows and borers would give us but little trouble."

Report Dept. Agriculture, of S. C. Aug., 1900: "Prunus cannot thrive on west. Bud-ding plum stocks has been successful. The plum stock, too, is less subject to the borer, especially the MARIANA. The chief difficulty, however, is to find a plum sufficiently firm for the peach to admit of a proper union.

We have found that the Mariana has not sufficient firm for connection; the best method is to do it direct; but by double-working, exactly as is done with Sheldon and other pears to get them on quince roots, we get perfect results. We have done double-working we have tried over twenty sorts and while several are good, the Poole's Pride is best, and we are using it largely for double-working peaches. It is also very hardy—see description under Plums.

H. M. Dunlap, ex-pres't Ill. State Horticultural Society, writes us: The trees arrived in good order. Only 7 of the Willow Twigs are live of those received last year. The Willow Twig you send me true to its own sort, so far as I can see. The men propagate it at all, for it is cheaper to grow 200 trees of Ben Davis or other good growers than 100 Willow Twigs. The growers are not very particular by purchasers, that, although some of the best varieties are the poorest growers, yet there are nurserymen who grow on the finest and most vigorous kinds, thus greatly reducing the cost of production. As one nurseryman expressed it, "we care nothing for the fruit; all we want is size to make the trees sell. Inexperi-enced nurserymen will do a very large thing, and sell a stock, and wonder why all nurserymen do not grow such uniformly fine, big trees. This plan, perhaps, is well enough if fine looking trees be the chief object, and their fruit only a secondary consideration."
Whole Root vs. Piece Root Trees.

Ed. Rural World:—No consistent argument can be founded to show that piece-rooted trees are equal to trees grafted in the natural crown (as Downing expresses it), except upon the hypothesis that it is a desirable thing to have orchard trees mainly or wholly without their own roots. If the true method of propagation be to grow trees from cuttings, or, what is practically the same, to use just as little of the seedling root as you can give the clon a start, depending upon the tree to throw out the main system of roots for the support of the future orchard tree, whatever materially interferes with the production of such cuttings is contrary to the laws of nature; and, as a small piece of root cannot support a vigorous growth, thereby necessarily forcing the clon, if it survives, to put out roots of its own, it is evidenced by the mishandlings of piece root grafting that the smaller the piece of root the better, because then the more nearly will the tree be on its “own roots.” They assume that piece-root trees are hardened, more seedy, more vigorous, and in every way superior to trees which have the natural collar of the seedling left intact together with its full natural system of its radiating roots in all directions. But the facts do not bear out the assumption. And besides the

Misleading inference

is often conveyed that whole root trees are not on their own roots; for the fashions is to ignore the fact that properly grown whole root trees possess an ample supply of fibrous horizontal own roots for surface feeders, and are just as truly “on their own roots” as piece-root trees, though unlike the latter their own roots are not their chief stay and support.

The whole argument if it is consistent with itself admits that the effect of the piece root “manufacture” of whole trees is to produce, in direct violation of nature’s laws, cheap nursery trees without a natural crown and without the natural system of roots which a cutting only, and a cutting never, can give to the future orchard tree; for if this were not the case it is plain that the method could not enable the “wholesale manufacturer” to sell his abnormal piece root grafts at a price which tempts anybody who can plant turf tips for greens in the Spring to buy and, forsooth, become a “nurseryman.” We would not

Disparage Small Nurseries;

far from it, but we feel that the culture and propagation of fruit trees and plants, particularly the apple, is a matter of greatest national importance, closely connected with the welfare and happiness of countless thousands.

Decrepit young orchards

scattered over the entire country largely attributable to a vicious system of growing short-lived trees, more like cuttings than nature’s plants, by wholesale nurserymen. In making piece-root grafts, “using a long clon and a

SHORT Piece of root,”

the main dependence is that the cutting or clon will put out roots of its own. But the fact is overlooked that a tree propagated from a cutting is less hardy than the same variety grown on an ordinary seedling; this has been fully demonstrated. A leading member of the State Horticultural Society of California utters the warning that we can understand and can and must have had two-year-old trees grown from cuttings to winter kill badly, while the same varieties on Chickas and hardy

Plainly Against Nature

to take a clon which has grown high up in the sunshine and air, place it in the ground and make a new root system entirely by nature for aerial conditions alone. Yet these are precisely the requirements imposed in piece-root grafting. A one-year-old seedling which, as all nurserymen know, grows naturally almost entirely on roots, and in which roots of an inch or two long and a six or seven inch clon spliced to each bit of root. When planted only about one inch of the clon is above ground, and one out of the half dozen or more grafts made from the seedling will have a natural collar—and even it is too deep underground.

Besides, as Peter M. Gilson, Sup’t Minn., Experimental Orchard, says, this collar piece has been cut so short that only fibrous and no deep-reaching roots result. Third count against piece-root grafts: the faulty and

Unnatural Union

of the clon and all the pieces of the root except the collar section. This defect is the consequence of the difference in texture of the wood and bark, as well as a lack of analogy between the albumen of stock and clon. The result of this is two imperfect and dissimilar systems of

roots, and often an abnormal enlargement at the point of union. This enlargement, the difference in color above and below the junction of the root, hair-like fibres and “horny” roots, afford tests by which with little experience any one may distinguish piece-root trees. It is impossible to detect the point of union in rightly grown two-year-old whole root-grafted trees. Such is the difference, even while young, that when whole root and piece-root trees of the same variety and size are mixed together, there are but few who could not soon learn to separate them readily. Indeed, E. Moody, one of the oldest and most experienced nurserymen and horticulturists of western New York, declares he can distinguish at a glance the two classes of trees even in bearing orchards. Of course varieties root differently, as Wine Sap and Whitney Crab, and each in a measure controls the root formation; but it is apparent that the smaller the piece of clon, the greater this influence of the engrafted variety.

In the fourth place, and this is the

Chieuest fault,

one fatal in the extreme and wherein lies their absolute and utter condemnation, the clon emits not only a scent but almost invariably a shallow system of roots. Hence
unnumbered thousands of these trees fall before storm and drought, wet or cold. For all who have observed with any degree of care know that cuttings—be they grape, quince, Le Conte pear, [see last page] or the cion-cuttins or outcropping roots—while making an abundance of fibrous and horizontal roots, rarely and almost never put forth any strong, deep-reaching roots. Cuttings are well enough for grapes, currants and such things as do not require far-reaching brace-roots, but apple trees thus grown will cause sore disappointment. Especially should they be avoided in regions where high winds prevail, for when the winds turn out such trees by the roots. In Colo. we have seen many examples of this—not in old worn out orchards, but in apparently vigorous young orchards just beginning to bear.

But unquestionably much the best trees are WHOLE ROOT TREES by which is meant such as are grafted or budded on vigorous 1st or second stocks just above the crown with the natural collar left undisturbed, using but ONE seeding for ONE tree. In whole root or crown root grafting a 4 or 5 inch cion is used and the long root of the seedling is shortened to 5 or 6 inches, the same as when transplanting for budding: besides making the graft convenient to plant, this induces more strong side roots to put forth, as well as several vigorous deep-extending roots instead of the one straight tap root. Thus the grafts are 8 or 9 in. long, allowing one inch for the splice, and involve special care and preparation, as well as considerable more work in planting than piece root grafts—the latter being but 5 or 6 inches much oftener than 7 or 8 inches in length. And as the joint is planted 5 or 4 inches low the whole root face, own roots are often sent out from the cion; but in any event, the tree will always have the support of a vigorous foster-root. By leaving the crown root or cut 5 or 6 inches the whole root face, the crown will beginning instead of but 1 or 2 inches, as is done in piece-grafting, the natural tendency of the middle part of the root when cut off to send forth other roots which will pierce deep into the earth is not destroyed, and the several new roots which take the place of the shortened single tap root, naturally go downward. It is for this very purpose that the French pear-seedling growers now take up the young seedlings when but one inch high, shorten the tap roots and transplant, thus forming the "branched-root" stocks which every leading Am. nurseryman now uses, though at an advanced price. The principle is the same when we shorten back the one straight leader of a vigorous young tree—instead of the one tall shoot several strong branches put forth forming a symmetrical, well-branched head, the upper branches going straightest upward. The stronger the 1 yr. shoot, the better will it branch when shortened back. The strongest growth is made on whole or crown roots, hence they always make the largest and best trees, well supplied both with deep penetrating roots and strong side or brace roots, grow more symmetrical in form, and have well-balanced heads or tops. Yet whole root grafts do not unite so well as piece-roots, the union being made on the harder and tougher wood above the crown; piece-roots on the soft wood of the root, unite much more certainly, and give the best stands in nursery rows. But, after it is once made, this very hardness and toughness of wood, being of like nature and texture with the cion, gives a better and more lasting union.

