

Grand Opera House! ST. PAUL, MINN. TO-NIGHT! The Magnificent Opera Pirates of Penzance. STILLWATER CHORAL UNION. GRAND CHORUS. 50-VOICES-50

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NATHAN FORD Gives Special Bargains in KNABE and FISCHER PIANOS. Clough & Warren Organs. HEZEKIAH HALL, REAL ESTATE AND MONEY BROKER.

AMUSEMENTS. Grand Opera House! Thursday, Friday & Saturday, MARCH 6, 7, & 8, SATURDAY MATINEE! THE CHANFRAUS! HENRIETTA & FRANK.

WAIT FOR HIM! NICOLL, THE TAILOR, of New York and Chicago, will occupy the store 67 EAST THIRD STREET, ST. PAUL, with a full line of Spring Goods. Grand Opening, Monday, March 10.

CLOTHIERS. B. O. P. C. H. We can make it to your interest to trade with us at any season of the year, particularly at this season, as we are cleaning out at ridiculously low prices.

BOSTON One-Price CLOTHING HOUSE Cor. Third and Robert Streets, St. Paul.

LECTURE! Analysis and Comparison of BLAINE and CONKLING! with side views of their leading Democratic and Republican associates, by CAPT. H. T. JOHNS.

MARKET HALL, Monday Ev'ng, March 10, '84, AT 8 O'CLOCK. Tickets 50c.

DAVIS & BROWN, Real Estate & Mortgage Loans 360 Jackson street, St. Paul, Minn.

WM. G. ROBERTSON, REAL ESTATE AND FINANCIAL AGENT. (Successor to D. A. Robertson & Co., the oldest real estate agency in Minnesota.)

BRISBIN & FARWELL, LAW OFFICE. ROOM 6, Corner of Wabashaw and Fourth streets, Over Express Office.

R. W. JOHNSON, REAL ESTATE AGENT, MANNHEIMER BLOCK, ROOM 11, St. Paul, Minn.

A. V. TEEPLE, Real Estate & Loan Broker, NO. 63 EAST THIRD STREET, St. Paul, Minn.

MANKATO. The Flourishing Metropolis of Southern Minnesota. The Immense Wealth to be Found in Her Stone Quarries. How It is Being Developed by Her Enterprising Citizens.

Its Public Buildings and Societies—The Center of a Growing Country. I am well aware that by those of the many readers of the GLOBE who are unacquainted with the flourishing city of which I write, it may be characterized as an enthusiast and much of what I shall say may be by their regarded as the creations of an over-wrought imagination.

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Corlies, Chapman & Drake, March 1st! Will remove their stock of Doors, Sash, Blinds, Etc., FROM Warehouse, corner Eighth & Jackson, NO. 441 JACKSON! BETWEEN SEVENTH & EIGHTH STS. 61-70

regions of this southwestern section of the state for the support of the dairy. The rich, luxuriant native prairie grasses furnish not only a splendid pasturage, upon which the cattle feed with the greatest relish, but the quantity of the milk produced from a herd of a given number of cows, surpasses that of those pastured on the finest of tame grasses, while the quality of the butter and cheese is of a most superior degree of excellence.

MANKATO STONE. The rock formation of Mankato has thus far been utilized for three distinct purposes, viz.: for building and bridge stone, for burning lime and later for the manufacture of cement. The building and bridge stone which the quarries north of the city and partially within its limits contains is in exhaustive amount and of superior quality to any stone found anywhere in Minnesota or the northwest for building or bridge purposes.

Table with 2 columns: Material Name and Description. Includes items like RIP RAP, COARSE LIME, RUBBLE STONE, RED LEDGE, GREY LEDGE, SOFT LEDGE, BRIDGE LEDGE, SHALE OF CEMENT, CUT STONE LEDGE.

For a number of years, and in fact ever since the settlement of this section began the Mankato quarries have been regarded as the best in the northwest, but it has been within the past few years that their real wealth and vast commercial importance has been fully appreciated or their resources anything like properly developed.

During the past year the enormous amount of 19,000 cars of stone for building and bridge purposes have been shipped from the different Mankato quarries to all points in the northwest. A large bridge across the Missouri at Blair, Nebraska, the great four track viaduct bridge at Minneapolis over the Mississippi, the Seventh street bridge at St. Paul and numberless public and private structures have drawn their material from the inexhaustible and incomparable Mankato quarries.

The most valuable lime for brick or stone work burned in Minnesota is the celebrated Mankato lime. The elements which produce cement seem to enter into the rock formation all about here to a greater or less degree, and hence for building purposes the lime is invaluable as its adhesiveness is so great.

