COL. W. R. STUART,
(The father of Pecan culture.)
Ocean Springs, Miss.
THE PECAN.

AND HOW TO GROW IT.

WHERE THEY GROW WILD
WHERE THEY ARE BEING CULTIVATED
WHAT LANDS ARE BEST AND ALL ABOUT IT

BY THE STUART PECAN COMPANY,
OCEAN SPRINGS, MISSISSIPPI.

CHICAGO:
WOMAN'S TEMPERANCE PUBLISHING ASSOCIATION,
1893.
DEDICATION.

To the Father of Pecan culture,

Col. W. R. Stuart,

who has done so much for the people of the South, and humanity at large, by his numerous repetitions of success, showing the practicability of growing and improving the Pecan, this work is most respectfully dedicated.

The Author.
ILLUSTRATIONS.

Col. W. P. Stuart  -  -  -  Frontispiece
Plate I.  Stuart Pecan Company's exhibit at
          World's Fair, Chicago, 1893  -  -  -  8
Plate II.  Trees with Tap-root Cut  -  -  -  38
Plate III.  Branch of Pecan Tree  -  -  -  54
Plate IV.  Pecan Nuts  -  -  -  59
Plate V.  Pecan Tree  -  -  -  60
### CONTENTS

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of the Pecan Tree</td>
<td>9</td>
</tr>
<tr>
<td>Copy of the Letter Addressed</td>
<td>13</td>
</tr>
<tr>
<td>The Answers</td>
<td>15</td>
</tr>
<tr>
<td>Tropical and Semi-Tropical Fruits and Nuts in America</td>
<td>32</td>
</tr>
<tr>
<td>Selecting a Site for the Grove</td>
<td>33</td>
</tr>
<tr>
<td>Setting Out the Grove</td>
<td>35</td>
</tr>
<tr>
<td>Age of Trees for Setting Out</td>
<td>37</td>
</tr>
<tr>
<td>Cutting the Tap-root</td>
<td>37</td>
</tr>
<tr>
<td>Care of Trees After Setting</td>
<td>40</td>
</tr>
<tr>
<td>Planting the Nuts</td>
<td>42</td>
</tr>
<tr>
<td>Will the Nuts Come True</td>
<td>44</td>
</tr>
<tr>
<td>Grafting or Budding, the Remedy</td>
<td>45</td>
</tr>
<tr>
<td>How to Secure Grafting Wood</td>
<td>50</td>
</tr>
<tr>
<td>The Fruitful and the Barren Pecan Trees</td>
<td>51</td>
</tr>
<tr>
<td>Enemies of the Pecan</td>
<td>53</td>
</tr>
<tr>
<td>Fertilizers for the Pecan</td>
<td>56</td>
</tr>
<tr>
<td>The Ideal Pecan Nut</td>
<td>58</td>
</tr>
<tr>
<td>The Number of Trees per Acre</td>
<td>59</td>
</tr>
<tr>
<td>What Others Say</td>
<td>62</td>
</tr>
</tbody>
</table>
PREFACE.

This treatise has been written and prepared by us because the demand for this knowledge has been persistent. We have been flooded with letters asking the questions herein answered. We fully realize that it is very important to be able to have a text-book for reference when engaging in any important industry, which can be relied upon. Here is our own experience, as well as a great many others right to the point, and will be invaluable to all who are not thoroughly posted. By all means start aright; it will save years of time, as well as money and perplexities. We wish to acknowledge with gratitude the valuable assistance rendered us by Col. W. R. Stuart, while preparing this work.

The Author.

May 1st, 1893.
THE STUART PECAN COMPANY'S EXHIBIT AT THE WORLD'S FAIR, CHICAGO, 1893.
THE PECAN AND HOW TO GROW IT.

HISTORY OF THE PECAN TREE.

The Pecan tree is found growing wild only in North America, and that principally between latitude twenty-five to forty; therefore we have rightfully a monopoly upon the nut. The trees grow in greater abundance along the streams, in sags or depressions, scattered here and there over the face of the country, most probably from the fact that there is more fertility and moisture in such locations than upon higher grounds. The tree resembles very closely the Hickory (especially at the age of ten or twelve years) by the fragments of scale bark upon the surface of its trunk. The limbs and foliage are almost identical in their general appearance with the Hickory, the leaves having that same pungent odor when bruised. It is characteristic of the tree, when growing where
it has plenty of room, to be quite spreading in its branches, forming a symmetrical head and making a dense shade. Growing in the forest it attains a height of sixty to one hundred feet, and from one to four feet in diameter at its base, with a straight trunk, presenting altogether a very pretty appearance. The wood is quite valuable on account of its great strength, it being about the same heft as that of Hickory. It is used for tool handles, wagon axle-trees, etc.; in fact takes the place of Hickory in the land of its nativity, although not considered quite as reliable. The nuts are quite small, usually; they are borne upon the extreme end of the twig of the preceding year's growth, in clusters of from two to eight.

It usually requires from eighty to one hundred and twenty-five to weigh one pound; although occasionally, a tree is found with large nuts, of which forty to sixty will weigh a pound, and if soft shell so as to crack readily by pressing two together in the hand, they are held in high esteem, as that is the variety sought after by those who contemplate setting out a grove with an especial view of growing nuts for market. When the wild
Indian had this country all to himself and roamed through these vast forests, the Pecan tree furnished him a very reliable source from which to lay up a store of most excellent food. The white man has never paid much attention to the nut until within the last few years, and now they are proving themselves more worthy of cultivation each succeeding year on account of their superior excellence. No other nut, either native or imported, can compare with it in flavor. And the end is not yet; by making choice selections and giving them proper cultivation, both size and flavor can be very materially advanced, judging from what has already been done in that direction. There is a loud call for further light upon Pecan culture, for general information bearing upon it of a reliable character, whereby the diligent may be hopeful of success. Herein lies the true secret of writing and compiling this book, inasmuch as we are propagators of this particular nut, it is our specialty; we are making a determined effort to draw out the very best results attainable in this line. Bearing in mind the accepted truth of a noted writer who said, "He who makes two blades of grass to grow
where but one grew before, is a public benefactor." We plant only the very choicest nuts; and when grafting or budding use scions from trees which have borne the largest, thinnest shell, richest meated, finest flavored nut now known; and by feeling our way along with care, a crowning success must be assured. Experience is the great teacher; with this thought in view, we addressed the following letter (which will explain itself,) to men in nearly all the States to which the Pecan is indigenous; these men all have some knowledge of the Pecan in both its wild and cultivated state, the most of them being the owners of tame groves. We sincerely trust that the information received in answer will be something of a help to those who contemplate setting out a grove to start aright, that being a very important point to insure success.
Copy of Letter Addressed.

Ocean Springs, Miss., Dec. 26, 1892.

Dear Sir:—Will you kindly reply to this inquiry, by furnishing us with what knowledge and statistics you can in regard to the Pecan tree and its nut in your State. In what part of the State do they grow wild? To what extent over the State? How large do the trees grow? Do they bear regularly, or do they miss some years?

What number will it take to weigh a pound of the largest you have ever seen growing there? Are there any shipped out of the State? If so, where do they go? What is the wholesale price? Are they usually thin or thick shell? What is the character of the land where the trees thrive best? Is it bottom or high land? To what extent will they live with the land flooded? Can you estimate the annual value of the crop in your State? Is the Pecan tree cultivated in your State with a
view of producing nuts? If so to what extent? Are there any grafted or budded trees, or any apparent interest in that direction when setting out groves? The information herein asked for will be gratefully received, as we want to incorporate it in a book which we are now preparing for publication, bearing upon the Pecan nut industry of the United States.

Yours very truly,

Stuart Pecan Co.
Answers.

FROM KANSAS.


Stuart Pecan Co.

DEAR SIRS:—The Pecan tree grows wild in the southeast corner of this State, the largest growth is three feet at the base, and sixty feet in height. They do not bear full every year; there are no large nuts—they would grade medium or small. Think there are none shipped out of the State. Do not know the wholesale price. They are thick shell. The trees grow in the valleys bordering the streams. The lands are frequently flooded, but the water does not remain long. Cannot estimate the annual value of the crop, it is not large, however. There are no cultivated groves here yet. Some have saved the Pecan trees, cutting away the other timber. There are no grafted or budded trees. This information was given me by my assistant,
who recently traveled through the Pecan region in search of general information on forest topics. The trees you sent me last year have grown finely. I should like to try them more fully.

