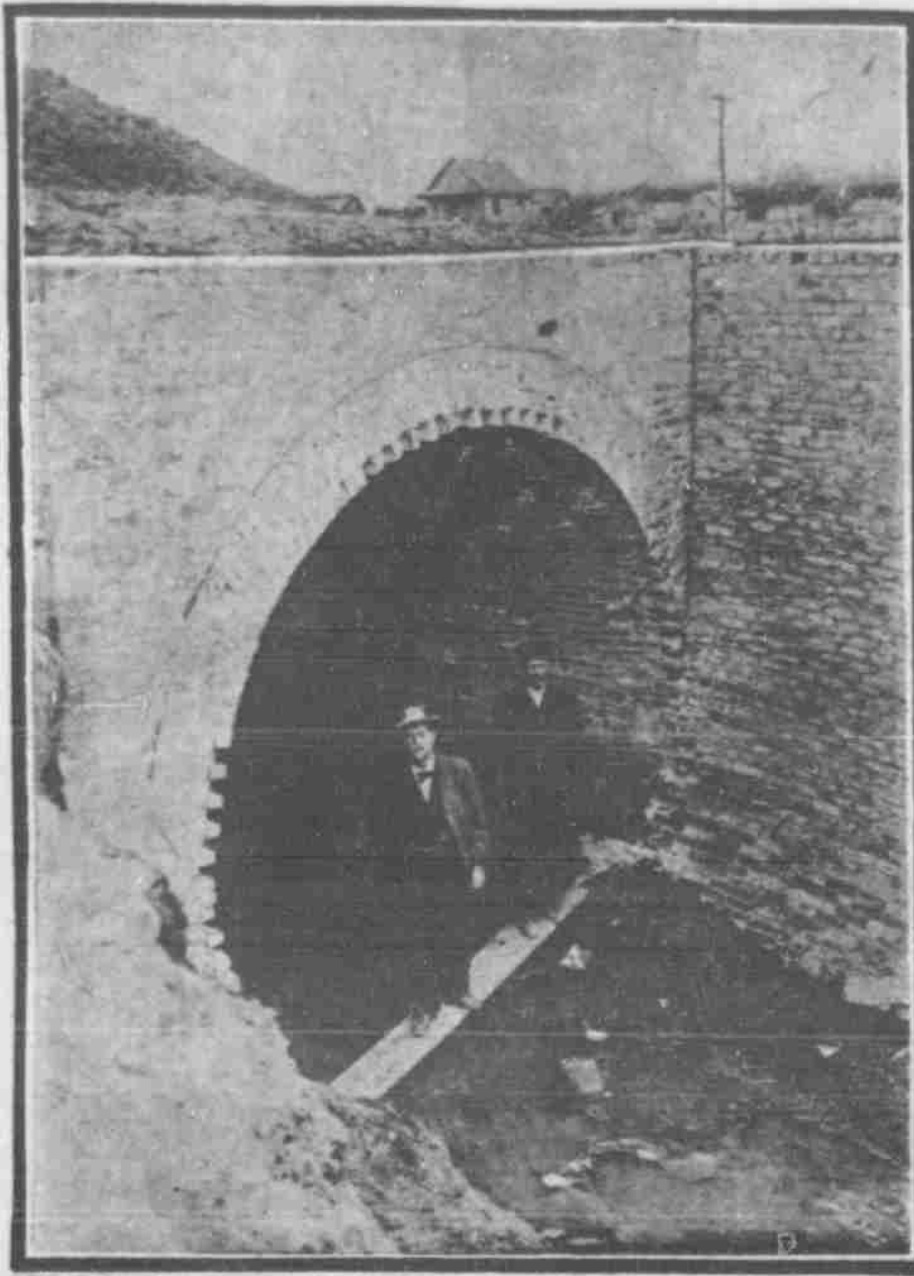


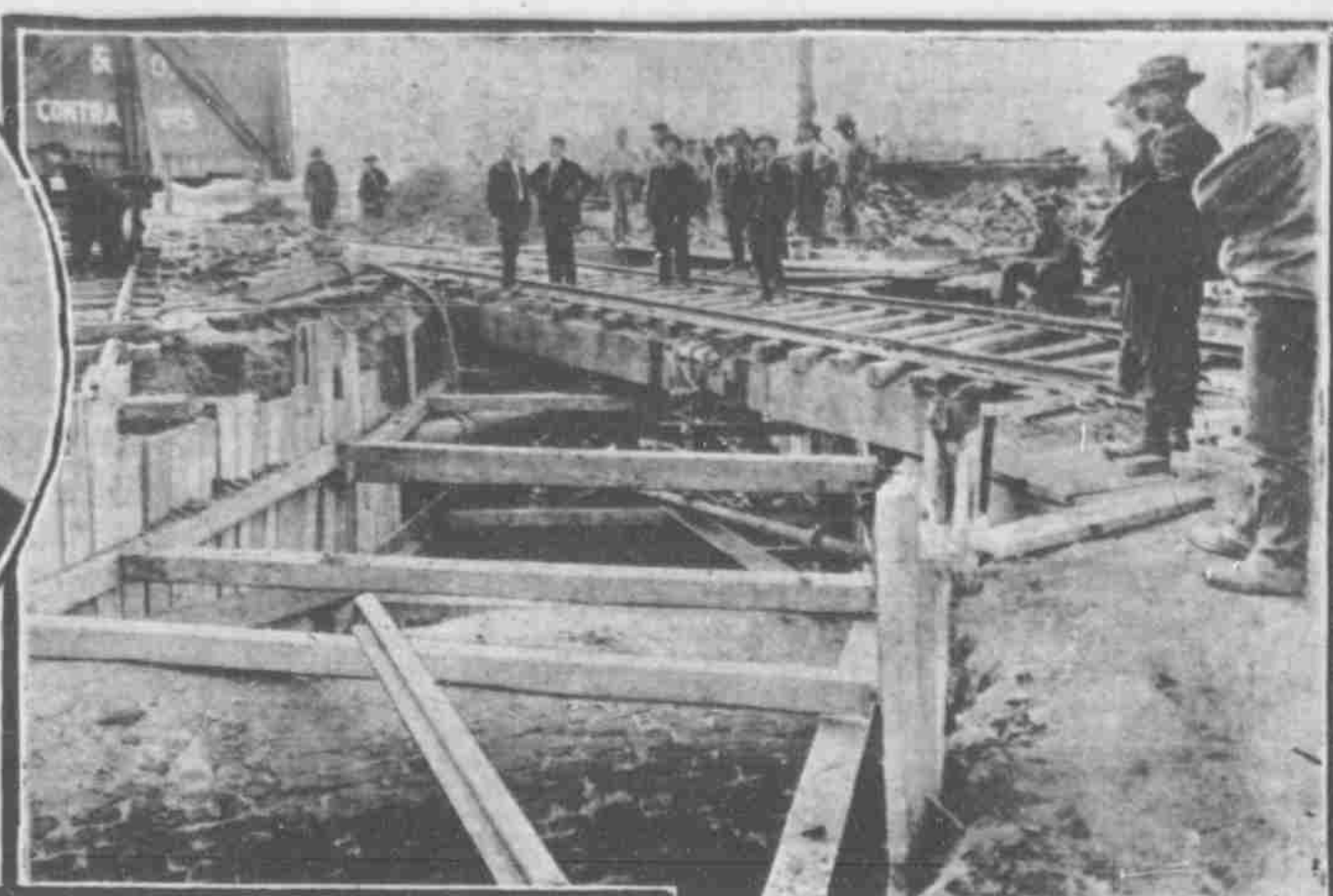
# Nearly Two Hundred Miles of Sewers in Omaha's System



END OF 30<sup>th</sup> AND FORT ST. SYSTEM - AT 27<sup>th</sup> AVE. AND CLINTON ST.



TWO FORMER CITY ENGINEERS  
ANDREW ROSEWATER GEORGE TILLSON



NORTH OMAHA MAIN SEWER OUTLET - 14<sup>th</sup> AND CAL ST.

A twelve-and-a-half-foot sewer runs north from Twenty-seventh street and Ellison avenue to a point a little north of Clinton street. These large drains have a capacity of about 10,000 gallons per second.

