

Some Facts
about
Fruit Culture
in
Indiana



Indiana Horticultural Society
Indianapolis, Ind.

A MONOGRAPH

ON

FRUIT CULTURE
IN INDIANA

Its Present Condition and Its Possibilities.

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INTRODUCTORY.



DEAR READER:—Do you have any desire to go into the growing of fruit—of owning a good fruit farm? Then why not locate where you and your family can have all the comforts, conveniences and advantages of modern country life—good (near) neighbors, good churches, good schools, good roads, good markets, unequaled shipping and traveling facilities, free mail delivery at your door, cheap and efficient telephone service in the home, electric cars along many principal highways giving hourly service, etc., with pure air, water and healthy climate? If so, read very carefully the following facts concerning the advantages of Indiana as a place to engage in fruit growing.

Why go into a new territory where you and your family will have to deprive yourselves of many advantages, endure many hardships and wait many long years before you are comfortably fixed?

Here, in Indiana, in the midst of all the advantages that modern life can give, you can buy a farm, equally productive, with the same or less outlay, and secure all these advantages at once. Consider well and make no mistake.

The Indiana Horticultural Society will be pleased to give any further particulars to those interested. Address

W. B. FLICK, Secretary,
Lawrence, Indiana.

FRUIT CULTURE IN INDIANA

In writing on the natural resources of Indiana let it be understood that but few States of the Union have a greater diversity of soil or can produce more of the necessaries of life than she can. Gold can be found in paying quantities within her borders, pearls are found in her waters, and diamonds are no doubt to be found within her bounds. But it is to none of these things that we write to call the attention of the world in this article, but to our wonderful horticultural resources. It is to orchard, vineyard and berry plantation that Indiana will point with pride, and to which she will be indebted for future greatness. Here we have everything to tempt the capitalist, seeking profitable investments, the home seeker, or the laboring man who must eat bread by the sweat of his brow. Lands in abundance can be bought cheap, that will produce as fine fruits as the sun ever shone on, and all they need to make them yield gold is for the "alchemist," Capital, to take hold and develop them. Our State is divided into ninety-two counties, every one of which will bring some kinds of fruits to perfection, while many of them produce profitably any variety that can be grown within the temperate zone, but there are counties or sections of the State where certain kinds of fruits grow to a higher state of perfection and can be produced more profitably. Until a few years ago the northern and central portion of Indiana were supposed to be far superior to the southern portion as a place in which to invest money in farm lands

with hope of remunerative return. This is true now only in part. If corn and wheat lands are the desired ones, then central, northern and western counties are possibly best even yet, but for fruits they are not. In the first place the lands are worth too much for constant tillage in cereal crops, the climate and soil are not well suited, and then market facilities are but little better than in the extreme south part of the State. To repeat, there are but few counties in the State where fruit can not be profitably grown, yet we will hereafter confine ourselves to those particular counties where soil, location, climate, elevation and every necessary feature is combined to make them especially adapted to commercial fruit growing. Here and there over the State is a county or section that is well adapted from some local peculiarity of topography or other influence to fruit growing of some particular kinds. These we will mention, but not as belonging within the fruit belt.

Indiana is centrally located in what is known as the great Ohio Valley, extending from Lake Michigan on the north to the Ohio river on the south, and between seven degrees and forty-five minutes and eleven degrees and one minute of longitude east from the city of Washington. It contains an area of 33,809 square miles. From the geologist's standpoint this State has a wonderful history. First, the southeastern portion appeared, then the northwestern and lastly the central. Then drifting from the north came vast glaciers, hundreds of feet in thickness, composed of ice, earth and stone, crushing and grinding the whole face of the earth, leveling the hills and filling the valleys. These glaciers extended some forty miles below the center of the State, the hills and ravines of the lower portion remaining unchanged. The dissolving glaciers and subsidence of water left in the State three groups of soils, viz.: the drift, the alluvial and the residual. The drift soils, covering an area of about two-thirds of the State, were formed by the grinding and leveling action of glaciers, thus mixing together in one heterogeneous mass earth, clay, gravel, sand and stone. The soils thus formed are rich in all the mineral elements of fertility

that make lands valuable for agricultural purposes. This rich supply of mineral elements is not confined to the surface loam, but extends down to the rock bed, and are consequently practically inexhaustible.

The alluvial soils are found along creeks and rivers, usually called "bottom lands." The rain and the snows, which give an annual water supply of about 44 inches, start up the trickling rills, the brooks, rivers and strong streams which are ever at work tearing down the soils and underlying clays, and disintegrating the very rocks from every slope, bearing them away to lower levels. The small water-formed drains of to-day in years become a chasm, and in ages a hollow, and the transformed material is gradually deposited as alluvial soil on overflow lands. Here are found the most productive corn lands under the sun, and centuries of cultivation will not exhaust their fertility.

