SCOPE OF THE BEET SUGAR INDUSTRY IN THE UNITED STATES

From its modest beginnings about three quarters of a century ago, the beet sugar industry of the United States has developed steadily to become today a keystone of the agricultural economy in many rural areas of America.

The first commercially successful beet sugar factory operation in this country was at Alvarado, California, in 1870. Today there are 62 factories in 15 states from Ohio to California which process about 17 million tons of sugarbeets each year, providing in the neighborhood of 43 million hundred-pound bags of pure beet sugar for the nation's pantries and food processing industries.

Truly, the sugarbeet is as deeply rooted in the economy of the nation as it is in the fertile farmlands of the Midwest and West. The sugarbeet brings dependable cash income to its growers, decentralized industry to bolster the wealth of primarily agricultural communities, an important source of feed for the livestock grower and feeder, and is a plant which helps the American farmer pass his acres along to his sons with none of its fertility "mined out."

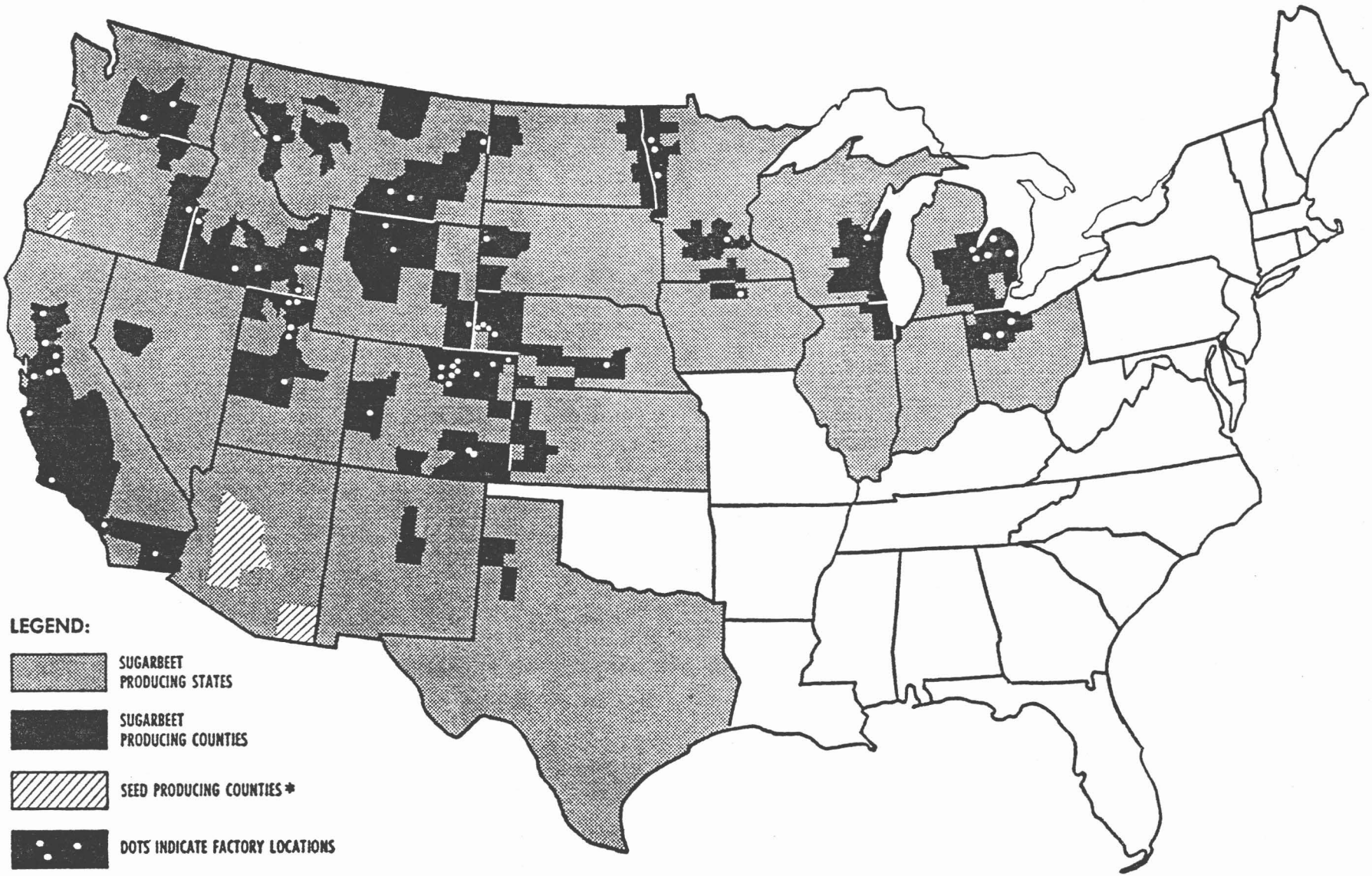
To thousands of sugarbeet farmers in 22 states, the sugarbeet annually brings cash income of more than $200 million, not including the monetary value of the by-products used for livestock rations and fertilizing the soil.

The 15 processing companies add hundreds of millions of dollars yearly to our national economy, providing work for thousands, and purchasing the machinery, equipment, services, and raw materials produced by other thousands in nearby and faraway factories, shops and mines.

Not only has the beet sugar industry become a stabilizing contributor to the trade and industry of our nation, but it also has grown to be the guarantor at all times of a domestic source of vital sugar supply, and at stable, reasonable prices.

On the following pages of this section are statistical and other highlights reflecting the scope and other aspects of the United States beet sugar industry.

CHART A



*Seed Producing Counties in California, Nevada and Utah not shown.

TABLE 1

OPERATING BEET SUGAR FACTORIES IN UNITED STATES IN 1960

By States*

State	Number of Factories	Daily Capacity (Tons of Beets)
California	10	30,150
Colorado	12	23,650
Idaho	5	15,900
Iowa	1	1,900
Michigan	5	8,000
Minnesota	4	12,150
Montana	4	9,350
Nebraska	5	9,500
Ohio	3	3,950
Oregon	1	4,500
South Dakota	1	1,800
Utah	5	8,200
Washington	2	6,900
Wisconsin	1	1,100
Wyoming	3	5,900
Total	62	142,950

*Location, capacity and managerial personnel of factories are listed, by companies, in the blue Directory section.

SOURCE: United States Beet Sugar Association.

HISTORY OF BEET SUGAR IN U.S.

In the White House one January morning in 1812, Dolly Madison, the President's wife, opened an unusual package just arrived from Paris. With it was a personal letter from a good friend, Joel Barlow, at that time United States minister to France.

"I send you the oddest present that you will receive from France," Barlow wrote. "It is a beet root, of that sort that they make so much noise about as cultivated for sugar . . .