### South Omaha Area.

The South Omaha system, with outlet at Jones and Fourth streets, has three main branches. The north branch drains the territory as far west as Twenty-sixth and Dodge streets and south to Leavenworth; the southwest branch, built thirty years ago, drains as far south as Twenty-seventh and Vinton streets, and the area west to the water shed at Thirty-third, and drains a section east to Twenty-fourth. The first continuation of the Jones street sewer was built last year to Twentieth street and Woolworth avenue, and connects with the system whose focal point is Twenty-first street and Lincoln avenue. Next year it is proposed to further extend this branch to Creighton avenue. A connection must also be made with the South Omaha system to properly drain the territory between Thirty-third and Forty-second streets, from about Pacific street to the south city limits.

When the first sewers were built, about thirty years ago, data on rainfall was very meager, and one inch per hour was taken as an average. This was based in certain pioneer experiments made in Brooklyn. Later the average found safe to figure on was raised to 2 1/2 inches an hour, which proved Andrew Rosewater's original contention.

City Engineer Craig, who has been almost continually engaged in the engineer's office from the days of George Tillson, who is now city engineer of New York, has many interesting stories to tell of the development of the system, some of which are not without a touch of humor.

### Tables Turned On Contractor.

"I recall when I was practically a chain boy for Engineer Tillson," said Mr. Craig. "We were measuring a piece of sewer work done by a man who is now a very successful contractor. He asked to be allowed to help by holding the tape half way between Mr. Tillson and myself. It was dark, of course, but the shadow cast by a lantern indicated the contractor was lengthening the measurement by wrapping the tape around his body. So when the measurements were taken Mr. Tillson quietly inquired, 'How many sections, George?' I told him eight. 'All right; just measure Mr. ———' girth and multiply it by eight. No, make it nine for good measure, and deduct from the total length.' The contractor saw the joke was on him and did not murmur.

"In those early days, too, we used to have difficulty getting Portland cement used where called for. In concreting native cement was permitted, but for mortar we demanded the real Portland, which was costly. One day Mr. Tillson and myself were out inspecting and we came to a suspicious place. Even while we were arguing with the contractor we noticed a laborer backing up to a mortar box with a heavy load held close to his front. He miscalculated the distance to the box, struck it with his heel and went sprawling backward in the mortar; and there he lay with a sack of native cement on top of him. It should have been Portland. That settled the argument."

### Do Sewer Rats Think?

Of rats in the sewers Messrs. Craig and Bruce tell enlightening stories. The largest tribe of rodents has its home in a "dead end" near the Young Women's Christian association building, and from there the hungry members or pathfinders make their way to the streets at various promising corners, gaining the street through the inlets.

"The wise rats have figured out a mode of travel that indicates they do think," said Mr. Craig. "Say the rat is bound for the inlet at the Bee building corner; he will start on the west wall of the sewer and run until he is about to overbalance; then make a spring to the east wall, and repeat this maneuver until he lands at his objective point. If that scheme of running along a curving wall so as to avoid falling in the water doesn't prove a rat can think, what does it prove?"

Engineer Bruce will also point out to the inquirer spots where a hundred men could hide in comparative comfort in the sewer drains of Omaha, just as there are many places where a team and wagon could easily make their way. Bruce and other men connected with the sewer department can tell almost to within a foot where any lost object will land after passing through the drain pipes. Times are recalled where reports of lost money or jewelry have been made and the engineer's men have found and returned the lost article. Some of the men who care for the sewers have also found money, jewelry and other things that no one had reported lost or ever claimed.

Design and construction of new sewers is in the hands of John A. Bruce, under City Engineer Craig and Assistant George Campen. The engineering and repair department, also under the engineer's control, cost the last year \$17,400. This department builds inlets, or catch-basins; flushes, cleans and repairs the sewers, and the plan has been found to be much cheaper than having the small construction work done by contract.

**T**HREE MILLION DOLLARS, in round numbers, represents the cost of the sewers of Omaha. The length of the sewers, mains and branches is 183 miles. They vary in size from the great mains 8x16 feet, inside measurement, elliptical in form, to the six and eight-inch pipes put in almost thirty years ago—the old Waring system.

