

CHICAGO DRAINAGE CANAL

HOW OTHER CITIES MAY BE AFFECTED BY THE ENTERPRISE.

Far-reaching consequences of the Enterprise—It Will Discharge 10,000 Cubic Feet of Water per Second—It Will Cost Twenty Millions of Dollars—Some Interesting Facts and Figures.

Few people seem to be aware of the magnitude or of the far-reaching consequences of the enterprise upon which Chicago has embarked for the disposition of its sewer-fifth. During the last three years the city has already spent more than ten million dollars in the construction of a canal which is to turn a portion of the water of the Great Lakes along an old glacial outlet into the Mississippi Valley, and carry the sewage with it so diluted that it will not be a menace to the health of the Illinois valley through which it is to flow. Ten million more dollars will have to be spent before the canal is in active operation; but the work is prosecuted with such energy that its completion is looked for within the next two years.

This is not to be a canal with locks to regulate the flow of water, but an open channel one hundred and sixty feet wide at the bottom, and eighteen feet deep, with plans for deepening it still more in the future. When first opened it is to discharge 10,000 cubic feet of water per second, which is about five per cent. of the amount now flowing through Niagara river. The quantity of water to be discharged is fixed by the legislature of the state with a view to protecting the valley of the Illinois from contamination. When the population of the city shall exceed 3,000,000 the quantity of the discharge is to be increased in proportion to the excess. The amount of the original discharge is so great that the engineers estimate that it will raise the low watermark of the Mississippi one foot at St. Louis. The accomplishing of such

AN ENORMOUS ENTERPRISE

is rendered possible by the peculiar physical geography of the Great Lakes. Lake Michigan and Huron are practically on the same water-level, about 580 feet above the sea, while Lake Erie is only eight feet lower. Lake Superior is an independent basin twenty feet higher. The basin of the lower three of these lakes is so delicately poised that only four feet of rock and two of gravel at Chicago prevent them from spilling over into the Mississippi valley at high water. The rock bottom of the Niagara, where it leaves Lake Erie, is only thirty feet lower than the rock shelf which forms the barrier west of Chicago. An elevation of fifty feet at Buffalo, or depression of the same amount at Chicago, would reverse the drainage and make the four lakes tributary to the Mississippi. What nature could do so easily the engineers of Chicago are to do in part by the expenditure of the vast sums put at their service by the city.

This plan for the disposal of Chicago's sewage has been devised by the city and the state without formal consultation with other parties whose interests may be affected by it. It seems assumed that, since the canal is wholly within the territory of Illinois, it is not necessary to consider the other interests involved. But the cities along the lower lakes are just beginning to be aroused to a consideration of the possible effect of this scheme upon the level of the lakes, and upon the depth of the water in their harbors, and in the channels which have been deepened at great expense to facilitate commerce to their ports. The Cleveland Chamber of Commerce has just petitioned the secretary of war to investigate the matter at once, and ascertain what effect the canal will really have, so that proper measures may be instituted for the protection of all

THE INTERESTS AT STAKE.

In response to this action of the Cleveland Chamber of Commerce, other cities on the lakes have joined in the request, so that public attention will be occupied with the question to a large extent for some years to come. A few words, therefore, with reference to the elements involved will not be amiss.

The total drainage area of the four upper lakes is 250,000 square miles, with a rainfall of about thirty-one inches. If we reckon that from 35 to 40 per cent. of this is now discharged through Niagara River (which is a liberal estimate), it would make the amount to be about 200,000 cubic feet per second. This accords very closely with the estimate made by Major Rufner, the United States engineer in charge of the survey of the lower part of Lake Erie. In 1893 he was set to gauge the flow at Black Rock, near the head of Niagara River. As a result of this investigation he concluded that the average discharge of the river was a little over 200,000 cubic feet per second. It is not, however, an easy matter to determine how much the diversion of 10,000 cubic feet, or five per cent. will reduce the level of the discharging stream and so of the lake. As the channel at Black Rock is only about 2,000 feet wide and twenty feet deep, Major Rufner estimated that the diversion of 5 per cent. of the water flowing into Lake Erie will probably reduce its level nine inches. The Chicago engineers, basing their calculations on earlier and less perfect data, have been reckoning on a lowering of the level of from three to five inches only. But in view of the shallowness of all the harbors on Lake Erie, and of the fact that the United States has but just completed its work of deepening the navigable channel two feet at a cost of \$2,000,000, even the lesser estimate is by no means

AN INSIGNIFICANT ITEM.

Especially does this appear in view of the future increase of the amount of the discharge upon the growth of the city to its possible extent.

