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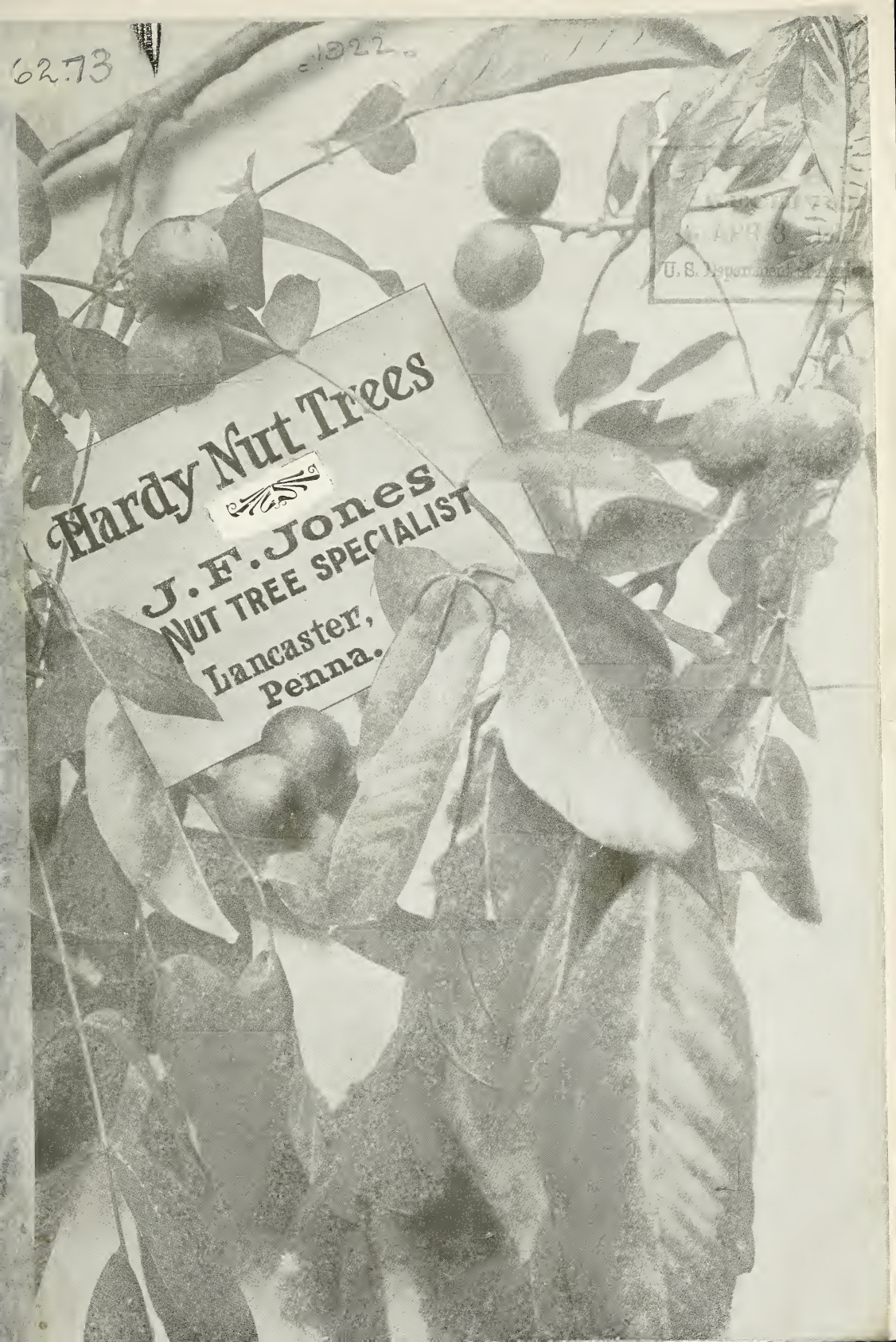
U. S. Department of Agriculture

Hardy Nut Trees

J. F. Jones

NUT TREE SPECIALIST

Lancaster,
Penna.



FOREWORD



WING to printing and engraving costs still being high, I am not using much new material in this edition of my catalogue.

Despite the general business depression however I sold nearly as many trees fall 1921 as I did fall 1920, our banner year, and indications now are that with few exceptions all trees will be sold this spring. The supply of trees of the Heart Nut, English Walnut and Shagbark is short and will not supply the demand. The propagation of most species of the nut trees by budding or grafting can not well be increased or put on a commercial scale as can the growing of most other trees, and notwithstanding the increasing demand for these trees, I can not profitably increase my out-put because the propagation of these trees requires extra skill which comes only from being vitally interested in the work. I am therefore obliged to limit my plantings instead of increasing them and to give my personal attention to the details of the propagating end of the work as well as the business management. My out-put this year which has taken from three to six years to produce (depending upon the species and sizes of trees) has cost more to produce than has that of any previous year, but I am not increasing the price of the trees.

With few exceptions, those who have been engaged in the propagation of these trees have not been able to "Make a go of it" and have quit. Notwithstanding the demand for these trees is increasing, the supply is diminishing, and what is worse, this condition seems likely to continue. The vital need of the Nut Industry is a supply of dependable trees of approved varieties, and with the rapidly increasing interest in nut culture the lack of an adequate supply of these trees is going to be keenly felt. What we need is a number of younger men of ability to take up the work of propagating these trees.

I wish to thank my friends for past favors and solicit your future orders with the assurance that they will receive the same careful attention that they have in the past.

J. F. Jones

Annual Plants or Tree Crops, Which?

Scientists have been warning us for years that our present system of farming with annual plants was slowly but surely exhausting our soils and that we would find, when it was too late, that we had "killed the Goose that laid the golden egg."

Besides the work and expense of growing annual food crops, the system of clean cultivation necessary for their success causes excessive leaching of fertility and erosion of the soils, with the result that land utilized for the growing of annual farm crops eventually loses its humus and fertility and refuses to bring forth bountiful harvests.

"Tree crops" will be the slogan of the future and by far the most important of these are the nut bearing trees. The apple and the peach are good to eat to be sure, but they have little actual food value in comparison to nuts as the analysis shows. Nuts are the most concentrated natural food known. They are ready to serve as the kernels come from the shell or they may be made up into various food forms combined with other materials, for which they are admirably adapted, since they are very rich and have a high protein and fat content and most foods are deficient in these elements.

The Demand for Nuts

The production of nuts has not kept pace with consumption in this country and the demand very greatly exceeds the supply. If the supply of common wild nuts that go to make up the bulk of our supply at the present time were of fine budded or grafted sorts, consumption of nuts would be twenty times as great as it is today, provided, of course the supply was available, and at a reasonable price.