"Put it in your garden for seed, not that I think it worth our while to make sugar of them . . ."

And so the first sugarbeet arrived in America to create no great stir and with no hint that one day it would supply more than 4 billion pounds yearly of U.S. sugar requirements.

When Barlow wrote to the President's wife, Napoleon was at war with Britain and in the throes of building the world's first beet sugar industry to supply his sugar-starved armies cut off from the Indies cane by the British blockade.

Beet sugar had been a laboratory novelty since 1747 when a German scientist, Andreas Marggraf, discovered the secret of extracting sucrose crystals from a beet. And it was not until 1799 that one of his students proved sugarbeets were a commercially feasible source of sugar. The King of Prussia, Frederick Wilhelm III, became interested in the project and provided money for a small, crude factory at Cunern, Silesia—the first beet sugar manufactory—which went into operation in 1803.

A Frenchman, Benjamin Delessert, planted some beets and built a small factory at Passy; by 1811 he had succeeded in making well-crystallized beet sugar. Napoleon, hearing of the achievement, rushed to Passy to see for himself the success of Delessert's experiments.

He promptly pinned his own Cross of Honor on Delessert's tunic, appropriated 1,000,000 francs for building factories and ordered 70,000 acres of sugarbeets to be planted immediately. Thus, war established the beet sugar industry in the world. The end of the war at Waterloo in 1815 nearly destroyed it. Slave-produced cane sugar from the Indies flooded European markets, wiping out most of the French beet sugar industry. But nations all over the world took note of the experiments. Ingenious men began searching for ways of growing bigger and sweeter sugarbeets and means of converting them into cheaper sugar. The industry was revived and by the middle of the century beet sugar was dominant on the continent.

(continued)

WILD BEETS IN CALIFORNIA

Although Minister Barlow's was probably the first modern sugarbeet to arrive in America, it appears that a wild variety may have been brought to the West Coast by Spanish explorers as early as the 16th century and cultivated by California Indians.

A Spanish sea captain, Pedro Fages, made several explorations of California between 1768 and 1772 and he wrote in 1775:

"Those (tribes) of the Sierras made also quantities of molasses candy, and sugar, that is not unworthy of the fame of these peoples, and it is extracted from certain species of vegetables, which of themselves do not appear to promise much."

It appears these were wild sugarbeets, thought to be of Mediterranean ancestry, because even today wild sugarbeets can be found in certain central regions of California; but whether American Indians were the world's first producers of beet sugar remains a moot question.

In any case, the first formal investigations of the new industry were made in 1830 by James Ronaldson of Philadelphia, first president of the Franklin Institute. Ronaldson organized the "Beet Sugar Society of Philadelphia," commissioned a man to investigate the European industry and distributed seed to farmers in various parts of the country.

A French chemist figured in the next event that established the industry in America. A Vice Consul at Boston, Mass., Maxamin Isnard had helped perfect the first beet sugar manufacturing process in France. Two American friends, Edward Church and David Lee Child, talked with Isnard and decided to go into the sugar business. In 1838 they completed a factory at Northampton, Mass., and produced 1300 pounds of crude sugar.

Although both men wrote books on how to grow and process sugarbeets, apparently their grasp of the subject was not all it should have been. Their company failed in 1841.

EARLY EFFORTS FAIL

The same year that Church and Child went into the sugar business, pioneers at White Pigeon, Mich., built a factory and then began looking for someone to run it. The local newspaper promised editors of other papers "a pretty considerable lump of sugar" if they would print a request by the sugar company for an engineer capable of running the mill. Beets were grown but the factory produced only molasses; it too closed its doors in a year or two.

(continued)

Dreaming of a self-sufficient community and complaining bitterly of a $1-a-pound sugar prices, the Mormon Church in Salt Lake City was next to try its hand at the sugar business. Brigham Young sent two men to France and England to study the subject, a company was organized, and in 1851 sugar factory machinery was ordered in England.

In one of the epic American pioneer struggles, the factory was shipped by flatboats from New Orleans to Fort Leavenworth, oxen hauling it 1200 miles across the desert and Great Plains in 40 huge, Santa Fe wagons. It was eight months before the party finally reached the Great Salt Lake. Each mile of the heartbreak trail behind the pioneers was marked with the blood and sweat of broken humans and animals.

The Mormons spent two years building and assembling the factory but in the end only dark and inedible molasses were produced. It was a bitter finale to a long, hard struggle; in 1855, the factory was abandoned, the machinery put to work on other projects or junked.

Similar attempts to establish the industry were made in the next quarter-century in Illinois, Wisconsin, Maine, Delaware, Massachusetts and California, and all failed except one at Alvarado, California, on San Francisco Bay.

A businessman and farmer, E. H. Dyer, organized a company and built a factory at Alvarado in 1870. Although the first company went bankrupt and the machinery sold, Dyer organized a new one. With new equipment, he went into successful and continuous operation in 1879. This factory is still operating today, having been modernized several times.

SUGAR FEVER SWEEPS WEST

Dyer's success stimulated new efforts throughout the West and Midwest. Sugar was scarce and high priced, pioneer towns were looking for industry and cash crops. The sugarbeet supplied all of those things; it revolutionized farming wherever it was introduced; it built new towns, brought trade and commerce to existing ones.

Claus Spreckels established a successful factory at Watsonville, Calif., in 1888. The Oxnard brothers began building a chain of factories on both sides of the Rockies—the first at Grand Island, Neb. in 1890, and businessmen in Utah, Colorado, Michigan and other states quickly followed suit.

The experience in Colorado was typical of the times. Sugarbeets had been grown there since 1860 when the gold rush brought thousands of pioneers to the Rocky Mountains. The gold petered out, but the pioneers stayed to farm the fertile Platte River valley.

(continued)

With seed brought out from the East, some farmers planted sugarbeets for cattle feed; they proved that big, sweet sugarbeets could be grown for profit—all that was needed was a factory to process them into sugar. In the first printed record on the subject, the editor of the Rocky Mt. News in 1866 published an editorial urging establishment of a factory in Denver.

For many years businessmen and farmers talked about the proposal but talk was cheap, money hard to come by, and the factory didn't materialize until 1899 after a group of businessmen formed a sugar company at Grand Junction. A success, the company was followed by two factories the next year at Rocky Ford and Sugar City. And in the following six years 12 more factories went into operation in the state.

By this time the sugar boom was in full swing all around the West.

From 1890 to 1900 some 30 factories were built; in the following 10 years 50 more went up. Poor business practices, lack of capital, drought, plant diseases, fire and low sugar prices wiped out many of the little companies but most survived and are still operating.

There are 62 factories in 15 states today, and sugarbeets are grown in 22 states from Ohio to California. Although the number of factories has been declining in recent years, total sugar production has been breaking records. The reason for this seeming contradiction: automation has increased factory efficiency and size has increased output; fewer factories are needed to process even larger crops.