Furthermore, it should be kept in mind that while the tax levy upon Chicago is made upon the substantial ground of promoting the sanitary interests of the city,

the ulterior object of insuring a ship-canal through which the largest ocean steamers shall reach the port of the city is prominently kept in view. The completion of the drainage-canal will mark the practical accomplishment of that long-cherished dream. The engineers in charge talk freely of diverting 15 or 20 per cent. of the water of the great lakes into the Illinois, so as to give such continuous volume to both that stream and the Mississippi as to make both navigable at all times to the largest steamers. Locks are of course contemplated to carry ships past the rapids which will be created at various places.

If this canal shall be adopted by the United States as a part of its system of internal navigation, it seems evident that the general government will be called upon to protect the other interests involved from injury. This will include the maintenance of the normal depth of water in the harbors of the lower lakes and in the navigable channel to which commerce has already adjusted itself. International questions may also arise. If it is not adopted as a national waterway, it will be an interesting question whether the cost of repairing damages can be assessed upon the city of Chicago, which is to receive the direct benefit from this diversion of a public waterway.

THE MOST FEASIBLE WAY

spoken of to keep the level of the lower lakes up to its normal stage is to store water in Lake Superior during the early part of the season and let it down in the drier parts of the year, thus equalizing the flow. But this involves unknown interference with vested rights on both the Canadian and the American shores of the lake, which would have to be adjusted by an international commission. The level of Lakes Erie and Ontario could be maintained by slightly constricting the outlets so as to diminish the cross-section of the discharging streams.

It must be confessed that the boldness of the Chicago engineers, and the promptness with which the city is proceeding to carry out their plans, are scarcely less than sublime. In olden times this project of Chicago might easily have become the occasion of a war between the east and the west, or between Canada and the United States. But, happily, the age of arbitration has already come and there will be ample time to prepare for the remedy of incidental evils before the canal shall become a fixed fact; for so vast are the stores of water in the great lakes that four or five years would elapse before the full effect of such a diversion as is contemplated would be felt upon the lake-level. Still, even the vast reservoirs of the great lakes are not inexhaustible; and now is the time to forecast the results of such a far-reaching interference with the natural waterways as the Chicago canal will be when, a few years hence, it is in full operation. It certainly is remarkable that the solution of a most difficult problem in disposing of a city's sewage should render financially practicable one of the boldest schemes for the improvement of internal navigation which have ever been entertained by engineers anywhere in the world.

FIGHTING FISH.

Two of Them Confined in a Bottle and Excited to Fight.

The London Field tells how fish fight in Siam: The two fish are placed in a bottle. They proceed to take each other's measure, shoulder up to each other in schoolboy fashion, and back and push round the "ring," the small fins vibrating rapidly all the time, and each little being quivering with excitement and wrath. This goes on for some minutes, until, as the spectators are growing impatient, one fish suddenly flips his head round, makes a dart, and a considerable dent in his adversary's tail shows at once that he has got home. Henceforth there is no hesitation until one or the other cries peccavi. In regular fish fights the battle is continued until one fish turns tail and is chased round the bottle by the other. But this is usually an affair of an hour, and frequently of three or four. The pluck and determination of the fighters are wonderful. The ordinary stream fish do not evince nearly so much as those that have been bred and reared for the purpose. The tail is the part which shows most damage, for it is very easily torn, but a good grip on a side fin is more effective. When one pins the other by the nose a very exciting struggle takes place, the two lying fastened together like professional wrestlers, and then shaking each other backward and forward with might and main.

They often seem extremely exhausted, but still fight on bravely, and sometimes it is a matter of difficulty to part them. They display considerable agility in evading their opponent's mouth, and also in suddenly twisting round and taking a piece out of his tail. In twenty minutes or so these appendages, which looked so brave and bright as they went into the fray, are torn to ribbons. The fish's general appearance after the fight suggests that of a sailing ship emerging from a hot action, with her canvas hanging in streamers, her topmasts shot away, and her crew gasping for breath, but still ready to fight again. The combatants sometimes succumb to a long contest, but generally they only take superficial damage, and are immediately ready to feed. After a match they are always rested for a week or longer, according to the extent of their injuries, and most of the rents and cuts are repaired by nature.

The New Woman Again.

Mrs. Brown—It's funny, but I meet you wherever you go.

Mrs. White—Yes, fact is, my husband is right in the midst of his housecleaning, and I am willing to go anywhere to escape from the atmosphere of soapuds and deluges of hot water. I really believe he is crazy on the subject of housecleaning.

Mrs. Brown—That's just the way with Mr. Brown. It's perfectly awful; I haven't been near the house for a week.

Came Into It Soon.