"Budding" and "grafting" are simply two different processes for accomplishing the same end, the one being performed in the summer, the other in winter or early spring, and the resulting budded or grafted trees are of equal value provided, always, that each operation has been properly performed. Budded whole root trees, if budded low—just above the collar—are equally good with grafted, if rightly planted so that all the seedling is well underground: but they are not on own roots and in cold regions not so hardy as grafted trees.

[Photo-engraving showing: Fig. 7. Piece-root Ben Davis, 2 yr., XX. Fig. 8. Whole Root budded Ben Davis, 2 yr., XX. Scale nearly one-half less than preceding cuts—Nos. 1, 2, 3 and 7]

We are free to confess that we too were opposed to the very idea of whole root trees until we investigated for ourselves; being led thereto no less by the writings of eminent horticulturists than by our own experience.

Old orchards still healthy which were planted from our nurseries long before piece root grafting was begun there, while much younger orchards of piece root trees were failing. In a small way at first, the back grafting of whole root trees was commenced both by collar grafting and budding, using always first class stocks for the reason that second and third class stocks, even if budded and grafted, are but 5 or 10 years are apt to continue feasible. And in this connection we cannot refrain from mentioning, as an illustration of a characteristic type of unfairness and prejudice, the case of a nurseryman who exhibited what he called first-class budded 2 yr. trees, 3 or 4 ft. high and
Keen competition

In the nursery line as in all others: for there are planters who always want what is lowest in price. But we know that whole root trees are the better and plainly so stated by the advancers of nurserymen that they are their own judgment, not upon our advice or recommendation. We have already cited the opinions of Pres't T. T. Lyon and Capt. B. B. Hosmer in our dissertation on the "Rural World's Own Judge: S. Miller, we all know; therefore we will only quote a few extracts giving the Results of experience

of others whose names are to-day among the most eminent in the culture of the budding of orchard trees. We can be any such names among piece-root advocates a somewhat diligent search has failed to discover them.

F. Barry, one of the foremost horticulturists now living, and the leading American authority, describing the "Barry's Fruit Garden," speaks of high and low budding and the necessity for the latter; after giving the reasons why stocks should be budded as close to the surface of the ground as possible, he says: "As the earth, so he sums up the whole matter in a few words—"low budding makes the best trees." Of the kinds of apple trees, he says, there are two kinds of budding, the "short-rooted" and the "long-rooted." He advises against the latter: "The roots from these small pieces cannot be so well developed as to properly feed the tree, or hold it up; hence, they are not so strong. We must plant the whole stock leaving the crown as nature formed it; then we have the whole root, strong and unimpaired by division to feed and develop the tree, as it is not so well provided for. and held in its place by its roots, but also receives most of its nourishment through them, it is plain to see why it will grow larger, live longer and bear more. Of whole root trees we have had little experience, for the only instance of grafting that has long been acknowledged by intelligent nurserymen and orchardists, yet nine tenths of the apple trees growing in the United States have not grown on whole roots for the reason that it costs more to propagate them that way, and it has been done to too many planters to do them any good; but we are glad to see the people in some sections awakening to their interests. We know such trees are the best; and in making an improvement so important as planting an orchard there is no economy in purchasing an inferior article." Whole Root or Crown Grafted Apple Trees are the comb of two forms, and we have foreseen for some years. We began their propagation, and have since grown many hundreds of thousands, because we were then satisfied, as we now know, that they are the root. Their great advantage may be seen in the many recent endorsements by high authorities, horticultural and cultural, and that the public has long known the trees are the best for permanent orchards. Perhaps no stronger or more authoritative endorsement has been written than that of the authorities.

"How to Keep our Orchards Healthy," read before the Mo. State Horticultural Society so long ago as 1854, by N. F. Murray, the Vice-Pres. of the Society, should receive a place in every orchardist's library. On the eve of re-election. Mr. Murray has long been known as one of the largest and most successful commercial orchardists in N. W. Missouri, and a horticulturist of much experience.

"This is a very important question, and one not only affecting the orchardist, but also the commercial interests of the country. For the happiness of the fruit hungry millions who wait for the rich, luscious, and life-giving fruits of our orchards.

"We must seek to find out, as far as possible, the causes of the unhealthy condition and premature decay of our western orchards, before we attempt to prescribe remedies. That our orchards are in a deplorable condition is now a fact. We look up and down the bluffs along our rivers, and out over our broad, rich prairies, for healthy orchards, but look in vain. In place of finding the rich, bright, green and glossy leaves, the sawed and blighted foliage, and the cupping and puckering foliage in which the keen eye of the experienced horticulturist reads starvation, premature decay, death.

How long

each species and variety of our standard fruits is likely to live under favorable conditions and fair treatment, in this latitude; and which varieties are best suited to our section of the country. As a rule, the good writers claim that the apple, the standard and king of all fruits. Mr. Knight, of England, famous in horticulture, has described the American Swanzey and other varieties as being grown on a healthy seedling stock, at two hundred years, and speaks of trees over one thousand years old, and still in healthy fruiting condition.

W. H. Mather, in his book published in 1850, tells of apple trees twelve feet in circumference; and claims that the apple tree, in a wild state, with moderate care, grows as large as thirty feet or more, and states that he had fruit from a tree in Plymouth two hundred years old. Mr. Cole also says that one of the few orchards, which have flourished under high culture, they often fall at one-half that age. I have myself seen trees of the Roxbury Russet that were planted near Marietta Ohio, by the celebrated Israel Putnam, in 1760, the 90th year of the state, still healthy and bearing abundant fruit.

The original Grimes' Golden Russet, a tree in Brook Co., West Va., was, some years ago, eighty years of age and still in good health.

In tracing the cause we fail to find it in any one of the numerous theories advanced, nor do we find it in the article of the country nor in the climate, nor yet in the soil.

I believe one great cause underlying this question is that in our Mad rush and greed

to multiply trees, to satisfy the demand for cheap nursery trees, we departed from one of the great and grand laws of nature, that simplest of all great laws, that in all cases of making one root for each graft, from each seedling, grafting at the collar, we went to cutting them into small roots, often making from two to five or even a dozen roots from each stock.

"This practice may suit the nurserman who feels that he must grow cheap trees, so he can compete with others who are growing the same stock, but there is no right to complain so long as they are unwilling to pay more than ten or fifteen cents for their trees, but such stock will never make the large, healthy, lasting trees that the original trees will flourish if left in the hands of the person who grew them and sold them in time, before they were started before this pernicious style was introduced.

That this is one of the chief causes of the short duration of our apple orchards we learn from our own experience, that the apple tree has a life, when well cared for, that is not strictly limited. It may be planted in the west, and live, grow and propagate roots for many years, but it is universally practiced, east and west, for nearly fifty years, and we hear our own lamentations re-echoed from our eastern brethren, victims of the same mistake.

"Now, I think that in order to have our orchards healthy, we must, as others have, go back to first roots and pay more attention to the laws of nature. We must renounce both the forced overgrowth and the starvation systems.

We may without seeds carefully selected from healthy trees—grow them one year, then graft just above the collar.

Several thorough nursermen recently have been

Denouncing WHOLE ROOT trees

in the horticultural press, many, perhaps all, of whom truly believe that piece roots are better—all the more reason why they should heed the numerous warnings of the high authorities, not only of this country, but of the best we know and all earnestly strive to advance our beloved Horticulture—man’s first occupation; do all the good we can, rejoice, and join with all brother nurserymen to grow the best trees that this art which does lend nature can produce for the orchards of the future.
son, 240,000 piece root grafts, the number planted last spring; besides this, there are 600,000 being on whole roots; the plant this year is nearly three million, more than half on whole roots.

