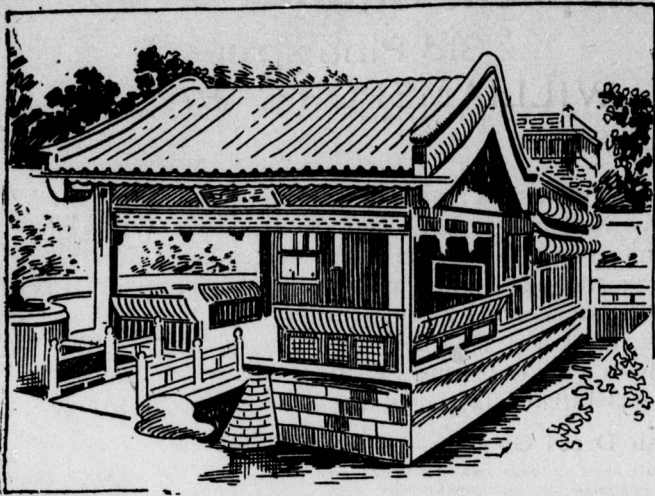


## View of the Imperial Palace at Pekin.



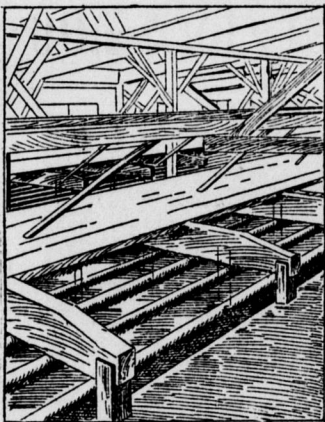
The Chinese imperial palace is the principal architectural feature of the Forbidden City, and is itself more forbidden still. To reach the palace it is necessary to pass three great walls. First, there is the great sixty-foot thick wall of the entire city. Within this is the wall of the Imperial City, six miles in circumference. Within this again is the wall of the Purple Forbidden City, which is sacred to the Emperor and his family. The Purple Forbidden City, or Tze-Kin-Cheng, is nearly square, its sides facing the four points of the compass. Two walls running from north to south divide the space into three parts. The central part contains the principal buildings. To this division the chief entrance is the Wu Mun, or Meridian Gate. Inside this gate is a large court, and running through it an artificial stream, spanned by five bridges of sculptured marble. Another gate at the end of the bridges gives admission to the Palace of Supreme Peace, or Tai-ho-tien, the principal hall of audience. Here the dignitaries of the empire meet and kow-tow to His Majesty. To kow-tow is to kneel thrice and knock your forehead on the ground nine times. To the innermost palace no man is admitted. It is here that the emperor lives, surrounded by his uncounted wives.

## The Modern State of the Salt Industry.

Interesting Processes.

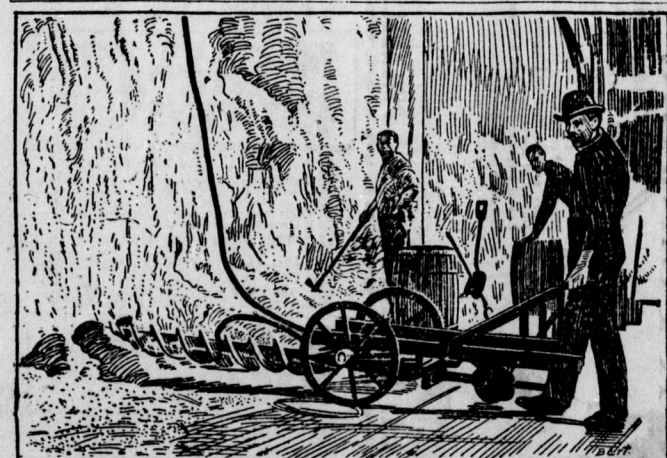
CONSPICUOUS among the natural resources of the State of Michigan are the forests which cover a considerable extent of its surface and the large deposits of salt which underlie a great portion of its area. In the vicinity of Manistee where the "salt blocks" which form the subject of the present article are located, this deposit consists of a stratum of rock salt, which is from twenty-five to thirty feet in thickness. Salt blocks are usually built in connection with sawmill plants, with a view to making use of the refuse as fuel, and for this reason the city of Manistee has of late years become such a large producer of salt that about half of all this commodity manufactured in the State is made at that point.