For over thirty years Capt. J. R. Beatty, who has been engaged in the stone and lime business has studied the character of the formation and has with the aid of various experiments to test the quality and value of the ledges which exist here. Long years ago he discovered that the lime which he burned possessed greater adhesive qualities when placed in contact with stone or brick than any lime in this section. He also discovered unmistakable evidence of the absence of drift in the formation which, together with the adhesive qualities of his lime and the desire to invent a concrete that would withstand our severe winter frosts led him to experiment and investigate still further. He became convinced that the rock formation contained the elements of natural cement to a very marked degree, and experiments revealed to him the fact that his quarry contained a layer of this shale that was cement itself.

The agricultural resources of the country immediately surrounding Mankato are both rich and varied. To the north lies the heavy timber belt, the last barrier between the sweep of the ocean of rolling prairie and the rest of the world, rich in its wealth of native timber, oak, ash, elm, maple, basswood, poplar and other woods, and of a deep, rich and wonderfully productive soil, while east, south and west the famous prairies stretch out like the broad expanse of the ocean, capable of sustaining an untold population.

Within a radius of twenty miles from Mankato the farmer from the heavily timbered districts of Michigan, Maine or any other northern state, can find the counterpart of his old home farm or can locate upon the broad prairie, of which he has heard so much. In fact any kind of a farm suitable for any species or system of agriculture can be found here, and the agricultural resources of the country surrounding Mankato can fairly be said to be rich, rare and varied, and without an equal in the same extent of territory anywhere. Particularly well adapted are the prairie

883,000. The buildings consist of a warehouse 50x250, cement mill, 40x80, engine and boiler room, 40x40, cooper shop, 40x125, all two stories high, beside office, blacksmith shop, room for twisting engine, etc. The kilns, five in number, have an aggregate capacity of 1,000 bbls. per day while the mill has a capacity for 1,500 barrels. The motive power is furnished by an engine of 200-horse power, and the fuel is deposited at the side of the kiln from the side tracks of the different roads which enter their yard. The practical tests in quantities have fully equalled expectations of the company who began to manufacture towards the close of last summer, and the coming year will see lively times at the cement works. The following chemical analysis, made by Prof. E. T. Cox, state geologist of Indiana, and a competent analytical chemist, assisted by some English gentlemen of six different brands of cements, including five Portland cements of English and German manufacture, and the Mankato cement is herewith presented:

Table with 6 columns: Material Name, English Portland, German Port., English Port., German Port., Saylor Port., Mankato. Includes items like Lime and Magnesia, Silica, Alumina, Oxide of Iron, Soda, Potash, Sulphates, Water & Loss.

A careful inspection of this table will show that the Mankato ground stone cement compares very favorably with the best made Portland cements, possessing but 55-100 per cent. of the worthless substances while it has an average of essential parts equal to the best of the cements with which it is compared. The recent test at the office of Burnham, Burr & Co., who handle cement, sewer pipe, etc., at Minneapolis, made upon the city testing apparatus with a briquette ten minutes in air after mixture and 18 hours in water broke at 180 pounds tensile strain to the square inch.

The many substantial and well preserved brick buildings to be found in Mankato, some of them erected long years ago, attest the valuable nature of its clays for brick making. The clay banks are absolutely pure and free from any deposit and have not a trace of limestone or other substances in them, and produce a very superior character of brick. A number of companies have been engaged in the manufacture of brick, among which Willard & Polchow and A. R. Mather, who made last year some 5,000,000, lead the van. From seven to ten million were made last year which amount will be very largely increased the coming season, a number of new yards being under contract.

MANKATO STONEWARE COMPANY. This institution purchased by John A. Samborn last spring was operated by him at a capacity of some 50,000 gallons and which turned out goods equal to the best Ohio ware and which sold rapidly and well. The company is to be reorganized this season and enlarged by the addition of large capital and its capacity more than doubled. The clay used for the purposes of their manufactory is of the most desirable quality and guarantees success.

MANKATO CLAY WORKS. Among the most interesting and valuable discoveries of the latest wealth of Mankato has been that of the existence of a most superior quality of "fire clay," in what has been for years considered a worthless bank of chalk white material. Early last spring Mr. S. F. Alberger, a gentleman from New York, who has large experience in the manufacture of fire brick, came to Mankato, and after prospecting for some little time, came upon this mine of hidden wealth, and at once began experimenting. So satisfactory were his tests that a company has been formed, with the above caption, in addition to the manufacture of fire brick will continue the manufacture of drain tile, so successfully accomplished last year by Mr. Alberger, and also no doubt manufacture well tubing, sewer and culvert pipe and hollow brick. The works at present occupy a building near the Sioux City depot, formerly used as a wheat warehouse, which has been converted into use as a fire brick factory and furnished with all the necessary machinery and steam for power and heating.