Mr. White, then, is in a field. A few nurseries, who evidently grow neither whole root trees nor trees on Mariana stocks, but who feel aggrieved over the persistent demand for a better tree than they grow, have been filling the papers with free advertising of their own stock and at the same time, in their advertisements, refer to the whole root trees, trying to give the impression that they are sold at exhorbitant prices. One grows virtually indignant because "the man who pays the highest price for a stock, or a tree, is generally robbed as if he had his pockets picked," while another disinterested and unselfish nurseryman tells his neighbors that his stock is "worth four times as much as those used on Myrobalan roots." Against our usual custom, we will here notice that as a matter of fact, the very reputation they may come to be accepted as true.

We have already shown the fallacy of the arguments for the must be cheap. Indeed, if cheaper than Myrobalans for, we neither know whether others charge "four prices," nor often publish our own, thereby giving competitors a chance to figure just under us, we will say that our retail average has increased to 2 or 4 dollars a thousand. The Myrobalan root has long been 15 cents each for piece root, and 25 cents each for whole root trees—and these prices include all costs of transportation, and ready the nurseries for the use of purchasers in any state or Territory, freight and all charges paid. If these be "four prices," what of others?

One of these nurserymen, advocating piece-root apple trees and plums on peach roots, after vigorously denying "four prices," further says, "Plums planted in 1870 on Myrobalan roots have sprouted and made a worthless thicket—poor trees and very little fruit," which, by-the-way, is the usual experience with the Myrobalan stock; and worse still, it is only half-hardy and a far more prolific breeding ground for borers than even the peach. He also triumphantly says that he has increased 15,000 whole roots, over 20 years old, that will afford us any tangible proof that they are better than on peach-root or a hundred other native varieties of plums. By his question he seems to mean that when the rest of the world has adopted Mariana having been introduced only some 7 years ago, or then it is a palpable attempt to over-reach. He also wants authorities in support of which root trees and Mariana stocks (we trust he now has them, authorities undisputed and irrefutably conclusive), yet he himself has been in the business over 30 years, and he is more than a little suspicious of the disappearance of the "good," Mariana type stock, which has been the stocky, hardy type—just the type the Mariana has not been so much a "cheaper" stock than the notably hardy, sprouting, borer-ridden Myrobalan. Mariana stocks with this type are grown in France and sold there for much more than Myrobalan, for the latter are bought in France at a cost of $3 per thousand or less; for our part, we should be glad to get a Mariana stocks, even if grown from cuttings, at three times the price—for, besides furnishing everything, we may nearly double, merely as a bonus to encourage our propagators to do their utmost to grow every Mariana possible.

If there is any wild competition among nurserymen, in order to produce trees at the least possible cost, use the cheapest plum stock obtainable even the peach and next the Myrobalan—this grower should not avail himself of the "cheap Mariana." But strange as all this may be, surely "its passing strange that Mariana should lack adaptability," yet this grower would not have any of the "cheap Mariana." However this paradox, like adversity, has its uses,—it clearly exposes the true animus of the writer.

I am quite satisfied that it is an excellent stock for the American garden, and that it is better than any other stone must have time for further observation.

It is in no spirit of boasting that we have given a few items showing the progress made with improved stocks, but "with all due respect" and due to the "move" and horticultural science lags not whit behind, as well as to show our friends and customers how fully the general and all encouragement has helped to perfect our system of culture and propagation, and to extend the business, in some measure at least, to the public at large. Our stock has been produced by propagations of Mariana stock, and then of Mariana stock, and the result is the stocky type that is or is not suckered from the roots. W. Jennings, in Southern Horticultural Journal, says: "A row of Kelsey plums on peach roots were made worthless by root-knot, while other rows near by on Mariana were perfectly free. This indicates that where root-knot prevails, the Mariana is invaluable.

I am quite satisfied that it is an excellent stock for the American garden, and that it is better than any other stone must have time for further observation.
"Root-Grafting and Budding.

This old matter of the relative value of root-grafting, crown-grafting and budding, I have given a great deal of study for years, and have looked into the trees as they grow in the nursery row, propagated in all sorts of ways, and have brought here photographs showing the formation of the tree propagated in the different ways.

[Note.—We are indebted to the Prairie Farmer for cuts of Prof. Bailey's photos. Figs. 1 to 4, Prof. Bailey kindly furnished us photo for Figs. 5 and 7. All Prof. Bailey's photos were taken from Mann apple trees.]

[Extracts from address of PROF. L. H. BAILEY, of Dept' Horticulture, Cornell University, and Editor of American Garden, delivered before the American Nurserymen's Association, New York City, June 1890; also extracts from the discussion which followed.]

"We might divide this whole subject into two parts, and discuss one as whole-root trees, and another as piece-root trees. Or speak about root-grafted trees, by which we mean trees grafted upon pieces, and about crown-grafted and budded trees.

"Piece-root grafting is not new, although in America it has recently reached its greatest development, but so far back as 1811 it was used by Knight, the famous horticulturist, of England, who by chance found out that pear trees could be grafted on pieces, and afterwards extended it to apples, peaches and plums, it all of which he was successful. But Mr. Knight never supposed that this was to be applied in a practical way. In fact, in England, to the present day this method of propagation is used to a limited extent, for ornamental trees mostly. It is only in America that we have used it to a very large extent for the propagation of fruit trees, and you sometimes see in English Journals that this root-grafting is an American Institution.

"In regard to the relative value of the three methods, while I cannot begin to settle this matter, I can still throw out some hints which, perhaps, may be useful, for it seems to me that we have practiced it long enough to enable us to have some definite practical experience in regard to the matter.

"I refer, first, to the advantages of piece-roots—not the crown-root, which is sometimes called root-grafting, but the pieces of roots, obtained by cutting a root into two or three pieces. In the first place, this method allows us to make more trees from our stocks; it allows us to double and treble, and sometimes even quadruple trees. In the second place, it cheapens multiplication. In the third place, it hastens multiplication. Fourth, it allows deep setting, and is of value especially in our great Northwest.

"Fifth. These piece-roots are often very good as a starter. The Kiakasaw and Am. plums have been grafted on peach stock, with the expectation that the peach root will be cut off, or perhaps will die away, and the tree will be on its own roots. I have known many orchards of pears which were grafted on apples, and after awhile the union fails, and the pear grows on its own roots. Pears have also been grown this way on apple roots.

"Sixth. It enables us to grow rare plants of which perhaps we cannot get seed or cuttings, or get stocks for grafting. This it occurs to me, are about all the advantages of piece-root grafting.

"There are some disadvantages in this method of propagation. In the first place, the roots from piece-rooted trees always, so far as I have observed, are more prongy, in their character,—not so deep, more horizontal,—have more tendency to grow near the surface, and have not nearly so many roots as those which are worked on whole roots, budded or grafted. When roots begin to form from a cutting, whether that cutting is made from a root or from a stem, the roots will nearly always form on one side of that cutting, and will have a tendency to push out and grow in one direction. That would be a disadvantage. I have root-grafted a great many trees for this purpose, and in nine cases out of ten the roots were a great deal heavier and stronger upon one side than the other. Whether the tree overcomes these disadvantages later in life, I cannot say, but I saw a case where two orchards were planted side by side, one

Fig. 1.—Piece-root tree, 3 yrs. old.
Fig. 2.—Formation of Piece-root grafts.

Fig. 3.—Whole-root budded tree, 2- yrs. old.

Fig. 4.—Piece-roots, 2-yrs. old.
set with whole-root trees, and the other piece-root, and up to the present day the latter is not as straight as the other.

In the second place, root-grafted trees as a rule make a smaller growth the first year. The tree has not so much root to start it off.

Third. Some have said that the union in piece-root trees is precarious—persons who are familiar with the matter and careful in their observations have made that statement.

Fourth. I say that root-grafted trees tend to be more straggling than trees which are worked upon whole roots, whether budded or grafted.

Fifth. Trees are apt to slip over in the orchard when root-grafted. I am inclined to think that is often true.

