

FLOUR AND LUMBER HAVE MADE MINNEAPOLIS FAMOUS

MINNEAPOLIS FLOUR FEEDS ALL THE WORLD

The City Has Done as Much for the Milling Industry as the Industry Has Done for the City—Minneapolis Millers Have Been Far in the Lead in the Development of Scientific Processes and Their Efforts Have Made a Market for Spring Wheat Products Originally in Second Place.

For the first seven months of the present year Minneapolis flour mills shipped 8,831,432 barrels of flour against 8,433,451 at the same period of last year. Although some features of the trade of the local mills are unsatisfactory, the demand for Minneapolis flour from other quarters has been such as to indicate a high record for the present year.

The present total daily capacity of the local mills is 80,516 barrels, or in round numbers about 35,000,000 barrels per annum. Flour mills are never worked to their full capacity for any extended period. In some parts of the country where considerable flour is manufactured, mills do not produce 50 per cent of their capacity. Minneapolis maintains a standard proportion of production to capacity of about 65 per cent. Two new mills are to be built here this year which will increase the total capacity several thousand barrels.

In 1864 Minneapolis mills were grinding 9,000,000 barrels of flour. In 1901 production made a new record of 15,322,906 barrels. The production in 1900 was 15,023,000 and in '99 the mills ground 14,292,000 barrels.

The Pillsbury-Washburn company's total daily capacity is 31,150 barrels; the Washburn-Crosby company, 27,518; the Northwestern Consolidated Milling company, 18,000; four other mills will reach nearly 9,000 barrels.

The daily capacity of the Pillsbury "A" mill is about 15,000 barrels, and of the Washburn mill belonging to the Pillsbury-Washburn company, about 10,400 barrels. These mills are famous all over the world and the flour milled in them has been advertised and sold in nearly every quarter of the globe.

In 1876, when Minneapolis flour production began to increase its importance in the world's supply, this city was producing about 950,000 barrels per annum. In the next year the production went up to 1,500,000 barrels. In 1885 was the single one in which there was any halting in this progress. Production was then in the neighborhood of 5,250,000 barrels. In 1896 the total reached 10,000,000. The mills have shown a rapid increase since that time.

Domestic Trade Growing.

While the export trade has not been satisfactory this year, the people of the eastern states are buying Minneapolis flour in increased proportion. This has compensated the millers to some extent for shrinkage of trade beyond the salt seas. In the battle between spring wheat and winter wheat flours for preference in the domestic market, the hard wheat product is winning. This is having a favorable effect on the millers, as it has been done by Minneapolis mills in the southern and eastern states. It is gradually adding to their territory at home while the millers are steadily endeavoring to fortify himself against any lean years that may come by holding his place in the export trade or bettering it to some extent.

The Canadian Wheat Supply.

One important result of the present year has been the successful experiment of the Washburn-Crosby company in grinding Canadian wheat in bond. This experiment was put through under conditions which were far from encouraging at the start. Canadian transportation companies were finally reasoned out of a wrong and prejudiced position and the wheat brought to Minneapolis. This company will repeat the experiment whenever the price of wheat in Canada will make it profitable.

Although spring wheat flour has many hard battles ahead in its progressive campaign for a world territory and bigger sales, the progress it has made is a matter of much congratulation to the men identified with this big industry. For a long time under the old methods of milling little faith was placed in the future of Minnesota as an agricultural state. The flour made from spring wheat was darker than that made from winter wheat and the value of spring wheat and spring wheat flour was consequently less than winter wheat and its product. By the old methods in milling, the hard outer covering of spring wheat was more or less pulverized and passed through the bolting cloth with the flour. The fine particles of bran mixed with the flour attracted moisture in hot or damp climates so that the flour soon spoiled. Therefore it could not be readily exported. In the markets of Chicago and Buffalo five bushels of spring wheat rarely sold for as much as four bushels of the same grade of winter wheat.

Prior to 1870, practically all of the flour of the world was made by what is known as the old process of low grinding in which the upper millstone was set low, or very close to the lower, and the wheat was reduced to flour by one operation. Between 1870 and 1890, this method gave place to the newer process the highly perfected machinery of to-day being the climax of the inventor's skill so much in evidence in the last thirty years. In the meantime spring wheat flour has changed places with winter wheat product in the estimation of the consumers the world over and Minneapolis is a flourishing metropolis, the greatest flour market in the world, in one of the richest agricultural sections on the globe rapidly developing the acres from which is to come her future supply.