Importation of nuts into the U. S. increased from \$8,549,997.00 in 1909, to \$57,499,040.00 in 1919, as the following statistics show.

Value of nuts imported into the United States from 1909 to 1919 inclusive compiled by the Federal Department of Statistics:

1909	1910	1911	1912	1913	1914
\$ 8,549,997	\$12,775,196	\$14,265,572	\$15,626,485	\$13,508,307	\$19,815,713
1915	1916	1917	1918	1919	
\$16,865,244	\$20,594,434	\$33,667,681	\$49,930,283	\$57,499,040	

DISTANCE FOR PLANTING. Pecans and black walnuts 50 to 60 feet apart; English walnuts 40 to 50 feet apart; filberts and almonds, 15 to 20 feet apart.

Pecans, English and black walnuts do not need all of the room given them for 12 or 15 years, and fillers of smaller growing nut or fruit trees may be planted between them to good advantage; also any cultivated farm or garden crop may be planted between the trees, as they are little in the way of cultivation for several years.

MY NURSERIES ARE LOCATED three miles south of Lancaster, in a section noted for its productive soil. We have the main lines of the Pennsylvania and the Reading railroads which insure the prompt delivery of shipments at nominal rates.

VISITORS ARE ALWAYS WELCOME and personal inspection of stock is invited. The Quarryville and Strasburg trolley cars, leaving Lancaster every half hour, pass the nurseries.

I GUARANTEE ALL TREES sent out to be well grown and of the size and quality specified, but claims for stock not satisfactory, must be made promptly upon receipt of the same.

WHEN TO PLANT: My hardy Pennsylvania grown trees may be planted either spring or fall. Trees may be planted any time while dormant and when the ground is not frozen. Shipping season in the fall, October 20th to December 15th, and in the spring, March 15th to June 1st. Trees for late spring shipments are held in my cold cellars, perfectly dormant, till June 1st to 10th.

Important Information

The propagation of nut trees is a highly specialized work and one that must be learned from the "ground up" if one is to succeed. These trees can not be propagated by ordinary methods as employed in the propagation of fruit trees, and even with the methods that I have perfected, results are always uncertain and not infrequently disappointing. The general nurserymen are not therefore propagating nut trees by budding or grafting and can hardly be expected to do so.



A fine specimen of the Black Walnut growing in Mass.

Facilities for Growing Nut Trees

I have gathered together here the largest and most valuable collection of new and rare varieties of nuts to be found. Owing to the difficulties encountered in the propagation of nut trees and especially in grafting with scions from old, bearing trees, working up Mother Blocks and stocks of trees is slow and expensive. My Mother Blocks, having been grafted direct from the original trees, have taken considerable time and expense to build up, but taking scions for propagation from these first generation, pedigreed trees, insures both the genuineness of the varieties and early and prolific bearing of the trees. My soil and climable conditions here are very favorable for the growing of this class of stock and I get here a very stocky tree with a well matured and well ripened wood growth that may be safely planted anywhere that nuts can be grown.

Growing Nut Trees with Superior Roots

Although nut trees make good roots here without special attention, we greatly improve this by cutting the tap roots of the young trees when they are one or two years old. Although new tap roots are usually formed, (usually two or three instead of one) the severing of the tap roots causes the trees to make more and better lateral roots which make for easier and safer transplanting. Such trees are not obtainable elsewhere.

Plant Only Budded or Grafted Trees

I am sometimes asked what are the advantages of budded or grafted trees over seedlings. The difference is the same as with fruit trees. Varieties of either fruit or nuts can only be perpetuated by budding or grafting. If we want a Baldwin apple orchard we do not attempt to grow the trees by planting Baldwin apple seed, because we know that these seedlings will not hold true to type or variety, and that fruit of all sizes, shapes and colors will be produced when the trees come into bearing. We also know that these seedling trees will vary as much in vigor and productiveness, as in the fruit borne, and that they will take two or three times as long to come into bearing as do the grafted or budded trees. The same applies to nuts and it would be just as reasonable to plant a seedling apple orchard as to plant a seedling nut orchard. The only difference is, grafted varieties of nuts have not been available till recent years and people have become accustomed to planting seedling trees. By growing grafted or budded trees of improved varieties of nuts, we put nut culture on the same plane with fruit growing and there is nothing in the orchard line that promises greater returns to the orchardist than the planting of these improved, budded and grafted varieties.



Grafted English Walnut Tree planted in the poultry yard, Spring, 1913. Began bearing at three years old and has borne every year since. Produced nearly a half bushel of fine nuts, Fall, 1918. The owner Benj. Mylin, was 68 years old when he planted this tree, but he has lived to enjoy the fruits thereof and to give many fine nuts to his friends.



A three-year budded Pecan Tree ten feet high, in Mr. T. P. Littlepage's orchard, Bowie, Md.

Hardiness of Nut Trees

I grow only hardy, northern varieties of nut trees for northern planting. All trees offered are grown here in my Pennsylvania Nurseries and are perfectly hardy and reliable. Much harm has been done the northern nut industry by a few northern nurseries selling southern pecan and other unreliable trees.

The extreme cold winter of 1917-18 was a severe test, but I did not lose any trees from frost and none had any protection whatever. Spring, 1918, many reports came in from customers expressing surprise and satisfaction with the hardiness of my hardy budded and grafted trees. Several customers in Michigan and New York reported that their English walnut trees from here went through the winter in good condition while apple trees suffered badly, many orchards being killed. With the exception of the hard shell almond and the filbert, I have always regarded the English walnut as less hardy than any other nut that I propagate, and their proving harder than the apple in these instances more than fulfils my claims for them.



From the second crop of a five-year old Pecan Tree, grown by Mr. J. F. Wilkinson, Rockport, Ind.

Ornamental Value of Nut Trees

It seems hard for some people to get away from the idea that they must plant maples, poplars or other worthless trees simply because others are planting them, when nut trees are far more ornamental; make just as good shade trees, and in addition produce a bountiful supply of nuts for home use if trees of good budded or grafted varieties are planted.

What constitutes an ornamental tree? The two factors of prime importance, and which the landscape architect looks to especially, are beauty and rarity. He is willing to sacrifice much on the former, if a specimen is rare. If one goes into a well planted place, the trees and shrubs one sees every day are hardly noticed, but new or rare specimens attract one's attention at once. A lawn or home grounds planted with nut trees, will attract more attention than any other planting that can be made. The early bearing of the grafted trees enhances their attractiveness as well as their usefulness.

Shrubby or herbaceous plants can be planted between or around the nut trees the same as with other trees. These trees, being very deep rooted, will not suffer because of being near the shrubbery, provided the soil is fertile, and the shrubbery will do better near these trees than they will when planted near ordinary shade trees which root shallow and spread their roots over a wide area.