Sixth. People say that these root-grafted trees are not so thrifty.

"Now I wish to speak of the advantages of whole roots, whether crown-grafted or crown-buddied.

"First. The crown of the tree is the easiest to be grafted and that it must be a vital part of the tree. A great many think the crown is the best place, and as between crown and root, it would seem to be true.

"These are the three special advantages of whole roots. I might say a word in regard to the relative merits of whole rooted or grafted and whole root grafted trees. I see no essential difference between these two, with this exception, that we can use a very long cion and can set the whole root graft deep down, and in this way get the advantage of growing the variety on its own roots and getting a larger growth the first year. Bud- stock is no doubt the best, anyway in regions where hard roots is not so great a desideration.

"I should be very glad to have this awaken discussion.

Mr. Albough, of Ohio, said that among the hundreds of thousands of apple trees which they propagate every year, there has not been a piece-root graft for the last six years. He advocated the use of budded root instead of those with a single long stem. Stand them deep enough so that the union would be, not only in the nursery but in the orchard, under the surface. As far as he is concerned he has not had one piece-root graft and had no trouble even in winters when the temperature was 50 deg. below zero.

Mr. Van Enden stated that several years ago he made a series of experiments in Eastern Kansas with root-grafts, using piece-roots from an inch long from different places on the root to the whole root twelve inches long, and found the best success with the top cut, six inches long. Those that were twelve inches long did not develop roots below. These experiments were made with the Ben Davis apple, which is one of the best varieties to throw out roots from cuttings, Mr. Carpenter, of Neb., thought that the question of grafting was a second one. In his section of the country whole roots and budded trees are not a success. The soil is too light and they are subject to root freezing. Mr. Carpenter said he is not whole-root grafting was that the soil is too rich and they make too strong a growth and run wild.

Mr. Stark, of Missouri, said that he did not agree with Mr. Carpenter in what he said about whole roots. They had been growing both whole-root and piece-root trees for years, and the whole root will mature as early or earlier than the piece-root, as it starts off quicker and makes its growth early in the season, hence matures even earlier; whole root trees always average much larger, and mature a week or ten days earlier than the piece-root.

The piece-root trees almost invariably tend to throw out roots from one side only, and the consequence is that the trees can in the nursery row will sometimes twist over from the wind the first year. They will not work during winter, while the whole-root trees will stand straight. They had been growing both kinds now for eight or ten years and they found that the buds on piece-root trees are so placed for the reason that they make better trees in the nursery and better trees in the orchard.

Mr. Albough said: "I am led often to believe that budded trees are better than grafted trees. In Nova Scotia or in New Brunswick I have found that the grafted trees are not so long-lived, and that the root grafts are better, because they settle down better. I have always practiced budding as much preferable to grafting."

Mr. Albough stated in answer to a question from Mr. Parsons, of N. Y., that in Ohio and the West, they use whole-root grafts on tree-in-pond, budding. They get upon stocks grown in this country.

Mr. Parsons: I do not think there is any question about rooted a grafted in stock that is made is this: Is the graft made in the cellar and planted out after being grafted, used to the exclusion of stocks planted in the ground, grafted on stocks or the buds above root. These experi-

Mr. Albough: About half and half of each. We graft about half, and bud the other half.

Mr. Stark: We bud very close to the surface of the ground and the trees when planted in the orchard are set a little deeper, so that the seedling stock is entirely covered. This will make equally as good a root as the whole-rooted tree. I will not stand by and see that we can from whole root grafting, yet we grow most of the apple or the latter way.

Mr. E. Van Minick, of Minn., said that the question was made by Prof. Bailey as to whether a root-grafted or a budded tree was the more healthy. Now, at the prices that some sell root grafts, I fail to see how very much work can be done on root grafts. We use the crown of the root, leaving the root as long as we can handle it, getting good results.

AM. ASS'N NURSERYMEN, Chicago, June, '89.

QUESTION: "Is there any particular advantage in budding or grafting apples on whole roots when trees are propagated at the nursery?

Prest.Sweet, of N. Y.: Any answer to that? I can say that Chase Bros, are using whole roots.

Mr. Samuels, of Ky.: I believe that Prof. Budd experiment many years ago, and would like to hear from him.

Prof. Budd: I would say yes, that once I grafted a piece-root on a whole root, and the piece-root died and the whole root flourished. I used them all for setting an orchard. The result was, that those grafted on the crown roots when I came to take them from the stock, they were smaller than the roots reaching roots than the others. The second and third roots were what would be called better trees to transplant, because they had more fibers and but few, far-reaching roots. The result in orchards was, but much in favor of the crown roots. Those were the only ones ever planted by myself in orchards. In later experiments I think it is always true with the apple, that the crown root gives fewer fibers, but stronger, more far-reaching roots; in my opinion it is the best.

Mr. Willard, of N. Y.: That there is about two thirds of the root. Then I grafted another thousand with the same varieties on sections of the root, using the second and third roots. I used all them for setting an orchard. The result was, that those grafted on the crown roots when I came to take them from the stock, they were smaller than the roots reaching roots than the others. The second and third roots were what would be called better trees to transplant, because they had more fibers and but few, far-reaching roots. The result in orchards was, but much in favor of the crown roots. Those were the only ones ever planted by myself in orchards. In later experiments I think it is always true with the apple, that the crown root gives fewer fibers, but stronger, more far-reaching roots; in my opinion it is the best.

Mr. Paton, of Iowa: As far as I know in the northwestern states, explained by Prof. Budd, that is budding roots in Iowa is to use nearly the whole root.

Mr. Samuels, of Ky.: I would ask Prof. Budd if the second section of the root of the crown root should not be grafted upon than to use the long root?

Prof. Budd: My observation is, sir, that the second section of the root of the crown root is good enough to unite. I have never used the second section of a pear root with good success; and so with the apple."

Prof. Thos. Beecham, for 30 years the editor of the Gardener's Monthly, and for over 50 years a practical nurseryman and scientific, in his address to the Asb, 1880, on "Living and Learning," said: "It is a fact we should always bear in mind that when much pruning is done, roots in like proportion always die, and
The large number of decaying roots destroy the healthy ones, thus surely killing the tree. Consequently we shall find that if there is not a large number of truly living roots, even for transplanting, but this is wrong; these fibres bear the same relation to the main root that leaves bear to the trunk. If the trees die, and if they are renewed. Hence the advantage of removing trees in early spring before the season's fibres are started. A few weak, fibrous roots are set aside to remain, and the large roots that are full of strength that push out the new white rootlets which gather nourishment from the soil. It does not depend on the period of germination of the small fibres. The large roots were started, as we saw, at the tip of the new fibres that growth is made.

Trade Journal and International Horticulturist, N.Y., June 15, 1898, "It is always to be noted at a meeting of the horticulturists that the sooner you ever arrive at positive conclusions, opinions absolutely diverse, are stated, and held to vigorously. Especially was this illustrated in the discussion of Prof. Bailey's conclusions of photographic evidence of the poor quality of root-grafts made on piece-roots. Some peculiar excuses we give for poor propagation, but I submit, that it is at the tip of the new fibres that growth is made.

Geo. Longman, editor Colman's Rural World, writing us relative to publishing "Whole Root vs. Piece Root Trees," says: "I hold article for the best of its kind, and think that the writer has not made any mistakes. No one, not even you yourselves, can realize the importance of the step you are taking or the value of your effort. I have written and will, if possible, have it put in the one of those articles which will be referred to as authority for a long time. But Prunus and Alnus, and the whole root of Root Trees," and hardly to you, you have the question?"

Enendorments and letters complimenting article, we have received by hundreds, and many favorable reports have also appeared in the horticultural press: "Whole Root vs. Piece Root Trees," is a most valuable and interesting article. (Read it in our Rural World on "Whole Root vs. Piece Root Trees," as valuable.

W. F. Heikes, Wholesale Nurseyman, Madison Co., Ala: I have read your article in the Rural World published by the Colman's Rural World, and write to you in the following words. If you will take the trouble to read the following, and to write back, I shall be obliged to you. The subject matter of your essay is one of great value, and should be published in book form for future reference.