In the last 25 years total beet sugar production has doubled, from 1.2 million tons per year to 2.4 million. Now the beet sugar industry is the largest American producer of sugar, supplying nearly one-fourth of all U.S. sugar requirements.

TABLE 16

CHRONOLOGY OF BEET SUGAR MANUFACTURING ENTERPRISES IN THE UNITED STATES

The information contained in the following table has been compiled from several publications about the sugar industry. General sources used without specific credit are: Production and Marketing Administration, U.S. Department of Agriculture Sugar Branch, March, 1950, "Beet Sugar Factories in the United States"; R. A. McGinnis, "Beet Sugar Technology", 1951, Reinhold Publishing Corp., N.Y.; Farr, Whitlock & Co., "Manual of Sugar Companies", 29th through 35th editions; individual company publications, and others.

The column heading entitled "Capacity-Orig-Pres", refers to the factory's original daily slicing capacity in tons of beets and its present capacity. Entries in bold face and marked with asterisk indicate factories that are still operating. Where "builder" is not listed the factory usually was constructed by the sugar company; in some cases, however, the name of the builder was not listed in the original source material.

Year	*Location*	*Original Company Name*	*Builder*	*Capacity* *Orig.*	*Pres.*	*Final Disposition and Remarks*
1838	Northampton, Mass.	The Beet Sugar Co.				Small factory built. Operations ceased after three unsucessful years.
	White Pigeon, Mich.					Small factory operated two years.
1853	Salt Lake City, Utah	Deseret Mfg. Co.				Factory equipment imported from England and hauled by oxen across the plains. Factory abandoned, 1855.
1856	San Francisco, Calif.		Bepler			Bepler, a coppersmith, built small factory at Ocean View. Enterprise abandoned, 1858.
1868	Chatsworth, Ill.	Germania Beet Sugar Co.		50		Sponsors included Gennert Bros. of N.Y. and Joseph Bunn, Springfield, Ill. Company failed, 1871.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1868	Fond Du Lac, Wis.		Otto and Bonesteel	10		Built at a cost of $12,000. Operated two campaigns with fair success. Abandoned, 1869.
1870	Black Hawk, Wis.		Cooperative			Machinery brought from Fond Du Lac and Freeport. Water shortage forced abandonment, 1875.
	Alvarado,* Calif.	California Beet Sugar Mfg. Co.	Dyer	50	1800	Factory succeeded but company disbanded and equipment moved to Soquel, Calif. In 1879, Dyer reorganized company, the first successful operation in U.S. With new machinery and equipment, Holly Sugar Corp. is still operating the plant.
1871	Brighton, Calif.	Sacramento Valley Sugar Co.		70		First factory to use diffusion battery in U.S. Made sugar, 1871-73. Made molasses, 1874-76. In 1879, machinery moved to Alvarado, Calif.
	Freeport, Ill.		J. Bunn			Company failed after making 100 tons of sugar during first campaign. Machinery moved to Black Hawk, Wis.
1874	Soquel, Calif.		Otto and Bonesteel			Ceased operations, 1877. Reopened for one campaign, 1879 or 1880, and made 150 tons of sugar.
1876	Portland, Me.	Adjunct to Forest City Sugar Ref.				Fairly successful for five years using imported German machinery. Abandoned, 1881 due to lack of beets.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1877	Isleton, Calif.					Built to obtain sugar from watermelons and failing, converted to beets. Abandoned, 1878.
	Edgemoor, Dela.	Delaware Beet Sugar Co.		60		Failed after first campaign due to poor cultivation, short crops and lack of profit.
	Franklin, Mass.	Franklin Sugar Refining Co.				Large beet crop but it was worth more for cattle feed than the factory could afford to pay. Operated one year.
1888	Watsonville, Calif.	Western Beet Sugar Co.				Operated until 1899. Dismantled after factory was constructed at Spreckels, Calif.
1890	Grand Island,* Nebr.	Oxnard Beet Sugar Co.	Carion-Delmotte	350	1200	In 1899, the factories at Grand Island, Norfolk and Chino merged with Pacific Beet Sugar Co., Oxnard, Calif., to form American Beet Sugar Co., becoming the American Crystal Sugar Co. in 1934. The Norfolk plant was dismantled in 1905 and reconstructed at Lamar, Colo. Chino factory was abandoned after campaign of 1917 and the equipment moved to East Grand Forks, Minn.
1891	Norfolk, Nebr.	Norfolk Beet Sugar Co.	Carion-Delmotte	350		
	Chino, Calif.	Chino Valley Beet Sugar Co.		400		