Gathering English Walnuts from a two-year tree in my test orchard.

Age of Bearing

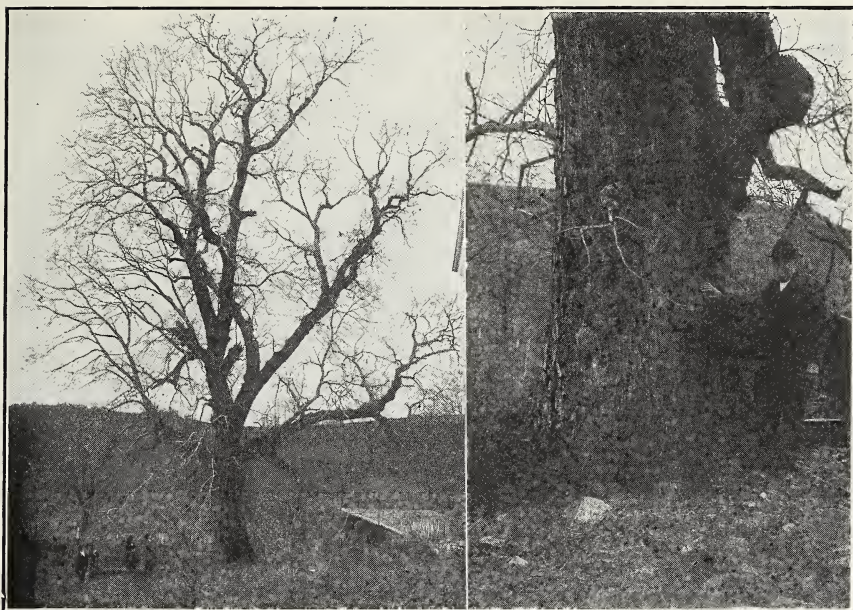
One of the big advantages of budded or grafted nut trees is early bearing.. We often have the improved English walnut trees to bear nuts the third year and sometimes the second, and they may be counted upon to bear by the fifth year here. The black walnut is no exception, and bears nearly, if not quite, as early as the English on the average. The heart nut bears even younger and it is not unusual for the Lancaster to bear a few nuts the second year after grafting. A top-worked pecan tree in Mr. J. G. Rush's grounds, West Willow, Pa., which we grafted for him spring 1917, bore a few nuts in the season of 1919.

Mr. J. F. Wilkinson, a pioneer pecan grower in Indiana, says: "All of my four year budded and grafted pecan trees bore from 20 to 97 nuts each last fall, and most of them bore a few nuts in 1918, at three years old. Three trees bore a few clusters of nuts each in 1917, at two years old."

Are Grafted Nut Trees Appreciated?

While those experienced in fruit growing realize at once the big advantages of grafted nut trees of fine varieties over seedlings, most people do not evidently appreciate what we are giving them, as is evidenced by their buying seedling trees from others at prices nearly as high in many cases as those we are charging for budded or grafted trees of the finest varieties. The cost of growing these seedling trees is only about one-tenth that of grafted trees and requires no skill to produce. In fact, we dig and burn about twenty thousand seedlings a year on which buds or grafts have failed to take and have not offered them for sale at any price. One of the seedling English walnut growers told me in conversation two years ago that he did not sell any trees under \$5.00 each and that he could easily sell all he had at that price! Another concern that advertises extensively boasts of an out-put of thirty thousand English walnut trees and their prices have run about two-thirds that of good grafted trees. While some of these people catalogue named varieties and otherwise try to lead the purchaser to think he is getting improved varieties, there is really no excuse for any one being fooled in thinking they are getting any thing but seedling trees, since these seedling fellows do not say they are selling budded or grafted trees and would not dare do so, because to do so would be clear evidence of intent to defraud and they would be shut out of the U. S. Mails. In view of these facts, I would warn those wanting nut trees for fruiting to be sure they are getting budded or grafted trees of approved varieties, regardless of whom they are purchased.

Grafted nut trees of approved varieties may be had from several other propagators; also from several nurserymen who we supply with these trees.



The above is from a photo of an English Walnut tree growing on the farm of Jacob Bauder, Berks Co., Pa. This tree is 210 years old; the trunk measures 15 feet in circumference three feet above the ground; spread 92 feet and 100 feet high. An idea may be had of its size from the men under it to the left. Mr. Bauder says this tree has produced 25 bushels of nuts in a single crop. Timber men who have looked at it recently say it is probably worth \$500 for lumber for the manufacture of fine circassian walnut furniture.

Soil, Locations and Climatological Data

Some people seem to think that to succeed with nut trees requires some particular kind of soils or location. The fact is, most of the nut bearing trees are less exacting in their soil and climatic requirements than are our more common fruit trees, and these trees will often succeed where fruit trees would fail. This is especially true of the black walnut, heart nut and pecan. These trees are doing well in many cases on the heavy black soils of Ind., Ill., Iowa, Mo., and Kans., where few fruit trees can be grown, also on a great variety of soils, including light sandy soils, if the fertility of the soil is kept up.

THE BLACK WALNUT grows naturally from Canada to Florida, and from Maine to the Great Divide, and on about all kinds of soils and locations. The climate of Colorado is especially trying on trees but the black walnut is doing well there. My grafted trees are also doing well in Washington and Oregon.

THE HEART NUT is a sport or variation from the Japanese walnut, *juglans sieboldii*. The tree is very hardy and does well from Canada to Florida, and it is believed it will do well anywhere the black walnut grows.

THE NORTHERN PECANS are as hardy as the other hickories and in this regard should not be confused with the southern pecan. In a wild or natural state, the pecan grows from Terre Haute, Ind., and Clinton, Iowa, on the north, to the Gulf Coast on the south. The tree grows in the river bottoms and will succeed on land that is too low and damp for most trees. Because of

this, it was formerly thought that the tree required excessive moisture for success, but this was long disproven by the thousands of trees growing thriftily and bearing well on high and dry locations, and on a wide range of soils. The pecan has proven to do well on even light sandy soils, if the soil fertility is kept up, as well as on the clay and clay loam soils. The varieties I am propagating are from Indiana, Iowa and Mo. and the trees are perfectly hardy.