The residual soils are found in the south part of the State. They were chiefly derived from the underlying rocks, limestone, sandstone and shale, and their fertility varies in passing from one formation to another. All the hills and valleys as now found were literally cut out of what was once a level stretch of land, by the weathering of rocks and the wash of streams and rains.

The blue limestone of the southeastern counties gives a porous clay soil of light color, rich in lime and much more productive than its appearance would indicate. Farther west and extending past the center of the State there are outcroppings of huge beds of shale which gives a cold, tenacious clay soil. The sandstone of the knobs that run back from the Ohio river and extending some sixty miles up through the State gives a light, sandy soil. Then there is a long stretch of subcarboniferous or oolitic limestone country, extending from the Ohio river a short distance from the falls in a northwesterly direction for one hundred fifty miles, which gives a very fertile soil, capable of producing the widest range of plant growth, but much of this area is too broken and rocky for practical cultivation. These

residual soils all respond to a liberal application of commercial fertilizer, but the fertility is most economically maintained by systematic green manuring.

In many parts of the State there are found considerable districts where the surface is formed by local deposits, evidently more recent than the glacier drift. Of these there is the terrace or second bottom formation which skirts the larger streams, frequently attaining a width of four or five miles. Below a surface loam of two or three feet in depth the formation is of water-worn pebbles, interspersed with coarse sand showing very distinct ripple marks and lines of deposits from running water. The northern counties of the State often present ridges of nearly pure sand which overlie the glacier or boulder drift and are, therefore, regarded as more recent.

The rocks underlying all these superficial deposits have been very slightly disturbed since their original deposition in horizontal strata. Their general dip is westward. Along the southern border of the State the dip amounts to about thirty feet per mile. Through the center of the State the dip is a little south of west, with a descent of about twenty feet per mile, and as the northern counties are approached the dip is less and more southerly.

This is a brief outline of the geology, topography and soils of Indiana, and at least one-third of its entire area is peculiarly and especially adapted to commercial fruit culture.

CLIMATE.

Indiana lies at an altitude ranging from 350 to 950 feet above tide water. In the absence of any large bodies of water or lofty mountains to exert local influence in climatic modification, Indiana may be taken as the type of a climate of latitude. Lake Michigan touches one corner of the State, and no doubt affects somewhat the climate of a few counties in its vicinity. It is also true that an elevation of 800 feet is equal

to a slight remove of latitude to the north, but these affect the climate in a very mild degree.

The extreme southern point of the State reaches a little below the thirty-ninth parallel of north latitude, while the northern line does not quite touch the forty-second parallel. This location secures exemption alike from the Arctic severity of the New England winters and the enervating summer heat of the Gulf States. The most objectionable feature of the winter climate of Indiana is its oscillating between these extremes. In the winter months the thermometer frequently marks a temperature above sixty degrees, while scarcely a winter passes without its reaching zero, and sometimes even twenty below that point. These extreme cold waves, however, are quite rare. The summer climate is almost tropical, the mercury frequently ranging from 95 to 98 in the shade and seldom falls below 60. The prevailing winds modify to a great extent climatic conditions and tend to greatly diversify the seasons, comparing one year with another. The "cold waves" come when the wind is between west and northwest. The north winds are tempered by the great bodies of unfrozen water of the lakes and bring in their wake heavy rains and sleet, but the heavy snows of this region are brought by northeasterly winds.

The position which Indiana occupies on the line of interchange of winds between the Gulf of Mexico and the great lakes secures the climate from the serious drouths that so frequently affect countries far from the seaboard. The wind from the Gulf comes unobstructed by mountain chain, and in the summer season meets with no cold surface to condense its moisture till it reaches Lake Michigan, whose waters maintain a temperature of 60 degrees throughout the summer. Under this influence condensation begins, and rapidly extends southward. During the summer a brisk southerly wind usually brings rain within twenty-four hours, but the heavy, continuous rains come from the east and southeast. March usually has the greatest number of rainy days, and has June as a rival for greatest rainfall. The severest

drouths of this region are the result of persistent winds from points between west and south of west. These winds, after passing the Rocky Mountains and losing their moisture in Arizona and New Mexico gain no moisture to restore what they have lost and reach this region with a hydrometric condition below saturation, so that a rain is impossible without a change of wind.

MARKETS.

There is no fruit producing State in the entire Union that has better markets and market facilities than has Indiana. Being in the very center of population, with large cities on the north, south, east and west, with thousands of miles of railroads and electric trolley lines, which will in a very short time put every town, village and almost every farm in touch with the great distributing points the question of markets is hardly of enough importance to need mention. Even in the extreme southern part of the State berries are now loaded in the evening and reach Chicago in time for the early market the following day. The river counties ship by way of the Ohio river to Cincinnati, Louisville and points south; the central portion finds outlet in any and all directions and the northern counties have been long called the garden of Chicago.