As soon as the site of a well has been selected, a cellar is excavated and planked up and a derrick, usually about eighty feet high, is erected and the work of driving commences. The



TOP VIEW OF A GRAINER, SHOWING THE BRINE, RUNWAY, AND AGITATING PADDLES.

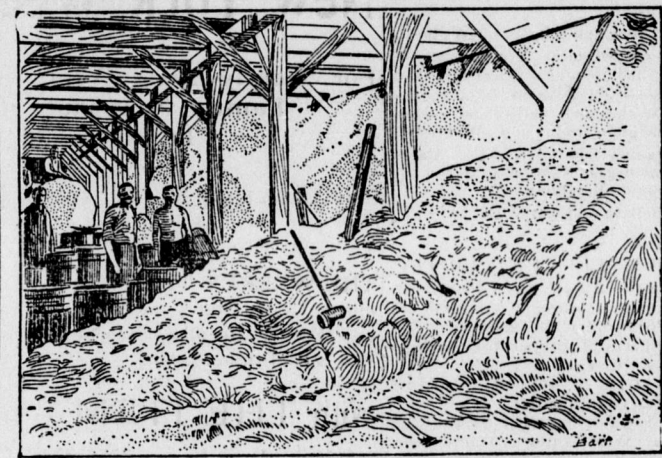
first operation is to sink a section of ten-inch pipe, by means of a sand pump, to a depth of about 400 feet, from which point the well is continued by inserting an eight-inch pipe within the ten-inch pipe and driving it down to the rock formation, the eight-inch pipe extending from the rock up through the ten-inch pipe to the surface of the ground. From the rock formation down, the rock is drilled without any pipe casing, except through such portions as are liable to cave. Salt well No. 5 at Manistee, which is described in the present article, is fairly typical of the wells in this vicinity. The ten-inch pipe reaches



COMPRESSED AIR AUGER FOR LOOSENING COMPACT WALL OF SALT.

to a depth of 400 feet, the eight-inch pipe to a depth of 616 feet, where the rock formation is encountered. The bed of rock salt, which is thirty feet

in thickness, reaches to a depth of 1985 feet, making a total depth of 2015 feet. The yield pumped from this well amounts to from 2000 to 2400 barrels of brine in twenty-four hours.



SALT PACKERS AT WORK IN THE STORAGE ROOMS.

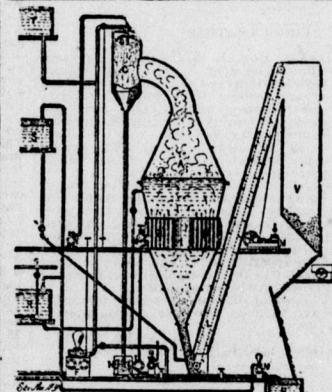
The accompanying diagrams and photographs represent the modern state of the art. As the brine is pumped from the well, it is delivered to the storage cisterns, from which it falls by gravity to the settlers, and from the settlers it is heated to a temperature of about 170 degrees Fahrenheit. Upon being allowed to cool, the gypsum, which, if it were not removed, would form a coating on the steam pipes in the grainers, is precipitated, and as soon as precipitation is completed the brine is drawn to a long box running across the head ends of the grainers, and from the box it is fed to the grainers as required. The latter are long, shallow tanks, near the bottom of which, and extending throughout their full length, is a series of steam pipes. The brine being admitted to the grainers, the steam is turned on, the liquor soon acquires a high temperature, and rapid evaporation takes place. To assist the precipitation of the grains of salt, the surface of the brine is agitated at frequent intervals by means of a series of paddles which are operated by a lever at the end of the grainer. The salt accumulates at the bottom, until in the course of twenty-four hours there will be a layer from six to eight inches deep. The salt is lifted from the grainer by means of long-handled, perforated shovels, and is deposited on the runway. As soon as it is thoroughly drained, it is shoveled into carts, run out over the storage bin, and dumped.