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Dr. W. W. Stell, the well known Tex. nurseyman, in So. Hort, Journal: In Colman's Rural World I find an article on "Whole Root vs. Piece Root Trees," by Chas. W. Stell, a well known nurseryman. Here is an exhaustive treatise and I fully agree with the writer in all he says of the merits of whole root trees as compared to piece-root trees. In a letter to me B. Sept. 17, 1899, Dr. Stell says: "I am on the programme of the Pilot Point Hort. Soc. for an essay on this like your article, and I have made many, many tests side by side, and I do know of a fact that whole root trees are far superior to piece-root trees."

Horticulturist, Pilot Point, Tex: Whole Root vs. Piece Root Trees.—This to horticulturists, is certainly a question of more than passing moment. If in planting a young tree destined to become a source of profit to the orchardist, the grafting upon a whole root will develop, as pointed out by some, a more vigorous and profuse growth, and live longer, and stand up against storms or live through destructive diseases. "I am on the programme of the Pilot Point Hort. Soc. for an essay on this like your article, and I have made many, many tests side by side, and I do know of a fact that whole root trees are far superior to piece-root trees."
...twenty years, for I have been experimenting and practising on the same line for nearly thirty years, in New York, Iowa, and Arkansas.

J. K. Newton, Venturo Co., Calif.: I have had the opportunity of trying yours of "Whole Root vs. Piece Root Trees," re-published in a Texas paper. I have been greatly interested in the discussion, and think we would all profit by it; but they will come in by car loads to California, and I want to use my influence in favor of the better trees. I shall make liberal extracts from your article, and shall make liberal extracts from your article.

J. C. Vaughn, Marion Co., Ill.: Enclosed find stamps, for which please send price list. Think you send free copies to friends? I have read your very interesting article on root grafting. From an agricultural standpoint it is a success; you have satisfied your theory is correct. Have done a good deal of grafting and budding, and am now enjoying the fruit of my fourth planting of orchard, and making the fifth planting, without fair prospect of living to see it come into bearing.

G. T. Kimball, Shawhoo, Kan.: The article in the Orchards & Fruits is not likely to be the last word on "Whole Root vs. Piece Root Trees," and at once decided to have this matter under trial in our experiment orchard—a few years hence, several trees each on whole roots and on piece roots.

D. J. Parsons, Saline County, Mo.: Whenever opportunity offers, I give the people more light on piece-root grafting. Hundreds, I find, know nothing of that system, but it soon becomes obvious to them that it will do in all cases. The next time I get right kind of trees, I always refer to them.

C. L. Hughes, Arapahoe Co., Colo.: "Whole Root vs. Piece Root Trees." I have read carefully, and I am free to acknowledge that I was accusing wrongfully in regard to the whole root system of grafting. The article is none the less a good one.

Geo. J. Kellogg, Rock Co., Wis.: I have read your article and am very much pleased with its general light and practical nature, and feel the necessity of training salesman on your plan, I believe in the encouragement of local agents and direct communications.

Dan Carpenter, Clay Co., Mo.: I have read the article by your Pres., and think your position about the "Whole Root vs. Piece Root Trees" is a little bit too strong. I read a paper at last meeting of the State Hort. Society, going for the nurserymen "rough stuff" who will not unite; and then substitute something else, and several of the 8¥10 acre nurserymen jumped on me with both feet. I mentioned one or two instances where my neighbor and I have each had 100 substantial farmers in North Iowa who have tried both graft-root and budded trees, and now discard the budded trees.

Jno. H. Young, Rush Co., Tex.: Your circular just received, for which please accept thanks. "A Tree is a Tree" is one of the many popular expressions and it is true. But there is a difference of opinion as to how trees are grown. I, for a whole root of apple or pear and other fruits—well, the reason's this: Stark's trees are lasting as Old Oak is.

A. W. Wright, Livingston Co., Mo.: I believe in the crown graft, and for years have advocated much more than you in the same direction.

W. F. Sweet, Newaha Co., Ind.: I have grown apple trees in this county for nearly thirty years. Have part of my orchard on budded stock above crown, and part on root of the tree itself, dead, yet by far a greater number of root grafts of two, three, and four years younger trees are dead. I have been with a number of orchardists, and not did any of the arguments which I heard advanced on the other side, at the recent meeting of the State Horticultural Society, shake my confidence in your plan.

Natt. Stevens, Tex., in Tex. Farm and Ranch: Much interest is manifest in discussion of whole vs. piece roots. This is somewhat like the question of whole or leafy plants, which is answered, as I understand, that demonstrated that whole potatoes are best for seed, but it takes more of them to plant an acre, while quartering them is about one-quarter as good as the whole ones, and planting the whole or leafy plants is a failure in the whole or piece root question. Grafted or budded on all the root, if not great trouble to grow trees and get the kind you graft, while on the short piece root one may get a fraud or a dead root instead. Thus, if one wants to kill a tree, cut off the top, and to kill one-half of it, cut one-half of it off. The other half will apparently be more vigorous for awhile, but soon meets a premature death.

The Other Side, as the Trade Journal says, hold opinions directly the opposite—doctors will disagree. Some of course still fight for, and cling to the "good old way;" all men don't think alike about whole roots, any more than they do about the tariff.

Pres'J. C. Ferris, of Iowa, in Western Rural: Whatever may be the opinion of Mr. Stark, or, of N. F. Murray, of Missouri, there is not a horticulturist of good standing in Northern Iowa or Minnesota, who will advocate planting apple trees grafted or budded at the surface of the crown, or with the union of stock and scion so near the surface that the clone will have abundant root above the union. If there is such a horticulturist in the Northwest, let the advocates of whole root grafting or budding present themselves for a fair trial; this is a fair illustration of this whole or piece root question. Grafted or budded on all the root, if not great trouble to grow trees and get the kind you graft, while on the short piece root one may get a fraud or a dead root instead. Thus, if one wants to kill a tree, cut off the top, and to kill one-half of it, cut one-half of it off. The other half will apparently be more vigorous for awhile, but soon meets a premature death.
orange trees grow in Manitoba! Because the frozen North cannot grow the finer sorts of apples on trees propagated in nature's way, does not affect their value for the great APPLE REGIONS. Mr. Ferris, you and our other friends nearer the Arctic circle, ought not to try to measure Missouri apples in your cold-contrasted half-bushel measures. Besides, you should remember that we, in the APPLE BOTT., don't want wood for fire-wood. Nor want it cut off by a home grown article.

"Give us protection for our infant Industry! (Sub rosa) It is now over fifty years since your buyers first came annually to bid against each other for the crop of the "oldJudge Stark orchard." Better grow some sour summer Russians, and every fall cellar a few barrels of Illinois or Missouri grown Jonathan, Grimes Golden and Jane-
ton! Seriously, if whole root trees won't do in the far North, why, don't plant them; but please do generously allow them to be planted in regions where it is proven they are the best trees for profitable long-lived orchards.

D. B. Wier, late of Illinois, later of San Fran-
cisco, and later still of ———, a sometime-prolific corre-
spondent of many horticultural papers, surely must be "off" with the editors these days. The fellow is a pro-
fusion of the California county paper, in which, as he says, he "demolishes" our whole-root argu-
ments. Fearful lest we shall not feel badly enough about it, he even writes us a personal letter, glowing with "shoulish glee" over his prowess and our pros-
pective discomfiture, and pleasantly adds, that if we don't like it, "to put it in our pipe and smoke it." Mr. W.'s article is couched in equally refined language, and his arguments alike, are logical and convincing to a degree.

"The one great trouble is, that we have so many workers, trying to run horticultural departments the "soft way," that the consumer is at a loss to know which is the best. Take apples for instance. As Mr. Stark says, it would be impossible for him to produce the unqualified force of Webber's Unabridged Dictionary, and so is well calculated to do great injury; for there is not one such book, in some places, to make my meaning clear. I number Mr. Stark's strongly made assertions, and will try to show they are wrong.

Mr. Wier then proceeds to answer seriatim. We briefly extract: "1. We will see as we proceed, &c. 2. This is exceedingly silly. 3. This is a direct contradic-
tion of other statements expressed in his sericed. 4. This is a direct refutation of one of our main arguments. To show how far this sentence gives the true reason would take much space and time to show up here. 5. We will refer to this in a future issue to prove.