THE ENGLISH WALNUT, when budded or grafted upon the native black walnut stock, as I grow them, ripen their wood growth up earlier and better than do seedling trees and are therefore considerably hardier than seedling trees. Grafted on this stock, the tree is also adapted to a wider range of soils, but the tree is more exacting in its climatic requirements than is the black walnut or other native nuts. While the English walnut can be grown with more or less success in all the eastern, middle and southern states, (and I have good reports on both the growth and bearing from all these states) my opinion is that its cultural range for commercial orcharding will follow that of the sweet cherry in the eastern and northern states, and where the sweet cherry (Hearts and Bigarreaus) succeed, one need have no hesitation in making large plantings of my hardy budded and grafted trees. These trees are doing well in the lake region, from New York to Michigan; also in Mass. and Conn., as well as farther south, and mature their nuts well in the short seasons of these northern states, but on the heavy black lands from southern Indiana westward, their success is irregular and uncertain. The trees are doing well in Kentucky and in the Ozark mountains in Mo. and Ark. and should do well in Okla. Contrary to my earlier expectations, my grafted varieties of the English walnut are doing well in S. C., Ga., and Ala. and it is believed the hardy, late vegetating, Mayette and Franquette will prove to be a profitable commercial proposition in these states.



English Walnut Trees growing along the roadside. Property of M. Herr. These trees bear several bushels of nuts each year and without any cultivation, the land being used for pasture.

Mr. J. B. Wight, Cairo, Ga., says: "Both trees of the Rush English walnut bought of you a few years ago bore the past year. The nuts produced were fully up to those bought in the market. I have not as yet decided whether or not it can be profitably grown here, but see no reason why it may not." Mr. Wight is a large and very successful grower of pecans.

THE EUROPEAN FILBERT can be grown where the English walnut succeeds, except that it does not do well in the lower south, and the tree requires well drained locations for best results.

Yields and Profit

I am sometimes asked what a pecan, English or black walnut tree will produce at a given age. No one can tell what any certain tree or trees will bear at a given age, because conditions are too varied, but we can estimate the crop in a general way. Good budded or grafted trees of good bearing varieties of these nuts, when properly planted and cared for till the trees are well established, will begin bearing about as early as the apple and should produce profitable crops as soon as the trees are large enough to carry good crops of nuts. On rich land, this should be about as early as the apple.

It is conservatively estimated that if one plant, say, 1000 good budded or grafted trees of the pecan, English or black walnut, (or some of each) and give the trees proper care till established, that they will return a net profit of at least \$3000.00 a year at 10 to 12 years of age and the yield will increase rapidly with the growth of the trees and should reach at least \$10,000 a year when the trees are in good bearing. If the nuts are cracked and the kernels marketed, the income should be considerably larger than this. It is felt that the above estimate is very conservative, and I believe that this is so, as I know several trees the crop of which sells for \$100.00 or more in a single year. Estimating an orchard on the basis of these trees, (and there is no good reason why we can't duplicate them or even beat them) profits would be very large, as the cost of growing is practically nothing, and the nuts, falling to the ground when ripe, are easily and cheaply gathered and are not perishable, but may be sold as they come from the trees or they may be cracked and the kernels sold at one's leisure, during the fall and winter months. Every year sees a large increase in the quantity of nuts cracked, and eventually they will be sold that way almost entirely. The average person will not eat very many nuts if they have to crack them, but if they are cracked and put on the market in a readily usable form, the demand will be practically unlimited. Remarkably efficient power crackers have been invented and are now in use cracking pecans, and it is believed that just as good one's will be devised for cracking good black walnuts and other nuts as soon as we have them in sufficient quantity to justify the manufacture of such machines. Eventually, nut crackereries will be in operation all over the country and those having a few hundred pounds of nuts or those who prefer to sell their product as they come from the trees, can dispose of their product readily and without the trouble of bagging and shipping them.

Some people, in investigating the possibilities in growing nuts, compare production and sales per acre with those of the best apple or peach orchards. Unless one knows what the fruit grower is up against in his fight with insect pests and diseases, the comparison is not a fair one. It is not what a crop sells for that determines the profit or the satisfaction of growing. With half the gross sales per acre, a nut orchard might show more net profit, and the crop is certainly more satisfactory to grow and handle. Also, the nut trees require comparatively little care or attention and are permanent, outliving several generations of fruit trees. When fruit is low in price, the fruit grower must go ahead with the necessary spraying, pruning, cultivation and thinning of the fruit, even though returns do not justify the expense, because if left to shift for themselves, fruit orchards are soon gone and the investment is lost. On the other hand, nut orchards, while the trees respond to manuring or added soil fertility, in increased growth and bearing, the trees will go along in good shape without, and if the land on which they are growing is naturally rich or has been previously made so by manuring or the growing of leguminous crops, the trees

will continue to bear good crops of nuts without any further attention to soil fertility, at least for a number of years.

Mr. E. A. Riehl, the noted Illinois nut and fruit grower, has a number of Thomas black walnut trees in bearing and wrote me in Dec. 1915 that he had sold all of his Thomas kernels at 80c per lb. wholesale, and as he got 10 lbs. of kernels to the bushel of nuts, he considered their growing very profitable. Later, Mr. Riehl wrote me that if he was a younger man he would plant at least 1000 grafted Thomas black walnut trees, as he considered their growing the best proposition that he knew of. Since this correspondence with Mr. Riehl nuts and nut kernels have nearly doubled in price. It does not require a large black walnut tree to bear a bushel of nuts, and I would expect them to do this at eight to ten years of age.