The present capacity of the works is about 500 brick per day, which in summer will be increased to 1,000. The indistinctness of this clay may be shown from the fact that subjected to 1,900 degrees Fahrenheit a degree of heat so intense that the human eye could not look at the substance, it sustained its form and substance and refused to melt. This industry thus established becomes of the most importance from the fact that no fire clay of any degree of value not works for the manufacture of fire brick exists anywhere nearer than St. Louis and Chicago. Permanent works are to be erected this summer by the company nearer their clay supply, and an extensive business will thus be inaugurated.

MANKATO SAND. A grade of sand said by experts to be of the character necessary to make glass has been discovered, and samples sent east for tests have produced the most satisfactory re-

sults, and a glass factory will be established here at no very distant date. Having thus briefly passed in review some of the natural resources of the earth formation at Mankato I shall next attempt a partial review of its general manufacturing industries or the production of articles of a merchantable character from different substances. The ones just passed may be styled "the production of something from nothing" or the manufacture of crude substances of but little or no value in that state. Those to follow are of a finer grade or produced from more valuable material. In this enumeration I am well aware that I have reviewed very many institutions of comparatively small capacity individually but which aggregate largely in making up the sum total of the city's industries and which help to swell the volume of her wealth. I have made no mention of retail institutions, some of which are of a magnitude and importance which dwarf some of the wholesale houses mentioned, but I have included in my sketch those institutions which either by manufacturing or wholesaling to other towns contribute toward the increase of material wealth of the city by drawing their support in a large degree from outside points. The result of my investigation and experience is to the effect that it takes three things to build a good town here in the west, a city of importance and of a population which approximates something near to the expectations and wishes of its friends and these are agriculture, commerce and manufactures. I have noticed that a purely agricultural town seldom remains prosperous after the introduction of over 5,000 people into its corporate limits. I have also seen that the wealth and population of a manufacturing city depends very largely upon the variety as well as the extent of its factories, and also upon the production of articles of merchantable value from cheap material. The establishment of extensive manufacturing establishments in any place similar to those now launched and in operation at Mankato brings with it of necessity a certain amount of commerce or wholesale business, and while these two industries go hand in hand and in a great measure depend one upon another, they can and sometimes do exist in localities removed from the agricultural surroundings.

At Mankato, however, the three great elements to produce a great city, and a great city they are, are produced. I now pass to the manufacturing establishments in question. LINED OIL MILL. This may justly be said to be the most important of all Mankato's manufacturing institutions as well as the producer. It was established in the year 1872 and has been operated continuously ever since and is today the most successful institution west and north of Chicago. Not only does it form a very important industry of Mankato but providing as it does a home market for flax, a crop admirably adapted for cultivation in Southern Minnesota it is an institution which is of vast importance to the entire section. When first built not a bushel of flax was raised in the territory, and seed had to be imported. The owners of the mill bought 300 bushels of seed which was loaned to the farmers and 30,000 bushels of a not very fine quality was the return, most of which was manufactured, a part, however, being again returned to the farmers for seed. They have purchased of the crop of 1883 the enormous amount of 280,000 bushels at an average price of \$1.35 at the mill, \$1.10 being the least price paid. The present capacity of the mill is 1,200 bushels daily, which makes an average of 2,500 gallons of oil, or over one car load daily, and twenty-three tons of oil cake. The storage capacity of 100,000 bushels, which their fine brick elevator contains, has long since proved inadequate, and the company have sought storage elsewhere about town. A new elevator of 200,000 bushels capacity will be erected the coming year. The mill, elevators, office, boiling rooms, and other buildings are of brick and are quite valuable, over \$80,000 having been expended in their construction.

The present engine being of insufficient capacity a new one is to be put in the coming year of 120-horse power, which, with other new machinery and buildings, will make this one of the largest mills in America. The manner of extracting the oil is by the hydraulic pressure system, which renders their oil cake a very superior article of cattle food. The new presses just put in will double the capacity which last season turned out 6,500 barrels of oil, using 160,000 bushels of seed, and producing the consequent amount of oil cake. They received 517 cars of seed and have shipped 415 cars of oil and oil cake, most of the latter going direct to England. With the increasing interest manifested in this portion of the state, and the general desire to abandon exclusive wheat raising for this branch of farming, and for stock raising in general, but little time will elapse until this most desirable nutritious food will find a home market which will in time no doubt equal the supply. During the great financial crisis of 1873, cars of oil cake brought money the moment they were loaded, the shipper being instructed to draw on London or Liverpool as soon as laden. The fact that no explosion can ever result under the pressure process in use in this mill, as was the case with the St. Paul oil mill some time ago, renders this one very popular, and the people of Mankato point to it with pride. The company have the following officers: J. A. Willard, President; G. F. Pipes, secretary and superintendent. Both raw and boiled oil are produced.