The new process as introduced by George H. Christian consisted of reducing grain to flour by two or more successive grindings. As a result of the first grinding, the grain was reduced to small particles or granules. The resulting chop was passed through the bolting apparatus and separated into its component parts, flour, middlings and bran. The middlings containing the more valuable portion of the wheat were reground on separate stones. Later, rollers were substituted for stones, but the principal governing factor remains the same, as in the sys-

the island mill property. This mill burned with the island mill, in 1872.

Milling on the west side of the river began with the erection of the Cataract mill in 1856 by W. W. Eastman. Mr. Eastman came to St. Anthony in 1854, his brother John W. Eastman having preceded him. The Cataract mill had five run of buhrs. It is quite remarkable that this mill should still be in operation. Mr. Eastman also built the Anchor mill with twelve run of stone. This mill is now one of the Pillsbury plant. Mr. Eastman soon engaged in other manufacturing enterprises and W. S. Judd and George A. Brackett became the owners of the Cataract mill, which they operated until 1867, when Mr. Judd retired and Mr. Brackett continued in the management of the property for one year. He sold the mill to Commodore Davidson, of St. Paul, who leased it to W. M. Brackett. Mr. Brackett operated the mill until the fall of 1869, when Commodore Davidson sold it to D. R. Barber, of Minneapolis, and it has since continued in the Barber family, the manager at the present time being E. R. Barber. D. R. Barber died in April, 1886, after a residence in Minneapolis of thirty years, during which time the town had grown into a city of 150,000 population.

Following in order the Union mill was built in 1863 by Henry Gibson, operated by him for several years, and afterward in 1869 to William Tomlinson and W. L. Tiffany. W. H. Dunwoody soon after bought the Tomlinson interest. In 1874 N. G. Elliott and E. P. Shuler bought the property. Mr. Elliott died soon after and his interest was purchased by J. W. Hobart, and the firm became Hobart, Shuler & Elliott, and later Hobart & Shuler. The Northwestern National bank came into control of the property in 1879, when it was sold to George Hineline, W. G. Plank, and S. R. Wheeler, who increased the capacity to 235 barrels per day, and changed the name to the St. Anthony. After operating the mill a few years these gentlemen sold it to Samuel Morse and T. A. Sammis. They increased the capacity to 600 barrels, and when the firms of Morse & Sammis and D. Morrison & Co. were consolidated in September, 1883, under the name of the Minneapolis Flour Manufacturing company, this mill became part of that property. It is now owned by the Standard Milling company, of New York, and is operated by the Northwestern Consolidated Milling company.

The Advent of C. A. Pillsbury.
In 1859 C. A. Pillsbury commenced his milling career in Minneapolis, and with G. W. Crocker and J. Welles Gardner as partners under the firm name of Gardner, Pillsbury & Crocker, they proceeded to put the Minneapolis mill in first-class condition. In October, 1871, the mill burned. It was rebuilt and enlarged to 350 barrels capacity. Mr. Gardner sold his interest to Woodbury Flak at about this time and the firm name was changed to Pillsbury, Crocker & Flak, and continued so for several years, when C. A. Pillsbury & Co. sold out to Charles W. Moore, and the firm name was changed again to Crocker, Flak & Co. In December, 1881, this mill was again burned with one or two others. The mill was sold to Edward Brown and rebuilt, and its capacity increased to 600 barrels, and later this capacity was increased to 1,500 barrels as new machinery came into use. In 1887 Mr. Moore sold his interest in the mill to Louis W. Campbell, who became manager, assisted by W. G. Crocker, son of George W. Crocker, who had retired from active connection with the property. In

January, 1888, Mr. Fisk died and later the mill passed to the ownership of Washburn Crosby company. George W. Crocker had previously built the Arctic mill, with a capacity of 300 barrels.

In 1864 Stamwitz & Schoeber used the basement of a furniture factory in St. Anthony for a two-run mill, known as the St. Anthony, which was operated until 1871, when it was burned.

In 1866 the Summit mill was built below the island mill on Hennepin island, by Kaushe & Co. This was the last mill built on the island, and it was swept down the stream in the Eastman tunnel wash-out in 1869.

In 1868 Taylor Brothers of Philadelphia built the Alaska mill, which contained six run of stone. This was counted a very fine mill, and later it became the property of Gardner & Pillsbury, and in 1874 they passed to Charles A. Pillsbury & Co. and this became the Pillsbury "B" mill, now the property of the Pillsbury-Washburn Flour Mill company. The mill burned in December, 1881, and was rebuilt at once with increased capacity.