During the year just ending the cost of new sewers has approximated \$160,000. For the coming year the engineer's department is planning these extensions:

Miller park outlet, \$60,000; extension of Thirtieth and Fort street system to Fortieth, \$55,000; completion of Twenty-seventh and Sprague streets branch, between Lake street and Bedford avenue, \$25,000; reconstruction of west branch North Omaha system to Thirty-third and Cass, \$35,000; reconstruction of southwest branch South Omaha system from Twentieth and Woolworth to Twenty-sixth and Creighton avenue, west on Creighton to Twenty-ninth street, and northwest to Thirty-first and Woolworth avenues, \$55,000. Minor extensions in other localities, \$10,000.

Another improvement that ought to be made, but not yet very definitely determined on, would completely care for the storm water in the district from California to Leavenworth. This construction, if carried out, would cost from \$65,000 to \$70,000.

One of the many difficulties of new sewer construction in certain districts will be noted in one of the illustrations. Here a very large new sewer is being constructed which runs under the brick California street main. The first piece of very heavy underground work is now being done under Burt street, where a 1,800-foot tunnel is being built by Contractor Jensen. An air lock is being utilized to keep out the water and three shifts of men are boring day and night. The bore will be of concrete and is being built in six-foot sections.

### Craig Talks of Rosewater's Work.

City Engineer Craig gives a very interesting account of how the Waring system, which proved totally inadequate a short time after installation, came to be installed.

"In those days Andrew Rosewater was a young man, whose reputation was local," said Mr. Craig. "He fought in vain against the adoption of the Waring system, holding that it would not suit conditions in Omaha. But Colonel Waring was a man of national reputation, and this fact brought such strong support to his plans here in Omaha that the ideas of Mr. Rosewater were not adopted. It required but a few years to vindicate Rosewater's position, and today the last vestige of the Waring system has almost disappeared. It was knowledge and foresight such as he exhibited in this instance that gave Andrew Rosewater an international reputation as an expert engineer.

"It is due to the memory and reputation of Mr. Rosewater to say, too, that his work and plans, developed several years ago and later put into effect, have provided Omaha with data and encompass a system second to none in the country. The storm waters and the ordinary sewage of a large city are nowhere better taken care of."

### Old Drains Inadequate.

This city has seven main sewer outlets—Thirtieth and Fort, Icard street, new North Omaha, Chicago street, Jones street, Pierce street and Riverview park. All of them empty into the river. The Saddle Creek district was the big project, perhaps, in extent of territory taken in. Its drainage area comprises the land from the upper end of the water shed, about Forty-seventh and Military avenue, to California and Forty-sixth. From the latter point the sanitary sewage passed into a septic tank at Forty-sixth and Dewey, while the storm water goes down the old creek bed.

The Thirtieth and Fort streets sewer drains the entire country from the School for the Deaf and as far north as Grand avenue, and west as far as Fifty-second street.

The North Omaha system has three principal branches. Its north arm drains the territory between Sherman avenue on the east and Thirty-third street on the extreme west; its extreme north limit is Pratt street, and it handles drainage south as far as Cum-ling. The west branch extends to Fortieth street on the west, goes as far north as Indiana and extends south to Jackson. The south branch extends to Pacific, west to Thirty-seventh and east to Twenty-sixth.

The rebuilding of the west branch of this system takes in the new Burt street main, which is now being bored through the high ground from Twenty-second street to Twenty-fifth avenue, and will extend from

Fifteenth to Twenty-sixth streets. Next year it is hoped to send this extension west to Thirty-third and thus relieve the Bemis park district and surrounding territory.

### Where the Sewers Run.

In this connection it may be said the engineers have found that the old sewers in the thickly settled parts of the city are inadequate to take care of the flow from the newer sewers west and north, and City Engineer Craig and the engineer directly in charge of sewers, John A. Bruce, point out that the blocking of Andrew Rosewater's plans in the old days by councils and boards of public works, together with a total inadequacy of funds, was responsible for a condition of affairs that could easily have been avoided if the advice of the expert engineer had been taken.

Two main sewer layouts converge at Twenty-seventh street and Ellison avenue and from Twenty-

seventh and Clinton run through Miller park in an open ditch. It is hoped to rectify this condition the coming year and have a covered sewer through the park.

