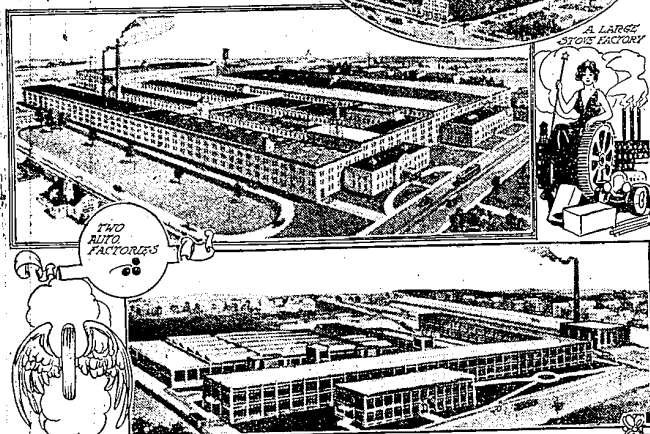


MICHIGAN'S MANUFACTURING INDUSTRIES



The DAIRY Horticultural NEWS

MORE CHERRIES ARE NEEDED

Field of Heavy Clover Sod Plowed Under and Well Pulverized Makes Good Location.

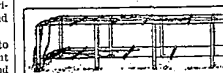
For a site select a high and dry spot on light or sandy soil if there be any on the farm. Ordinarily I do not believe 25 to 30 cherry trees are too many for an 80-acre farm, says a writer in an exchange. To prepare for planting plow very deep, turning under a good coat of partly rotted manure. This would better be done in the fall or early winter so that in the spring a top dressing of more manure may be given and disked in. A field of heavy clover and plowed under and well pulverized makes an excellent location without additional fertilizing. The trees should be set in rows 15 to 18 feet square. It does not pay to crowd too closely. If the soil be rich and loose the pits may be dug with a spade, but if the soil be of a heavy nature use dynamite as well adapted to our central states are, Montmorency (sour), Early Richmond (sour), and Deyhouse (moderately sour), are three of the best. The Early Richmond is about ten days earlier than the others, but the fruit is not as large. Other good sour cherries are English Morello, very dark colored, and Late Duke, Downer's Late Red and Sileman are very late sort.

Write to some reliable nurserymen describing your soil and climate, ask their advice in making your selection and order direct. Some of the varieties that seem to be well adapted to our central states are, Montmorency (sour), Early Richmond (sour), and Deyhouse (moderately sour), are three of the best. The Early Richmond is about ten days earlier than the others, but the fruit is not as large. Other good sour cherries are English Morello, very dark colored, and Late Duke, Downer's Late Red and Sileman are very late sort.

DOUBLE-DECK BERRY TRELLIS

Device Shown in Illustration Has Found Favor in Blackberry Sections—How It is Made.

The sketch shows a trellis which has found favor in blackberry sections. It consists of two parallel rows of 2 by 4 posts set 6 feet apart in the row, and 18 inches from each other cross-



Double-Deck Berry Trellis.

wise. These posts are 4 feet high, and on the tops of them run heavy gauge wires fastened with staples, writes Mabel I. Whorton in Farm and Fireside.

Two other wires fastened in the same way are placed on the posts one foot from the ground. A number of notched boards made on the order of a swing board are placed between the wires, top and bottom about four feet apart. These boards act as a support to the vines. The vines are trained to run along the trellis thus formed. The new shoots (next year's bearing vines) as they grow are trained along the under set of boards.

At the end of the season when the old canners are cut away the small boards are easily moved, the new vines lifted to their position of prominence on the top, and the lower boards are again free for the next year's growth.

This method is used a great deal in California for loganberries, and the Himalaya blackberry, which sends out such long runners. It is a comfortable height for picking, and a whole field may be planted in this way with parallel sets of trellises.

UTILIZE THE WASTE PLACES

Idle Spots of Many Farms Could Be Planted With Trees—Bees Would Furnish Honey.

On many farms there are waste corners here and there that could well be set to trees that would in the course of a few years be a source from which to get an occasional bean pole, fence post or other stick, and finally, if nut-bearing trees were planted, a fine lot of nuts would be produced, the basswood by the industry of the bees would furnish the table with the very nicest of honey; or, if in the case of the sugar maple, sugar of which there is none to equal it could be made; and during all this time the trees would be growing into valuable wood or timber.