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1891	Lehi, Utah	Utah Sugar Co.		300		Enlarged by Dyer, 1900, to 1200 tons. Auxiliary slicing stations at Springville, Bingham Junction and Provo pumped juice to factory. System abandoned because of pipe corrosion. Plant dismantled, 1937.
1892	Staunton, Va.		Lapham			Processing machinery installed in tannery buildings. Operated, 1892-93. Burned, 1904.
1896	Eddy (Carlsbad), N. Mex.	Pecos Valley Beet Sugar Co.		200		Milwaukee brewing interests moved machinery from Canada. Operated, 1896-98. Burned, 1903.
1897	Los Alamitos, Calif.	Los Alamitos Sugar Co.	Dyer	350		Enlarged by Dyer, 1898, to 900 tons. Factory dismantled, 1926.
	Rome, N.Y.	First New York Beet Sugar Co.		200		Operated 1897-99. Machinery moved to Visalia, Calif., 1906, by G. S. Dyer.
	Menominee Falls, Wis.	Wisconsin Sugar Co.	Dr. Korn	500		Operated 1897; closed until rebuilt by Henry Hinze in 1901 to 600 ton capacity. Dismantled, 1932.
1898	Ogden, Utah	Ogden Sugar Co.	Dyer	350		Enlarged by Dyer, 1912, to 1000 tons. Machinery moved to Nampa, Ida., 1942.
1898	Oxnard, Calif.	Pacific Beet Sugar Co.	Oxnard Construction Co.	2000		In 1899, incorporated with three other factories to form the American Beet Sugar Co., becoming the American Crystal Sugar Co. in 1934. (See entry under 1890.) Plant dismantled, 1959, and factory site sold.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1898	Bay City, Mich.	Michigan Sugar Co.	Fred W. Wolf	500		Operated 1898-1905. Machinery moved to Waverly, Ia., 1907.
	St. Louis Park, Minn.	Minnesota Sugar Co.	Dyer and Kilby	350		Operated, 1898-1904. Burned, 1905. Salvaged machinery moved to Visalia, Calif., 1906.
	Binghamton, N.Y.	Binghamton Beet Sugar Co.		350		Using French machinery, operated 1898-1902. Machinery moved to Blackfoot, Ida., 1904.
	La Grande, Ore.	Oregon Sugar Co.	Dyer	350		Operated, 1898-1911. Machinery moved to Burley, Idaho, 1912.
	Crockett, Calif.	California Beet Sugar and Refining Co.		500		Installed in old flour mill. Also refined cane sugar. Closed, 1903. Beet processing machinery moved to Corcoran, Calif., 1908.
1898	Betteravia,* Calif.	Union Sugar Co.	Stut (engineer)	500	4200	Operated since 1952 as the Union Sugar Division of Consolidated Foods Corp.
1899	Spreckels* (Salinas), Calif.	Spreckels Sugar Co.	W. C. Waters (in charge)	3000	6500	Most of machinery imported from Germany to build world's largest beet sugar factory. Raw sugar only produced during first four years.
	Grand Junction, Colo.	Colorado Sugar Mfg. Co.	Dyer	350		Enlarged to 900 tons. Acquired by Holly Sugar Corp., 1922. Dismantled, 1943.
	Holland, Mich.	Holland Sugar Co.		350		Last operated by the Lake Shore Sugar Co., 1942.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1899	Waverly, Wash.	D. C. Corbin	Emil Salich	350		Operated 1899-1910. Machinery moved to Centerfield, Utah, 1918.
	Kalamazoo, Mich.	Kalamazoo Beet Sugar Co.		500		Closed, 1903. Machinery moved to Chippewa Falls, Wis., 1904.
	Pekin, Ill.	Illinois Sugar Refining Co.	Hapke & Fuehrman	700		After one year of operation converted to glucose factory. Machinery moved to Glendale, Ariz., 1905.
	Rochester, Minn.	Detroit Sugar Co.	Fred W. Wolf	500		Operated 1899-1903. Machinery moved to Madison, Wis., 1905.
	Benton Harbor, Mich.	Wolverine Sugar Co.	Dyer	350		Operated 1899-1900. Machinery moved to Berlin, Ont., Canada, 1902.
	Leavitt, Neb.	Standard Beet Sugar Co.	Oxnard	500		Enlarged to 1,100 tons. Operated 1899-1906. Machinery moved to Scottsbluff, Neb., 1910.
	Bay City, Mich.	Bay City Sugar Co.	Kilby	600		Enlarged to 1,400 tons. Dismantled by the Michigan Sugar Company, 1941.
	Alma, Mich.	Alma Sugar Co.	Kilby	600		Enlarged, 1912, to 1,400 tons. Factory idle since 1952.
	West Bay City, Mich.	West Bay City Sugar Co.	Bartlett-Hayward	500		Enlarged to 900 tons. Dismantled, 1943.
	Caro, Mich.*	**Peninsular Sugar Co.**	**A. Wernicke Maschinenbau**	**600**	**1500**	**Enlarged by Oxnard, 1902. Now owned and operated by the Michigan Sugar Co.**

