



A FOUR-YEAR-OLD TREE BEARING ITS SECOND CROP OF NUTS.



LARGE PECAN-TREE NEAR ENTERPRISE, IND.

PECAN POSSIBILITIES.

the gas by the sun's heat, and several means of avoiding the effects of this expansion (or contraction) have been proposed or employed:

- "1. The use of an envelop that reflects the sun's rays but does not absorb them, such as coating with aluminum foil.
- "2. The use of a cellular outer wall, in which circulates air (or gas, perhaps exhaust) of uniform temperature.
- "3. The use of a spray to cool or heat the gas, or of a circulating blower and heater to heat it.
- "4. The use of planes or propellers to hold the balloon at a given level.
- "5. The use of a wire-wound envelop (Vaniman's wonderful invention) of such strength as to hold the gas inside at a uniform volume under pressure.

"The greatest limitation of the motor-plane lies in the reliability of the motor, necessitating duplicate motor plant for any flight far from land.

"With either balloon or plane the car (or nacelle) should be a small but staunch and seaworthy motor-boat, equipped with auxiliary sail and moderate-range wireless. As a single man in a 16-foot sailboat has crossed the Atlantic in three weeks, our aerial pilot and his engineer should readily reach the track of the transatlantic liners, if not the nearest shore, even tho deposited in mid-ocean. With a non-sinkable motor-boat, and ample provision, the human risk in the first air-voyage across the ocean is almost eliminated.

"The map shows the most promising routes."

THE DAWN OF A NUTTY ERA

THE RECENT CRUSADE in favor of nuts as an article of diet may or may not be responsible, but it is certain that the growing of nuts for food is now attracting more attention than used to be given it, and that the area devoted to commercial nut-growing is extending its northern boundary. Northern nut-trees, whether chestnut, hickory, or filbert, are now mostly wild; but in the South there are "nut-orchards," and possibly we shall soon see plantations of cultivated nut-

trees in the Northern States. The National Nut Growers' Association held its tenth annual convention in Mobile, Ala., last October, and in November, 1910, a Northern Nut Growers' Association was organized in New York. The extension of the nut-growing area is one of the objects of this association. Among the nuts once thought to be distinctly southern, but now beginning to be grown in the North, is the pecan. In a report of a recent meeting of the association at Cornell University, *The American Fruit and Nut Journal* (Petersburg, Va.) says:



A CART-LOAD OF PECANS; 700 POUNDS THAT SOLD FOR \$350.

Mr. C. A. Reed, of the Department of Agriculture, who took this photograph, warns us that this was a fancy price which should not be expected by prospective planters.

Among the important papers presented was an exceedingly suggestive one by Mr. T. P. Littlepage, of Washington, who has extensive pecan interests in southern Indiana, and who for

the past several years has been exploring the bottoms of the Wabash and the Ohio for promising varieties of this splendid type of the hickory. Mr. Littlepage proved quite conclusively by his extensive explorations and by the submission of convincing specimens of fruit gathered from native trees, that there were many varieties highly meritorious and worthy of propagation. Most of these varieties were well filled, of good size, of excellent flavor, and fine cracking qualities. This latter characteristic is of great importance, considered from the commercial standpoint. Mr. Littlepage's paper left a distinct impression that pecan-culture was not to be confined in the future to the cotton-growing States, but that regions in the North were suitable for the cultivation of this splendid native nut."

At the same meeting, however, W. N. Roper, of Petersburg, Va., warns Northern cultivators not to underestimate the difficulty of acclimating the pecan in the North. We quote from the published *Proceedings* (Ithaca, 1911) as follows:

"Pecan-trees for successful culture in the North must be of hardy, early-maturing varieties, budded on stocks from northern pecans, and grown in nursery under suitable climatic conditions. These are requisites indicated by practical, experimental work and observations extending over several years.

"The successful production of large southern pecans in far northern climates can hardly be looked for except under the most favorable conditions of soil, location, and season. There seems no good reason for planting southern pecans in the far North, except in an experimental way; for there are northern varieties now being propagated that are the equal of most of the standard southern sorts in quality, and very little below them in size. They will prove to be as large or larger in the North than the southern varieties grown in the same locality, and much more apt to bear regularly. . . . .

"Only well-grown, vigorous pecan-trees should be planted in the North. It is a waste of time and money to plant indifferent pecan-trees in any locality, and especially in a locality where they have to contend with severe climatic conditions. The size of the tree is less important than its root system and vigor. The purchasers of trees grown on thin, sandy soil, with the root systems consisting almost entirely of straight tap roots, destitute of laterals, need not expect success. Most of these trees will die early, and many of those that live will linger on for several seasons without making much growth, tiring out the patience of the planter."

In a recent bulletin of the North Carolina Department of Agriculture on "Pecans" (No. 156), W. N. Hutt notes that the pecan area appears to be moving northward. He asserts that, in regard to hardiness, the history of the pecan-tree is very closely paralleling that of the corn-plant. We read:

"In the early days of corn-growing, corn was considered a southern plant that could not be grown successfully in the North and West. Corn-breeders set to work to produce a quick-growing, early-maturing, and therefore hardy variety of corn. This end was attained, and a variety produced that could make its entire growth and ripen its grain in ninety days from the planting of the seed. This 'Ninety-day Corn,' as the variety was called, produced a revolution in the corn-growing world. Corn-growing went north by leaps and bounds. Earlier and quicker-maturing varieties were produced, until corn is now grown successfully away north in Canada.