A grouty old gentleman, after making his will, called his serving-man, and remarked: Michael, I've left you in my will all the impudence I possess.

Michael—Faith, I'm glad to see that by your generosity I inherit the greater part of your estate.

Well, well, Michael, you've come into your inheritance remarkably soon.

SMUGGLED IN WALKING CANES.

Systematic Fraud Discovered by United States Customs Officers.

The United States Customs officials in Montreal have made some startling discoveries, which will cause arrests and a sensation among the smugglers of phenacetin and sulfonal not only in Montreal, but also in Toronto, New York and Boston. During the past year the authorities at Washington and elsewhere have known that vast quantities of the drugs referred to have been, and are now, smuggled through from Montreal to Boston. Special officers were sent from the headquarters of the U. S. Customs Department to trace if possible the gang operating, but without avail. The local officers were on the alert and have succeeded in getting "the inside track" of what promises to give startling disclosures in the course of a few days. The head-quarters of the leader of the gang has been located in the East End of Montreal and he is now under the surveillance of a Secret Service officer, who, when the trap is ready to spring on the gang, will be arrested. He is watched night and day.

Phenacetin and sulfonal are two expensive German drugs on which there is a very heavy duty when imported into the United States. In Montreal it can be purchased in large lots, at 32 cents and 45 cents per ounce respectively. In the United States it is sold, in the same quantities, at one dollar per ounce.

THIS LEAVES A PROFIT

of \$76.50 on every five pounds the smugglers succeeded in getting safely "across the line." The men at the head of the gang are wealthy, having accumulated all their riches by the smuggling of these two drugs. Naturally there is a wide field for the smugglers to "work" and they get orders for more than they can, with safety, get across, so every day they grow bolder and invent new schemes to get the drugs through. The most ingenious yet tried is the one just brought to light by the Customs officers, and which the smugglers are saved the trouble and anxiety of long roundabout trips in order to evade the officers. The new scheme is to drill out thick walking sticks and umbrella handles, leaving merely a shell. The drugs are then packed into the hollows and the tops neatly replaced, defying detection. In some of these oak sticks as much as five pounds of sulfonal have been packed. By this new process hundreds of pounds of the drugs have been safely taken into Uncle Sam's territory and disposed of during the past month. Recently special agents from Boston seized a large quantity of the drugs at Vancoboro, Me.

AS IT IS DONE IN CHINA.

Chinese and British Methods of Declining Manuscript.

When a British editor rejects your manuscript he does it either by means of a curt "declined with thanks" or else sends you a printed slip on which he presents his compliments, which you don't want, and regrets that he cannot grant you what you do; that is an opportunity of seeing yourself in print. But when a Chinese editor finds that your article or poem or story isn't worth the paper, that it is written upon he sends you a letter like this—a model that might well be copied in English newspaper offices:

"Illustrious brother of the sun and moon—Behold thy servant prostrate before thy feet. I bow to thee and beg that of thy graciousness thou mayst grant that I may speak and live. Thy honored manuscript had deigned to cast the light of its august countenance upon me. With raptures I have perused it. By the bones of my ancestors never have I encountered such wit, such pathos, such lofty thought. With fear and trembling I return the writing. Were I to publish the treasure you sent me the emperor would order that it should be made the standard and that none be published except such as equalled it. Knowing literature as I do, and that it would be impossible in 10,000 years to equal what you have done, I send your writing back. Ten thousand times I crave your pardon. Behold, my head is at your feet. Do what you will. Your servant's servant.

THE EDITOR.

It would be a positive pleasure to receive back rejected communications if they were accompanied by such letters as this. The ingenuity of the excuse for returning this particular manuscript is quite beyond all praise. It is no less than a stroke of genius.

Japan's Learned Soldiers.

It appears that notebooks are quite common in the Japanese army among both soldiers and coolies. They keep regular diaries, and take copious notes of everything they see. "It is surprising," writes a war correspondent to the China Mail, "what a lot they know about the great West. Several of them talk intelligently of Spartans and Persians, Napoleon and his march to Moscow, and even compare the abolition of feudalism in England and Japan. They fully understand all that is implied in the contrast between old-fashioned hand-to-hand warfare and modern long-range manoeuvres; and they speak scornfully of the Chinese tactics at Ping-Yang, in trying cavalry charges against massed bodies of riflemen without first using their machine guns, as the French at Waterloo did their field pieces, to throw the ranks in disorder. All this from the Japanese must be surprising to Europeans, because we do not know them. Their progress is greater and more real than foreigners imagine."

He Would Suit.

Can you cook, knit and do plain sewing, dear? said the Emancipated Young Woman to the lovely young man upon whom she had been bestowing her attentions.