There is an increasing demand for thousands of bushels of fruit in our own manufacturing, mining and quarry towns and cities, where better prices can always be obtained than in the largest cities, and, until this demand is fully supplied it is not worth our while to seek markets outside the State. The only concern the commercial grower need take is to build up and supply satisfactorily his nearest market.

When we realize that Indiana imported about \$5,000,000 worth of fruits last year we find what a home market we have. After the demands of this market have been met we are so located that the markets of the world are ours and no State can excel us in certain kinds of fruit.

STATE AND LOCAL HORTICULTURAL SOCIETIES.

The subject of horticulture is deemed of such importance in Indiana that for forty-three years it has had a State Horticultural Society and receives regular aid from the State Legislature to carry on its work. The society issues annually a nicely bound book, giving to those who desire it all the information along horticultural lines that it gathers from year to year. Any person may become a member of this society who is interested in its workings, by paying a small annual membership fee. This society holds two regular meetings each year, known as the mid-winter and mid-summer meetings. The former is held at the State capital, where officers are elected and all routine business transacted in addition to quite a number of lectures given by the leading horticulturists of America. The mid-summer meetings are held around over the State by invitation of the local societies. These affairs are of a social nature and very enjoyable indeed. Here also a number of lectures are given and topics of local interest discussed.

In addition to this work the State now owns and is operating an experimental orchard, where experiments of any kind deemed advantageous may be carried on by experts. At present the orchardist is trying, by cross-fertilizing, in-breeding and other scientific methods to produce an apple as luscious as the Grimes, as prolific as the Ben Davis, as good a keeper as the Jennep, and as hardy as a Russian. This kind of work has not been taken up by any other State, and is sure to redound to the credit of Indiana and the prosperity of the apple growers. In almost every county where there is a special horticultural interest there are local societies which are experimenting with local conditions and problems, and by working all together present fruit growing is not a leap in the dark, but a fair, open business proposition. The novice or commercial grower seeking fruit lands can go into any county of this State, make his investment, and from his neighbors and local society gain all the information and knowledge he needs as to profitable varieties, time to plant, cultivate, best markets, and

if he is wise enough to learn from the mistakes as well as successes of those who have gone before, there is no more danger of going wrong than in any mercantile or manufacturing business, or in fact any other business venture.

The State society has now an annual appropriation of \$1,500 with which to carry on the work now begun and to go out into new fields of research or investigation.

INDIANA AS A HOME FOR FRUIT GROWERS.

There are hundreds of men and women who are having to earn their own living in our crowded shops, factories, in dark, dangerous mines, and many other uncongenial and unhealthy occupations who have some capital to invest in a home and business if they only knew just where to go. It is to this very class of people that this is addressed. This may be a broad assertion, but there is no place on this "mundane sphere" where a dollar will purchase more of all that goes to make up the sum total of human happiness than in Indiana. No where that lands can be bought so cheap with the same productive capacity. No where that fierce labor competition is less rampant and markets nearer.

The laboring man and the home seeker who comes to this State, or the one who lives and toils in its manufactories or mines, herded in unhygienic dwellings in her cities may go into any one of her fruit counties, buy him a little home of even but a few acres, and in a short time have for himself and family a veritable garden of Eden with scarcely a serpent to disturb its serenity. No soil will respond more quickly to generous treatment, no place where the winds blow more kindly, and no spot where God's sunshine is more freely given. These fruit farms will yield wheat, corn and truck enough to feed the husbandman and any flocks and herds he finds necessary for the support and happiness of the family, while the fruits of any and all kinds lend a luxury to his daily food that the crowned heads of Europe might well

envy, and the surplus, or what is intended for a money crop, can be cashed right at his door and the proceeds put in bank. His neighbors are kindly, genial, independent tillers of the soil, well fed, comfortably clothed, landed gentlemen, who can not be thrown out of house and home at the whim of any man, who owes no allegiance to the walking delegate, is not affected directly by any strike, and who can not be driven to the polls and voted like so many cattle. His children here have the "inalienable right" to a life lived in "the open," near to nature, where they can expand and grow into such citizens as are the strength and bulwark of the Nation. Indiana has a common school system second to none and her compulsory education law has driven out gross ignorance and will be the means of giving to the State a class of well educated, self-supporting citizens.

A comfortable country church is to be found in reach of any one who is desirous of attending divine services, and any fruit grower can reach these or his nearest town in most instances over good roads, and many instances over very fine pikes. Trolley lines are making a network over the State, the telephone will soon be within the reach of all, and in many counties now every one gets his or her own mail delivered daily. What more can mortal ask and what more does he need than can be gotten in Indiana fruit counties in the way of health, happiness and wealth, if he only has the foresight to reach out and grasp what is offered him.