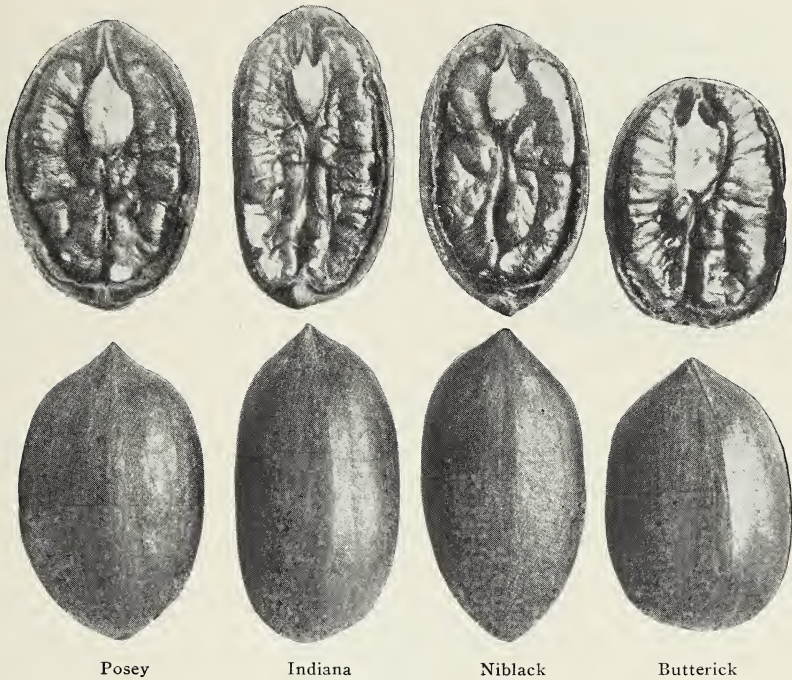
How to Succeed with Nut Trees

Because we see the black walnut, the pecan and the hickories growing in a wild or natural state, and occasionally bearing good crops of nuts, under adverse conditions, some people seem to think that these trees do not require any care or attention. While this is true as regards the trees when established, at least if they are planted on good land, the young trees should have some attention till they are established. When the trees are poorly planted on old, worn out land, and left to shift for themselves, failure will be the result, and the same is true of any other tree or trees. The principal requirements for success with nut trees is soil fertility. The nut tree is a natural engine of production and, with the help of sunlight and moisture, can turn the crude soil salts and fertility into a finished and highly concentrated food product, but we cannot expect the tree to produce large or regular crops unless the soil fertility is kept up, any more than we can expect the gas engine to run without gas or oil. However, it is not necessary or even advisable to delay the planting of the nut orchard because the land to be planted is not fertile. By using some good fertilizer such as bone meal or tankage, mixed with the soil around the roots in planting the trees, we can supply the fertility necessary for good tree growth at once, and very cheaply, as two or three quarts of this material is sufficient for average size trees, and by mulching the ground lightly around the trees with stable manure, grass, straw, leaves or other material, sufficient moisture can be maintained for good tree growth without cultivating the land. This annual mulch, rotting on the surface, quickly builds up the soil about the tree, and by growing Sweet Clover or other legumes the land can be built up to a high state of fertility with very little expense and while the trees are growing. Nut trees do not require cultivation and, being planted 40 to 50 feet apart, in orchard form, the young trees use only a small portion of the area for several years, and this gives ample time and opportunity to build up the soil in a natural way, and at the same time no time is lost in bringing the orchard forward. When these trees are planted on good farm land, one can continue to crop the land for several years if desired, and the distance given the nut trees in orchard form makes them little in the way of cultivating farm or truck crops for several years.

I mention Sweet Clover especially in connection with soil improvement, because, in my experience, it is the only legume that does well on old worn out or gullied fields. Sweet Clover is really a wonderful plant, as it not only takes well on poor, worn soils, but it will grow 6 or 8 feet tall. The unhulled seed is the best to use. We sow this at the rate of one-half bushel to the acre, right on the hard ground, without any preparation whatever, with excellent results.

The Pecan

BUSSERON. From Knox Co., Ind. Considered one of the best of the Indiana pecans, and one of the most reliable. Nut large, long, and of fine appearance. The original tree has a great bearing record and the variety is one of the safest and best.



Posey

Indiana

Niblack

Butterick

BUTTERICK. From near Grayville, Ill. The old Butterick tree is one of the "giants," and has been bearing beyond the memory of the oldest inhabitants. The nut is one of the largest of the Indiana group and a real paper-shell of excellent quality. The original tree is a heavy and regular bearer. The Butterick combines large size, with a real paper-shell nut of high quality, and a rapid growing tree that bears very early, and is perhaps the best all round pecan of the Indiana group.

GREENRIVER. Originated in Henderson Co., Ky. The nut is medium size; shell thin; kernel full and plump and of the best quality.

INDIANA. From Knox Co., Ind. One of the largest of the Indiana pecans and one of the best. The nut is thin shelled, full meated and of very good quality. The tree is a very heavy bearer. One of the best pecans.

MARQUARDT. Named and introduced by me. The Marquardt I consider a very remarkable pecan to have originated so far north. Coming from 20 miles north of Burlington, Iowa, and 200 miles north of where the Indiana varieties originated, the Marquardt should not only be hardy in tree but mature its fruit well in the Lake region or similar latitudes where the success of the Indiana sorts is questionable. The nut is as large as the Indiana varieties; with a thin shell, and full kernel of excellent quality. If one has any doubts about the pecans of the Indiana group maturing their fruit with them this is the variety to plant.

NIBLACK. Originated in Knox Co., Ind. Named for Hon. Mason J. Niblack, Vincennes, Ind. Nut medium to large; shell very thin; kernel full and plump and of the very best quality. Cracking quality the very best. One of the most desirable of the Indiana group and it is believed it will do well farther north than any other of this group.

POSEY. From Gibson Co., Ind. One of the largest and finest pecans of this group. The nut is very large and a real paper-shell. The cracking quality



Marquardt Pecan

is the very best. The tree is of a very stocky grower with very large, luxuriant foliage, and very ornamental.

Prices of Pecan trees, either budded or grafted on Indiana seedlings:

1½ to 2 feet	\$1.75 each or \$17.50 per dozen.
2 to 3 feet	2.00 each or 20.00 per dozen.
3 to 4 feet	2.25 each or 22.50 per dozen.
4 to 5 feet	2.50 each or 25.00 per dozen.
5 to 6 feet	2.75 each or 27.50 per dozen.
6 to 7 feet	3.00 each or 30.00 per dozen.

The English Walnut

FRANQUETTE. One of the finest walnuts and the tree is very hardy and very reliable. Nut medium to large; shell medium to thin; kernel large, full and of excellent quality. My trees are the Vrooman variety which is much the best of these nuts.

MAYETTE. Nut quite large, smooth and of attractive appearance, Kernel large, full and of excellent quality. Considered the best walnut known. The tree is very hardy and reliable and one of the safest to plant. My trees are of the Wiltz variety which is much the best of this type. Unlike the old Mayette, the Wiltz Mayette bears very early.

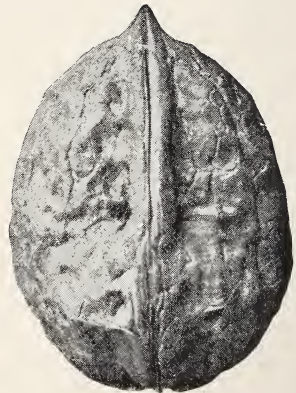
RUSH. The Rush has the distinction of being the first eastern variety to be propagated. It was named by me for the originator, and introduced in 1904. The nut is medium to large; quite smooth and attractive, the kernel is full and of splendid quality. The tree is very hardy; a very rapid grower and early bearer. Perhaps the best eastern variety.



Wiltz Mayette



Rush



Vrooman Franquette

Prices of English walnut trees budded or grafted on black walnut stocks:

1½ to 2 feet	\$1.75 each or \$17.50 per dozen.
2 to 3 feet	2.00 each or 20.00 per dozen.
3 to 4 feet	2.25 each or 22.50 per dozen.
4 to 5 feet	2.50 each or 25.00 per dozen.
5 to 6 feet	2.75 each or 27.50 per dozen.