Yes, was the timid reply.

Then be mine! exclaimed the impetuous lover.

GRAINS OF GOLD.

The true life of man is in society.—Simms.

The deeper the sorrow the less tongue it has.—Talmud.

Justice is the great interest of man on earth.—Daniel Webster.

Shun the inquisitive, for you will be sure to find him leaky.—Horace.

What morality requires true statesmanship should accept.—Burke.

Strive to do thy duty; then shalt thou know what is in thee.—Goethe.

Great mistakes are often made like great cables, from a multitude of strands.—Hugo.

Good intention will no more make a truth than a good mark will make a good shot.—Spurstone.

The men of action are, after all, only the unconscious instruments of the men of thought.—Heine.

In the works of man, as in those of nature, it is the intention which is chiefly worth studying.—Goethe.

Infamy is whose it is received. If thou art a mud walk; it will stick; if marble, it will rebound.—Quarles.

No man ever did a designed injury to another, but at the same time he did a greater to himself.—Home.

Self-denial is the result of a calm, deliberate, invincible attachment to the highest good.—G. Spring.

Man is the merriest, the most joyous of all the species of creation, Above and below him all are serious.—Addison.

He fancies himself enlightened because he sees the deficiencies of others; he is ignorant because he has never reflected on his own.—Bulwer.

Milton has carefully marked, in his Satan, the intense selfishness which would rather reign in hell than serve in heaven.—Coleridge.

I have played the fool, the gross fool, to believe the bosom of a friend would hold a secret mine own could not contain.—Massinger.

Till thou hast conquered thyself thou art but a slave; for it is almost as well to be subjected to another's appetite as to thine own.—Burton.

WHISKEY IN KHAMA'S COUNTRY.

He Can Keep His Own People Sober, but the Whites Give Him Trouble.

King Khama of the Bamangwato, South Africa, has long been known for his antipathy to liquor dealers. Perhaps there is no other country where liquor is so rigorously excluded. Khama makes all his own laws, and he endeavors to have the punishment fit the crime; and as the drink habit, in his opinion, is a crime little less heinous than murder, it goes hard with the unfortunate subject who is seen to be unsteady on his legs or is caught with a surreptitious whiskey bottle. Of late years, however, the King has been having a great deal of trouble with the white men who flock into his country, and insist that interference with their potations is an infringement of their rights.

A short time ago Khama, who is getting well along in life, paid a visit to Cape Town and made his first acquaintance with a railroad, a steamship, the sea, and other wonderful things. While in the capital he received a deputation from the various temperance societies, and to these kindred spirits he poured out his grievances. His language shows that he does not approve of all features of the "higher civilization."

"I rejoice greatly in your words, my friends. I have no difficulty in keeping liquor from my own people, but my difficulty is that the white people will have liquor, and I do not know how I am to succeed in carrying out the law. I have been almost in despair on the subject on account of this; but, so far as my own people are concerned, I never will give in. I began when I was quite a boy, and determined that I would have nothing to do with liquor; and one of my indunas present, who is an older man than myself, is one of those who have supported me in this matter; and I have others who are faithful to me, and who are doing their very utmost to assist me in the entire prohibition of liquor in our country. The one difficulty is that we have white people there who have another Government, and I cannot control them. I feel that I shall go back much stronger, and greatly cheered and comforted by your words."

Laces in English Palaces.

The Princess of Wales has just made her daughter-in-law a very handsome present—namely, three founces of most magnificent old English point lace, said to be worth something in four figures. Some lace, of course, is as valuable as precious stones—old Venetian point, point d'Alencon, the best English point, and others. Now, it is very well known to the intimates of Marlborough House that the Princess of Wales, who has always been one of the best dressed women in Europe, always keeping within the fashion, though never countenancing eccentricity, has one cherished hobby in the direction of dress—a great fondness for collecting lace, of which her Royal Highness has a great number of specimens of extreme beauty, value and rarity, only equalled by the collection possessed by the Queen, who is also a great connoisseur of the same expensive and beautiful fabrics.

It is said that the Princess of Wales' collection of lace is worth in actual money over £30,000 while, if "associations" are also taken into consideration, some of the more historic pieces are, of course, priceless. But in historical laces, of course, the Queen beats the Princess, for her Majesty possesses some magnificent laces, the property of former sovereigns, some of the most beautiful having belonged to Katherine of Aragon.

She Knew Him.

He will turn the tables on you if you are not careful, said one woman to another, who was berating her husband.

Turn nothing, she exclaimed, he's so lazy he wouldn't turn a table if it was on rollers.