The sewer known as the Twenty-seventh and Sprague streets branch drains the country from Hamilton street on the south to Military avenue and Forty-

fifth street on the extreme west, and east to Thirty-third street. This system is now complete except for a gap of three-quarters of a mile between Lake street and Bedford avenue, where the sewer is now but an open channel. In this part of town is the section of sewer largest in dimension, extending from Twenty-seventh and Ames to Thirty-first and Pinkney streets.

## Story of the Potato and Its Record of Usefulness

**N**EBRASKA potato growers produce something over \$6,000,000 worth each year, and shipments of our tubers are made to all parts of the country. The acreage and production are increasing every year in this state, and therefore anything concerning this important crop is of interest hereabouts. Writing in the St. Louis Globe-Democrat, Vernon Murray gives some timely consideration to the potato, called forth by the recent decision of the wise men of France to let the good, honest American potato into their banquet halls after nearly forty years of exclusion. It is a curious coincidence in the history of this apple of the earth, as the Frenchman called it, that it figured on the same great stage that Louis XVI made famous and in a measure shared its rise and fall with him. In the beginning of his reign the potato was deemed a rank poison by Frenchmen generally. Its one friend was the famous Parmentier, who cultivated it under difficulties till Louis XVI became convinced of its worth and granted Parmentier lands and protection for his potato plants. At once the despised vegetable leaped to glory along the path of its royal patron. The potato sewer was worn in the buttonhole of the monarch and the all-potato banquet became the climax of the French chef's art and an event in the history of this most eventful period.

It was the day of the great Lavoisier, whose achievements in the world of science and interest in agricultural chemistry gave him more than national fame and authority. To win him to his cause Parmentier gave in his honor a great feast in Paris, where every dish was made of potatoes, and even the brandy and liquors produced from them.

Many of the distinguished men of the day gathered at this banquet, which was deemed one of the most remarkable in history, and the glory of the potato reached its climax. But, alas for the vanity of earthly honors from potato fields to thrones. The king lost his head and the potato its valuable eyes, which were no longer planted two in a row as enthrallingly as the horticulturist recommended in the high noon of its favor. Nevertheless, a vegetable with eyes was not to be despised, especially when capable of repeating itself in some 600 or more species through the use of them. It came out from its eclipse in France, as elsewhere, and by good breed-

ing began to recommend itself to royal horticultural societies and men of science and learning of all lands. Even before its fluctuating fortunes in France it figured in the history of nations and was born across seas and continents by scholars and explorers who gave it an honorable place in classic literature as well as foreign soil.

In various Spanish books of the sixteenth century the introduction of potatoes to the Spaniards by voyagers from Peru receives elaborate notice. Humboldt describes their place in the New World at its earliest discovery. Sir Walter Raleigh honored the North Carolina and Virginia potato tubers not only by historic notes, but by cultivation on his estate near Cork. Gerard, in the first edition of the "Herbal," not only gave the potato plant and flower the distinction of a frontispiece, but of glowing paragraphs wherein he described it as "a food, as also a meate for pleasure, equal in goodness and wholesomeness unto the same, being either roasted in the embers or boiled and eaten with oil, vinegar and pepper, or dressed any other way by the hand of some cunning in cookerie."

The patriotic defender of home products is quite right when he asserts that "the American potato permits of no comparison, whether boiled, baked, fried, scalloped, chipped, mashed or served with its jacket on." Parmentier's secret of converting it into brandy and liquor is all that is needed to make it grander in the land than the sheaf of Joseph, to which all the others did obedience. There are indications, too, that in some of those dry regions where orange rinds serve as whisky jugs, and bulldogs eat reporters, a great necessity, which is the mother of invention, will wrest the liquor juice from the bosom of the potato, and no French chef surpass the ingenuity of the thirsty American in securing the "gifts the gods provide." No offense need be taken from this suggestion, either, by the temperance societies, since there must be some sparkling and stimulating cup that cheers but not inebriates, hidden in the bosom of Nature somewhere, to meet that life principle, impulse, or whatever it is, that raises a thirst for it in human breasts.