To prove that Indiana is a State of homes we quote the following: "Of the farms of the State more than one-half are operated by the owner who lives upon the farms; 95 per cent. are tilled by white farmers, and only 5 per cent. by colored. There are in the State 1,796 farms under three acres, 71,055 between 50 and 100 acres, and 225 of 1,000 or more acres. The census bureau shows that there was an increase in the number of farms from 1890 to 1900 of 23,730. This might be accounted for by reduction in the size of farms, but this is true only in a small part for the farms averaged only five acres less in 1900 than

in 1890. The report further shows that the total farm acreage was 1,257,107 greater than ever before. The acres of unimproved farm land or lands under cultivation increased in the same time 1,578,876 acres. The total value of increase in farm property in the same ten years was \$109,293,684 and the increase in farm products for the same period was \$109,690,934. The State has still 5,000,000 acres of unimproved land that is to be bought at a comparatively low figure. Truly what Indiana needs is for about 1,000,000 of her citizens who are now living cramped, distorted, half-starved existences in her cities to go out on these broad acres, gaining for themselves full, natural lives and help feed those of her own less fortunate ones as well as the starving millions abroad.

WHAT PURDUE IS DOING FOR HORTICULTURE.

Among the various forces which are at work in this State, having for their object the development of a taste for and the dissemination of horticultural information perhaps none is more potent for good to the State at large than those found at Purdue University, an institution founded, primarily, for the two-fold purpose of (1) giving instruction to the young men and young women of the State along both the theoretical and practical lines which have to do with the every-day affairs of life, and (2) inculcating a taste for original investigation into the many unsolved problems which are constantly confronting the practical, every-day business man, and especially the man who lives closer to nature in his every-day life than any other—the farmer and fruit grower.

The first of these influences is found in the University proper, and the second in the Experiment Station, which was established and is maintained exclusively by the general government. - Both of these forces are accomplishing great good to the State, not only in bringing the younger element especially to a higher plane of living, but by bringing them into closer relation with nature's laws they are enabled to accomplish greater results in various fields of labor.

After four years of training, during which time these young people are taught to think and act for themselves, they go out into their various localities and scatter seeds of information, many of which "fall upon good ground," the full fruition of which can not be measured, but which results in time in the uplifting and betterment of the whole community.

To acquire a thorough knowledge of horticulture, which includes not only fruit culture, but vegetable culture, forestry, landscape gardening and floriculture, it first becomes absolutely necessary to become acquainted with the various sciences which have to do with plant growth, such as botany, chemistry, etc. The fruit grower or the florist who does not possess this knowledge is greatly handicapped—in fact, he is simply groping in the dark. He may prune his trees at a certain time of year, or he may use a certain brand of fertilizer on his flowers, but he does not know why as good results might not be had if done at any other time, or whether his fertilizer contains the proper ingredients in the right proportions to produce the best results. He must also understand the relation which plants and insects sustain to each other, and be able to distinguish his friends from his enemies.

All these sciences, and many more which are so closely related to them that they can not be separated from them in a well-rounded college course, are taught at Purdue University. In the horticultural department the student receives instruction concerning the plant as a whole, its several parts and their uses; plant foliage, its modifications and uses; pollination, its purposes and how effected, and how weed migration may be checked; the food of plants, sources and kinds of food, and how plants obtain their food; the germination of the seed, conditions of germination, changes in germination, and the practical lessons they teach; botanical relationships of farm crops, joint action of the clovers and their parasites in renewing the nitrogen supply of the soil; the diseases of plants and their causes. A little later he is taught the principles of plant breeding; propagation in its various

forms and limitations; pruning and thinning; care and cultivation of fruit trees and vines, harvesting, packing, storing and marketing fruits; preparation of soil, planting, transplanting and cultivation of vegetables; laying out and ornamentation of public and private grounds, with special attention to the needs of the rural home; insects, their relation to the farmer and fruit grower; description of species, their habits and life history, whether injurious or beneficial, rate of increase and means of holding them in check.

Instruction is also given as to the relation of forestry to horticulture; the work of the forest in forming, improving and fixing the soil; the effects of forests upon climate; influence of forests on the evaporation of moisture from the soil; effects of forests on the water supply of springs, creeks and rivers, etc. All of which play a very important part in the practical horticulture of the State.

In addition to the instruction given to students as outlined in the foregoing paragraphs, and the bulletins which are published as the result of investigations by the instructors, which reach about 25,000 of the farmers of our State, hundreds of questions relating to kindred topics are answered every year by private letters. Thus the whole University is brought into vital relation with those departments of the world's work which stand for better, happier, and more contented citizenship.