In 1866, also, George W. Crocker and Edwin Rowlandson built the Arctic mill next below the Union mill. They sold out in 1869 to William Tomlinson and W. L. Tiffany. W. H. Dunwoody soon after bought the Tomlinson interest. In 1874 N. G. Elliott and E. P. Shuler bought the property. Mr. Elliott died soon after and his interest was purchased by J. W. Hobart, and the firm became Hobart, Shuler & Elliott, and later Hobart & Shuler. The Northwestern National bank came into control of the property in 1879, when it was sold to George Hineline, W. G. Plank, and S. R. Wheeler, who increased the capacity to 235 barrels per day, and changed the name to the St. Anthony. After operating the mill a few years these gentlemen sold it to Samuel Morse and T. A. Sammis. They increased the capacity to 600 barrels, and when the firms of Morse & Sammis and D. Morrison & Co. were consolidated in September, 1883, under the name of the Minneapolis Flour Manufacturing company, this mill became part of that property. It is now owned by the Standard Milling company, of New York, and is operated by the Northwestern Consolidated Milling company.

C. C. Washburn's Service to Milling.
Then came the advent of the Washburn interests, and it is at this point that the progressive milling in Minneapolis began.

Ex-Governor C. C. Washburn owned a large interest in the Minneapolis Mill company, which controlled the water power on the west side of the river, from which the flour mills draw their power. He was unquestionably the Nestor of Minneapolis milling.

In 1866 he built the mill that was afterwards named the Washburn "B." At that time this was the largest mill west of Buffalo. It was 66x100 feet and six stories high, and was completed in 1866. It had

eleven run of stone, and a capacity of 800 barrels. The cost was \$100,000. The building of this mill had much to do with attracting investors to the northwest, and especially to Minneapolis. It seemed to settle the question of the permanency of the power derived from St. Anthony falls, also to firmly establish this point as a milling center.

General Washburn leased this mill to W. S. Judd and George A. Brackett for five years at an annual rental of \$12,000. In 1867 Mr. Judd retired and Mr. Brackett operated the mill for one year, when he surrendered his lease. At this time Mr. Brackett was the largest miller in Minneapolis, operating as he did the Cataract and Washburn "B" the two mills having fifteen run of stone.

Then came the Christians. Governor Washburn found that George H. Christian knew something about the grain and flour business, and he interested him in the Washburn "B" project. Governor Washburn saw in Mr. Christian a practical manager. The "B" mill was furnished with buhr stones and bolts, according to the milling process of that time, but this did not satisfy Mr. Christian. He began to study into mill machinery. He employed by chance a French journeyman miller named La Croix. This man told Mr. Christian that mills in France had a way of purifying the middlings, by which a part of the wheat berry which under the machinery then used adhered to the hull was detached and added to the flour. Mr. Christian saw in this an opportunity to effect a large saving of flour material. He and La Croix went to work on a machine, but without much success. Mr. Christian did not give up the idea. His head miller, George T. Smith, suggested the employment of brushes to remove the fine dust from the screens, and on trial this proved practicable. Mr. Christian and La Croix turned their information over to Mr. Smith, and the latter obtained a patent for the middlings purifier.

Rolls Are Introduced.
Governor Washburn at once supplied his mill with these machines, and it became apparent that a superior process of milling had been discovered. Rival millers were shut out from the Washburn "B" Minneapolis introduced the new process secret, but the information was soon passed around and the other millers of Minneapolis introduced the new process. When Governor Washburn decided to build the Washburn "A" mill, Mr. Christian went to Europe for the purpose of investigating the whole question of flour mill machinery. He visited the best mills in France, and also mills at Budapest and Trieste, and elsewhere. He found that he was at a disadvantage in not being able to speak the French language, and so he set out to learn the language that he might read for himself the publications having to do with the technical side of milling in France. He decided on

the purchase of French buhr mill stones and these were imported for the "A" mill. The Budapest mills had about that time introduced rolls and Mr. Christian in turn introduced these into the "A" mill.

Minneapolis was now easily at the head of flour milling in the United States.

In 1875 Mr. Christian sold his interest in this property to his brothers, J. A. and Llewellyn Christian, who continued the business with Governor Washburn. George H. Christian's connection with the Washburn "B" mill began in 1869, under the firm name of Christian, Tomlinson & Co. In 1870 the firm name was changed to G. H. Christian & Co., the partners being Governor Washburn and Mr. Christian, the latter retiring about 1875, as stated above.