Yours very truly,

E. A. Popenoe,

Professor of Horticulture and Entomology,

Kansas State Agriculture College.
FROM MISSOURI.


Stuart Pecan Co.

Dear Sirs:—I will answer your questions to
the best of my ability. The Pecan tree grows
wild on all the bottom lands along the Missouri
River, but few are found elsewhere. I have
known trees three feet through, and one hundred
and forty feet high. They bear nearly every year.
I think of the very largest nuts, sixty would weigh
a pound. Some go out of the State, but mostly
find a market at home. The price paid is about
five cents per pound. Some are thick, and some
are thin shell, they also vary in quality, some being
very fine flavored, some are very smooth shell,
while others are rough. I know of no groves
being set out here. They are all wild, but some
men have had sense enough to spare the tree when
clearing the land. A friend of mine has eighty
trees in a field, the nuts from which brought him as
much money as the wheat off the field which the
trees occupy. Have known water to cover the land three feet deep around the trees, for a week at a time, without their showing any injury. I know of only a few grafted trees and these were grafted upon small Hickory sprouts. I have tried grafting them upon Hickory limbs, but only two lived out of seven. I have two trees of a hybrid Pecan grafted on Hickory trees that are large enough to bear; they are grafted in the crown system upon limbs an inch thick. Hoping this will be of some use to you, I am yours truly,

Samuel Miller.
Bradfordton, Ill., Jan. 9, 1893.

Stuart Pecan Co.

Gentlemen:—The Pecan grows wild here in the southern half of the State, in the valleys; have seen them three feet in diameter. There is a failure of nuts some years; it takes about one hundred to weigh one pound; they are all used in the State; the wholesale price is six to seven cents per pound. The land is sandy where the tree thrives best. Flooding the land does not seem to hurt them. I think I am the only one that has started a Pecan orchard here. Many who own the land where the wild trees grow are beginning to guard them with care. There are no grafted or budded trees here that I know of.

Yours truly,

Jas. A. Stone.
ANOTHER ANSWER FROM ILLINOIS.


Stuart Pecan Co.

Dear Sirs:—The Pecan tree grows wild in spots and patches upon most of the bottom lands in the southern part of the State. The finest ones are in the extreme southern part, and the farther south, the more numerous the trees; some are three feet in diameter. There are some nuts every year, but the bearing is irregular; the nuts are of fair size and good flavor. There are some sold in Chicago and St. Louis, but mostly are used at home. The price is from eight to ten cents per pound. Some are thin shell, can be crushed in the hand, are also rich and of fine flavor. The trees do best on sandy land; flooding does not seem to hurt them. The crop will average thirty thousand dollars annually. Until within the last five years there has been very little effort to save the wild trees, much less to start new ones. I know of no grafted or budded trees; I have a few trees which grew from the nuts I bought of you last year.

Yours truly,

L. A. Michels.

Stuart Pecan Co.

Gentlemen:—The Pecan tree is indigenous to this State. It is usually found in the valleys of the streams. Some of the trees attain a diameter at the base of five feet. They bear a full crop about every three years. It would require of the largest sized nuts, from seventy-five to one hundred for a pound.

They sell at wholesale for five to twelve cents per pound. They are usually thick shell. I think they make the best growth upon alluvial soil. If the young trees are flooded during their first year’s growth from the nut, while in leaf, they are killed, but after first year, overflow does them no apparent harm. Can give no estimate of the value of the crop. Orchards are being planted here. There are no grafted or budded trees.

Yours truly,

W. G. McLendon.
Gentlemen:—The Pecan grows wild upon the valley lands along the streams; also upon the hillsides and the heads of streams. Large quantities are shipped out of the State. Can give no definite figures as to the amount. Many thousand bushels go to the Northern States every year. Price averages from one-fifty to three dollars per bushel. They mostly have a thick shell, although in some localities very good thin-shelled ones are found. Some trees grow to be three feet through and seventy feet high. A few groves have been set out in different parts of the State, but none are yet in full bearing. There are some few grafted trees in different parts of the State although none are bearing yet. The tree does not bear full every year as a rule. The desire for groves is increasing.

Respectfully yours,

A. A. Pillock.
THE PECAN AND HOW TO GROW IT

FROM MISSISSIPPI.

Okolona, Miss., Jan. 2, 1893.

Stuart Pecan Co.

Gentlemen:—The Pecan grows wild and bears an abundance of fruit in this latitude, eighty miles south of the Tennessee line, the presumption is that they grow all over the State. I see no reason why the tree should not keep company with the Hickory. I have seen them eighteen inches in diameter, five feet from the ground. They bear every year. The tree is rarely seen upon hills, or prairies. Eighty to one hundred of the nuts will weigh a pound; they are mostly used at home. There is quite a manifest desire for groves. In the year 1860 I had made up my mind to clear and plant one half section with walnuts, but my wise neighbors actually laughed me out of the project; the overflow spoiled it; if I had executed my project, I should now be the owner of 320 acres of land worth $200.00 per acre.

Yours truly,

Dr. J. H. Green.
ANOTHER ANSWER FROM MISSISSIPPI.

Hollendale, Miss., Jan. 4th, 1893.

Stuart Pecan Co.

Dear Sirs:—The Pecan tree grows wild all over the Delta section of this State. Some of the trees grow very large and produce good size nuts with fine flavor. The best bearing trees grow upon the ridges which are sand loam. I am sorry to say that it is a common way when gathering the nuts to cut the tree. Flooding the ground does not hurt the tree. There is now an effort being made here as well as in other parts of the State, to propagate a large, thin-shelled variety, the seed and trees of which are obtained from the Stuart Pecan Co., at Ocean Springs, this State; but as yet that is its incipiency. I think there will be a growing demand for trees, as they do so well here, and if they can be grown successfully upon the Gulf coast, in the sand, they ought to do wonders here when cultivated, as the wild tree is often the monarch of the forest. I have no grafted trees.

Yours truly,

I. T. Casey.
FROM ALABAMA.

Eufaula, Ala., Jan. 13th, 1893.

Stuart Pecan Co.

Gentlemen:—I do not think there are any wild Pecan trees in this State. Cultivated ones grow very finely and bear nuts every year. I think seventy-five would weigh a pound, as an average; but there are some very large soft shell. The nuts sell at wholesale from ten to fifty cents per pound. The trees mostly grow upon sandy soil. There are no grafted or budded trees here. There is some interest being shown in starting Pecan groves. I have planted a four-acre grove.

Yours truly,

Cliff. A. Locke.
FROM FLORIDA.

Anthony, Florida, Jan. 1st, 1893.

Stuart Pecan Co.

Dear Sirs:—The Pecan tree does not grow wild in any part of this State; but there are some cultivated groves here. They are mostly thin shell; there are not enough raised yet to supply home demand; they grow upon both low and high lands, but bear earlier and produce better on upland. Cannot estimate the value of the crop; the industry is new. I know of one tree growing on poor sandy soil fifteen years old, which produces an average of three bushels of nuts per year. I also know of trees twenty years old producing as high as ten bushels per year on clay land. There is a growing desire for groves manifested. I have the largest grove in the State; containing four thousand trees, all grafted, now five years old; they are seventeen feet high, and bear a few nuts; think they will bear profitably in three more years. This grove is in northwestern Florida, upon high clay land.

Yours truly,

H. S. Kedney.
FROM KENTUCKY.

Moscow, Ky., Jan. 16th, 1893.

Stuart Pecan Co.

Gentlemen:—The Pecan tree grows wild in the western part of the State. It bears very well, but the nuts are small; not many sold out of the State. Don’t think the overflow of water hurts the tree, excepting when in leaf. Cannot estimate the value of the crop. They are rarely cultivated; do not think there are any grafted trees here.

Yours truly,

James L. Beckham.
FROM INDIANA.

Evansville, Ind., Jan. 12th, 1893.

Stuart Pecan Co.

Gentlemen:—The Pecan tree is indigenous to the southern part of this State; the trees bear very well, but the nuts are small. Of the crop, several hundred barrels are shipped out of the State every year; they go to Chicago, New York, and St. Louis. They sell at from five to twelve cents per pound. No groves are being set out here. Most of the trees grow upon low land, yet I know of some growing upon high land. I have never seen any grafted trees, excepting in Florida. I have three small trees in my yard which grew from large nuts sent me by Colonel Stuart of your place.

Yours truly,

Samuel Vickery.
FROM GEORGIA.

Bainbridge, Ga., Jan. 12, 1893.

Stuart Pecan Co.