WASHINGTON COUNTY.

Old rock-ribbed Washington is the second in importance as an apple growing county of the State. It has the rough or rolling surface common to all the southern counties, but very little actual waste land. In fact the hilly, rough portion can be made much more profitable than the rich bottom corn lands or wheat fields. There are in this county 329,226 acres, upon which are now growing 265,220 apple and 32,939 pear trees, as well as a large number of cherry, plum, peach and other less important fruits. Washington county is the original home of the

Fleenor peach, which is one of the finest commercial peaches grown and has brought into this county thousands of dollars. In 18.. an emigrant from South Carolina settled here, bringing with him and planting some peach seeds from which came the peach which was called Fleenor. It is still to be found here, perfectly pure as it comes true from seed if planted from seedling trees and is often confounded with the "White Heath."

Because of its strong red clay limestone soil, apples and pears color up more highly than in almost any other county, and are famous lookers and keepers.

The Ben Davis is a favorite commercial apple, but our growers are not so wedded to it but they grow in great quantities other and better varieties. There are about 100,000 acres in this county of as fine tree fruit land as can be found in the whole world, and much of it can be bought for from \$5.00 to \$40.00 per acre. Fruit growing is not in any sense an experiment in this county, but an assured business proposition. The county has a number of miles of fine gravel roads right through the best fruit section, every farmer gets his free rural mail delivery and the country telephone system is very complete. This is an excellent small fruit country and the output is hundreds of gallons per year, but no definite figures could be obtained to substantiate the fact. This county also has quite an area where the persimmon and pawpaw are indigenous. These fruits from coming spontaneous and costing nothing have not been considered in a commercial way until the last few years, since which time they have been in great demand locally and many dollars' worth have been shipped to market.

FLOYD COUNTY.

Floyd county is in the southern part of the State on the Ohio river. While it is one of the smallest counties it ranks near the front as a small fruit section. Especially is it famous for its strawberries. Its

surface is very rolling, but its hill tops are excellent for tree fruits and its hillsides for small fruits. Strawberries have yielded as high as 3,000 gallons per acre and during the busy season the output is seven and eight carloads per day.

The land values vary much, but lands can be bought from \$5 to \$50 per acre, according to location and the outlook and possibilities of this county need but to be understood to be appreciated.

ORANGE COUNTY.

Up to this time there has been very little fruit grown in Orange county for commercial purposes. The people now appear to begin to realize the importance of fruit growing, and in the past year there have been several commercial orchards planted. There are 256,000 acres of land in Orange county and it is thought that more than half of this land would make good orchard land. The southern part of the county is hilly with quite an area of level land on top of some of the hills. There appears to be some peculiarity in the soil of the hillsides and hilltops that ripens an apple to a higher degree of perfection than is attained anywhere else in the same latitude.

This class of unimproved land can be bought very cheaply, much of it from \$5 to \$15 per acre. Some of it is well located with reference to gravel roads. One example is that of a 100-acre tract that can be bought for \$400, which is said to be fine orchard land.

Small fruits do well; in fact, anything in the fruit line that will grow in this latitude. The trouble has been that the farmers plant an orchard and then leave it to "root hog or die." Not 3 per cent. of our farmers cultivate or spray their orchards, seeming satisfied with enough fruit for family purposes.

What is needed is to get some up-to-date, practical fruit growers to locate and plant some of these lands in fruit. The result of their labor would spread like an infectious disease, and permeate the whole coun-

try. If something could be done to get the industry properly started southern Indiana is destined to become one of the greatest fruit sections in the country.

George W. McIntosh, of Rego, and James A. Gillum, of Paoli, are probably the most successful fruit growers in the State.

ST. JOSEPH COUNTY.

St. Joseph, one of the northern tier of counties, has an area of 318,080 acres. The soil is diversified, ranging from the muck lands of the Kankakee valley to a heavy clay loam of the high lands; the elevation is from 700 to 900 feet above sea level.

There is a valley of from three to four miles in width and from one hundred to one hundred fifty feet deep across the county from east to west, and a similar one intersects this from the north. Through these valleys flow the St. Joseph and Kankakee rivers. The land on the south and west of these river basins rises very abruptly while to the north and east the ascent is more gradual. Numerous small water-courses give excellent drainage. This highland constitutes fully four-fifths of the area of the county and is exceptionally well adapted to fruit growing, tree fruit doing exceptionally well throughout the county.