7. Natural crowns and tap roots have no more to do with the future of a tree in any way for good or for evil, than the number of hairs in a pig's tail has with the pig's ability to catch an apple.

D. S. Vandyke, Waukegan, Ill., in Southern Hor-
ticultural Journal: "I proved conclusively one year ago that whole roots are a failure, and that one and two-
piece grafts were superior to whole root grafts. The spring was wet and rainy. The piece roots grew fine, while the whole roots seemed to stand still; the tap root rotted in nearly every instance."

Mr. V. has thus settled in one year what Downing, Barry, Berekman, were a lifetime learning. Like others, he destroys whole roots, but he does not plant small whole root grafts, but planted the long seedling without shortening back. The result was what every practical man would expect. The plant grew of the eastern Illinois in a "wet and rainy spring. His one piece roots were likely just what are known to the trade as "soup yellows," and his tap roots are a very different thing than our half degree or so, which arise like piece-root nursemen cut their seedlings.

Judge Elmer Baldwin, of Illinois, in the Prairie Farmers' Bulletin several years ago I cut number of seedlings into two pieces and set in separate rows. I also cut like ones into 3 pieces, setting in separate rows. Could see no difference in the growth of vitage, or vigor, or anything, and have found the stronger tendency to form branch roots than the crown, or top piece, which might be expected, as the farther down the root the more water and food."

As to whole root grafting, I cannot comprehend the idea. A No. 1 seedling root is from one to two feet long. The crown should be four inches, and the union of graft and crown should be set at least three inches under the surface. To set 50,000 grafts, averaging eighteen to twenty inches long would be a serious job for a majority of the men favor grafting on fair length pieces being the best.

Exactly. And the evidence adduced proves that a fair length top part of the root, with the crown left intact, is just as well as with any other method. The only fault that the crown cut short is not so good as the second cut, for then it will put out only shallow roots. Yet, some nurserymen still assert that grafting does not leave enough of the roots, and proceeds to form the small, hair-like "fibrous" roots which Prof. Meelia and Mr. Bailey thought of, because the crown pieces went in with the other pieces. On the other hand, in grafting do not leave enough of the root part of the root, and proceed to form the small, hair-like "fibrous" roots which Prof. Meelia and Mr. Bailey thought of, because the crown pieces went in with the other pieces.

1. Webster, an Ill. nurseryman, recently elected President of the State Hort. Society: "To my mind there has been enough said but no arguments to prove that we have to go back to seedling to get a tree that is strong."

As I passed the Am. Ex. Co.'s office in our town this spring, an old and successful apple grower was reading the tags on several bales of trees to the passers-by and demanding, "What's this?"

He remarked, that if that is not intended to deceive or pull the wool over the eyes of purchasers, he did not know how to say it. He then felt in the root, and noted that there were not the gentlemen sending out the Old Oak Process, straining at a graft and swallowing a camel. The de-

1. As to the trade-mark: When Pres.' W. "catches on" and seeks to obtain his trade-mark, he will find that the U. S. patent laws will not permit nurserymen to obtain trade marks on "trees grafted on short blasts of true trees."

Oh no, the laws prescribe it shall be a fanciful name.

Perhaps Pres.' W. will originate a better name for his trade mark, if it is to be used.

Dr. T. H. Hoskins, of Vermont, after reading a brief extract from our article, republished in the New England Homestead, writes to that paper: "I have rather strong reasons for believing that the evidence of little proof, as in the article by C. M. Stark in the Home-
stead of July 30th. These nursery points in controversy and the result of the test of the future of the root, the second cut is inferior to the crown cut. A whole seedling root means a root a foot long. In root grafting such a root is never used. The top cut is not a whole root. If it is used as root to the tree that is cut.

It is only fair to say that the brief extracts made by the Homestead in their explanation as to what is meant by crown or whole root grafts, hence, Dr. Hoskins falls into the usual error about using roots a foot only. Such extracts must be strong."

As to the second root, the author says that it will not be grown that way. In the South the Le Conte pear is grown exactly in that way.

It is only fair to say that the brief extracts made by the Homestead in their explanation as to what is meant by crown or whole root grafts, hence, Dr. Hoskins falls into the usual error about using roots a foot only. Such extracts must be strong.

To all who have observed with any degree of know that cuttings—be they grape, quince, Le Conte pear or the cuttings of piece root apple grafts.
—rarely and almost never put forth any strong, deep-reaching roots. This assertion is untrue as for LeConte cuttings, indeed, "The Vice-President tree and dealer, some one and a thousand and one other points of superiority over Le Contes trees budded on seedling pear stocks. We barely mention this observation, for there are hundreds of propagators.

But perhaps Mr. J.'s irascibility is pardonable, considering that he is kept so busy of late defending his "pepperidge" Le Contes, grown from cuttings, he has no time to reflect on the fact that there are a thousand and one other points of superiority over Le Contes trees budded on seedling pear stocks. We barely mention this observation, for there are hundreds of propagators.

Blank & Bros., nurserymen of S. W. Mo., in their latest Price List say: Misleading statements are put forth, making comparisons between trees after the manner of patent medicine men, "before and after taking." They say they deliver nothing but whole roots, and that no cuttings or nurserymen's advertisements gives them away. As the ways of propagation are so easily understood, for a time we omitted mentioning anything about it; but we will here state that there is nothing there worth saying.

We do not claim any advantage for whole roots, nor charge double prices for same. All go at the same price here, with the assurance that none of them, where no deception can be practiced on anyone knowing a bud, and in receiving such trees, the purchaser can see at glance that they are genuine.

Possibly Prof. Bailey's "before and after taking" is what these gentlemen mean—it is certainly bad medicine for these "pepperidge" trees, and the advertisements gives them away. From the length of the controversy and the study given the subject by eminent scientists, it appears there are still some who find it hard to understand. We do not think the time was well spent in the oversight in "omitting mention" of methods that has thus tardily been corrected, after "hearing the news" so long ago proclaimed by Professor or Berchtrode, since repeated by inquiring tree planters and buyers from ocean to ocean. As all go at the same price, the minority portion of, their apple trees are certain to be locally sold; the "majority" being piece root grafts, will, without a doubt, move off more slowly. Most Western nurseries are "pepperidge" trees, and every one of them is genuine.

We fully agree with our esteemed coLaborators, that no deception can be practiced in the "whole root process"; they do indeed show a glint at what they are.

Mr. Dyke, Prof. Brunk, and others in a single year, yet "Preas. Evans, of the Mo. State Hort. Society, after a lifetime of experience in practical orcharding, says: "I can not tell now whether it is best to use whole or piece roots. How true it is, Messrs. B., Van and others, and that "some" if it is not the last residual mutterings."


Mr. Amorose: What about the whole root?

Prof. Clark: I suppose you mean the "Old Oak Process"?

Mr. Amorose: That is what I mean, apples have an oak to do with it. What is an oak to do with an apple tree, anyhow?

Everything, professor—if the apple tree happen to be grafted on a "vigorou8, first-class" white oak sapling! At the lost meeting the subject again came to the surface again the discussion, and closed as it started, each party being at its own point of view.

Mr. Greathed, (this is not near the correct word, but it has the right number of letters), an erstwhile tree dealer, more lately a piece-root Nebraska nurseryman, and a devoted student of a United States Patent Office, says: "What is an oak to do with an apple tree?"

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men, "Greathead talks too much, and not much can be depended upon what he says."

The "No. 2 apple seedlings used for whole-root grafts" by Mr. Greathead (when he makes any whole-root grafts), and which, as he says, "make two-piece root grafts," truly "proverbially true," that he uses second class roots for his piece-root grafts just as we charged is done by piece-root men, may be worth but $1 per thousand; but "vigorous, first-class roots," which alone are used by "this man Stark," for making both whole-root and piece-root grafts, are worth to-day $6 to $7 per thousand—indeed, the talented Mr. Greathead, in his "novel list, has laid a bleeding." No, we say not! "One-twentieth of a cent": now the veracious Mr. Greathead, in a paper read before his Neb. Hort. Society, said a whole-tree root "costs one-fourth of a cent, more than a piece-root tree." Perhaps since then, with Mr. G., apple seedlings have thus fallen to a fifth of their former price; but with all other nurserymen they have advanced 50 per cent. within six months—and this advance is attributable in no small degree to the great demand incident to the larger consumption, caused by the new, very high, and universal demand for whole-root trees.