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1900	Rocky Ford,* Colo.	American Beet Sugar Co.	Oxnard	1000	2900	Corporate name changed to American Crystal Sugar Co., 1934.
	Sugar City,* Colo.	National Beet Sugar Co.	Bartlett-Hayward	500	1200	Present title of National Sugar Manufacturing Co., adopted in 1902.
	Fremont,* Ohio	Continental Sugar Co.	Dyer	350	1300	Purchased by the Great Lakes Sugar Co. and later by the Northern Ohio Sugar Co., a subsidiary of Great Western Sugar Co.
1900	Marine City, Mich.	Marine Sugar Co.	A. W. Colwell	350		Enlarged by Kilby to 600 tons. Dismantled, 1928.
	Lyons, N.Y.	Empire State Sugar Co.	Hapke and Fuehrman	600		Operated 1900-09. Machinery moved to Anaheim, Calif., 1911.
1901	Bay City* (Salzburg), Mich.	German-American Sugar Co.		400	2700	Presently owned and operated by the Monitor Sugar Division of the Robert Gage Coal Co.
	Lansing, Mich.	Lansing Sugar Co.	Kilby	800	1100	Now owned and operated by the Michigan Sugar Co.
	Loveland,* Colo.	Great Western Sugar Co.	Kilby	600	2500	Built by the founders of The Great Western Sugar Co. On January 12, 1905, consolidated with five northern Colorado factories — Windsor, Fort Collins, Longmont, Greeley and Eaton —to form present The Great Western Sugar Co.
	Logan, Utah	Logan Sugar Co.	Dyer	350		One of first factories to use osmose process. Dismantled, 1936.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1901	Saginaw, Mich.	Saginaw Sugar Co.	Kilby	600		Operated 1901-03. Machinery moved to Sterling, Colorado, in 1905.
1902	Greeley,* Colo.	Greeley Sugar Co.	Dyer	600	1600	On Jan. 12, 1905, factories at Greeley and Eaton consolidated with four northern Colorado factories—Longmont, Loveland, Ft. Collins and Windsor—to form present The Great Western Sugar Co.
	Eaton,* Colo.	Eaton Sugar Co.	Kilby	600	1800	
	Carrollton,* Mich.	Saginaw Valley Sugar Co.	Kilby	600	1500	Acquired by the Michigan Sugar Co., 1906.
	Mount Clemens, Mich.	Macomb Sugar Co.	Kilby	600		Enlarged to 1,250 tons. Last operated by the Franklin County Sugar Co. Dismantled, 1951.
	Crosswell,* Mich.	Sanilac Sugar Refining Co.	Oxnard	600	1100	Acquired by the Michigan Sugar Co., 1906.
	Sebewaing,* Mich.	Sebewaing Sugar Refining Co.	Hapke and Fuehrman	600	1500	One of initial group of factories incorporated as the Michigan Sugar Co., 1906.
1903	Garland,* Utah	Utah Sugar Co.	Dyer	600	2000	On July 18, 1907, the Utah Sugar Co., the Idaho Sugar Co., and the Western Idaho Sugar Co. consolidated to form the present Utah-Idaho Sugar Co.
	Idaho Falls,* Ida.	Idaho Sugar Co.	Dyer	600	3000	
	St. Louis, Mo.	St. Louis Sugar Co.	Dyer	500		Later enlarged to 1,100 tons. Last operated by the Lake Shore Sugar Co. in 1954.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1903	Menominee, Mich.	Menominee River Sugar Co.	Kilby	1000		Enlarged to 1,300 tons. Last owned and operated by the Superior Sugar Refining Co. Dismantled in 1955.
	Owosso, Mich.	Owosso Sugar Co.	Kilby	1000		Enlarged to 1600 tons. Inoperative since 1933. Dismantled, 1948.
	Fort Collins,* Colo.	Fort Collins Sugar Co.	Kilby	1200	3100	Included in 1905 consolidation forming present The Great Western Sugar Co. Factory has not operated since 1956.
	Longmont,* Colo.	Longmont Sugar Co.	Kilby	600	3100	Included in 1905 consolidation forming present The Great Western Sugar Co.
	Windsor,* Colo.	Windsor Sugar Co.	Kilby	600	1600	One of original six factories consolidated on Jan. 12, 1905 to form present The Great Western Sugar Co.
	East Tawas, Mich.	Tawas Sugar Co.	Kilby	600		Operated 1903-04. Machinery moved to Chaska, Minn., 1906.
1904	Chippewa Falls, Wis.	Chippewa Sugar Refining Co.		600		Built with machinery moved from Kalamazoo, Mich. Dismantled, 1934.
	Janesville, Wis.	Rock County Sugar Co.	Thedore Hapke	600		Machinery originally set up at Dresden, Ont. by Fuehrman and Hapke. In 1940 machinery moved to Hilaire, Quebec, Canada.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1904	Blackfoot, Ida.	Snake River Valley Sugar Co.		600		Machinery moved from Binghamton, N.Y. Plant dismantled by present owner, Utah-Idaho Sugar Co. and site converted into storage warehouse.
	Sugar City, Ida.	Fremont County Sugar Co.	Dyer	700		Enlarged to 1700 tons. An auxiliary slicing plant was operated at Parker with a juice pumping system similar to that used at Lehi. Factory dismantled, 1947.
1905	Lewiston,* Utah	Lewiston Sugar Co.	Dyer	600	1800	Consolidated with The Amalgamated Sugar Co. (incorporated, 1902) Jan. 15, 1915, to form present The Amalgamated Sugar Co.
	Blissfield, Mich.	Continental Sugar Co.	Dyer	600		Last operated, 1950-51 by the Great Lakes Sugar Co. Factory has been dismantled.
	Riverdale, Ill.		C. Pope	350		Dismantled, 1927.
	Lamar, Colo.	American Beet Sugar Co.		400		Enlarged to 500 tons. Last operated, 1912. Dismantled, 1927.
	Sterling,* Colo.	Sterling Sugar Co.		600	1600	Acquired in December, 1905 by The Great Western Sugar Co.
	Madison, Wis.	United States Sugar Co.		600		Machinery moved from Rochester, Minn. Dismantled, 1924.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1905	Glendale, Ariz.	Eastern Sugar Co.	Hapke and Fuehrman	800		Operated on beets until 1913, then ground cane for two short campaigns. Beet processing machinery moved to Delta, Colo., 1920.
	Holly, Colo.	Holly Sugar Co.		600		The first factory constructed by founders of Holly Sugar Co., (predecessors of present Holly Sugar Corp.). In 1915 factory was dismantled and machinery moved to Sheridan, Wyo.
1906	Hamilton City,* Calif.	Alta California Beet Sugar Co.	Oxnard	600	1700	Acquired by Holly Sugar Corp., 1935.
	Brush, Colo.	Morgan County Construction Co.	Dyer	600		Last operated by The Great Western Sugar Co., 1956.
	Fort Morgan,* Colo.	Morgan County Construction Co.		600	2250	Now owned and operated by The Great Western Sugar Co.
	Swink, Colo.	Holly Sugar Co.		1200		Acquired by Holly Sugar Corp., 1916. Sold to the American Crystal Sugar Co., 1959 and dismantled.
	Billings,* Mont.	Billings Sugar Co.	Kilby	1200	3800	Acquired in 1916 by The Great Western Sugar Co.
	Garden City, Kans.	U.S. Sugar and Land Co.	Stearns-Roger			Later known as the Garden City Co. Property purchased by Holly Sugar Corp., 1955, and acquired by the American Crystal Sugar Co., 1959. Last operated during 1955 crop year.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1906	Chaska,* Minn.	Carver County Sugar Co.		600	1700	Machinery moved from East Tawas, Mich. Acquired by the American Crystal Sugar Co., 1925.
	Nampa, Ida.	Western Idaho Sugar Co.	Dyer	750		Incorporated into the Utah-Idaho Sugar Co., 1907. Factory closed, 1911, due to ravages of "white fly." Machinery moved to Spanish Fork, Utah in 1916.
	Visalia, Calif.	Pacific Sugar Corp.	Dyer	350		Machinery from Rome, N.Y. and St. Louis Park, Minn. Machinery moved to Hooper, Utah, 1919.
	Charlevoix, Mich.	West Michigan Sugar Co.	Walburn-Swenson	600		Machinery moved to Ottowa, Ohio, 1912.
1907	Los Animas, Colo.	American Beet Sugar Co.	Dyer	700		Last operated during 1920. Factory dismantled, 1942.
	Waverly, Iowa	Iowa Sugar Co.		400		Built from machinery moved from Bay City, Mich. Operated, 1907-13, 1920-21, and 1942. Converted to other uses, 1943.
1908	Corcoran, Calif.	Pacific Sugar Corp.		600		Machinery moved from Crockett, Calif. In 1921 machinery moved to Whitney, Ida.
	Santa Ana (New Delhi), Calif.	Southern California Sugar Co.	Hinze	600		Machinery moved from Wiarton, Canada. Operated by Holly Sugar Corp., 1916-20. Dismantled, 1924.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1910	Scottsbluff,* Neb.	Scottsbluff Sugar Co.		1200	2900	Acquired by The Great Western Sugar Co., 1916.
	Paulding, Ohio	German-American Sugar Co.	Larrowe	700		Later enlarged to 1200 tons. Factory last operated by The Great Lakes Sugar Co., 1948.
1911	Findlay,* Ohio	Continental Sugar Co.	Dyer	600	1250	Operated by The Great Lakes Sugar Co. through Jan., 1955 and then acquired by the Northern Ohio Sugar Co., a subsidiary of The Great Western Sugar Co.
	Monte Vista, Colo.	San Luis Valley Beet Sugar Co.	Dyer	600		Closed, 1915. Machinery moved to Lovell, Wyo., 1916.
	Elsinore, Utah	Utah-Idaho Sugar Co.	Dyer	500		Enlarged to 1100 tons. Dismantled, 1942.
	Fallon, Nev.	Nevada Sugar Co.	Hinze	500		Machinery moved from Watsonville, Calif. Factory dismantled, 1933.
	Anaheim, Calif.	Anaheim Sugar Co.				Machinery moved to Sidney, Mont., 1925.
	Huntington Beach, Calif.	Holly Sugar Co.		750		Acquired by Holly Sugar Corp., 1916. Machinery moved to Torrington, Wyo., 1926.
1912	Dyer (Santa Ana), Calif.*	Santa Ana Cooperative Sugar Co.	Dyer	600	1650	Acquired by Holly Sugar Corp., 1917.
	Burley, Ida.	Amalgamated Sugar Co.	Dyer	400		Later enlarged to 1275 tons. Abandoned, 1948.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1912	Toledo, Ohio	Toledo Sugar Co.	Larrowe	1000		Later enlarged to 1500 tons. Dismantled, 1941.
	Ottowa, Ohio*	Ohio Sugar Co.	National Cons. Co.	600	1400	Now operated by Buckeye Sugars, Inc., successor to Buckeye Sugar Co.
	Decatur, Ind.	Holland-St. Louis Sugar Co.	Larrowe	700		Dismantled, 1944.
1913	Payson, Utah	Utah-Idaho Sugar Co.	Dyer	500		Later enlarged to 750 tons. Dismantled, 1940.
1915	Layton, Utah*	Layton Sugar Co.	Dyer	500	1300	Controlling interest acquired by Utah-Idaho Sugar Co., 1959. Factory did not operate during 1959-60.
	Sheridan, Wyo.	Holly Sugar Co.				Machinery moved from Holly, Colo. Acquired by Holly Sugar Corp., 1916. Factory last operated, 1948, and machinery transferred to other sites.
1916	Lovell, Wyo.*	The Great Western Sugar Co.	Dyer	600	1400	Machinery from Monte Vista, Colo.
	Twin Falls,* Ida.	The Amalgamated Sugar Co.	Larrowe	600	3400	Research laboratory for factory operations constructed, 1958.
	Gering, Neb.*	The Great Western Sugar Co.		1200	1800	
	Spanish Fork, Utah	Utah-Idaho Sugar Co.	Dyer	750		Machinery from Nampa, Ida. Enlarged to 1750 tons. Dismantled, 1942 and site used for storage.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1916	West Jordan,* Utah	Utah-Idaho Sugar Co.	Dyer	500	1600	Now equipped with bulk storage bins with combined storage capacity of 24 million pounds.
	Brigham City, Utah	Utah-Idaho Sugar Co.	Dyer	500		Later enlarged to 1300 tons. Dismantled, 1946 after being idle for a number of years.
	Grant's Pass, Ore.	Oregon-Utah Sugar Co.	Dyer			Acquired by Utah-Idaho Sugar Co., 1916. Operated two years and machinery moved to Toppenish, Wash., 1919.
1917	Tracy, Calif.*	Pacific Sugar Corp.	Dyer	500	2300	Acquired by Holly Sugar Corp., 1927. Equipment includes beet seed processing plant built 1956.
	Rupert (Paul),* Ida.	The Amalgamated Sugar Co.	Larrowe	600	3100	
	Smithfield, Utah	The Amalgamated Sugar Co.	Dyer	700		Machinery moved to Clarksburg, Calif., 1935.
	Bayard, Neb.*	The Great Western Sugar Co.		1300	1800	
	Brighton,* Colo.	The Great Western Sugar Co.	Larrowe	1300	1900	
	Moroni, Utah	Peoples Sugar Co.	James Stewart Co.	400		Machinery moved to Toppenish, Wash., 1937.
	Manteca,* Calif.	Spreckels Sugar Co.	Dyer	1200	2600	