In common with many other communities in our State the land owners are not awake to the possibilities of their soil, and but few commercial orchards have been planted. The largest is one of thirty acres, mostly apple, in the eastern part of the county, twelve acres of which is just coming into bearing and the balance but recently planted. There are a few others of from five to ten acres. Pears succeed equally as well as apples. In 1903, when pears were almost a total failure throughout the State, H. H. Swaim harvested from ten-year-old Kiefer trees, which have bore six successive crops, an average of four and one-quarter bushels per tree, some of the best trees yielding seven and

one-half bushels. These sold in the local market at \$1.50 per bushel, and no crop from these trees has sold for less than \$1.00 per bushel.

Grapes and small fruits do equally as well as the tree fruits and are grown quite extensively in the vicinity of South Bend. Grapes not uncommonly yield five to six tons per acre. C. P. Bradley one season harvested thirty-six and one-half tons from five acres. Other prominent fruit growers are: T. J. Coffin, Jacob Betz, Leonidas Norris, A. Mohn, D. R. Rockhill and H. H. Swaim.

Of small fruits strawberries are most extensively grown and yield enormous crops of the finest quality of fruit. George F. Newton has the credit of the largest crop ever grown in the county, with a yield of 8,400 quarts per acre, the net receipts of this acre being \$325.00. The variety grown was Crescent Seedling pollenized with Captaub Jack and grown in matted rows heavily mulched and without irrigation. H. H. Swaim holds the record for the largest single picking of strawberries in the county, with 1,680 quarts from one acre. South Bend, with its 40,000 population, is an excellent fruit market.

The shipping facilities of the county are unequaled in the State. The following is a list of railroads in the county: L. S. & M. S., Chicago & Grand Trunk, Michigan Central, Vandalia, Baltimore & Ohio, Lake Erie & Western, Wabash, Indiana, Illinois & Iowa, with a branch to Lake Michigan at Benton Harbor.

LAWRENCE COUNTY.

The possibilities of Lawrence county as an apple county have been demonstrated to the world by J. A. Benton. In 1887 Mr. Benton planted an apple orchard of twenty-five acres which came into bearing in 1895, giving a paying crop that year and every year since. His largest sale during this period was 1,400 barrels, besides windfalls; his most profitable yield per acre was \$88.00. To do this has meant work in the way of cultivation, spraying and in fact every detail necessary to success

has been well looked after. Mr. Benton won quite a number of premiums at the Paris, France, Exposition on his apples, as well as premiums and medals at the Pan-American Exposition. Lawrence is one of the interior counties with a gently rolling surface, with more than 100,000 acres of land that will produce bountiful and profitable crops of apples and can be bought for \$5 to \$50 per acre.

BROWN COUNTY.

Brown is one of the interior counties of the State. Its surface is very hilly and almost mountainous. It contains 204,800 acres. About one-fifth of these acres only are rich bottom and table lands that yield fair profits in ordinary farm crops. This county is crossed by several ridges which divide it into sections and it is on these ridges that we find the orchards which even now are attracting wide attention and will some day make this county famous as a fruit section. It now has growing over 100,000 apple trees, 70,000 peach trees, as well as large numbers of pear, plum and other tree fruits. There is quite a large number of orchards of from 100 to 1,500 trees just coming into bearing, but as the apple orchard of William Waltman and what is known as the Freeman peach orchard are the largest we will use them as examples of what has been and can be done.

We quote the following from Mr. Waltman: "My orchard has in it 5,000 apple trees, most of which are Ben Davis, that have been planted from eighteen months to six years, on a ridge 1,100 feet above sea level. This orchard covers 100 acres and I have a crop about every other year, which gives me over \$80.00 per acre when it bears. The original growth was walnut, beech, hickory, sugar maple and such like trees, very large and fine. I bought the farm for the timber, paying \$4.00 per acre for it, and I would hesitate a long while before I would take \$100.00 an acre for any acre in orchard. Fruit trees of all kinds do well on my farm, but nothing brings in the money like Ben Davis apples."

The Freeman peach orchard is on an adjoining farm to the Waltman apple orchard, and covers 100 acres in all, eighty acres of which is in peaches. Six thousand trees were set in 1893, 4,000 in 1894, 2,500 in 1895. The best crops gathered were in 1899 and 1901. The first year named gave a crop of 2,500 bushels, which sold for \$1,400.00; the last one 9,033 bushels, which brought \$6,250.00. The expense of marketing was about half the above amounts. On this same farm, in bearing, are 2,000 pear, 100 plum, 1,000 apple, 150 cherry trees and quite a vineyard. The original cost of this land was \$4.20 per acre, all the land in timber. The cost of clearing the land, cultivating and setting the trees was \$17.00 per acre, and is worth on the market near \$100.00 per acre at the present, and there are thousands of acres in this county that can be made to do just as well with the same amount of brain and energy expended thereon.

HARRISON COUNTY.