GENTLEMEN:—Many cultivated groves of the Pecan tree are to be found in this State. Mr. Averitt of this county has one of forty acres, of which two hundred trees bore last year. Some of the trees yielded four bushels, and the nuts sold at from fifteen to twenty cents per pound. This grove is on high land. I have a grove, the trees of which are three, four and five years old, also upon high land. New groves are being set out every year, and so far as I can learn they all do well.

Yours truly,

Jno. D. Wood.
SUMMARY OF EVIDENCE.

We have a communication also from Mr. Henry E. Dosch, of Hillsdale, Oregon, who has a few trees growing there. He reports they do nicely. We also have one from Gen. John Bidwell, of Chico, California, a place in the Sacramento Valley. He says he has trees thirty years old, and that they flourish finely in that locality.

Verily it does look as though the planting of Pecan groves would prove to be the solution of the hitherto difficult problem of what to do with a certain vast acreage of land in the Great Golden State, notably the San Joaquin, and Sacramento Valleys, which are visited by an overflow every winter. The soil is rich and deep, affording just the home in which the Pecan is bound to flourish, and yield a rich return to its cultivator.

But, while admirably fitted for the Pecan, the land is too bountifully supplied with moisture for fruit trees in general, and is altogether too wet for cereals. It will be readily seen on a careful review of the foregoing, that the information covers a
broad field, extending as it does from Ocean to Ocean, and latitudinally, from the Gulf to the fortieth parallel, in a large portion of which the Pecan tree is indigenous to the soil. We further learn that the tree, when not in leaf, will survive the floods; that it thrives upon clay, sand, and alluvial soils; and moreover that the people are becoming interested in the Pecan, and are planting groves with full confidence in a future and abundant reward. It is also dawning upon the perception of those interested in this subject, that the nut is capable of vast improvement, through wise cultivation, in the line of grafting and budding, and that such cultivation must yield rich returns in the enhanced market value of the nut which is certain to follow.

In fact there is no ground for discouragement appearing in the evidence. Taking it all in all, it adds an encouraging chapter to the history of the enterprise already so full of promise to the investors in the Pecan industry.
TROPICAL AND SEMI-TROPICAL FRUITS AND NUTS IN AMERICA.

Perhaps the extent of our resources in tropical fruits and nuts, as reported by the Census Bureau, will be something of a surprise to many. At the time of the last census, there were exclusive of orchards intended only for private use, 13,515 acres of almonds, 677 of bananas, 169 of citron, 9,864 coconuts, 4,477 of figs, 550 of guava, 1,362 of kaki, 7,256 of lemons, 495 of limes, 12,181 of madeira-nut, 7,097 of olive, 184,003 of orange, 2,189 of pineapple, 171 of pomelo, and 27,419 of pecan trees; a total acreage of 221,068 given to tropical and semi-tropical fruits and nuts. The reports on valuation of crops for the same year amounted to $14,116.59, divided as follows: Almonds, $1,525,109; banana, $280,653; cocoanut, $25,217; fig, $307,271; lemon, $988,099; lime, $62,496; madeira-nut, $1,256,958; olive, $386,368; orange, $6,603,098; pineapple, $812,159; pomelo, $27,216; pecans, $1,616,576. In nearly every case the number of non-bearing
was double the number of bearing trees. Pecan culture is recommended in the report, as an industry from which future developments of a wonderful nature may be expected.

SELECTING A SITE FOR THE GROVE.

A deep sand-loam is probably the best, as that kind of soil is usually fertile, and the roots penetrate it quickly and with ease. Consequently, it will grow very rapidly, and with the fertility such soils usually have, you will save the expense of fertilizing your grove for a good many years. Next in order is clay-loam with a porous subsoil.

Many of those soils hold a rich store of fertility for several feet in depth; although the roots are liable to meet with much more resistance while working their way downward; hence, growth may be slow.

Next come common sandy soils, such as grow the pine; it is not uncommon to see fine cultivated Pecan trees in bearing upon these lands; but it
must be borne in mind that all such lands will give better results if they are fertilized a little each year; but as soon as they come into bearing you will not feel the expense, as they are sure to pay their own way with half a chance, and leave a fine profit besides. Groves will do nothing upon springy, boggy soils, where the water stands near the surface; the roots will not penetrate the water; they will only shoot out laterals, which are not the main reliance of the Pecan. Its stronghold is its tap-root, which will go right into the bowels of the earth thirty feet, and send out laterals all the way down. They are diligent in their search after food, and the more porous the soils the quicker they will find it. In loose porous soils the feeding roots are much more numerous than in the hard; the farther down to standing water, the better for the Pecan tree.

Neither will it do to set trees where there is ledge rock near the surface, especially if solid, but the tap-root will work its way down through fragmentary rock in a zigzag way; it will also penetrate very hard clay, although slowly. There is no limit to the growth of the roots laterally.
SETTING OUT THE GROVE.

Pecan trees should be set from forty to eighty feet apart, being equal distance from each other, in straight rows both ways, standing north and south, east and west. The distance must depend upon the natural fertility of the ground, or the anticipated treatment you propose to bestow upon them year by year, as their interests demands; always bearing in mind, the poorer the land, the farther the trees should be apart. Even though they stand at the farthest distance apart here given, the feeding roots will in time, carry home to the parent stem, plant food from the utmost limit. Now measure off your ground, the distance between trees being decided upon, make a hole where the first tree is to stand, with an iron bar, four feet deep, into which drive a stake eight feet long, leaving three or four feet above the surface; do the same where each tree is to stand, over the whole plat of ground; this is your guide by which to set your trees. Now take out the ground three or four feet deep, and two feet each side of the stake all around; then fill in the bottom of this hole with
surface dirt or good dirt drawn for that purpose, so that the end of the tap-root after being trimmed, when resting upon it will show the distance required for the root to set in the ground, when the hole is filled to the surface. Now cut off the end of the tap-root also those of the laterals with a sharp knife, so as to leave a smooth surface; don't peel up the bark, nor let any bruised part remain. Good work right here is very important to insure new roots coming out from the end at the surface so prepared. When all things are ready, take out the stake, stand the tree where the stake stood, fill in with good dirt, packing moderately, have the lateral roots lay straight out, do not pack them down against the tap-root. By this manner of measuring off and preparing the ground you can have them all straight in row and nice with very little extra trouble.

The time to set out the trees is soon after they shed their leaves in the fall, or just after the cold of winter has passed. The tree rarely needs a stake to hold it in an upright position, but in case one is found leaning, give it attention immediately; keep them growing straight.
AGE OF TREES FOR SETTING OUT.

The Pecan tree if set out at the age of one and two years is more likely to live and prosper than if older. At that age they are easy to handle, also cost less, and will make a larger tree at the age of ten years, than if it was older when transplanted.

CUTTING THE TAP-ROOT.

This subject deserves more than a mere passing notice, inasmuch as some people apprehend that cutting the tap-root is injurious, when in reality the reverse is true; it being a benefit according to experience and evidence. It is a well-known fact with vegetable growers, that such as cabbage, celery, lettuce etc., will grow much stronger and larger when transplanted, than if allowed to mature where the seed was sown; as there will be numerous new roots shoot out from the end of each broken one. It is the same with corn in the early stages of its growth. The Pecan is no exception to
THE PECAN AND HOW TO GROW IT. 39

this rule, as it awakens it to the necessity of a more thorough and vigorous rooting.

Make a clean smooth cut of the tap-root, leaving it from fifteen to twenty-four inches long, and there will one, two or three new tap-roots take its place, shooting from the end where cut. See plate No. 2. This shows a photographic view of two Pecan trees, which had their tap-roots cut during the first year of their existence from the nut: this is positive evidence: the view shows where the root was cut; also that one of the trees has thrown out one, and the other two new tap-roots; such we believe to be invariably the case.

Col W. R. Stuart, "The Father of Pecan culture," says all the trees in his grove had their tap-roots cut; and he is sure it has been a benefit to them. Mr. H. C. Dickson of Georgia writes, that of twelve trees purchased from us three years ago, the one having the shortest root, has made the best growth.

Of four hundred taken up out of our nursery and set out one year ago, and then taken up to sell, show there is not a failure to record; every one of them has made a new tap-root. There is no end to
the evidence in this line from all quarters, and not a single failure from the thousands of trees which we have sold, consequently it is a settled conviction with us, that it is just as well, if not better, to transplant the tree when one or two years old than to have it mature directly from the seed without transplanting.

CARE OF TREES AFTER SETTING.