But Mr. G.'s ability to matute truth is hardly touched upon as yet. He says: "Now the whole truth is the P. C. N. is trying to line its pockets by selling worthless whole-root trees at double the price of piece-root trees." We state our retail price delivered anywhere in the United States is 15c. each for piece-root and 25c. each for whole-root trees. All nurserymen know that costs of delivering average more than half the gross proceeds; if our prices virtually mean robbery of a "credulous people," we hasten to explain. For his retail price lists quote piece-root apple trees, buyer paying his own freight and taking his own risk, if—listen, oh, ye outrageous, and "credulous people!"—at "25c. each, $2 per ten!"—Honest Iago!

"Verily, Mr. Stark can afford" no more time to devote to gentlemen of Mr. Greathead's "peculiar" talents.

Mr. "Wisdom," in his "bleeding." No, we say not! "One-twentieth of a cent": now the veracious Mr. Greathead, in a paper read before his Neb. Hort. Society, said a whole-tree root "costs one-fourth of a cent, more than a piece-root tree." Perhaps since then, with Mr. G., apple seedlings have thus fallen to a fifth of their former price; but with all other nurserymen they have advanced 50 per cent. within six months—and this advance is attributable in no small degree to the great demand incident to the larger consumption, caused by the new, very high, and universal demand for whole-root trees.

But Mr. G.'s ability to matute truth is hardly touched upon as yet. He says: "Now the whole truth is the P. C. N. is trying to line its pockets by selling worthless whole-root trees at double the price of piece-root trees." We state our retail price delivered anywhere in the United States is 15c. each for piece-root and 25c. each for whole-root trees. All nurserymen know that costs of delivering average more than half the gross proceeds; if our prices virtually mean robbery of a "credulous people," we hasten to explain. For his retail price lists quote piece-root apple trees, buyer paying his own freight and taking his own risk, if—listen, oh, ye outrageous, and "credulous people!"—at "25c. each, $2 per ten!"—Honest Iago!

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ill, nurseryman of many years experience, came lately and was most agreeably surprised at the extent of our stock, especially at our success in pear growing; and his remark was, 'But you said you had seen more than you expected to find in the whole State of Mo. Among other appreciative visitors, Mr. James W. Gano and Mr. Charles P. Harrison & Co., one of the best Eastern nursery firms, doing an immense business, especially in seeds and flowers. We will not undertake to say how the beauty of the place impressed them; after looking over and taking in the extent of our large apple block (four million 1 and 2 year, trees, two-thirds on whole roots) said, 'You have made a good thing of it.'

Then, after closely examining our system of handling great numbers of orders, booking, filling, packing, &c., Mr. Gano said it had been a good thing for you to be away out here where you have had to originate your own methods, instead of taking them from a man, and so all have kept in the same old units until they really believe their way is the only way.

We opened our new packing houses, our pear, peach, and this large block of apple, that he has requested us to have photographs taken to be used in illustrating the Census Report. Mr. Hale is Census Supt. for the Dept. of Nursery, &c., and is one of the best known men in the East, particularly as a peach grower, having sold his crop last year for $35,000—and, by the way, he wants us to supply him 5,000 Elberta for his Georgia orchards.

Mr. W. "much doubts" the honesty of others, yet would trust the man who "rose to that of Caesar's wife. Else why does he accuse us with charging FOUR prices? Why does he, with his usual prejudice against others, go to the sense of working up orders, come in, and, with malice beyond the bounds of reason, advertise to duplicate at half price, thus practicing a double deception in his vain attempt to prove which his lack of business sagacity and skill has let pass from his control. For verily his aperch hath departed. His vanished cantata is his "only authorized agent. Imposing this agent, it would appear, has become a disastrously unprofitable one—and no wonder! For the 'agent,' while traducing us as the对面的, with all the ease of a man in the effort to maintain a waning trade, either forgets or never knew the four things necessary to all successful Business—"HONOR, ATTENTION, BUSINESS, and ORGANIZATION. Nor has the "agent" sufficient penetration to see that his cry of "four prices" don't mean four prices. The prices of a better trees delivered free of cost at $1, and in fact much lower prices than this "agent" asks them to pay, besides paying their own freight, taking their own risks, &c. A few of the "agent's" prices, Fall '89, compared with our retail prices, Fall '89:

<table>
<thead>
<tr>
<th></th>
<th>Our Price</th>
<th>Agent's Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gano apple, 30c. each</td>
<td>retail price</td>
<td>20c. each</td>
</tr>
<tr>
<td>Lawson pear. 81</td>
<td>60c.</td>
<td>75c.</td>
</tr>
<tr>
<td>Gen. Grant peach. St each</td>
<td>25c.</td>
<td>50c.</td>
</tr>
<tr>
<td>Oates. Cl. peach.</td>
<td>81</td>
<td>25c.</td>
</tr>
</tbody>
</table>

"Four prices" forsooth! But the "agent" is at last beginning to talk the true "Wisdom," or "You can fool part of the people all the time, but you can't fool all the people, all the time."

Mr. Gano shall leave this "honest nurseryman" and his "honorable competition," shall say farewell to his glowing, flattering, triumph of art—the life-like picture which points a moral and adorns a tale—shall say farewell to a man who has committed the grossest of all possible affronts toward the integrity of nurserymen who sell whole-root trees; why could he not look at home before casting the first stone? Why not visit the Gano orchard, and see the beauty of the place. He has the able superintendent, Mr. Gano, as we have gone, and see the acres of bearing peach trees in their full beauty. An agent that comes here, and tells us that we have got a couple of thousand acres of cherry trees, and does not let Mr. Gano tell him, as he told us, how disappointed and surprised he was that Mr. "Wisdom" should send them trees that are bearing any and everything besides the varieties named on the labels.

CONCLUSION: A word or two before you go and have done. The amusing assumption of a few so-called authorities, that "we have the same system as the rest of the world—English, or of England." All along they take it for granted that their "peculiar excuses" for advocating piece-root trees is the reason why they can sell their fruit at so much lower prices than we. Their assumptions are comprehensive; indeed; the choice of honest fruit growers lies between the two systems of propagation, and they regard whole-root propagators in Dr. Johnson's spirit, who said that the devil was the first whig. In the piece-root man's view, whole-root propagation is a conspiracy against the public welfare, and therefore one that must be wiped off the face of the Earth. It is an organized attempt to maintain at all hazards a vicious system, and to secure selfish interests. It hates competition, while whole-root propagation is a free and open system, which can not be turned aside by any amount of argument or by the threat of a law. He believes in a competitive spirit, and yet has no faith in the democratic theory of the equality of man. He is for the self-interest of the few, while whole-root propagation is for the interests of the many.

It is a system which may be so modified as to meet the wants of all—whether those who have few acres, or those who have a hundred, or even a thousand. It is a system which, when properly understood, can not fail to bring about the greatest prosperity and happiness—all to be achieved by the wisdom and self-abnegation of the piece-root nurseryman, who sees that there is so much for the country, has made the orchards of to-day so much longer-lived and more productive than were the orchards of a few years ago. These are the fundamental assumptions, and all the rest follow. In defending them, the piece-root men deliberately claim the honor due to them, the praise due to their system, and the premises, thereby seeming to justify them. They allege that every requisite of a long-lived orchard tree is met by the piece-root system of manufacture, and the utterances of great men like Darwin, Barry, Berckmans, are contemptuously and ostentatiously neglected—all these things are said and done in a way designed to excite the wrath and ridicule of the unthinking crowd, composed, perhaps, of those who wish to have the piece-root system both upheld and justified. They are for an agent for an instant that in all their calculations whole-root trees are still to be reckoned with; and, as may be gathered herein, the piece-root system is in the long run most comfortable. We cannot choose but do our part to soothe them, and at the same time we shall continue to propagate and sell Old Oak Process whole-root trees.