FLOURING MILLS. The "Mankato" flouring mill, one of the largest and best mills outside of Minneapolis in Minnesota, operates forty-nine pairs of rollers and five run of burrs, and has a capacity for the manufacture of 700 barrels of flour per day, and consequently must consume 3,500 bushels of wheat. It is a model mill, built to make money, and necessarily contains the most perfect and improved machinery.

The building is of brick, stone trimmed and cost its owners \$130,000. The mill company have an elevator on the Chicago and Northwestern track as well as Southern Minnesota railroad, which has a capacity of 385,000 bushels. The mill manufactures five distinct brands or grades of flour, and turned out the past year 135,000 barrels. The larger part of this has to be shipped here from the west by rail which with the shipments of flour requires a large number of cars in the course of a year—95 men are employed about the mill. A Corlies engine of 275 horse power moves the vast machinery of this mill, while in the same engine room may be found the engine and great force pump for supplying the city Holy water works system. Five boilers furnish the steam for the two engines, and also for steam heating the mill, and eight to nine tons of coal are required per day. The mill is under the active management of Mr. F. L. Waters, and does admirable work, turning out flour which commands as ready a sale and as good prices as any in the west.

MANKATO CITY MILLS. This mill with a capacity of 100 barrels per day has been recently refitted and is now in excellent order. It is owned and operated by Mr. J. Dierbauer, and is a roller mill.

MANKATO BUTTER TUB FACTORY. This institution now owned and operated under the firm name of Woodward & Marsh, was started by W. W. Woodard in August, 1883. Noting the rapid tendency toward dairying in the southwest and perceiving at once that some sort of package or receptacle in which to store and ship butter must be provided

Much of its products find a ready market at home while the remainder goes east. IRON AND NOVELTY WORKS. The Mankato Iron and Novelty works operate as their name would indicate a machine shop and foundry. They do a general business as would be expected of such an institution, but like many individuals they have their hobby and that is an iron farm fence. Though the vast belt of timber adjoining Mankato furnishes nature's own material for fences at a very reasonable figure yet the more remote prairie districts tributary to her find it not only expensive by reason of transportation but also from lack of durability, cost of construction and liability to destruction from prairie fires. I was much surprised to learn that the timber farmers in this vicinity are using barbed wire for fences with an abundance of timber on their own land. The Mankato Iron Fence Novelty works perceiving the great and growing demand for a perfect, cheap and durable iron fence have procured an invention and are now manufacturing an iron farm fence which combines all the elements desirable to make it popular with and useful to the farmer. It consists of a tubular wrought iron post with a three-flanged cast iron base which, when the post is driven into the ground, comes just above its surface and thus secures the post from the rust which would soon destroy it were this part also wrought. The posts being tubular offer a much greater resistance for the amount of iron they contain than in any other form and are designed to be set or driven in the ground just like rods and posts. The posts, which rise one foot three inches above the surface, three or more barbed wires are attached by means of small bits of the wire inserted in holes drilled through the posts. Between each two are three iron stays which are firmly attached to the wires by means of iron staples which effectively prevent their becoming separated should any one of them become more slack than the rest or should they be attacked by stock. When once the fence is set and the wires attached there is no slack or sagging except between posts, a distance of four rods, as the wires are so attached as not to move upon the posts. The posts being set this distance apart offers less actual resistance to pressure of stock than if nearer and being more flexible is less liable to be broken easily, resuming its position as the stock glides over them from the quick remembrance of the sharp iron barb. The entire cost, wire and all, of a three wire fence of this kind is but fifty cents per rod or thirty cents per rod for posts and stays alone. The posts being set this distance apart offers less actual resistance to pressure of stock than if nearer and being more flexible is less liable to be broken easily, resuming its position as the stock glides over them from the quick remembrance of the sharp iron barb. The entire cost, wire and all, of a three wire fence of this kind is but fifty cents per rod or thirty cents per rod for posts and stays alone. The posts being set this distance apart offers less actual resistance to pressure of stock than if nearer and being more flexible is less liable to be broken easily, resuming its position as the stock glides over them from the quick remembrance of the sharp iron barb. The entire cost, wire and all, of a three wire fence of this kind is but fifty cents per rod or thirty cents per rod for posts and stays alone.

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