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1917	Missoula, Mont.	The Great Western Sugar Co.	Dyer	1000		Operated one year. Machinery moved to Mitchell, Neb., 1920.
	Delta, Utah	Great Basin Sugar Co.	Stearns-Roger	1000		Machinery moved to Belle Fourche, So. Dakota, 1927.
	Shelley, Ida.	Utah-Idaho Sugar Co.	Dyer	750		Now utilized for purposes other than sugar production.
	Yakima, Wash.	Utah-Idaho Sugar Co.	Dyer	750		Machinery moved to Chinook, Mont., 1925.
	Cornish, Utah	West Cache Sugar Co.	Cannon & Lynch	600		Built from equipment moved from Raymond, Alta., Canada. Machinery moved to Missoula, Mont., 1927.
	Worland, Wyo.*	Wyoming Sugar Co.	Larrowe	600	1500	Now owned and operated by Holly Sugar Corp.
	Mason City,* Iowa	Northern Sugar Co.	Larrowe	1200	1900	Purchased by American Crystal Sugar Co., 1925.
1918	Springville, Utah	Springville-Mapleton Sugar Co.	Dyer	350		Acquired by Utah-Idaho Sugar Co., 1937. Factory dismantled, 1940.
	Whitehall, Mont.	The Amalgamated Sugar Co.	Larrowe	600		Factory never operated. Machinery moved to Honeyville, Utah, 1920, which was never completed.
	Centerfield,* Utah	Gunnison Valley Sugar Co.		500	1500	Acquired in 1940 by Utah-Idaho Sugar Co. and incorporated as Gunnison Sugar, Inc.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1919	Rigby, Ida.	Beet Growers Sugar Co.	Cooper & Schwartz	800		Last operated by Utah-Idaho Sugar Co. Dismantled, 1939 and converted to sugar storage.
	Hooper, Utah	Hooper Sugar Co.	Gutleben	600		Machinery originally erected in France. Factory dismantled, 1936.
	Sunnyside, Wash.	Utah-Idaho Sugar Co.	Larrowe	750		Machinery moved to Raymond, Alta., Canada, 1925.
	Toppenish, Wash.	Utah-Idaho Sugar Co.	Dyer	750		Machinery from Grant's Pass, Ore. In 1925 machinery moved to Bellingham, Wash.
1920	Belmond, Iowa	Iowa Valley Sugar Co.	Dyer	600		Operated by American Crystal Sugar Co., 1928-1930. Equipment moved to other plants, 1933-42.
	Mount Pleasant, Mich.	Columbia Sugar Co.	H. A. Vallez	1200		Purchased by Michigan Sugar Co., 1948. Inoperative since 1950.
	Mitchell, Neb.*	The Great Western Sugar Co.			1800	Built with machinery moved from Missoula, Mont.
	Green Bay, Wis.*	Green Bay Sugar Co.	A. Bentley; Schwartz Eng. Co.		1100	Acquired by Menominee Sugar Co., 1933.
	Delta, Colo.*	Holly Sugar Co.		600	1300	Machinery moved from Glendale, Ariz.
	Fort Lupton, Colo.	Industrial Sugar Co.	J. Stewart & Co.	600		Last operated, 1947-48. Factory dismantled and abandoned, 1951.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1921	Preston, Ida.*	Preston Sugar Co.	Gutleben (engineer)	900		Machinery originally erected at Crockett, Calif. Operated by Franklin County Sugar Co., 1922-1959. Now operated by The Amalgamated Sugar Co.
1925	Chinook, Mont.	Utah-Idaho Sugar Co.		900		Dismantled, 1953.
	Sidney, Mont.*	Holly Sugar Corp.		1800	2300	Machinery moved from Anaheim, Calif.
	Bellingham, Wash.	Utah-Idaho Sugar Co.		1150		Dismantled, 1941 due to an inadequate supply of beets. Machinery moved to South America.
1926	Johnstown,* Colo.	The Great Western Sugar Co.				A special plant for extraction of sugar from sugarbeet molasses and manufacture of monosodium glutamate. Largest factory of its kind in the world. Operates year-round.
	Ovid, Colo.*	The Great Western Sugar Co.		1900	1900	
	East Grand Forks, Minn.*	American Beet Sugar Co.	Honolulu Iron Works		2650	Built in part from machinery moved from Chino, Calif. Now operated by American Crystal Sugar Co.
	Minatare, Neb.	The Great Western Sugar Co.		1800		Ceased operations, 1940. Abandoned, 1948 and dismantled completely by 1951.