Harrison is one of the river counties, being bordered on the south, southeast and southwest by the Ohio river. It contains 305,074 acres, much of which is supposed to be among the finest fruit land of the State. There is now growing in this county over 250,000 apple trees, which gives it the lead of all the counties of Indiana as an apple county. When growers feel the importance of spraying, and learn to successfully fight fungus and other fruit tree diseases, she can possibly grow and market apples cheaper than almost any other section. This country is quite rolling, especially the river townships, which are hilly, and it is on these highest hills where the finest orchards grow and fruit most regularly.

Mr. Samuel Wolf last year gathered 1,200 barrels of apples from ten acres of thirteen-year-old trees.

John Cunningham has an apple orchard of Ben Davis apples fifteen years old that brought him in 1900, \$1,400; in 1901, \$1,200; and in 1902, which was a very bad year for apples, \$900.00. The number of bushels

could not be ascertained. There are in the county near 15,000 acres of most excellent fruit lands that can be bought for from \$10.00 to \$20.00 per acre.

CLARK COUNTY.

Clark county is one of the largest in the State, containing 235,516 acres, and is situated on the Ohio river. The surface is quite diversified as well as its soil. It contains many acres of rich bottom corn lands, acres of valuable timber lands yet unculled, but it will be known in the future as a great horticultural section. The soil and situation fit it for any kind of fruit that will grow in this latitude. Its apple, peach and plum crops will justify any one in the embarking in the growing of either on a commercial scale, and will give handsome returns on money invested in their production.

The growing of fruit trees has not been so extensive in the past as it is likely to be in the future, and we have only family orchards, or at least small commercial ones to judge from. In either instance no records have been kept, but suffice it to say that whenever Clark county tree fruits have been put on the market they have brought the very best price on account of size, color, flavor and keeping quality. Apple and peach lands can be bought for from \$5.00 to \$25.00 per acre.

It is in the growing of small fruits—the berries—that this county takes first rank. The little city of Borden, in Wood township, is the main shipping point, and the bulk of the fruit goes north on the Monon railroad, reaching Chicago and intervening points in prime condition. A recently organized Fruit Growers' Corporation will supply the only thing necessary to make this one of the most popular berry sections in the State—and that is co-operation among growers in demanding transportation rates and putting an agent in the field to look after markets.

A recent visit to Wood township brought to light many object lessons that will be of great value to investors, on either a large or small

scale. Strawberries rank first in importance and many carloads are shipped out each day during the busy season. Good lands that can be easily fitted for berry growing can be bought right in the berry district for \$20.00 to \$50.00 per acre, while areas ready to plant or already planted can be bought for \$100.00 to \$150.00 per acre. It is not infrequent for growers to be offered the above prices for the fruit alone on the acres, the buyer to pick and market same. J. J. Dietrich reports that in 1900 he, from one acre of black raspberries, picked 837 gallons, which netted him \$167.50. The same acre in 1901 yielded 1,010 gallons, for which he received net \$241.77. The same acre in 1902, with the addition of one-half acre in bearing for the first time, gave 987 gallons, for which he received \$224.83. One acre of strawberries in 1902 yielded 1,281 gallons, which netted \$304.95. Mr. Dietrich says these figures mean after all expenses are paid incident to the crop after ripening began.

R. M. Borders in the same district in 1901 sold from one and one-half acres 2,550 gallons of strawberries, for which he received \$225.25. The same field in 1902 netted him \$660.10, but the number of gallons is not given. Two Borders brothers went in debt \$2,000.00 for land, supported their families on it, paid taxes and interest and in four years paid for the land. This was largely, if not entirely done, with berry crops. W. R. Jackson, in 1897 picked 1,210 gallons of strawberries from three-fourths of an acre which sold net for \$325.50. The same area in 1898 gave 2,000 gallons which netted \$245.50. In 1901 one and one-fourth acres yielded 2,350 gallons, netting \$481.00.

John Coats, in 1902, picked from one acre of strawberries 2,478 gallons; net proceeds, \$640.00. In 1903 two acres of blackberries gave a net sum of \$260.00. Page Callahan netted \$460.00 from one acre of strawberries, and while he has since done as well he has never broken the record. Lafe Scott realized \$280.00 from one acre of strawberries. G. W. Martin is probably the largest grower, having out about twelve acres.

At the present there are about 1,000 acres of strawberries growing within six miles square, which is an increase over former years, and there has been an average of eighty carloads shipped from Borden alone for the last ten years. Conservative growers estimate that there are at least 5,000 acres of berry land in this county that can be made to produce as well as the ones mentioned.

This county is the pioneer and has had almost a monopoly of the persimmon trade in the past. This fruit is indigenous to many counties of the State, but has not figured to any extent in city markets. It has many variations in time of ripening, size, flavor and other minor points. One Logan-Martin became interested in a tree growing wild on his farm which produced fruit almost seedless. He began to bud, graft, cultivate and otherwise improve this wild fruit, the result of which is a fine, large fruit, almost seedless, and for which there is a great demand at very profitable figures. Mr. Martin's oldest improved tree is now twenty years old. In 1903 it yielded fifty crates.