Old World scientists tell us that they are already at work upon a whisky which will exhilarate, but not intoxicate, and it may be that Parmentier's secret will soon be out and the potato crown the discovery. It is significant that with all the gay carousing over that potato brandy and "liqueur" at the "greatest feast of

the nation Lavoisier, the prime guest, was not found under the table, nor were any of his distinguished friends helped home by the gendarmes. To drink with an air that, like Lamb's furious and incessant smoking, could "command the respect of his friends" would certainly be a consummation devoutly to be wished by any well-developed drinker, and Ingersoll's famous whisky letter to his friend, Walston H. Brown, shows what poetic possibilities lurk in the brain of the wise drinker. It may be that it would not be so easy to find "the breath of June and the carol of the lark, the sunshine and the shadow chasing each other over billowy fields" in the potato beverage, but if it did its appointed work some glorification out of the dew of night and the teeming bosom of earth would no doubt attend it.

It would certainly be well, says Mr. Murray, for the potato to have its eyes opened to all the virtues within it, even if unvirtuous mortals were inclined to abuse its rich gifts as they have the liquid joy in the staves of oak or the luscious juice in the heart of the grape. Over both of these, however, the potato holds the record of "a merry, drinking, laughing, quaffing time," which showed no death in the cup nor a single drop of poison to "steal away man's brains."

Whatever the new developments in name or fame that may await this modest vegetable of the garden, it is more than probable that no potato brandy will ever move such effort as Cassius made at nomenclature, when he cried out in anguish at his overthrow, "O thou invisible spirit of wine, if thou hast no name to be known by let us call thee devil!"

One of the most circumspect newspapers of the land declares that whatever may have been the matter with the American potato in 1875, when France rejected it, there is nothing the matter with it now. That certainly tallies with the tremendous figures which show the increase in the production and the demands made upon it for home consumption by people not given to feeding on poison when they know themselves. Putting all things together, it might be well for Americans to keep their potatoes on their own soil; at any rate, until they are well assured that there is not a hungry child left in their borders to pray in vain, "Give us this day our daily tatoes," for that truly is the kind of vegetable tragedy no country can afford.

## Origin of that Slangy But Useful Term "Dope"

**T**HERE is probably not one man in 10,000 who lets the word "dope" fall so trippingly from his lips who knows the origin of that slangy but useful term, says the New York Times. Though originally applied only to the drug of the opium-smoking fiends, whereby wild imaginings born in the clouded brain were taken by the victim as true, by almost universal usage it has come to mean the essential factor or material cause of anything done or said—the influencing or moving cause that enables one to achieve success in his efforts, to "arrive," as the French put it.

"What's your dope on that story?" asks the city editor of the reporter, just in from an assignment, meaning to ask, in genteel English, what are the live facts discovered, the meat of the article that is to be.

"What dope did you use on the court?" asks one

lawyer of a "brother-in-law" who has just had a decision rendered in his favor by the court, meaning thereby to ask what cogent argument, or subtle influence brought about the favorable opinion.

"The word, while not of Chinese origin, originated among the Chinese of San Francisco," said an old resident of the Pacific coast. "Years ago, when that city was full of opium-smoking joints, run by orientals from China, they were largely patronized by many of the depraved white men of the town. Now Chinese is a monosyllabic language, there being no word in it with more than one syllable. Accordingly, when the Chinese learns, or rather partially learns, English, he is prone to pick and use the most prominent syllable in a word, disposing of the rest by a mere breathing or grunt.

"When a white man would enter one of the San Francisco opium joints the Chinese proprietor would coem forward and ask affably: 'You want ope?' the

word 'ope' being the Chinese pronunciation of the English word 'opium,' formed by emphasizing the first syllable and letting the rest of the word go by the board. This, owing to the liquid running together of the two words 'want' and 'opium,' was understood by the would-be opium smoker as 'dope.' Accordingly, the little pill that brought the funny dreams was spoken of among the initiated as 'dope.' From this the transition to the meaning of the fanciful images conjured by the drug was easy. 'What dope did you use to think up that wild story?' became 'What dope are you giving us?'

"You've got the dope all right," perhaps is the commonest form of expression, wherein the word is used in the final sense, meaning, 'you are right,' whether in ideas or action.

"But it all harks back to the little pill the silk-clad Chinese rolled for his victims over the little lamp in San Francisco years ago."