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1926	Torrington,* Wyo.	Holly Sugar Corp.			3000	Built in part from machinery from Huntington Beach, Calif.
1927	Missoula,* Mont.	The Amalgamated Sugar Co.			1450	Now owned and operated by American Crystal Sugar Co.
	Lyman, Neb.	The Great Western Sugar Co.		1900		Last operated in 1948. Dismantled, 1958.
	Belle Fourche,* So. Dakota	Utah-Idaho Sugar Co.		1700	1800	Machinery moved from Delta, Utah.
1930	Wheatland, Wyo.	The Great Western Sugar Co.		1500		Last operated, 1939. Site abandoned.
1935	Clarksburg,* Calif.	The Amalgamated Sugar Co.		1600	2200	Machinery moved from Smithfield, Utah. Now owned and operated by American Crystal Sugar Co.
1937	Woodland,* Calif.	Spreckels Sugar Co.		1800	3500	
	Hardin,* Mont.	Holly Sugar Corp.		1800	1800	
	Toppenish,* Wash.	Utah-Idaho Sugar Co.		1800	3400	Machinery moved from Moroni, Utah.
1938	Nyssa, Ore.*	The Amalgamated Sugar Co.		2300	4500	
1942	Nampa, Ida.*	The Amalgamated Sugar Co.		2000	4500	

(continued)

TABLE 16 (Continued)

Year	Location	Original Company Name	Builder	Capacity Orig.	Capacity Pres.	Final Disposition and Remarks
1947	Carlton,* Calif.	Holly Sugar Corp.		2700	3900	
1948	Moorhead,* Minn.	American Crystal Sugar Co.		2500	3900	
1953	Moses Lake,* Wash.	Utah-Idaho Sugar Co.		2000	3500	Part of equipment and structural material from Chinook, Mont.
1954	Crookston,* Minn.	American Crystal Sugar Co.		3400	3900	

UTAH

History

One of the most remarkable sagas in the history of the United States beet sugar industry is the story of attempts by Utah pioneers to construct a beet sugar factory in the comparative wilderness of the newly-settled Utah territory.

In 1849, Brigham Young, head of the Mormon church, sent several missionaries abroad to carry the message of the church and, incidentally, to seek industries which might be established in the new church colonies in Utah.

In southern France, Apostle John Taylor met a wealthy, young engineer, Phillip De LaMare, and the two went to Arras in 1851 to study the successful sugarbeet growing and processing operations there. Convinced that a sugar industry could be established in Utah, Taylor and De LaMare went to England, raised more than $50,000 in cash and established the Deseret Manufacturing Co. to make beet sugar.

Machinery was purchased at Liverpool and in 1852 shipped to New Orleans. Then began an incredible tale of hardships, courage and bad luck —a story of industrial pioneering unmatched in American history.

The huge pieces of heavy, awkward-shaped machinery were flat-boated up the Mississippi to Fort Leavenworth where 50 specially-constructed prairie wagons and several hundred head of oxen awaited the shipment. Financial troubles, death, disease and procurement problems plagued the party but the wagon train finally got going on July 4, 1852. Disaster struck almost immediately. One after another, the wagons broke down and poorly-trained oxen balked wildly, halting the caravan.

Some forty more "Santa Fe" wagons had to be purchased and once again the party set out on the 1000-mile trek across the plains. Only a fragmentary record of that epic trip in the fall and winter of 1852 remains but it tells a story of bitter struggle, hunger and cold, and it was November before the weary travelers reached Salt Lake City.

Part of the machinery was put in operation in December of 1852 but only inedible molasses was made. And then the Deseret Manufacturing Co. went into bankruptcy. The Mormon church took over the operation and set up the machinery at "Sugar House" in another location in South Salt Lake City but another three years of experiment failed to produce sugar. Reluctantly, in 1855 the factory was shut down and the project abandoned.

(continued)

UTAH—History (Continued)

Dreams of a sugar industry in Utah never were abandoned but it was not until the first successful beet sugar factory was established in 1870 in California that serious attention was again paid the idea of beet sugar for Utah.

In 1889 the Utah Sugar Company, precursor of the modern Utah-Idaho Sugar Company, was incorporated and in 1891 the company built a plant at Lehi.

The Lehi factory was the first beet sugar plant in the nation constructed entirely of American machinery by American workmen, and it had many years of successful operation. It was unique in another respect. There were three auxiliary slicing plants at Springville, Bingham Junction and Provo from which juice was piped to the Lehi plant for purification and further processing. The pipeline system finally was abandoned, however, because of pipe corrosion.