The plant under consideration consists of five wells, three cisterns each eighteen feet wide by 100 feet long, and eight feet deep, and six settlers twelve feet wide, 175 feet long, and eight feet deep, capable of holding

Part of the salt manufactured in this plant is made by the vacuum-pan process. In operating the plant the pans are first filled by gravity, after which the gravity supply pipe is closed, and the valve in the pipe connecting with the settlers is opened, the brine being drawn into the pans by the vacuum therein as the evaporation proceeds. The water and the air pumps are inserted, steam is admitted to the steam belt, and the process of manufacturing salt begins. The atmospheric pressure being removed from the surface of the brine, the latter boils violently at a temperature which seldom rises above 150 degrees Fahrenheit. The brine rushes upward through the tubes, and under the rapid evaporation the brine becomes so dense that it can no longer hold the salt in solution. Fine crystal grains are formed, as the liquid circulates through the large three-foot opening in the steam belt, and falling to the bottom of the pan they pass to the foot of the elevator, whence they are taken up and dumped into the drainage bins. After the salt has remained in these bins for a period of sixteen to eighteen hours, it is drawn off into carts, wheeled to the storage bins and dumped. It is customary to use the pans for not longer than twelve consecutive hours, at the end of which period they are emptied, boiled out with fresh water, and cleaned. One of the pans is run during the day and the other during the night, each pan making in a twelve-hour run from 600 to 700 barrels of salt, the combined production being from 1200 to 1400 barrels a day.

In the manufacture of salt it is a recognized necessity that a large quantity must be kept in storage, and for this purpose the salt is dumped into vast storerooms which measure from 200 to 300 feet in length, and the same in width; the amount in store frequently aggregated 400,000 barrels. As these rooms are from sixteen to twenty feet

deep the salt becomes tightly packed, and has to be worked loose by packers with picks, shovels, grubbers, etc., who proceed to quarry, break up and pack the salt into barrels. With the coarser grades of salt made in the grainers this is not a difficult matter, but the finer grained, vacuum-pan salt becomes compact and very hard, and the packer soon finds himself confronted by a wall of salt twenty feet in height and as white, if not as hard, as marble. To undermine and bring down this mass



VACUUM PAN PLANT.  
A, vacuum pan; B, steam belt; C, condenser; D, spray plate; E, air pump; F, cold water pump; G, steam pipe; H, sealing tank; K, hot water pump; L, elevator; N, brine pump; R, brine settler; S, brine tank; T, water tank; U, brine vat; V, drainage bin.

of salt is a dangerous operation, and involves long delays; and to overcome these difficulties, the companies have used a compressed-air driven spiral auger, which is ten inches in diameter and provided with a double spoon point. The auger is mounted on a truck and the back end of the shaft is attached to a three-horse-power rotary air drill machine. A row of holes is driven into the salt wall at a height of ten inches from the floor for a distance of six feet into the mass, the holes being drilled as closely together as possible. After an interval of one to three hours, a fall of salt takes place, a mass equal to 400 or 500 barrels of salt being brought down in each section. The saving of labor by the use of the compressed-air drill is shown by the fact that sufficient salt can be undermined and caved in this manner in one-half day to keep the packers at work for two or three days following.—Scientific American.

**A Cheerful Notice.**  
The following notice was lately affixed to a church door in Hertfordshire, England, and read in the church: "This is to give notice that no person is to be buried in this churchyard but those living in the parish, and those who wish to be buried are desired to apply to the parish clerk."

## A BRIDE WITH PASTED EYELIDS.

One of the Odd Marriage Customs in Korea.

In Korea when a girl is married she appears at the wedding ceremony with her face painted a ghastly white, her lips dyed scarlet and her eyelids past-



BRIDE WITH HER EYELIDS PASTED.

ed together, so as to deprive her entirely of sight.