For the first two or three years it will be best to cultivate the land; don’t crop heavy, but by all means keep it free from weeds. It is best to grow some hoed crop such as corn, cotton, beans, or potatoes one year, then the next, sow to clover or to cow-peas, and plow under; be sure to keep the fertility of the land well up; keep your thoughts upon the interest of the Pecan tree; in starting them you have laid the foundation of a great success; don’t draw the fertility from close around the tree by growing crops too near. When plowing, turn the furrow towards the tree until the land is
well rounded up, so as to leave the dead furrows, half way between the rows, two feet deep that the water may drain away freely. This applies more particularly where the land is flat with hard sub-soil.

When the trees are four years old seed down to orchard grass, or whatever kind does best upon your land for permanent pasture. As soon as it has made sufficient growth turn in sheep and calves, as they cannot hurt the tree now by browsing it; in this way whatever is taken of the land’s production, will be left upon it; don’t take off a crop of hay unless the soil should be rich enough to spare it; otherwise you will be robbing the trees of what they will need to carry on their growth and fruit production. It is well to have a light mulch around the trees, just enough to keep the grass and weeds down. If the land should be rather poor sand, draw in marsh muck six inches deep around each tree; the rains will carry its fertility down to the roots of the trees and greatly stimulate their growth. Keep the trees trimmed to the height of eight or ten feet before letting them branch; even at that height, the weight of nuts in good bearing years
will weigh the ends of the lower limbs down near the ground, after the trees have attained an age of fifteen or twenty years. There were trees near here last year presenting that appearance, and some limbs higher up the trees actually broke under the weight of nuts. The growth of the trees will depend very much upon the care given them; their needs must be supplied from year to year. Do not be half-hearted about it, enter right in with a vigorous determination to accomplish the end sought for and your hope will blossom into a reality more bright than you ever dreamed of; but you must not be caught napping.

PLANTING THE NUTS.

In preparing the plot of land for planting nuts, plow it deep, have it of fair fertility and in a location free from pests of all kinds if possible. Mark off the ground in rows four feet apart, then make a furrow four inches deep, drop the nut in this, twelve inches apart, and cover so the ground will
be level. In case rats or squirrels find them they will dig them out; then there is an ant that is attracted to the nut as soon as it opens to let out the shoot; they will also eat the kernel entirely up. Plant in the winter. Be sure to get nothing but the large thin shell variety, which has grown upon isolated trees, standing rods away from any of an inferior kind. This way of doing is far preferable to planting, where you want the grove to stand, for you can protect them in a nursery much better than when planted on a large area of ground. Keep them free from weeds and grass, and they will make a growth of eight to fifteen inches the first year.

Transplant them into the grove at the age of one or two years, in case you are ready, but the sooner, the better; some report good success even at the age of five and six years. All that are not set at the age of one year should have the tap-root cut fifteen to twenty-four inches below the surface of the ground.
WILL THE NUT COME TRUE

The Pecan is no exception to the general rule that seedlings are unreliable. It is now an established fact that only a small per cent will come true; frequently the variation is very great; sometimes they degenerate; then again, a better nut is produced than the one planted. Col. W. R. Stuart says they will sport more or less, and his great experience cannot be questioned. The Pecan industry is not old enough yet to give even an approximate estimate of just what can be depended upon, yet when the best has been done in this line of endeavor and it is not satisfactory, the question is, what is the course to be pursued to make it sure that the trees of your grove will produce what you have worked for and expect.
GRAFTING OR BUDDING IS THE REMEDY.

By using cuttings from cultivated trees that are known to bear fine nuts, and graft or bud the seedling, you are absolutely certain of reproducing the same variety. This is a more difficult operation with nut-bearing trees than ordinary fruit trees, and only a very small per cent live, except from the hand of an expert. Trees which produce a first-class nut are very few in number, consequently the work of propagating from them goes slowly, as the supply of cuttings are limited, yet this work has been going on for three or four years, so the newly propagated trees are now producing some cuttings. There is a method known as "annular budding" which proves quite successful. Proceed as follows:

Take a sharp knife, make two cuts completely around the stock about one inch apart, cut only just through the bark; make a straight slit through this bark between the two circles, now slip off this ring of bark and use it for a pattern to cut the ring of bark by from the scion, which must have a
well developed bud about in its center; cut close to each end of the pattern; now split this second ring down as you did the first, slip it off from the scion, put it in the place of the ring taken from the stock, trim if necessary so that the fit will be perfect; now wrap with strips of waxed cloth all the wounded parts, but do not cover the bud; cover over well the slit with wax, also tie two cords around, one above and one below the bud, over the waxed cloth just where the scion bark meets the stock bark. In case it is a success, the bud will show life in a few days, and after the shoot is out a few inches, cut the cords, also the top, from the tree a few inches above the bud; let no sprouts grow on the stock, as they would draw the support from the bud. After the bud has grown ten inches, cut the stock down to within one inch of the bud. Seedlings can be worked in this way after they are two years old up to five or six. The scion wood must be full as large as the stock; the bandage and wax must be well applied so as to exclude the air perfectly from the wound. In case new bark does not form readily over the stock above the bud in two years, trim down a little with a sharp knife.
Some use the tongue graft; it does very well for one year old stock. The mode is to cut the stock square off a little below the ground, place your knife down on one side of the stock, one and one-fourth inches from the end, draw upwards, have the knife come out almost the center of the stock at its top; this takes off a wedge-shaped piece; now partly split, and cut a little across the grain from the top of the stock down so far as the piece is long that you shaved from the one side; thus you have a wedge-shaped tongue upon one side of the stock; now prepare the scion in a similar manner only cut clear across the scion, having the knife come out just at the inner edge of the bark at the end; split the scion in the center, setting the knife back from the end in commencing; now insert the tongue of the scion into the cleft of the stock, being sure that the edges of the bark of all meet nicely upon one side, this makes it possible for a union of the scion with the stock at four different points. Wrap with twine to hold the parts well together; bring up the earth to near the top of the scion all around, no wax is needed. Scions should be cut when the buds are dormant, and stored away in a
cool, moist place until used. Trees to be worked this way must be upon high, dry ground, as standing water would be death to the scion at any time for the first six months after the grafting was first done. The old-fashioned cleft graft is fully as reliable as any; trees one inch in diameter are very favorable for that style of work; saw off the stock just at the surface of the ground, with a fine tooth, sharp saw, split the stock in the center; now put a wedge in the cleft to hold the splits apart just the distance of the thickness of your scion when trimmed, wedge-shape at one end, ready to be inserted into the cleft of the stock; which needs to be done with great nicety. Where the scions are small enough so they will not crowd each other, it is best to put in two for each stock. Wrap a cord firmly around and tie; also use a liberal amount of wax upon the sides of the cleft, also upon the top of the stock; in fact cover all bare places well over; then bring up the earth to near the top of the scion, leaving one bud out. The limbs of the tree can be worked in a similar manner, with this difference; more wax must be used, and each scion must have a terminal bud, so as to prevent evaporation. The new
growth of limbs of course are preferable as the bark is more pliable; also has more sap which circulates very freely. The old style way of propagating, by budding as we bud the peach, is a failure with the Pecan. There is no question but what it richly pays any one who contemplates putting out a Pecan grove, to do it with budded or grafted trees, even though you go very much more slowly, as it is not the number of trees that count so much as it is the good ones. Ten budded or grafted trees are of more value in starting a grove than one hundred of the best seedlings you can get; in the one case you are certain that your trees will bear fine large soft shell nuts (in case your scions were of that kind, which are the kind to secure by all means), while with seedlings you do not know what the nuts will be. It costs no more to care for the grove of choice trees than of poor ones; then again the grafted or budded ones comes into profitable bearing three years earlier than the seedlings. Here is a case in point; last November we paid in cash, $248.00 for the nuts which grew upon one tree, the crop of one year. The tree is twenty inches through at its base and forty-five feet high;
such a size tree would grow in twenty or twenty-five years. Now small nuts from the same size tree will sell for not more than fifteen or twenty dollars. Another tree only ten years old bore $13.50 worth. These choice nuts are such as we grow seedlings from, we sell a great many more seedlings than we do grafted or budded trees, simply because they are so much cheaper, and people in general do not realize that such a vast difference exists between the profits of the seedling and the grafted or budded; but such is the case, and such it will always remain for aught that we can see.

HOW TO SECURE GRAFTING WOOD.