There are about 2,000 trees in this immediate vicinity, which are all young, but made an average profit of \$5.00 per tree last year. These trees begin to bear at three years and five-year-old trees last year averaged three gallons of fruit to the tree.

There are thousands of acres of Clark county land particularly suited to the persimmon and the market is never likely to be glutted with them, as they can be shipped at any time from September until March without being put in cold storage.

MONROE COUNTY.

Monroe is one of the interior counties of the State and has quite a diversified surface. This county is known best as the home of the State University, located at Bloomington. Her building stone is second to none. Her soil is adapted to the growing of grasses, cereals and fruits, as has been proven in the past. This county is included in what will

soon be known as the great apple or tree fruit belt. Of her 268,480 acres there are nearly 70,000 acres that are unimproved and are almost unexcelled as apple lands. These high, rolling, cheap acres so fitted for apples especially, are sure to attract capital and will be appreciated by investors as they have not been by past and present owners. These hilly, unimproved lands have just the soil and location needed for fruit culture and can be bought in tracts of but a few acres up to 1,000 or even 1,500 from \$5.00 to \$40.00 per acre, according to location. The near-sightedness and indifference of the population is the only reason that these hillsides and summits are not one solid orchard of bearing apple trees.

The wide awake farmer, the small orchardist and the amateur fruit grower have demonstrated to the world what can be done in this county. It is well known at the State Fair and Horticultural Society that it takes something extra to beat Monroe county and it is rarely done.

All the tree fruits, as well as grapes, do well. Fred Fess finds Moore's early grape quite a money maker, and has grown the Niagara grape to weigh from one to one and one-quarter pounds per bunch. His Kiefer pear trees, planted out in 1892 averaged to the tree in 1899, seven bushels; in 1900, eight bushels; in 1901, seven and one-half bushels, and in 1902, six and one-half bushels. Another grower realized an average of eight bushels of Ben Davis and Wine Sap apples from ten-year-old trees. In fact all the leading varieties do well, producing quite regularly as fine fruit as can be found anywhere.

The small fruits do well in this county, but from lack of organization of fruit interests as well as lack of past records kept, it was hard to verify general ideas and knowledge of this coming fruit county.

Frank Rose, a grower of small fruits near Bloomington, has realized a net profit of \$265.00 from one acre of Bubach strawberries, and \$235.00 per acre from Columbian raspberries. There are hundreds of

acres near Bloomington that can be bought fairly cheap that will do this under ordinary cultivation, and its possibilities under high cultivation are almost limitless.

In looking the State over one finds here and there an orchard or vineyard that is highly profitable, but owing to the high price of lands one would not speak of them as fruit sections, especially when farms can be bought so very cheaply in adjoining counties that can be made produce just as fine fruit with the same labor.

The orchard of W. B. Flick, of Marion county, is one of these. Mr. Flick's orchard of sixteen acres, was planted in 1873. It began bearing in about six years and has given a good crop almost every year since. His largest sale for any year during that time was \$2,250.00 from a little more than ten acres, and even with the high value placed on his farm his orchard is highly remunerative.

T. J. Newby, of Carthage, has one of the model farms of the State. His land is very fertile and high priced yet he finds that his orchard is his most profitable farm crop. He grows many kinds of fruit, yet he says that the apple is king. His six-acre apple orchard gave in 1895, 1,000 bushels from about 225 trees. In 1901 he again gathered over 1,000 bushels, for which he received \$2.40 per barrel in the orchard. Mr. Newby was also a winner of premiums and medals on fruits at both Paris and Pan-American Expositions.

D. E. Hoffman, of Winchester, grows Ben Davis apples with profit on high-priced lands. One year he sold 2,500 bushels of this variety for \$1,000.00 in the orchard. His largest sale was \$3,000.00 for the crop from forty acres, all Ben Davis.

C. P. Bradley, of South Bend, is very enthusiastic over grape growing in St. Joseph county. He says that three-fourths of the county can be made produce grapes profitably and that he is doing it every year. The early grapes are sold in small baskets at from 5 to 7 cents per pound, but the late ones are sold for wine. Mr. Bradley gave no figures

but simply said that in his locality there was no fruit more profitable than grapes.

William H. Fry, of Greenwood, is a grower of fine grapes which he markets direct from the vines, and finds the business very profitable indeed.

P. G. Willis, of Elizabethtown, is possibly the largest grape grower in Indiana, having out many acres and making many barrels of wine, for which he gets 40 cents per gallon more than California wine brings in the open market.



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