As for the groom, he wears a hired suit, a hat of woven horsehair and a pair of shoes closely resembling "Arctics."

The life of the Korean woman, while secluded, is not as unbearable as that of the women of many other Oriental nations. They are poor, and consequently compelled to work very hard, but as a rule they are well treated by their husbands. They have pretty names, meaning Plum Blossom, Treasure, etc., but after marriage are known only as So-and-so's wife, until they have a son, after which they are known as the mother of that son.

## Has 3,000,000 Silkworm Eggs.

Professor Carl Braun, of Bangor, Me., has 3,000,000 eggs in cold storage in his laboratory. They are the eggs of the silkworm, and were sent to him from Japan. Professor Braun is President of the National Science Association, and long has believed that Eastern Maine is a good place to start a silkworm industry. He is planning to keep the eggs in cold storage until the hatching time comes around and then the sun, warmth and stir will do the rest. He says silkworm culture offers an alluring opportunity to Maine women and girls to branch out into a new line of work. He has made a number of experiments and has found that silk can be "raised" in Eastern Maine.

## In Line With the Majority.

"Why, it's old Diogenes!" cried Skeinrus, as the ancient philosopher, lighted lantern in hand, plodded slowly down the street.

"Hullo, Diag," cried Patroclus in bantering tones: "found that honest man yet?"

The sage stared up at them. "Honest man?" he grumbled. "I'm not looking for an honest man; I gave that up long ago."

And he turned to hobble away. "Then what are you looking for?" cried young Herclius.

Diogenes paused. "I'm looking for a hired girl," he growled; "ours left yesterday."—Cleveland Plain Dealer.

## Tough on the Joker.

The contributor wrote a joke about a plumber whose bills were always normal. "That," said the editor, rejecting it, "is not a joke; it's a lie."

The contributor tried again with a story of the plumber whose charges left nothing to be desired on the score of size. "That," said the editor, who had suffered, "is not a lie; neither is it a joke."—Scraps.

## Historic Bell of Kennebunk.

The bell which called Kennebunk to celebrate the one hundred and fiftieth anniversary of the Unitarian Church was cast by Paul Revere.—Portland (Me.) Eastern Argus.

## How Boys of 1784 Dressed.

Until the time of the Revolution children dressed precisely like their parents. This goes to explain their painfully mature air in their portraits. In the illustration reproduced of the



boy in calico, we have one of the first attempts at change. Cotton had come into general use and was worn both summer and winter. Figure calico in high colors is the material of this boy's suit.—New York World.

## ONE STATE'S PROGRESS.

### SENATOR SCOTT TELLS HOW PROSPERITY CAME TO WEST VIRGINIA.

Remarkable Growth of Business Under the McKinley Administration — Coal, Oil and Lumber Industries Are Active — There's More Money in the Banks.

"West Virginia came into the Republican column in 1892, when it gave President Harrison a plurality of 1471 votes," said United States Senator Nathan B. Scott, a member of the Executive Committee of the Republican National Committee. "We followed this up with a plurality of 11,487 for President McKinley in 1896. This year we expect that West Virginia will give President McKinley a plurality of 20,000 votes."

"Our State is growing steadily every year as a manufacturing State. Our big industries are those of iron and steel, tin plate and lumber. We make considerable pottery and glassware, have many textile mills, and manufacture to a certain extent many of the goods that enter into daily consumption. That these industries have improved under the administration of President McKinley goes without saying and the people know the reason why."

"Coal is probably the largest product of West Virginia. In 1895 we mined 11,400,000 tons; last year our output was 18,750,000 tons. The increased demand was caused by the better times. It gave employment to nearly 11,000 more men. Not only that, miners worked in 1895 only 195 days. Last year they were busy nearly every working day. With a large output from our coal mines, with activity in our lumber mills, the demand for the products of our farms and of our factories has increased considerably."