THE EDITOR'S EXPERIENCE

A Sufferer For Several Years From Acute Dyspepsia.

Food Distressed Him, and It Began to Have a Weakening Effect on the Heart—Many Remedies Failed Before a Cure Was Found.

From the Cansoe, N. S., Breeze.

While newspaper men are called upon in their capacity as publishers to print from week to week words of praise spoken in favor of proprietary medicines, it is not often that the editor himself feels it his duty to say a good word on behalf of any of these preparations. And yet if a newspaper man has actually found benefit from the use of a proprietary medicine, why should he not make it known to his readers, and thus perhaps point out to some of them the road to renewed health. The editor of the Breeze believes it his duty to say a few words of praise in favor of a remedy that has proved an inestimable boon to him, and to say them without any solicitation on the part of the proprietors of the medicine, who, as a matter of fact, had no reason to know that he was ailing or was using their medicine. For several years the editor of the Breeze had been subject to that distressing complaint, dyspepsia, and only those who have been similarly troubled can know how much misery this trouble entails. He had but very little appetite, and what he did eat caused an unpleasant feeling of fullness, and made him feel languid and heavy, often causing intense pain in the stomach only relieved by vomiting up the food which he had taken. He was also troubled with palpitation of the heart, brought on no doubt by the dyspepsia. Numerous remedies alleged to cure dyspepsia were tried, but without success, and the trouble was approaching a chronic state. At the suggestion of a friend Dr. Williams' Pink Pills were tried and relief soon followed their use, and after a few boxes had been taken the editor was able to assert positively that he had been cured of his dyspepsia by this remedy that has proved so great a blessing to mankind. To any one troubled with this complaint he would strongly recommend Dr. Williams' Pink Pills. To newspaper men particularly they will be found just the thing to impart health and vigor to the whole system and enables them to pursue their work free from that tired, despondent feeling so prevalent among the craft. The editor of the Breeze firmly believes that what they have done for him they will do for others, and he gives them his hearty and unsolicited endorsement.

Dr. Williams' Pink Pills are an unfailing cure for all troubles resulting from poverty of the blood or shattered nerves, and where given a fair trial they never fail in cases like that above related. Sold by all dealers or sent postpaid at 50 cents a box or 6 boxes for \$2.50, by addressing the Dr. Williams' Medicine Co., Brockville, Ont., or Schenectady, N. Y. See that the registered trade mark is on all packages.

Unlucky Number.

"I ain't a superstitious man," said Hiram Berry to a friend, as they worked together in the field, "but once in a while it does come on you kinder convinin' that signs come true. I'm reminded of one ter'ble certain case up to our house. "You ain't seen nothin' spiritual, I hope," said the other man, pausing in wide-eyed expectancy.

"Yes, we call 'late we hev had a real case, not 'actly spiritual, no, but convinin'."

Feeling that his hearer's appetite was sufficiently whetted, Hiram went on:

"One day last week Mary was going over to her mother's to set a spell with her an' so she kinder purposed to stand us on the noon meal.

"She didn't git nothin' for a relisher, but just warmed up some fish an' potatoes, so's to git it easy. 'Long 'bout 'leven o'clock Aaron's folks come over, kind of unexpected, an' as they kep' a-settin' an' didn't make any motion to go, she asked 'em all to draw up an' hev a bite. There's seven of us an' five of them, with the children, an' we had to dish out the meal with consider'ble caution. Fact is, I hed to divide an' subtract more than I've done sence I used to figger in school.

"Jest as we had settled down comf' table, in come Nehemiah, lookin' as thin an' hungry as a b'ar in the spring. He drew right up to the table. Easy table, because there war't nothin' else left. Mary felt it pretty keen. 'I tell you sars she, 'it's unlucky to hev thirteen to a table—especially if there's only enough food on it for twelve.' An' lookin' at it all ways, it's one sign I hev a toler'ble good faith in. The circumstance was convinin'."

Nice Army to Fight With.

In a letter from an English officer employed in the Chinese army he says:—"Since I have been here I have had no regular appointment to any Chinese force, and I have had no pay, only a few hundred dollars for expenses. I have had three ribs broken, been blown about ten yards into the air and had all my men desert me on every possible occasion. I cannot run fast enough to keep up with the fighting line, and up to now they have shown no disposition to wait for me. A nice army, this, to go fighting with!"

The Chinese prisoners at Tokio are, by the way, fed by contract. The price is something under one-half a cent a head per diem, but then you can get considerable rice in Japan for half a cent.

For twenty-five years

DUNN'S BAKING POWDER

THE COOK'S BEST FRIEND

LARGEST SALE IN CANADA.