TO RENOVATE STRAWBERRY BEDS

Where Plants Are Vigorous and Bed Not Too Weedy It Sometimes Pays to Renovate It.

If the strawberry plants are vigorous and the bed not too weedy, it may be renovated for another year. Mow the plants close to the ground, rake off the foliage and burn it. Mow a furrow, cutting out all but about one foot of the row, and then go through foot and take out the weeds and diseased plants in this row.

Fill the furrow with thoroughly rotted manure and cultivate the soil back. Keep up a thorough cultivation of the soil all the season.

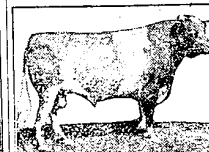
Inexperience is Costly. An inexperienced man with a pair of sharp pruning shears will do more harm in an orchard in one day than all the insects combined could do in a year.

START TRAINING BULL EARLY

Inserting Nose Ring Is Simple and Short Operation—Composition Metal Does Not Rust.

A bull's training must be started early. A light weight ring should be inserted in his nose when he is from nine to twelve months old, but under no circumstances should be led by the ring until three or four months after so that the nose can heal up well.

Inserting the nose ring is a simple and short operation when properly done. First tie the bull securely to a post by the head and horns, then take a common trocar and cannula, well sterilized, and push through the thinnest part of the membrane that separates the nostrils, withdraw the trocar, leaving the cannula in the opening. Put one end of the opened ring in the point end of the cannula and then carefully withdraw cannula, which brings the ring into the opening and after closing ring and putting in the screw, the job is done. Before the operation, the ring should be ex-



A Shorthorn Bull.

amined and all rough edges carefully filed down so there is nothing to irritate the nose and keep it raw and bleeding.

When the animal is about two to two and one-half years old, the light ring should be removed and a good heavy ring inserted. Iron rings should not be used as they rust and keep the bull's nose raw and sore. The best are made of brass or bronze composition and do not rust.

In tying up the bull by the nose, one should be careful to avoid frightening him, causing him to jump back and salt the ring out of his nose. It is safest to pass the chain through the nose ring and then up and around his horns and when he jerks back most of the strain comes on the horns and not at the nose.

PROPER TOOLS FOR DAIRYING

Manure Spreader Is One of Most Profitable Implements—Silos Regarded as Essential.

It is impossible to give a specific answer to the question as to what tools a dairyman should possess. Much depends upon a man's pocketbook and the possibility of his changing work with neighbors to get the use of their tools, and upon labor conditions in general. For instance, a manure spreader is one of the most profitable implements for a farmer with a few acres to distribute. Yet amount of dressing to distribute. It is possible to handle the manure in the old way if a man simply cannot buy a spreader.

If you are dairying you ought to have a silo, and that means a silage cutter and an engine, unless you can arrange with a neighbor to do the work. If you raise potatoes in any quantity a planter, sprayer, and surely a digger, will perform the work very economically. Yet it is possible to get along without these. Of course, you would not expect to compete very successfully with growers who have of tools in use only a portion of the year, and it ties up your capital to your disadvantage if you have but little to begin with. There are certain things that every farmer is expected to have, such as wagons, plows, harrows, mowing machine, hayrack, etc.

FEED CALVES IN STANCHIONS

Discourage Desire to Suck One Another's Ears—Wooden Device Is Entirely Satisfactory.

There are several good reasons for feeding calves in stanchions. The calves can be fed their milk, then their grain, and after they have eaten the grain they will lose their desire to suck one another's ears. A stanchion made of wood will be entirely satisfactory. It should be made from 3 to 3 1/2 feet high and 18 to 24 inches from center to center, with the built in the same manner as the old style rigid stanchion. The calf should be fastened while eating, but loosened from the stanchion after it has eaten for cheese and condensed milk, and for slaughtering and meat packing. Each of these seven industries showed a noteworthy increase in value of products during the decade, the largest percentage of gain being that of 854 in the beet-sugar industry and the smallest that of 61.1 in the flour-mill and grist-mill industry.

Beyond the Limit. Red-T-Trelling at 60 miles an hour continuously, a train would cover the circumference of the earth in 17 days. Green—So would an automobile. "No, it wouldn't," the automobile driver would have to spend a lot of time in court."