"It now looks as if the history of pecan-growing will be analogous to that of corn-production. . . . Even as far north as Pennsylvania, seedling pecan-trees have been found growing and producing matured nuts. The western range of pecan-growing has also been steadily advancing. The pecan is found native along the Mississippi and its tributaries as far north as Davenport, Iowa; Terre Haute, Indiana, and Cincinnati, Ohio. The northwestern area in which it is indigenous embraces portions of Iowa, Illinois, Indiana, Ohio, Missouri, and Kentucky. From the native areas of the pecan in these States nuts have been carried and trees planted in yards, gardens, and fields over a very wide range of country. Trifling as such plantings may seem individually, they amount in the aggregate to thousands of trees."

Altogether it would seem that just as the Canadian Northwest, once looked upon as almost within the Arctic Circle, now teems with hardy varieties of wheat, so our Northern States may soon

be teeming with orchards of pecans and other "southern" nuts. The possibility of this is even now being skilfully utilized by the unscrupulous. Dr. W. C. Deming, of Westchester, N. Y., secretary of the Northern Nut Growers' Association, writes of "Nut Promotions," in *The American Fruit and Nut Journal* (Petersburg, Va., March-April):

"The Northern nut-grower is not yet bothered with Northern nut promotions. . . . But the allurements of pecan-growing in the South are spread before us with our bread and butter and morning coffee. The orange and pomelo properties have been banished from the stage, or made to play second fiddle, and now we see in the limelight the pecan-plantation, with a vista of provision for old age and insurance for our children. And there shall be no work nor care nor trouble about it at all. Only something down and about ten dollars a month for ninety-six months. And the intercropping is to more than pay for that. It is indeed an enticing presentation.

"Altho we have as yet no Northern nut promotions, we may expect the time when the sandy barrens of the shore and the boulder pastures of the rock-ribbed hills will be cut up into five-acre plots and promoted as the natural home of the chestnut and the hickory, holding potential fortunes for their developers. I hope it will be so, for it will postulate a foundation in fact. . . . .

"We can picture the day when our dooryards, our roadsides, our fields and hills shall be shaded by grand nut-trees, showering sustenance and wealth on our descendants and all people, and bearing the names of their originators; when the housewife of the future shall send her wireless call to the grocer for a kilo of Hales' Papershells, the Rush, the Jones, the Pomeroy Persian walnuts, the Black Ben Deming butternut, the Craig Korean chestnut, the Morris Hybrid hickory, the Close black-walnut, or the Littlepage pecan."

**GROWING WEIGHT IN A SHRINKING WORLD**—That objects on the earth's surface weigh half as much again as they did before man's appearance on the globe is asserted by a German geologist, Dr. Bruno Müller. This is due, he says, to the shrinkage of the sphere in cooling, which has brought everything on its surface nearer to the center of attraction. Says *Cosmos* (Paris), in an article on the subject:

"The earth is a cooling globe; as it cools it contracts. On the other hand, it is isolated in space, and its mass remains invariable. The attraction of a spherical globe manifests itself at the surface and on the exterior, as if the whole mass of the globe were concentrated at its center. Consequently, as the radius of the earth shortens, objects situated at its surface, as they approach the center of attraction, increase in weight. More exactly, the weight at the surface is in inverse ratio to the square of the radius; if the radius diminishes by a fifth of its value it may be seen that the weight increases and becomes 1.56 times what it was at the outset ( $5^2 : 4^2 = 1.56$ ).

"Dr. Bruno Müller has been inquiring what influence such an increase of weight has been able to exert on the earth's history, and has taken up successively the geophysical, geological, and paleontological sides of the problem. *Ciel et Terre* (March) gives an abstract of his first point of view.

"Supposing, then, that the earth, since the far-off epoch when it had yet no living organism upon it, had shrunk by one-fifth of its radius. Such a hypothesis is not too great, since it is imagined by geologists who suppose the crust to have been bent into folds before the formation of valleys and mountains. It must be remembered that many ancient mountain chains, as high as the Alps or the Pyrenees, have been razed to the present level of the oceans. We may draw the conclusion, then, that weight has increased by half of its former value.

"The atmosphere, supposing that its mass and composition have not varied, has thus been increasing in weight throughout the geologic epochs; its pressure at the earth's surface has thus grown very considerably, for the present atmosphere presses on a terrestrial surface less extended than formerly. But it is probable that the above hypothesis of the constancy of the mass and composition of the atmosphere does not represent the facts; we know that enormous masses of carbonic acid and other gases have been taken up from the atmosphere by marine organisms to form calcareous rocks (carbonate of lime), and by the plants of the carboniferous era which constitute the bulk of our coal." —*Translation made for THE LITERARY DIGEST.*