The European Filbert

DAVIANA. A fine large nut with very thin shell. The bush is late vegetating and very promising here.

BARCELONA. A large roundish nut. Tree a strong grower. Blooms early yet usually bears fair crops. Largely planted in Oregon and Washington.

WHITE AVELINE. A medium to large sized nut. Bush bears well here and we consider it one of the best sorts.

ENGLISH. Medium to large; thin shell, quality good; very reliable.

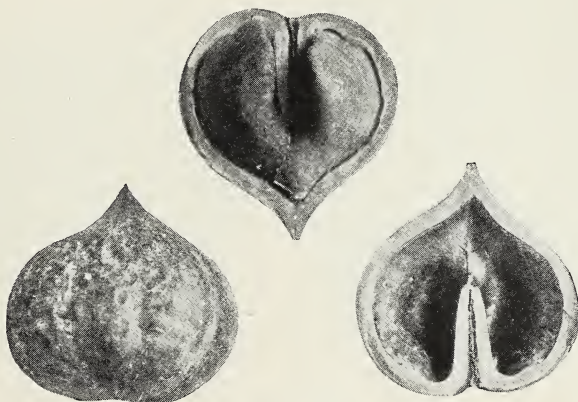
1 to 2 feet \$1.00 each or \$10.00 per dozen.

2 to 3 feet 1.25 each or 12.50 per dozen.

3 to 4 feet 1.50 each or 15.00 per dozen.

The Heart Nut

THE HEART NUT, *juglans cordiformis*, from Japan is very rare in this country for the reason that it is only a "Sport" or variation from the common Japan walnut, *juglans sieboldiana* according to Sargent and almost invariably reverts to that type or species from seed. Owing to the extra cracking quality of the nut, the rapid and luxuriant growth and early and prolific bearing of the tree, the Heart Nut is one of our most valuable nut bearing trees.



Lancaster Heart Nut

LANCASTER. I consider the Lancaster Heart Nut one of the most valuable nut trees I have ever propagated and introduced and that is saying a good deal. The cracking quality of this variety is especially good; the shell opens in halves and the kernel simply drops out whole, in a solid lump. The tree is of very robust growth with very large, almost tropical looking foliage and quickly makes a striking and very beautiful specimen on the lawn or in the home grounds. The grafted trees bear very quickly; usually the second year after planting here, and the tree is a very regular and prolific bearer. The nut is heart shaped, smooth, brown in color and is of excellent quality, having a flavor closely resembling our butternut. The nuts are borne in clusters of from 5 to 15 nuts. Prices of budded or grafted trees one year old, 5 to 6 ft. high, \$3.00 each; 4 to 5 ft. high, \$2.75 each; 3 to 4 ft. high, \$2.50 each; 2 to 3 ft. high, \$2.25 each; 1½ to 2 ft. high, \$2.00 each.

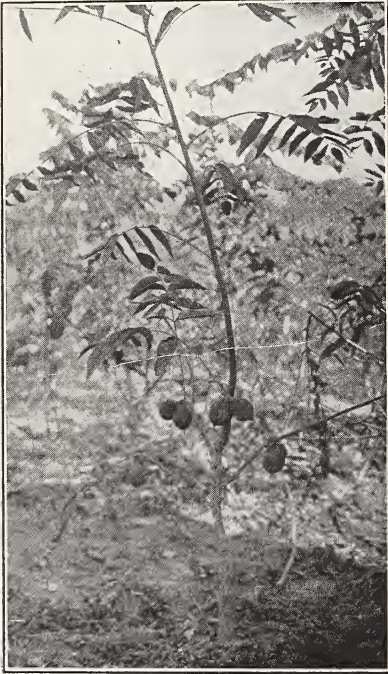
The Hard Shell Almond

RIDENHOWER ALMOND. Originated in Illinois, where the tree is perfectly hardy and bears good crops. Nut medium size; quality very good. The Ridenhower almond will succeed anywhere that the peach can be grown and is desirable for home use.

4 to 6 feet trees \$1.00 each or \$10.00 per dozen.

3 to 4 feet trees .85 each or 8.50 per dozen.

The American Black Walnut



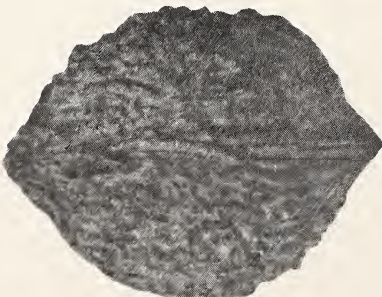
Grafted Black Walnut Tree Bearing Seven Nuts 17 Months after the Tree was Grafted

OHIO. From Northern Ohio, named and introduced by me. Nut medium to large; shell thin; kernel full of good quality. An excellent cracking nut, and the halves of the kernels can be removed entire in most cases. Tree a good grower and very early bearer.

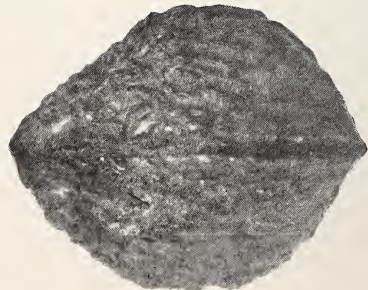
STABLER. Originated in Md. One of the finest black walnuts and the best of all in cracking quality, the kernels being easily removed in halves in most cases when the nut is cracked. Nut medium size; shell thin; kernel full and of good quality.



The Thomas



Ohio



Stabler

THOMAS. Originated with the late Jos. Thomas, King of Prussia, Pa. One of the finest black walnuts yet found and the best of all the large nuts in cracking quality. Nut very large; kernel large, light colored, and of very good quality. The tree is a wonderful grower, fully doubling the ordinary black walnut in growth.

TEN EYCK. Originated at So. Plainfield, N. J. The Ten Eyck is the thinnest shelled black walnut that we have. The nut is medium to large; kernel very full and plump and of very fine quality.

Prices of grafted or budded black walnut trees:

1½ to 2 feet	\$1.50 each or \$15.00 per dozen.
2 to 3 feet	1.75 each or 17.50 per dozen.
3 to 4 feet	2.00 each or 20.00 per dozen.
4 to 5 feet	2.25 each or 22.50 per dozen.
5 to 6 feet	2.50 each or 25.00 per dozen.
6 to 7 feet	2.75 each or 27.50 per dozen.
7 to 9 feet	3.00 each or 30.00 per dozen.