Those who contemplate establishing groves and cannot afford to buy a sufficient number of grafted trees with which to set it, can buy from one tree up to as many as they can, according to their desire and ability, of the very choicest variety, and a part of each succeeding year's growth of new wood can be trimmed off to graft or bud seedlings with. In
so doing you may be going a little slow, but you can have the satisfaction of knowing that you are on the right road, the one which leads to success; you are growing your own wood for grafting and may have some to sell, and it will sell at a good price, because it is scarce; it need not be long before you will get back all your trees cost you, as it is a very profitable business raising the trees, just for the grafting wood alone. We appreciate this condition perfectly, inasmuch as we never have been able to get all the grafting wood which we want to use in grafting and budding our seedlings.

THE FRUITFUL AND THE BARREN PECAN TREES.

A Pecan tree standing alone may not bear nuts, from the fact that it receives no pollen with which to fertilize its blossoms. Herein lies the advantage of having a number of trees together in the grove, the wind and the bees carry the pollen from one tree to another, the flowers are thereby fertilized and production follows. Let one stalk of corn grow
by itself and but few kernels appear upon the cob.

Mr. George Tyng, of Texas (who has for years been an extensive cultivator of the Pecan) says, "Most Pecan trees bear both male and female flowers upon the same tree." The male flower is about three inches long, borne upon twigs of the preceding year's growth; the female flower resembles a leaf-bud, and appears on new twigs of the current year. I believe (but do not assert) that some Pecan trees are male trees, bearing male flowers, but never bearing nuts; also that there are female trees producing nuts only when the spring weather has not been too dry or too stormy to prevent fertilization of their flowers by pollen carried by breeze or insects.

Nuts will mix when the trees stand close together, the same as corn, upon the same principle, through the distribution of the pollen from one tree to another, either by the wind or insects, such as work upon the blossoms. Therefore when setting out your grove, set each variety by themselves, and have a double distance between the rows of each variety, setting the space so left, with fruit trees of
some kind; as by so doing you can keep each variety comparatively separate. There are two kinds of blossoms, the stamen and pistil; now in order for a tree to produce, some of the pollen from the stamen, must come in contact with that of the pistil, thus fertilization is produced, and the embryo nut is formed; hence, the larger groves will be more likely to bear, and every tree in them, than smaller groves.

ENEMIES OF THE PECAN.

The Pecan has two enemies, the caterpillar, and the saw-bug. The caterpillar forms webs around among the smaller subdivisions of the boughs of the trees. These webs are from one to two feet in diameter. The caterpillars remain in these webs some weeks, until nearly full grown, but eat only few leaves. They then leave the web and come down and settle in a mass on the body of the tree, like bees on the outside of a hive in hot weather. In this state they can be easily destroyed. After a few days they ascend, and disperse themselves all
PLATE III. PECAN BRANCH WITH EMBRYO NUT.
over the tree, and feed upon the leaves. These worms must be destroyed, either while upon the body of the tree, or in the web.

Make a ball of old clothing, attach to the end of a pole, soak the ball in coal oil, then set it on fire and hold under the webs, and but few, if any, will survive. The saw-bugs begin their depredations late in the summer and continue until frost comes. They saw off very neatly, by their peculiar process, the smaller limbs from one to two feet from their ends. These limbs sawed off are punctured at different points and an egg deposited at each puncture; the remedy is to gather all these limbs and burn them. The Pecan tree has no disease; it is very hardy, while nearly every other tree, plant or shrub of any value has some enemies. In case the tree is small, and the worm should attack its leaves, it is well to spray with a weak solution of paris green. Keep the tree well looked over, and in case there is anything wrong, right it at once, before it has had time to get a foothold.
FERTILIZER FOR THE PECAN.

Have a place to pile everything in a compost heap that has any value as a fertilizer. The three principal ingredients which the tree requires to make its growth, also to produce well, is Potash, Nitrogen and Phosphate. Potash is found in ashes of all kinds; also kainite, a substance resembling rock salt, which is shipped to this country from Germany, contains about 14 per cent. of potash. The cheapest source is to buy wood ashes even at 20 cents per bushel. Next comes kainite at about $15.00 per ton. (Dealers in commercial fertilizers usually handle it.) These should be sown in a light dressing about the trees in the fall and worked into the soil, then the fertilizer gets down to the roots by the time the trees start to grow in the spring. A little each year is better than a large quantity at once.

Nitrogen comes from animal waste, guano, nitrate of soda, blood, cotton-seed, etc. In case it exists in quantity, it should not be composted, as the heat
that would be generated in the compost heap would drive off a large per cent. of the nitrogen. Such had better be mixed with marsh muck, leaf mole, or humus of some kind, and kept under cover. Apply this to the tree the same as the potash.

Phosphate exists in the phosphate of lime, the bones of all animals and the mineral phosphate rocks, which are the ancient marine animals. The last can be sown around the tree at any time and worked into the soil, as there is no waste to it. There is nothing better than barn-yard manure, but as that is made only in limited quantities, and not enough to go around, the deficiency must be supplied from some other practical source. Your compost heap will be a complete manure, having all the elements of plant growth. See that nothing goes to waste that will add to the value of the compost heap. Upon a farm of 160 acres there will be enough each year to keep a good sized grove in fine condition. It is only the naturally poor land that requires to be fertilized; the valleys are always rich enough in their natural state for the tree to do its best both in growth of wood and nuts. The
thin sandy soils require to be fertilized; and the tree appreciates such treatment as you can readily see by the way it grows, also in the extra crop of nuts which it will produce.

THE IDEAL PECAN NUT.

There are about six important points in the make-up of a really good No. 1. O. K. Pecan nut. These distinct qualities taken as a whole, necessarily cut a very important figure in the case of each person who contemplates growing nuts for profit.

First. Is size; the larger the better, other points being equal, inasmuch as large products sell best as a rule. The largest nuts that we have been able to find measure exactly two and one-eighth inches in length, and one inch in diameter.

Second. Its general appearance; the nut should be symmetrical and well favored, so as to please the eye.

Third. Thinness with firmness of shell; thus
FIG. 1. STUART.

FIG. 2. VAN DEMAN.

FIG. 3. COLUMBIAN.

FIG. 4.

FIG. 5.

PLATE IV. PECAN NUTS.
making the meat easy of access without hammer or nut cracker.

Fourth. Fullness of the interior or plumpness of the meat.

Fifth. Fineness of the kernel with an abundance of oil, causing crispness and leaving no fibrous residue in the mouth after mastication.

Sixth. Is flavor, which must be fine and please the palate; a nut having all these qualities in a marked degree is the nut of all nuts, and is here already.

NUMBER OF TREES PER ACRE.

We give in the following table the number of trees or plants required for an acre of ground if placed at an equal distance apart.

<table>
<thead>
<tr>
<th>Distance apart each way</th>
<th>No. of plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 foot</td>
<td>43,520</td>
</tr>
<tr>
<td>2 feet</td>
<td>10,880</td>
</tr>
<tr>
<td>3 feet</td>
<td>4,835</td>
</tr>
<tr>
<td>4 feet</td>
<td>2,720</td>
</tr>
<tr>
<td>5 feet</td>
<td>1,740</td>
</tr>
</tbody>
</table>
PLATE IV. PECAN TREE.
6 feet ........................................ 1,208
7 feet ........................................ 888
8 feet ........................................ 680
9 feet ........................................ 537
10 feet ....................................... 435
12 feet ....................................... 302
14 feet ....................................... 222
15 feet ....................................... 193
16 feet ....................................... 170
18 feet ....................................... 134
20 feet ....................................... 108
25 feet ....................................... 69
30 feet ....................................... 48
35 feet ....................................... 35
40 feet ....................................... 27

If other distances than those given are required, multiply the distance in feet between the rows, by the distance the plants are apart in the rows and the product will be the number of square feet for each plant or tree. Divide this number into the number of square feet in an acre, 43,520, and the result will be the number of trees or plants required for an acre.
What Others Say.

TRANSPLANTING PECANS.