FIRST ARTICLE

From "Michigan—the Land of Plenty." NO state in the Union offers greater opportunities to the manufacturer than Michigan. The history of the growth of the manufacturing industries of the state is proof conclusive of the truth of this assertion. While the growth of manufacturing industries has been closely related to the development of the splendid transportation facilities of the state, yet the rapid advance in manufactures dates back as far as 1825, when the Erie canal, affording connection with the eastern seaboard, was opened. The transportation facilities of the state at present, both by rail and by water, are excellent. With over nine thousand miles of railroad, Michigan is sixth state in the Union in its length of track. The state borders on four of the great lakes, which furnish splendid rail and water transportation facilities, the state is most fortunately located with reference to the markets of the country. It should be noted that Michigan is located but a short distance from the center of population of the country, thereby giving the state remarkable market advantages. Michigan is in fact the center of the East is a ready and accessible market for Michigan products. Cleveland, Indianapolis, St. Louis and the cities of the South are within easy reach. Chicago, Milwaukee, St. Paul, Minneapolis and other cities of the West likewise receive their portion of made-in-Michigan goods. There are, perhaps, two other features that place Michigan in the fore ranks as a manufacturing state. One is the abundance of water power and second, the varied manufacturing industries within its borders.

Importance and Growth of Manufactures. Michigan has for many years been one of the leading manufacturing states. In 1849 the value of its manufactured products amounted to \$11,168,000, by 1892 it had increased to \$115,395,000, and in 1909 it amounted to \$655,109,000. The early development of manufactures in the state was due largely to the utilization of its extensive forests, while the growing markets afforded by the rapidly developing West, and advantageous situation of the state with respect to the markets of both the East and the West, and its important agricultural and mineral resources have also been influential factors in its later progress. During 1849 an average of 9,344 wage earners, representing 2.3 per cent of the total population of the state, were employed in manufactures, while in 1909 an average of 231,499 wage earners, or 8.2 per cent of the total population, were so engaged. During this period the gross value of manufactured products per capita of the total population of the state increased from \$28 to \$244. The proportion which the manufactures of the state represented of the total value of the products of manufacturing industries in the United States increased from 1.1 per cent in 1849 to 2.8 per cent in 1899 and 3.3 per cent in 1909. The growing industrial importance of Michigan is indicated by the fact that in the value of manufactured products it has advanced from seventeenth place among the states of the Union in 1849 to ninth in 1899, eighth in 1904, and seventh in 1909. In 1909 the state of Michigan had 2,159 manufacturing establishments, which gave employment to an average of 27,071 persons during the year and paid out \$155,395,000 in salaries and wages. Of the persons employed, 231,499 were wage earners. These establishments turned out products to the value of \$655,109,000, of which materials cost \$368,612,000 were utilized. The value added by manufacture was thus \$316,497,000, which figure best represents the net wealth created by manufacturing operations during the year.

A FOOD FACTORY

Five leading industries of Michigan as measured by value of products—1909:

Industries.	Value of products.
Automobiles, including bodies and parts.	\$261,479,000
Lumber and wood products.	101,347,000
Foundry and machine shop.	43,323,829
Flour mill and grist mill.	33,323,829
Furniture and refrigerators.	25,467,000

Automobiles.

The manufacture of automobiles in Michigan on any considerable scale commenced in Detroit less than a decade ago, although it had been carried on to a limited extent prior to that time. The industry developed rapidly, and by 1904 Michigan had become the leading state in the manufacture of automobiles, which position it held in 1909. In 1904 Michigan contributed 26.5 per cent of the total value of products for this industry for the country as a whole, while in 1909 the proportion had increased to 38.8 per cent. The total value of products for this industry in Michigan in 1909 was \$261,479,000, which was more than twelve times the amount reported for 1904, while the value added by manufacture in 1909, the value added by manufacture in 1904, contributed 14.5 per cent and 13.5 per cent, respectively, while of the total increase of \$255,989,000 in value of products for all manufacturing industries in the state from 1904 to 1909, \$88,614,000, or over one-third, was reported for this one industry.

Lumber and Timber Products.