"As for the truth, it is eternal, and perhaps the discussion, like Wordsworth's streamlet, will—"And flow as now it flows.""

Dr. W. W. Steell, Paris, Texas, last writes us: "I enclose article read before the Pilot Point Hort. Society. T. V., Munson was not in attendance, neither Prof. Brunk—who learned all there was to be learned about this."
cheaper prices and induces larger purchases. Thirty years ago the first apple trees manufactured under the piece-root system were not more than half as large as the 25- to 30-footers manufactured in Colorado. The present-day average size of these trees is about 50 feet, which mean any other term, because clons are put upon small pieces of machine-cut roots) were introduced in the south. Large orchards were planted, yet to-day there is scarcely a root alive. Some of them, even in the large localities we find old and vigorous apple trees propagated by the whole stock method and planted years before the latter-day commercial revolution. I have mentioned elsewhere the puzzle to make a tree, a few apples, then a decline—and in 7 or 8 years your piece root tree is gone. Recently I spent some time in an orchard, manufacturing Cheap John trees, with large crops of fruit, that were 15 to 18 inches in diameter. No one could tell me how old they were, although parties could recollect back 50 to 60 years, and said that the trees had been put in then. I also noticed many young trees, 4 to 6 years old, but scarcely a middle-aged one, and upon inquiring why this was, I was simply told 'they live no longer than what they used to.' This is the cry to-day all over the country, and why? I claim the main cause is the mode of propagation. Wholesale manufacturers recently have introduced all over the country by the many millions annually for the last 30 years. The piece root advocates claim that an apple tree is better when grafted on pieces of roots, and the shorter the piece the better, just so it is long enough to splice to a long clon, as they expect the clon to make the roots to sustain the tree in the future. These advocates have recently stated their positions in the papers, four in the Southern Hort. Journal and one in the Petaluma Courier, of Cal. One from the St. Louis column, and one from the Chicago paper. Vandyke meant by one-piece graft, unless it was that he only cut one piece from the seedling for his stock. If so, this is just about the same as piece-root graft. The following presumption follows: that he made whole-root grafts on the entire root of the seedling, thus having a graft 15 to 20 inches long that would require a post sugar to plant. No. 3 is piece-root. There are a few who are a very large fruit, and many of the younger men, who are still hardy, and are developing this period, will not believe that they will give the best results on ordinary farm lands. The heavy, cold, wet soils Mr. Wier speaks of, Texas Farm and Ranch recommends for a 'Frog Lake' and the like. He does not claim that he can grow good apples to get at bottom facts, I must say that I differ entirely from Mr. Stark as to the ideal tree being a sucker from the old root. A good sucker, they have, Mr. Wier had none, and the old horse apple seen has none succeeded except the old horse apple. This does make a very good tree from the sucker. Old variety.

7. St r: The absence of a crown formed by nature, a serious defect but still not the most serious fault of piece root trees. Wier denies; says 'it matters not how at a tree succeeds, or is dominated by the roots.' This is the very point of it. In this I hold he is correct, provided the remainder part has either a developed or embryonic bud, can be grafted, even if it has been deprived of a bud. A crown is not absolutely necessary, if the graft is inserted just below the crown the rest are exactly the same if grafted just above it.

11. St r: It cannot be expected to form a perfect m t, crown and top, all from the same eon. Wier says it does perfectly. I hold to be one of the most strongly upholding piece-root grafting. A tree of 50 years is the ideal wood. A tree of 50 years is the ideal wood. Mr. Wier was knocked out of his wits in this round or could have understood really what was meant, for I must precisely say that Mr. Wier propo to impose on piece-root grafting.

To all the balance of the scrud Mr. Wier enters general denial, with only broad assertions and sometimes with ambiguous language, which is freely made to by some writers who are hard pressed for argument. I regard the points in balance of the 'scrud' very stro and the whole paper shows the writer is not an advocate. Mr. Wier, however, attempt to make a strong point when he signed the only object a nurseryman could have in such an article is to deceive the people in such trees to him. This was very unkind as well as true, as I propose to show by the following figures:

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Mr. Wier, I suppose, is now a citizen of Cal., but he is still very active. However, the fact seems to be that State comes, it seems, the most of the opposition whole-root trees, but there are parties in that State who will not read Mr. Wier and others of piece-root tree advocates:

"Nurserymen, Take Notice."


"It has been noticed for some time that a great many apple trees are dying in the region, and the subject seemed so much importance that at two recent meeti
J. L. Williams, Robertson Co., Tex., Oct. 25, '90.—Have just rec'd price list from T. V. Munson, Mr. M. has piece root trees, buyer paying express charges, at the same price you deliver them. Inclosed find Munson's sketch, "Fruit Trees," and the price list. I am including this to note the picture. It does seem to me a one-eyed negro could see at once Munson's argument is without foundation.

WORLD BEATER PLUM.

The following, received too late for insertion on proper page, we take from the published proceedings of the Mo. Valley Hort. Society, referring to the new World Beater Plum, named on page 24:

"Clay Co., Mo., Oct. 6, 1890:

"To the Mo. Valley Hort. Society: In the year 1838, I brought the original seed from near Nashville, Tenn., to Lincoln Co., Ky., and in 1858, from Lincoln Co., Ky., to Clay Co., Mo., where it has been raised and propagated since 1849, and have not missed a crop since 1849."

J. H. TINSLY.

We, the undersigned, do hereby testify that the following description is true of the Plums presented to your Society, Sept. 20, 1890:

Description.—Tree very hardy, upright and spreading; fruit almost indistinguishable from Wild Goose, but making preserves it all cooks up; commences ripening August 20, and continues in fruit until often frozen on tree. It is almost a disease to any one with much company, as they keep ten days to two weeks after becoming ripe before they mellow up, being very desirable for shipping; bears very heavy crops and is free from the ravages of curculio.

"We think its hardness, early productivity, prolific crops, sweet flavor and freedom from curculio, unite to recommend it to fruit growers. In fact, we can truly say it surpasses anything we have ever yet grown or seen and merits the consideration of our fruit growers."
1.—Garber pear, 2-yr., XX, on Japan pear seedling.
2.—Two Kieffer, 1-yr., XX, 5 to 7 ft., on Japan pear seedlings.
3.—Three Flemish B., "¾ inch and up," on Le Conte cuttings—as sent out by a leading Southern nursery.
4.—Three Garber 1-yr., XX, 5 to 7 ft., on Imported French pear seedlings.
5.—Yard stick—one and one-sixteenth inches wide.
6.—Three Kieffer, 2-yr., XX, on Imported French pear seedlings.

The above, except the Flemish B., were grown in our Nurseries. The F. B. on Le Conte were from a lot of over 5000, "¾ inch and up," bought last Spring from a Southern grower—as we had sold short on XX grade. But these trees on Le Conte were so poorly rooted that instead of using, we filled orders with our 1-yr., XX, 5 to 7 feet, transplanting the bulk of the Le Conte lot. We also transplanted some pears sent us from N. Y., which were left over—all under exactly similar conditions. The N. Y. trees nearly all grew, while in rows alongside, less than a fourth of the trees on Le Conte lived. The latter by their behavior have convinced us not only that their foundation is "shaky," but, as a leading nursery firm in S. W. Mo., says, "They won't do—they go back."

The 3 trees on Le Conte were not the "best" of the lot—neither were they the worst; few were passable, none good enough—we used best 1 yr. instead. Still, if trees on Le Conte, as said by some, do well in parts of the South, these may have a mission. We hope so.

The Japan Seedlings are of the same race with the Le Conte, Kieffer, &c., and seem likely to supersede the Le Conte as a stock. They are well rooted, very hardy and are thus far free from blight—three fatal defects of Le Conte cuttings. Japan seedlings are particularly desirable for Kieffer, Garber and other Hybrid pears, and well suited for the older sorts, especially weaker growers, producing a most vigorous growth; being very hardy, they also promise much as a stock for the hardy Russian Bessemeranka, or Seedless pear.

See article, "Whole Root vs. Piece Root Trees."