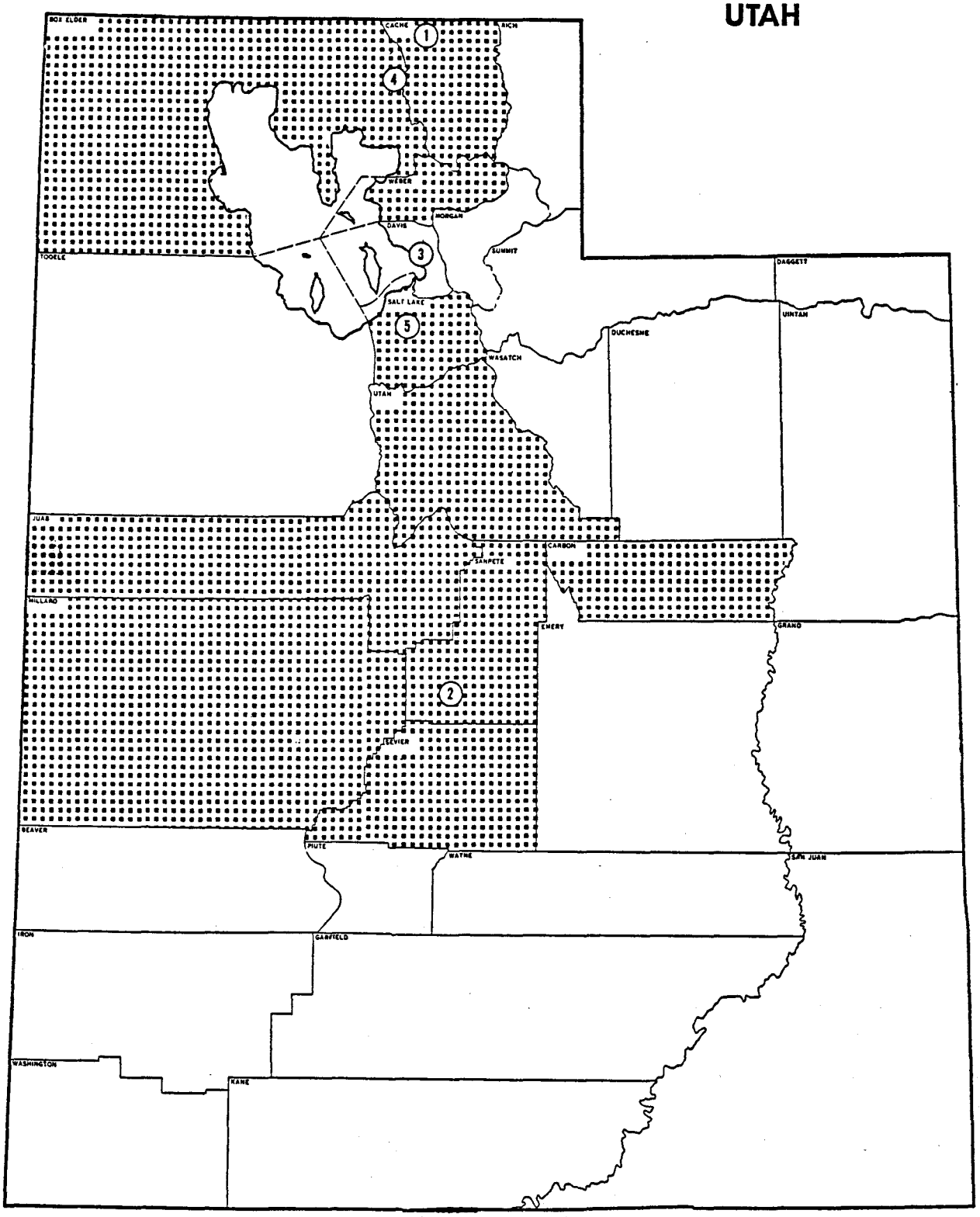
After Lehi, a total of 17 other beet sugar factories were constructed in Utah between 1898 and 1919—at Ogden, Logan, Garland, Lewiston, Elsinore, Payson, Layton, Spanish Fork, West Jordan, Brigham City, Smithfield, Moroni, Delta, Cornish, Springville, Centerfield and Hooper.

One by one most of these were taken out of operation as new techniques made possible greater capacity per factory and transportation improvements enabled moving the beet crop longer distances to the mill. Today, five of these factories are still operating at Garland, Lewiston, Layton, West Jordan and Centerfield.

Utah now annually produces about 150 million pounds of pure beet sugar. Acreage devoted to the sugarbeet crop ranges from 28,000 to 35,000 acres each year on some 2,000 Utah farms.

Utah also is one of the nation's major sugarbeet seed producing states. In the southern part of the state at St. George, the Utah-Idaho Sugar Company has a beet seed processing plant at which more than one million pounds of seed are processed in normal years. The seed is grown on irrigated farms in the Virgin River Valley, where the overwintering method developed in Arizona and New Mexico is highly successful. Production of sugarbeet seed in the St. George area began in 1931.

UTAH



SUGARBEET PRODUCING COUNTIES

Box Elder	Juab	Sevier
Cache	Millard	Utah
Carbon	Salt Lake	Weber
	Sanpete	

FACTORY LOCATIONS

The Amalgamated Sugar Company	1. Lewiston
Gunnison Sugar, Inc.*	2. Centerfield
Layton Sugar Company*	3. Layton
Utah-Idaho Sugar Company	4. Garland
	5. West Jordan

*Operated as part of Utah-Idaho Sugar Company

TABLE 37
SUGARBEET ACREAGE, PRODUCTION AND FARM VALUE; BEET SUGAR PRODUCTION; IN UTAH, ANNUALLY SINCE 1937

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Sugarbeets							Beet Sugar
Crop[1] Year	Number Farms	Acreage Planted	Acreage Harvested	Production	Av. Yield Per Acre	Per Ton Payments[2]	Farm Value[3]	Factory Production
		— 1,000 acres —		1,000 tons	tons	dollars	1,000 dollars	1,000 100-lb. bags refined
1937	6,939	50.6	46.5	570	12.3	-------	----------	1,622
1938	6,898	54.3	51.7	814	15.7	-------	----------	2,212
1939	6,881	54.7	52.9	683	12.9	6.03	4.058	2,012
1940	6,345	51.1	47.1	502	10.6	7.10	3,564	1,477
1941	5,350	41.5	40.1	576	14.4	8.11	4,671	1,635
1942	5,533	47.1	44.5	556	12.5	9.62	5,349	1,635
1943	4,192	34.2	31.6	499	15.8	10.42	5,200	1,292
1944	3,845	33.4	30.5	396	13.0	12.94	5,124	1,098
1945	3,834	34.7	31.4	436	13.8	12.17	5,306	1,124
1946	4,549	44.9	40.7	568	14.0	13.05	7,412	1,397
1947	4,543	47.0	44.5	740	16.6	14.04	10,389	2,109
1948	3,794	39.7	34.6	427	12.4	13.01	5,555	1,165
1949	2,979	29.4	28.0	466	16.7	12.77	5,951	1,245
1950	3,679	40.0	27.6	535	14.2	13.79	7,368	1,519
1951	2,626	27.6	25.6	403	15.7	14.20	5,722	1,111
1952	1,993	23.4	20.4	260	12.8	14.83	3,856	717
1953	2,313	28.4	26.8	435	16.2	13.88	4,738	1,202
1954	2,732	35.8	33.1	534	16.2	13.61	7,268	1,530
1955	2,481	30.2	29.0	437	15.1	13.84	6,048	1,198
1956	2,171	28.2	27.0	463	17.2	14.44	6,686	1,382
1957	2,055	30.8	29.1	470	16.2	14.30	6,721	1,364
1958	2,159	34.2	31.5	429	13.6	14.60	6,263	1,290
1959	1,985	32.8	31.2	572	18.4	14.41[9]	8,243[9]	1,586
1960[8]	2,088	35.0	31.9	536	16.8	-------	----------	----------

For sources and footnotes, see p. 112