This industry in Michigan dates from 1824, when the first steam saw-mill was built in the Saginaw valley. Its growth thereafter was very rapid, for in 1849 there were 558 establishments reported, which employed an average of 2,739 wage earners and turned out products valued at \$2,464,000. The industry was at first concentrated along the valleys of the Grand, Saginaw and Muskegon rivers and their tributaries, and at such lake Cheboygan and Grand Haven. Until the rise of the automobile industry, this was the most important industry in the state as measured by value of products, and it still continues to lead the products of manufacturing industries in the United States increased from 1.1 per cent in 1849 to 2.8 per cent in 1899 and 3.3 per cent in 1909. The growing industrial importance of Michigan is indicated by the fact that in the value of manufactured products it has advanced from seventeenth place among the states of the Union in 1849 to ninth in 1899, eighth in 1904, and seventh in 1909. In 1909 the state of Michigan had 2,159 manufacturing establishments, which gave employment to an average of 27,071 persons during the year and paid out \$155,395,000 in salaries and wages. Of the persons employed, 231,499 were wage earners. These establishments turned out products to the value of \$655,109,000, of which materials cost \$368,612,000 were utilized. The value added by manufacture was thus \$316,497,000, which figure best represents the net wealth created by manufacturing operations during the year.

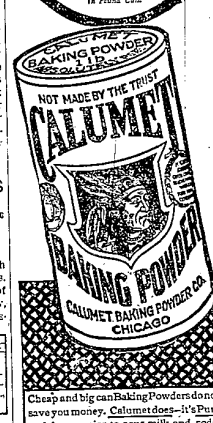
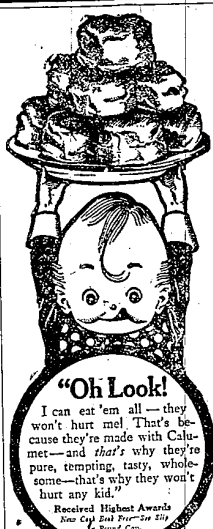
Maple was by far the most important of the hard woods, while beech, basswood, birch, elm and oak constituted most of the remainder. The state still ranks first in maple and beech. Foundry and Machine-Shop Products. In addition to the general class of foundries and machine shops, this industry also includes establishments which manufacture bells, gas machines and meters, hardware, plumbers' supplies, steam fittings and structural ironwork. The industry was really of greater importance in the state than is indicated by the statistics, as some machine shops manufactured a distinctive product, and were assigned to other classifications. A number of the most important establishments were engaged in the manufacture of cast-iron radiators and boilers for steam cranes and pile drivers. The gross value of products increased from \$25,426,000 in 1899 to \$45,399,000 in 1909, or 78.5 per cent for the decade.

Food and Kindred Products.

This group of industries in Michigan includes seven industries, namely: Flour mills and grist mills; the butter, cheese and condensed milk industry; slaughtering and meat packing; the manufacture of food preparations; bakeries; the beet-sugar industry, and canning and preserving. The canning and preserving industry embraces all establishments in which fruit, vegetables and fish are canned or preserved, as well as those which prepare pickles, preserves and sausages. In 1909 there were 1,289 establishments reported for these seven industries, which employed 10,578 wage earners and manufactured products valued at \$100,000,000, adding \$26,460,000 to the cost of materials by the process of manufacture. This group of industries, however, is of much less importance relatively when measured by value added by manufacture or average number of wage earners than when measured by value of products, owing principally to the comparatively simple processes involved in the manufacture of flour, mill and grist-mill products, and butter, cheese and condensed milk, and in slaughtering and meat packing. Each of these seven industries showed a noteworthy increase in value of products during the decade, the largest percentage of gain being that of 854 in the beet-sugar industry and the smallest that of 61.1 in the flour-mill and grist-mill industry.

Beyond the Limit.

Red-T-Trelling at 60 miles an hour continuously, a train would cover the circumference of the earth in 17 days. Green—So would an automobile. "No, it wouldn't," the automobile driver would have to spend a lot of time in court."



The Kind of Stuff. "That sensational novel of his is selling like hot cakes." "It's a burning shame!"—Judge.

Wash day is smile day if you are Red Cross Blue American maid, therefore the best maid. Adv.

Giving Them Away. Neighbor's Little Girl—When did you get back, Mrs. Spriggins? Mrs. Spriggins—Why, child, haven't been away. Neighbor's Little Girl—That's funny, I heard mother say you and Mr. Spriggins had been at Loggerhead for a week.

On the Contrary. "Employed in the steel works, are you? Don't you find your job fearful hot in the summertime?" "Oh, no, you see I work in the chilled steel department."



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