Our twenty-five or thirty years experience in transplanting nursery-raised Pecan trees has been entirely different from that of our correspondent, W. E. Freeman, as detailed in a late issue of our journal; and with others whose success has come under our direct observation, the Pecan tree has been no more difficult to transplant than the pear under the same circumstances. In fact, our percentage of loss from transplanting has been less with the Pecan than with the pear. But we speak wholly of nursery-raised trees that have been properly managed, that have been grown in not too deep and rich a soil, and that have been root pruned or transplanted every two years while growing in the nursery. Transplanting from the forest or from deep alluvial or clayish soils, where but few lateral or fibrous roots are developed, would of course, be attended with general unsatisfactory
results, and so would it be with the pear. We should not have recurred to this experience of our old friend and correspondent, had his communication not been calculated to deter many inexperienced cultivators from planting out trees of what we consider the most profitable fruit tree in cultivation. And we would here enter our protest to the prevailing opinion in regard to the extreme tardiness with which the Pecan comes into bearing. Properly transplanted and cultivated, Pecan trees will, in most cases, come into profitable bearing in from ten to twelve years; many in seven or eight years after setting out. There are not many varieties of the pear that will do better.

---

PLANTING THE PECAN.

Dick Naylor, of Scottsville, Texas, writes Farm and Ranch, that if any man in Texas upon the birth of his first son would plant twenty acres of good land in Pecan trees and set it aside for him, that boy, when he attained to his majority, would have
an independent income of $5,000 a year, and merely the trouble of picking it up. This might be a bad thing for the boy, but the income would be there all the same. When the universal popularity of the Pecan nut is considered, he adds, we must conclude that a grove of Pecan trees would be one of the safest investments a Texas farmer could make. If the land was not needed for other purposes, the trees could be planted two or three times as thick as they would stand when grown, and the surplus trees cut out for fuel as they grow large enough. There is no better fuel than Pecan wood. A peculiar advantage in planting such trees is found in the fact that very little cultivation is necessary. Yet, it might be better to use the land for crop purposes while the young trees are growing, taking care not to plow too close to them. Those who would start a grove of Pecans should lose no time in getting ready, as fall or winter is the best time to plant.
PECAN CULTURE.

I have been long impressed with the fact that too many of our people are flocking to the cities and towns, to the injury of health, to the hurt of morals and the sacrifice of personal independence. If tens of thousands now in the crowded cities were in the country cultivating small farms, (such are in the reach of nearly all,) they would have better sanitary conditions, less temptation to sin, and more personal liberty. With these convictions, I am prompted to write a brief article on one of the methods of securing a comfortable support in the country. Our country industries are not sufficiently diversified in this South-land. We confine our rural industries to too few things, to cotton, sugar and rice, important but laborious and overdone products. Many, especially those of smaller means, could find easier and more profitable modes of culture. Many things suggest themselves; but I will confine myself in this article to the growing of Pecans. The Pecan tree is indigenous to the Gulf States, and found growing wild in Texas, Louisiana,
Mississippi, and Alabama and Southern Arkansas. In their wild state they are generally found on rich and moist soils, which suggest that such soils are the best for planting and rearing Pecans. These trees will grow on clayey, sandy soil, and where the land is quite free from much moisture and by fertilizing will grow to a large size and yield profitable crops but they will do better on rich bottom lands. Where the land is rich they ought to be sixty feet distant from each other; certainly not less than forty feet.

A plot of ground can be cultivated for several years after the Pecans are planted before they will shade the ground too much for crops; after that the Pecan grove will be an excellent pasture. The cattle must not be allowed to browse among the young trees, as they are fond of the leaves and limbs, and will soon destroy them. Be sure to plant the largest and best Pecans you can find. Large Pecans will command in the market three times as much per pound as the smaller ones. The young Pecan tree needs little pruning, and if in rich soil, only needs to be let alone. Pecans bear from the planting from seven to twelve years. Now a
word as to the advantage of their peculiar cultivation: While the trees are growing to the bearing period, they need almost no attention, and will not occupy time or hinder any other business you may wish to pursue. Trees after getting into bearing will yield from a bushel to three barrels. Average Pecans are worth from twelve to fifteen dollars per barrel. If you raise peaches, pears, strawberries, tomatoes, and the like, they must be handled with great care, and promptly disposed of or they are spoiled and lost. Pecans can be kept for months and shipped anywhere without injury or loss. I don't know anything that a young man who has a few hundred dollars can do that will pay him so well as to buy some good land near navigation or a railroad, and plant it in Pecans. In a few years when his domestic circumstances demand a large income, he will have it. It's light work; little children can gather Pecans.

J. B. Walker.

P. S.—I have no Pecan trees nor seed Pecans to sell;—no axe to grind by this article.
THERE ARE MILLIONS IN IT.

To the Editor of the News and Courier:

There are more developed industries in the South than are thought of, and it seems strange that so few have thought of starting a Pecan grove. The cultivation of the Pecan is not a new industry, as many may suppose, as there are a great many people in this country, and indeed all over the State, who have a few bearing trees. Even in Florida, where the golden fruit can be so profitably raised, they are putting out Pecan trees. Two gentlemen in the town of Micanopy, Fla., have each several acres of Pecan trees adjoining their orange groves. If Pecan culture did not pay, these gentlemen would not set them on land that is so valuable for orange growing. There are a great many varieties of the Pecan. One kind is so insipid that it cannot be eaten. Hence it is of great importance in securing trees to get the best varieties by purchasing from reliable dealers. It has been fully demonstrated right here, in Barnwell county, that
the native South Carolina Pecan is superior in size and flavor to those grown West. It is therefore no experiment to plant Pecan trees. I have seen vigorous trees, bearing plentifully, in the different soils of this and adjacent counties. It succeeds admirably wherever the hickory grows, and it resembles somewhat the latter. It is very tough and hardy, and its long tap-root seems to render it independent of the seasons. The young trees are not troubled by stock of any kind. It can be planted in a pasture if desired. It commences to bear at seven or eight years old, and continues to increase its stock every year thereafter. The trees are very symmetrical in shape, and constitute as handsome and efficient shade tree as any other. A grove of these valuable trees would add much to the beauty of the home. Here is an opening for those who own only a few acres of land, to plant trees that will in a few years enable them to supply an ever-increasing demand. There is no danger of oversupplying the market, there are too many "doubting Thomases" in every community to be in any danger of planting too many. If Pecan trees could be planted in the spring and a crop of nuts har-
vested in the fall, the business might be overdone; but as the harvest is eight years ahead, only those who can "see ahead" and are willing to wait for a good thing, will plant out Pecan nuts to any extent. It is not likely that there will be a general planting of the trees for some time, until the doubting ones see what their neighbors are doing. Corn, cotton, or any other crop may be grown upon the land until the trees pay enough to give the land up to them. Who would want to plant the land in cotton when it pays $200.00 per acre in Pecan nuts? They bear paying crops as early as the pear, apple, or orange, and a Pecan grove will be as valuable here as an orange grove in Florida, and not liable to the same disasters that afflict the orange.

My trees at ten years old bore at the rate of $150 per acre, and at fifteen years old the yield was $300 per acre. There is more money from a single acre than a hundred acres of land would rent for. But assuming the product is but half that, what other crop affords so great and so reliable a profit? A ten-acre grove would pay better than a ten-horse cotton farm, and a grove once set is a lifetime thing.

A gentleman who lives only a few miles from
this place has two bearing trees, from which he gathered and sold last year $47.50 worth of nuts with still enough left for family use. Think what an acre of such trees would pay. It is surer than life insurance or a bank account. You can't spend it in a few years, nor do you have to die to win. It pays an enormous interest and pays it promptly and surely on the first day of every November. Forty trees are usually put on an acre. My plan is to check off the land thirty by thirty-five feet. This gives about thirty-six trees to the acre, which, in my opinion is near enough. They should be set at one year old and not later than two, as it is not unusual for a year-old tree to have a root twice as long as the tree is tall. Good mulching and fertilizing is about the best thing for the first year or so. After that any of the high grade fertilizers will produce astonishing results. Experience has proven the fall planted trees will grow more in two years, than those planted in the spring will in three. So the sooner they are set after they stop growing in the fall the better. They will then have formed new roots enough to enable them to stand the summer. If any one will, for experi-
ment, take and transplant a tree in September and
dig it up in November, the number of small roots
that have been formed will surprise him. Com-
mence now young man, and put out a grove of the
best paying and most reliable of all trees, the Pecan.
Pecan nuts are not perishable like pears, plums,
oranges and other fruit. Ten years more will pass
as swiftly as the past, and in all probability your
neighbor will have a bearing grove ahead of you.
In the South no industry pays better than a Pecan
grove. To give some idea of what I think of the
business after fifteen years experience, I will say
that I have a thirty-five-acre grove and am only
sorry that I did not put out one hundred acres in-
stead of thirty-five. I will put out sixty acres more
this winter, making one hundred acres in what I
consider the most valuable and reliable trees one
can plant.

O. D. Faust,

Bamberg, S. C.
PECAN CULTURE.