BEAVER SHAGBARK HICKORY. Originated with Mr. G. E. Beaver, Millerstown, Pa. This is a hybrid between the shagbark hickory and the bitter-nut. The kernel, unlike the bitter-nut parent, is very sweet and good and of excellent quality. Unlike the shagbark hickory, the Beaver is a rapid grower and quickly makes a fine specimen. I have had this variety bear the second year from grafting, where grafts were set on strong stocks, and one can count upon the trees bearing in five years I am sure.

The nut is large, with a very smooth, white shell. The shell is very thin and soft and the cracking quality is excellent. Don't fail to plant some trees of this.

Prices: 1 to 2 ft. \$2.00 each, \$20.00 per dozen; 2 to 3 ft. \$2.25 each, \$22.50 per dozen; 3 to 4 ft. \$2.50 each, \$25.00 per dozen; 4 to 5 ft. \$2.75 each, \$27.50 per dozen; 5 to 6 ft. \$3.00 each, \$30.00 per dozen.

Native American Persimmon

LAMBERT. From Hiawatha, Kansas. The largest fruited sort of this species I have seen. Fruit very large, bright yellow and very showy. The fruit has few seeds and is of very good quality.

JOSEPHINE. One of the finest American sorts and does fine here. The fruit is large, has few seeds and of splendid quality.

EARLY GOLDEN. Originated in Ill. An early ripening sort and valuable for market. Mr. E. A. Riehl, Godfrey, Ill., says it is the most profitable fruit that he grows. He ships this fruit to the St. Louis market.

GARRETSON. Adams Co., Penn'a. This is a very delicious persimmon of rather small size but seedless and a great bearer.

Prices: 1 to 2 ft. \$1.25 each, \$12.50 per dozen; 2 to 3 ft. \$1.50 each, \$15.00 per dozen; 3 to 4 ft. \$1.75 each, \$17.50 per dozen; 4 to 5 ft. \$2.00 each, \$20.00 per dozen. All trees grafted on hardy northern persimmon stocks.

Planting and Care of Nut Trees

It is important that nut trees be handled and planted carefully to get the best results. Keep the roots moist and expose as little as possible to sun or wind in handling. The holes should be dug amply wide to accommodate the roots and a few inches deeper than the roots are long. No manure or other coarse material should be used in the holes about the roots. A few handfuls of bone meal or tankage, mixed with the soil about the roots, will do no harm and will give good results. Only good top soil should be used in filling the holes, and this must be well firmed about the roots, while the tree is being planted by tamping with the spade or shovel handle or a tamping stick with a smooth, rounded end, that will allow the earth to be well tamped and at the same time, not bruise the roots. Most failures in transplanting are due to the planter not firming the earth well about the roots of the tree or from using water in the holes as the trees are being planted. If water is used and the soil handled while wet, it will harden and shrink away from the roots in drying. For the same reason, trees should never be planted soon after a heavy rain, or at any time when the ground is very wet. If trees arrive when the ground is very wet, heel them in or put in the cellar till the ground is in condition to plant. If the ground is dry, so much the better for planting, and trees may be watered after they are planted. Remove a shovel of earth on two sides of the tree, and a foot or more away; fill the holes with water and after this has soaked in, put the dirt back, leaving a loose mulch on top. If the clay is thrown out and away from the holes, and only top soil used in filling the holes,—taking this top soil from a circle surrounding the tree, when the tree is planted, it will be surrounded by a depression or basin a few inches below the surface level. This is a decided advantage, with such trees as the pecan, walnut and persimmon, as I have found by several years experience. These trees may be planted this way either spring or fall, and on any land not naturally wet. Trees planted in this way not only live better, but grow much faster, as the basin about the tree gathers both moisture and fertility during rains, and is eventually filled up with the most fertile soil. This method of planting is especially desirable where trees are to be grown without cultivation. It is possible, by this method of planting, supplemented with an annual mulch, to grow vigorous trees and profitable orchards easily and cheaply on rough, cheap land, that would be quickly ruined by erosion, if cultivated. By sowing sweet clover or other strong growing legumes, a plentiful supply of mulching material can be grown right where it is needed, and at the same time, the land improved and built up.

NUT TREES MUST HAVE THE TOPS REDUCED or cut back, either before or after planting. This forces an early and stronger growth and induces the formation of new feeding roots and the tree is well established in its new location much sooner. If the top over-balances the root system to any appreciable extent, the over-taxed roots will simply become exhausted and no new roots will form, with the result, that even though the tree may live, it will linger along several years before getting started. The top should be reduced one-half or two-thirds depending upon the size of the tree and its root system.

TRAINING THE TREES. A four or five foot tree, when cut back to two feet, will usually throw out several strong shoots, and this is just what is wanted. These shoots, being low, induce a quicker and stronger root formation and a sturdier tree. The head of the tree will not be wanted so low, but all growth should be allowed to remain until the tree is well established. The most vigorous shoot may then be selected and trained to form the future tree. This can be trained up-right, by tying to a stake where necessary. The tree should become well established in its new location by the end of the second growing season, when the surplus shoots may be removed and all of the sap thrown into the shoot selected to form the tree.

Additional Information

The American Nut Journal, Rochester, N. Y., is the best Nut Journal published, and any one who is especially interested in nuts or nut culture should subscribe for it.

Price List of Larger Transplanted Nut Trees

J. F. JONES, *Nut Tree Specialist*

Lancaster, Pa.—Spring 1922

Advantages of Transplanted Nut Trees

It is well known generally that the walnuts, hickories, pecans and most other nut trees are difficult to transplant when wild or natural trees are dug from the woods or fence rows and transplanted and nursery grown trees grown from the nut and not transplanted while young are also difficult to transplant successfully, although they transplant much better than the wild or natural trees. Although the nut trees are expensive to transplant because of their long tap roots, this seems necessary to induce lateral roots to form and to get trees that will transplant safely in the hands of the average planter. All of my regular stock trees as listed in catalogue this year have either been root pruned or at least transplanted once and these trees in these sizes are very satisfactory, but even these, when grown into larger or specimen trees are difficult to transplant. To overcome this difficulty we have transplanted these trees twice. Transplanting these trees after they have attained some size is a laborious and expensive thing to do and adds greatly to their cost, but the insistent demand for larger specimens from those who knowing their worth and who were glad to pay a good price to get them, has led me to grow a few hundred of these twice transplanted trees. Such trees are not obtainable elsewhere.

Prices of Transplanted Nut Trees

Owing to their deep running tap roots, transplanting these trees is very expensive and adds greatly to their cost, but I have made the price as reasonable as possible, and when the cost of growing these trees together with their comparative worth is taken into consideration they are much the cheapest trees that I grow and sell. In fact trees of like size and quality in any of the finer ornamentals cost as much or more and they are only seedling trees for ornamental purposes only, while the specimen trees I offer are all budded or grafted and of the finest varieties to be had. These twice transplanted trees not only transplant much more easily and safely but they grow off quickly as they do not suffer from transplanting as do the trees which have not been previously transplanted.