The new firm of Washburn, Crosby & Co. took possession of the "B" mill in 1877, Governor Washburn, John Crosby and W. D. Washburn being the owners, and this company, under considerable reorganization, has continued to operate the mill until the present time.

In 1867 the Dakota mill was built by Russell & Huy. They were succeeded by L. B. King & Co. Up to 1872 the mill was known as the Russell, after R. B. Russell, the builder, but in this year H. F. Brown, W. F. Cahill, F. L. Greenleaf and E. S. Brown bought the mill and named it the Dakota. H. F. Brown and Mr. Greenleaf later became the owners of the mill. This was the only flour mill ever built in Minneapolis or St. Anthony.

In 1870 McMullen and McHeron built the North Star mill, on the East Side, with a capacity of 260 barrels. In 1871 the mill was sold to H. J. Crosswell and was run by Crosswell & Lougee and others until 1885, when the mill burned. It was not rebuilt.

In 1871 Leonard Day and M. B. Rollins built the Zenith mill, with capacity of 500 barrels per day, five stories high. In 1872 Llewellyn Christian bought an interest in the mill and the firm became Christian, Day & Co. In two years Mr. Christian retired, being succeeded by Day, Rollins & Co. In the great mill explosion of 1878 this mill was destroyed by fire. It was immediately rebuilt and operated until 1883, when, upon Mr. Day's death, Slide, Fletcher, Holmes & Co. assumed control. The mill is now the property of the Northwestern Consolidated Milling company. It has a capacity of 2,000 barrels per day.

Founding of Pillsbury Interest.
The Pillsbury milling began in 1876. John S. Pillsbury located in Minneapolis in 1855, the first of the Pillsbury family to settle in Minnesota. He engaged in the hardware business in St. Anthony, but lost everything in the panic of 1857. He secured a new stock of goods, however, and continued in the hardware business until 1874. In the meantime Charles A. Pillsbury had reached Minneapolis, in 1869. At that time there were only four or five mills at the falls, nearly all old-

fashioned, using buhr stones for reducing the grain to flour. Governor Washburn had just introduced the new purifiers and the roller process into his mill. The younger Mr. Pillsbury secured an interest in the Alaska mill soon after his arrival, and in 1870 the firm of Charles A. Pillsbury & Co. was organized and this mill came under their control as the Pillsbury "B" mill. Charles A. Pillsbury became manager of the company. He made it a part of his policy at the start to introduce new machinery as rapidly as new inventions made it practicable to do so, and the great success of the firm was attributed as much to this part of the firm's policy as to any other single feature. The middlings purifier was introduced at once into the Pillsbury mills. Then came the introduction of the roller process. The old buhr stones were thrown away; the new process flour was a success, and "Pillsbury's Best" began to sell throughout the United States. The company, under the leadership made it possible to ship flour to the east with considerable convenience. The business of the company grew so rapidly that they found it necessary to make new leases. They accordingly came into control of the Pillsbury "B" Empire, Excelsior, and Anchor mills. These were rebuilt throughout with modern machinery. It was about this time that grain elevator building in the northwest began on a large scale.

The Pillsbury company soon found it necessary to build a new mill. It was now Mr. Pillsbury's turn to go to Europe and see what the millers were doing on the other side. He visited Budapest, where the best flour of Europe was made, and gave a thorough inspection to the machinery used there. He returned and at once proceeded to build the largest flour mill in the world—the Pillsbury "A" of Minneapolis. Mr. Pillsbury associated with him in the business, his uncle, John S. Pillsbury, his father, George A. Pillsbury, and his brother, F. C. Pillsbury. These men continued as owners of this splendid property until 1889, when a controlling interest in the mills was sold to an English syndicate, with headquarters in London, England.

More Mills Built.
Returning to the development of the flour industry in Minneapolis, in 1872 the Holly mill was built by William F. Cahill, C. M. Loring, Loren Fletcher and George Hineline. They operated the Holly mill until June, 1878, when it was purchased by W. H. Hinckle & Co. The original capacity of the mill was seventy-five barrels; later increased to 600 barrels, and C. McC. Reeve became the owner, under the name of the Holly Mill company. Previous to that purchase, A. W. Krech operated the mill for a time. The Holly mill was finally purchased by the Pillsbury-Washburn Flour Mills company.

In 1873 Leonard Day & Co. built the Fallside mill, which cost \$100,000, with capacity of 600 barrels. Leonard Day died

DEERE & WEBBER CO. MINNEAPOLIS



Washington Ave. N. and Eighth Ave. Will Move October 1st.

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