BY PROF. F. S. GARD.

Suppose a party with some means purchase 1,000 acres of good Pecan land at say $5 per acre (and good lands at present can be had for that) the cost of the land will be $5,000. To inclose this with good cypress fencing, cost (material and work) $4,000; seed, planting of the same 52 feet apart each way (making 16 to the acre), and putting cypress stakes around the seed planted, $1,000; total, $10,000.

A smaller grove might be taken as a sample, but what is true of a large one will be more fully true of a small one, which can be kept up in connection with the regular work of the farm without the purchase of additional mules or farming implements for the special work of cultivating the grove. Thus far we have the cost of land, fencing, and putting the seed in the ground and proper guards around it, at a cost of $10,000; size of grove, 1,000 acres; trees in rows 52 feet apart, or 16 to the acre, giving the whole grove 16,000 trees. Now, for the culti-
vation of the trees planted in a proper soil: The Pecan needs no cultivation for its own sake; it will grow from the seed to a full-sized tree without the use of a plow or hoe.

It is a forest tree with long roots, and capable of making their way through the soil, and gathering up food like other forest trees, without the help of man. But being comparatively a slow grower at first and therefore liable to be smothered to death by the rank growth of weeds, etc., natural to our warm climate and prolific soil, the Pecan tree for the first few years of its growth needs the assistance of the plow and hoe to make it a decided success. This assistance if given with reference to nothing else than the keeping of the trees of the grove clear will cost some money. But there is no necessity that this outlay for cultivation should be a dead expense, as the land planted to trees can be planted in cotton, sugar, corn or almost anything that will pay expense of cultivation; there is no necessity that the Pecan grove should cost anything more to its owner. Thus the first cost of the land, fencing and planting, and even part of this, can be made to come back before the trees can be bearing,
by the judicious management of the working or leasing of the land planted in Pecan trees.

Assuming that $10,000 to be the first cost of the 16,000 tree grove, and that no further outlay is needed, by a judicious management of the place, to bring the grove up to bearing, we are theoretically at least prepared to determine whether the enterprise will pay, and if so what per cent. on the capital invested. The money invested in a Pecan grove will give no returns under twelve years from the date of planting the seed. Some Pecan trees bear before they are twelve years old, but not enough to pay much. I have seen trees bear as much as one-fourth of a barrel at twelve years from the seed; at sixteen years from the seed a Pecan tree will bear from one-half to a whole barrel of Pecans; at a more advanced age the tree will double or treble this amount. Put the gross product of a Pecan tree at twenty years of age at $5—and this is about the average yearly crop for a number of trees taken together—this gives for an annual income from 16,000 trees, $80,000. Before the grove is twenty years old it will have yielded fruit enough to repay first-cost of the orchard and
interest on the same up to that date. So that after that time, the net income from an investment of $10,000; or in other words, a net income of $40,000 on a capital of $10,000 invested. Will this pay? This is not all theory. The figures can be realized if the planting and cultivating be done on strictly business principles. While some are developing the corn, cotton, rice and sugar interests, let others whose tastes lead in the direction of fruits, develop the Pecan, orange and other fruit interests of our State.

PECAN TREES.

INFORMATION OF VALUE TO PERSONS INTERESTED IN THE CULTURE.


Editor Morning Star:

Dear Sir: I notice a good deal being said about Pecan culture and would like to have my say, too, and at the same time get all the information I can. I got seed from Arkansas and planted about twelve years ago and the trees are now from twenty
to twenty-five feet high, and from six to fifteen inches in diameter, and have been bearing for four years. I can say little about the profit of the crop as I have only a few trees bearing and have put no fruit on the market; but the nuts are fine and well flavored. I send you by this mail an average sample of the nut at this stage of growth; there are clusters on the trees having eight nuts in a bunch. The trees are planted in ordinary soil, with barely ordinary cultivation. About four years ago I planted a nursery, the seed also from Arkansas. The trees are about a foot apart in the row and the rows four feet apart. They are now an inch to two inches in diameter and from ten to twelve feet high.

I transplanted fifty last spring without the loss of a single tree. In every excavation from which I took the tree to be transplanted have sprung up three, four, and sometimes half a dozen young trees from the roots of the adjacent trees left exposed. The young trees are now two feet high, vigorous and perfect in shape as if from seed. My bearing trees and nursery are in the town of Rockingham, and worth a visit of inspection to those interested.
I expect to plant a grove of four or five hundred trees; will begin this fall. I have seen a Pecan, called the "paper-shell," about twice the size of the ordinary nut with thinner shell. I would like to know if any one is familiar with the nut and where to get the seed. I saw the nut at the Exposition in Ocala, Florida.

I expect to have on exhibition at the fair in Raleigh this fall a specimen of the nuts on my trees. I can sit under Pecan trees of my own planting and eat nuts of my own production and do not "mumble them without the teeth either."

Very respectfully yours,

T. J. Steele.

NUTS FOR PROFIT.

The Massachusetts Ploughman says: In the South the raising of nuts for profit is a foregone conclusion. The Pecan is the nut preferred, from its large yield, and from the oil which the nut holds. This when pressed can be used for table or cooking purposes, and the demand for it is steadily
increasing. Chief Van Deman, of the Department of Agriculture, believes firmly in the cultivation of the nuts as a profitable industry. Colonel Stuart, of Ocean Springs, Miss., who has made a wide reputation as a successful cultivator, says: "I planted those large paper-shell Pecan nuts when I was fifty-seven years old, and now I am sixty-one, I tell you they help me live. I got 117 pounds from one tree last fall, sold 105 pounds for $105 and planted the remainder of them, and have raised a fine lot of young trees, which are for sale. Pecan culture, planting the very large nuts, I consider one of the safest and best paying industries a man can engage in. One of the highest priced nuts in Europe is the Pecan, shipped from New Orleans but grown in Texas. This tree is the Hicoria Pecan, growing from southern Indiana to the Gulf of Mexico. New varieties are obtained by grafting, and these bring fancy prices. The nuts are oblong, smooth and thin-shelled, with sweet and delicious kernels. The tree is beautiful, symmetrical, and rapid-growing, with abundant light green foliage, narrower than that of the hickory. There is a fine specimen tree in the grounds of the Capitol at Washington.
IS PECAN GROWING PROFITABLE.

Our New Orleans market seems to be a favorite for shippers of Pecans, as large quantities are received at this point from various places throughout the Gulf States, and especially the State of Texas, where they are mostly gathered from natural groves. These nuts range in size and quality from the smallest, which sell at wholesale at about four cents, to a fair quality, which range from seven to twelve and a half cents per pound. In Louisiana and Mississippi however, where the trees have been mostly planted and cultivated, the product is generally of a much better quality, and it is from these States the large paper-shell variety come which sell at wholesale from forty to fifty cents, and even more, if very choice. This fact clearly demonstrates the necessity to such readers of The Times-Democrat as propose investing in a Pecan orchard, the wisdom of propagating not from the medium but from the very best nuts that can be purchased. To illustrate: A barrel of Pecans will weigh, let us say,
160 net. If they are small and inferior, the proceeds at 4 cents, will be $6.40; if medium, 7 cents, or $11.20; if fairly large at 12 cents, or $19.20; if very large with soft shells, the highest market price, which we will say is 30 cents, or $48 per barrel. And the latter, it must be remembered, cost no more to grow than the most inferior sorts. Now there are many persons who would plant Pecans but are deterred from it, first, upon the area of land necessary to establish a large orchard; secondly, upon the length of time elapsing before such an orchard would produce a profit.