Caliper or Trunk Diameter of a tree indicates its size as nothing else does, hence I have given the caliper of these trees. Height is considered only approximately. Had these trees not had their tops reduced each time they were transplanted they would be double the height indicated, but this cutting back or heading in has made them form nice well branched heads and they are therefore much more desirable. In the case of the Heart Nut the tops are younger and in some cases have not been headed back, but the tops being young, this has not been necessary and they can be headed as wanted when transplanted.



Engraved from a photo of one of my twice transplanted pecan trees, second size, at random, showing the remarkable root development. Such trees transplant easily and safely, and are very satisfactory

Pecan Trees, Sizes and Prices

First Size: 5 or 6 years from the bud; roots nine years old; caliper 2 to 2¼ inches. Height 8 to 10 feet, heavy, well branched heads. Extra select trees \$10.00 each; \$100.00 per dozen.

Second Size: Five years from the bud; roots 8 or 9 years old; caliper 1¾ to 2 inches. Height about 8 feet; well branched heads. Very fine trees, \$7.50 each; \$75.00 per dozen.

Third Size: Three to five years from the bud; roots 7 to 9 years old; caliper 1½ to 1¾ inches. Very nice trees, \$5.00 each; \$50.00 per dozen.

Varieties: Indiana, Busseron, Butterick, Posey, Niblack, Green River, Marquardt and Major.

Black Walnut Trees, Sizes and Prices

First Size: Four or five years from the graft; roots seven to nine years old; caliper about 2½ inches. Height 8 to 10 feet. Extra select trees, \$10.00 each; \$100.00 per dozen.

Second Size: Four or five years from the graft; roots six or seven years old; caliper about 2 inches. Height 7 to 9 feet. Very nice trees, \$7.50 each; \$75.00 per dozen.

Third Size: Three to five years from the graft; roots 5 to 7 years old; caliper about 1½ inches. Height 6 to 8 feet. Very nice trees, \$5.00 each; \$50.00 per dozen.

Varieties: Thomas and Ohio.

Pleas Hybrid Pecan (New)

A natural hybrid or cross between the pecan and the bitternut.

A very remarkable nut. Nut quite large; shell very thin and soft; cracking quality excellent. Kernel very full, and of very good quality, having none of the bitter taste peculiar to its bitternut parent. The tree is a very rapid and beautiful grower and has the prettiest foliage of all the hickories.

First Size: Caliper about 1½ inches, well branched, \$5.00 each.

Second Size: Caliper about 1 to 1¼ inch, well branched, \$3.50 each.

The Bush Chinquapin

I have several hundred of the above bearing here and find them the only chestnut which is blight proof. These attracted a good deal of attention and comment from the visiting nut growers attending the recent convention at Lancaster. The nut is about half the size of the native chestnut; sweeter and better in quality; with a thin shell that is easily removed from the kernel. These make only a large bush, growing about 8 feet tall and about the same spread. They bear nuts in large clusters and produce big crops every year here. The bush is very pretty as an ornamental as well as valuable for its fruit.

Bearing Size: First size, bore well the past fall, \$3.00 each, \$30.00 per dozen. Second size, bore well the past fall, \$2.50 each, \$25.00 per dozen. Third size, many have borne nuts, \$2.00 each, \$20.00 per dozen.

Testimonials

American Nut Journal, Rochester, N. Y., Aug. 1920.

"Last fall I bought from J. F. Jones, The Nut Specialist, Lancaster, Pa., one Japanese Heart Nut (*Juglans cordiformis*) and planted it in my experimental grounds at Brentwood, Md., in Nov. 1919. It was two feet tall; a half-inch in diameter, and grafted by Jones spring 1919. This spring, at one year from the graft, it put on five catkins. I let them grow about an inch long, as a curiosity and to show friends, and then pinched them off, not to endanger the development of the young tree. That, however, did not end it as when the foliage developed each cluster disclosed a group of little nutlets, 12 to 15 to each cluster. There were five clusters, actually seventy nuts, determined to materialize, pressing for expression on the stage of life. How is this for early bearing of grafted nut trees? Of course I reluctantly pinched them off. I have two Stabler grafted black walnuts and one Rush English walnuts two years set, bearing nuts. Three nuts on one Stabler and two on another and one on the Rush."

Signed John F. Keenan, M. D., Brentwood, Md.,
in Rural New Yorker, Aug. 1921.

"The trees arrived today and they are certainly nice ones. The root system is wonderful. I had gotten some pecan trees from another nursery before I learned of you and when I think of the poor clubs for roots that they had, I feel like tearing them all out and planting others. However, since they are planted I will let them go and see what happens."

Signed G. A. Zimmerman, M. D., Harrisburg, Pa., April 22nd, 1921.

"The Lancaster Heart Nut tree purchased from you about 18 months ago produced seven fine nuts this autumn. We are all delighted."

Signed Mrs. J. Norman Henry, North East, Md., Nov. 8th, 1920.

"Will you kindly send me several of your catalogues, as so many people who come here to visit our poultry plant get greatly interested in the many fine English walnut and pecan trees that we have growing, and always ask where they can get the trees. I gave away the last catalogue I had yesterday."

Signed E. L. Wyckoff, Aurora, N. Y., Aug. 8th, 1921.

NOTE: Mr. Wyckoff has been buying trees from me for several years.

"I am enclosing check herewith for \$21.94 and I want to tell you that the trees I rec'd from you were the finest I ever got anywhere. The way you pack them is perfect, and if a fellow has the holes dug, there is nothing to do but to put it in and throw in the dirt. You put in one extra tree for which you did not charge me."

Signed Rob't White, New Castle, Pa., May 6th, 1921.

"The walnut trees from you arrived in very good condition."

Signed P. W. Wang, Kinsan Arboretum, Chukung,
Kiangsu Province, China.

"The six pecan trees from you brought in by the S. S. Hypatia are absolutely the best in condition of any I have ever imported. My friend, the Gov't Entomologist who inspected them, told me that they were the best trees he had seen brought into the Union. * * * Now, twenty days after their arrival, the trees have shoots four inches long to tip of leaf."

Signed H. G. Hean, Durban, British Union, South Africa, March 25, 1920.

NOTE: The last two testimonials are surely evidence enough that we know how to pack trees. Some people seem to doubt my being able to deliver them a few hundred miles in good condition, while the fact is I ship them all over the world.