To the first objection we will say, there is no more handsome ornamental tree than the Pecan, either for the house, yard, or lawn, and it is always preferable to grow a nut-producing tree, all things being equal, than one valuable for shade and ornament alone. Again, there are very few farmers who do not own a piece of land which is utilized as a pasture for stock, and which for argument's sake, we will say contains ten acres. This planted in Pecans, at the rate of sixteen trees to the acre, and protected four or five years from browsing by cattle and sheep, may be returned to its former use as a pasture to the
equal benefit of both trees and stock. To the second objection, to wit, the length of time necessary to wait before an orchard becomes profitable, we answer: The Pecan being a forest tree and very long-lived, its progress is necessarily slow. This is especially the case with the natural growth. But it is being clearly demonstrated that by selecting, first, only the best varieties; second, by fertilizing and cultivation this time may be reduced, say four or five years, perhaps more. To illustrate: On our little farm in the pine woods, was a group of three trees fifteen years old, each producing three-quarters of a barrel of superior nuts, the income from which amply repaid for the room they occupied beside paying taxes upon the farm. Second, a lady who resides in Plaquemines parish gave us a quantity of Pecans produced from trees ten years old, from the seed. Third, a gentleman living in the vicinity of Mobile, reports several of his fifteen-year-old trees yielding one barrel each. Fourth, a correspondent of the Orlando (Fla.) Reporter showed extra fine nuts from trees fifteen years old, producing at the rate of two bushels each. Fifth, Col. W. R. Stuart, of Ocean Springs, Miss., a gen-
tleman well-known in New Orleans, has quite a number of fine trees from which he is receiving a large income. These trees are quite large and twelve years old from the seed. We might multiply these instances, but they are sufficient data upon which to calculate the age at which the Pecan begins to become profitable. Lastly, a thrifty Pecan grove upon the farm undoubtedly adds to its value, whether the trees are large or small. It is also an investment for the young man that will return him twenty-fold at middle age and fifty-fold should he live to grow old; a future endowment for his children and grandchildren, one that will pay better and is more sure than stocks or bonds or business enterprises of any kind, if ever so promising.—*Editorial in The Times-Democrat, New Orleans.*
PROGRESSIVE PECAN CULTURE.

THE GOOD POINTS OF A NEW INDUSTRY ABLY SET FORTH.—OF GREAT INTEREST TO TEXAS CULTIVATORS.

A paper read by Col. W. R. Stuart, of Ocean Springs, Miss., before the Mississippi State Horticultural Society.

I have been requested by your honored secretary to prepare a paper on “Progressive Pecan Culture,” to be read at the Ninth Annual Meeting of your Society, which is ordered to convene at Booneville, Mississippi, December 16, 17 and 18, 1891.

If I fail to interest you, please attribute the failure to my inability to properly treat this important subject, rather than lay the charge at the door of that much-abused individual, “Old Father Time,” at whose threshold has been piled the shortcomings of many a brilliant orator and writer. And I claim that the subject of “Pecan Culture” is an important one. It is so recognized by very many of the leading horticulturists of the South, and its importance is further attested by thousands of enter-
praising men and women throughout the country, from the Atlantic to the Pacific, who are engaging in the work. Besides, we have the unqualified endorsement of Prof. H. E. Van Deman, the United States Pomologist, Washington, D. C., as to the incomparable value of the Pecan. Fifteen years ago (at the age of fifty-six years) I was impressed with the belief that Pecan culture in the southern half of the United States promised vast possibilities, if due care and attention were given it.

I purchased and planted the largest and best flavored Pecans that could be found, without regard to price.

Experience has demonstrated the correctness of this theory. And it was in this way that a new industry (Pecan culture) was begun; an industry new not only to myself, but new to the country at large. During the years that have followed I have felt a deep interest in this work, and have used every honorable means at my command to advance the cause by improving the varieties grown and by bringing the subject prominently before the American people. Some writers have been pleased to call me "The Father of Pecan Culture." If my
humble efforts have been instrumental in giving this branch of horticulture the prominence it has attained, surely those years were well spent, and I have reason to be proud of the distinction accorded me. For the Pecan has taken its place in the front rank as the best and most profitable nut-bearing tree, while the nut itself, where its merits are fully known, is pronounced superior to all others. And this industry must go on from year to year increasing in popular favor as well as in profit to those engaged in its pursuit. The pride felt in this work has been seasoned by a reasonable admixture of profit and pleasure, but there is even greater pleasure in the thought that I have rendered valuable service to those of my fellow-beings whom I have induced to engage in Pecan culture. Having on former occasions given figures showing actual results of my experience, that feature will not be treated in this paper. However, it is desired to refer, in passing, to one tree of the variety known as the "Stuart Pecan," soft shell, which has yielded this year over $250 worth of nuts, at the price readily obtained from them. What branch of horticulture will pay better? It is truly gratifying to
note the widespread and ever-increasing interest in Pecan culture as well as the growing demand for the best varieties. The tendency to-day is to begin right. New beginners, real or prospective, are seeking information as to the best varieties and the best methods, so that no time or labor may be wasted in unnecessary experiments. Nor do these inquiries come from any particular locality, but from all parts of the country, from Florida to California and from Maryland to Texas.

In all portions of the United States, south of the fortieth parallel of latitude, Pecan groves are being started, and some enterprising gentlemen risk the business even farther North. The importance of a correct beginning cannot be overestimated. The best results can only be had by planting the best varieties, and by thorough cultivation while the trees are young. The grower's bank account will be materially affected by the price obtained for the product of the grove; there will be greater profit in producing nuts that will find a ready market at one dollar or more per pound, than in those which sell for only ten cents per pound. I am selling one variety at ten cents each and will not have half
enough to fill the orders that will be received during the next sixty days. Mr. J. T. Quigley, of Aransas Harbor, Texas, a gentleman of clear, practical views, and who is a close student of Pecan culture, recently procured some of my best varieties for planting. Under date Dec. 7, he writes, "To the investor of to-day these nuts are cheap at a dollar a piece."

I could add dozens of similar testimonials, but merely give the above as it forcibly expresses the value of the best seed, and the importance of planting only the best. Hence it may be assumed that the secret of success in Pecan culture is found in planting the best varieties of Pecans in good soil, and in the thorough cultivation of the trees until they come into bearing. While the trees are young they will not interfere with the growth of any crop it is desired to cultivate. The Pecan tree thrives best in a generous soil, and unless the soil is very rich, it will be found advisable to stimulate the trees by the use of muck, mulch or fertilizer. Bear in mind that the attention bestowed upon your young trees will be richly repaid in their rapid and vigorous growth. But here we are met by the irre-
pressible croaker who, in tones of despair, exclaims, "Oh, it is too long to wait; it will be eight or ten years before we get any returns for the labor and money expended." Too long to wait? Why, my good friend, will you not have to wait whether or not you plant the Pecan trees?

And your land will not produce less of the regular crop you rely on for a support, because of the small trees, which will, with due attention, soon grow into a bearing condition and render you independent the balance of your life. As to transplanting trees, my experience has convinced me that it is better to transplant the Pecan tree at the age of one or two years. Avoid older trees, for they are not apt to do so well, unless they have been highly cultivated and well cared for in the nursery.

Indeed the one-year-old trees are most desirable. In conclusion, I desire to express a willingness to impart in the future, as in the past, any information or assistance in my power to those who expect to engage in this industry. I do not claim to know all about Pecan culture, for I am learning something new on the subject everyday. But what I do know I have learned by practical experience, and I will
most cheerfully give my friends who are interested in the subject the benefit of that experience if they will apply to me. Pecan culture is in its infancy to-day and will make rapid advancement within the next ten years. There is no danger of overdoing the business, for the demand will keep pace with the production; and the man who plants now will doubtless not only reap the reward in person, but will leave a rich legacy to his children or those who succeed him. We have record of one wild Pecan tree which has produced more than 1,000 pounds of nuts in one season. Please estimate the value of that tree had it been of the choice varieties. Hence plant the best; it will repay you many fold. "Progressive Pecan Culture" is a subject that will soon interest the young and old throughout our grand country. I confess that my interest increases with each succeeding year. I am now in the 72d year of my age, and as an evidence of my faith in this industry, will state that I have just finished clearing up a piece of new ground in which I will plant a young grove this winter.

Ocean Springs, Miss., Dec. 11, 1891.
The Pecan
Is Our Specialty...

Perhaps you are looking for a location upon which to set a Pecan grove? In case you don't find what suits you write us, we can give you points that may lead you to it.

Do you want to sell a Pecan grove?
Do you want to buy a Pecan grove?
Do you want anything that pertains to the Pecan industry? If so, by all means write us without delay.

Tell us just what you want, and if we can't help you out we will put you in correspondence with some one who can, we are at your service. Address

The Stuart Pecan Co.
Ocean Springs, Mississippi.
BRITISH-AMERICAN REAL ESTATE AGENCY.

This agency is established to deal with every class of Real Estate property...

LARGE TRACTS OF LAND AT A FAIR MARKET VALUE.

It can undertake negotiations forthwith, and anyone placing property in our hands, however small or large, will always receive prompt attention.

GULF COAST LAND A SPECIALTY

LAND FROM THREE TO ONE HUNDRED DOLLARS PER ACRE.

For further information call on or address

J. HARLAND COATES,  F. L. DRINKWATER,
12 Godliman St., St. Pauls, Ocean Springs,