"West Virginia farmers grow diversified crops. Our oil belt is another source of profit to the State. Five years ago we only produced eight million gallons of oil; last year upwards of twelve million gallons. We are pumping oil in enormous quantities and there is no sign of the supply decreasing. Wool is one farm product from which our people have learned something. In 1896 all the sheep in West Virginia were worth less than \$900,000. Since then their value has increased 50 per cent., while the wool is selling at 100 per cent. more than it brought while Prof. Wilson's theoretical free tariff trade was experimenting with the country at the expense of nearly every industry, whether of farm or field, in the United States."

"You must remember that West Virginia has a population of about 1,000,000 people, and we do not claim to do big things. Still our farmers can look with satisfaction at the value of their live stock, which has increased by nearly \$5,000,000 since 1896; also at the amount of money on deposit in the banks of our State, which has increased from \$5,000,000 on July 18, 1894, to \$10,000,000 on June 30, 1899. The increase in the number of depositors has been equally gratifying, from 16,288 in 1894 up to 31,000 last year. With these facts of gain in the wealth of our State there has been a corresponding decrease in the number of business failures. The liabilities of those who were in trouble in 1896 were nearly \$700,000. Last year they were only \$250,000. Our people, too, appreciate the feature of the gold standard law, which simplifies their currency. They realize the difference between the administration of the national finances under President McKinley when they compare them with the mismanagement under President Cleveland. Then we were borrowing money from Europe at whatever rate of interest the foreigners chose to make us pay, while during the last year we have been loaning money to Europe, and still have more that we can spare to send there should it be needed."

"The State of West Virginia is in a small way but the reflection of the conditions in all of the other States of the Union. If the people everywhere would vote according to their sound thought and better judgment, then President McKinley would be re-elected by acclamation in the electoral college, just as he was renominated by acclamation in Philadelphia."

## His Proper Place.

Mr. Altgeld announces his intention of taking the stump as soon as the Kansas City nominations are made. As a Cabinet possibility in the case of Democratic success, Mr. Altgeld will make a strikingly horrible example.

## Democratic Politics.

The Hon. William A. Clark, of Montana, is another Democratic millionaire who has been treating the country to an exhibition of the sort of politics that obtains in that party.

## Goods Were Not Delivered.

Mr. James J. Van Alen is one Democratic millionaire who is not in touch with his party this year. He made a bargain with it in 1892 and failed to receive the goods.

## The Yellow Kid.

The suggestion that a yellow Journalist be given second place on the Kansas City ticket is an excellent one. Yellow journalism is the running mate of yellow politics.

## Of Course It Does.

A decrease of 284,000,000 pounds in the quantity of wool imported in a year shows the value of protection to wool to the American farmer.

## Dead Against Them.

The party that opens the mills has opened the eyes of the people. That is another reason why the Democracy cannot win this year.

## Cheaper Matches.

Matches were a dollar a gross cheaper last year than in 1895. That was not much of a burden on the workingman or his wife.

## A Difficult Count.

It would be impossible for the census enumerators to count the roofbricks printed in the Democratic newspapers.

## A Better Runner.

It must be conceded that Aguinaldo is holding out longer than any of the assistant Democrats.

## A GREAT NATIONAL DANGER.

### It is Our Dependence on Foreign Ships to Carry Our Commerce.

The present disturbed condition of Europe, with reference to far eastern complications, as well as those arising in Morocco and elsewhere, has called attention to American dependence upon foreign shipping for the carriage of their foreign commerce. If the nations of Europe should become involved in a great war, which many believe to be imminent, there would be a wholesale withdrawal of foreign ships from the channels of trade to provide transport for troops and munitions of war.

As nine-tenths of our foreign commerce is carried in foreign bottoms, it is obvious that the withdrawal of a large portion of that shipping for other than commercial uses would deprive our people of their only means for supplying our constantly growing foreign markets. Freight rates would rise to a prohibitive amount in respect of many of our commodities. Our surplus productions would accumulate upon our hands in enormous quantities, prices would fall, wages would be reduced and industrial stagnation and loss of employment would be widespread. The conditions existing between 1893 and 1896 would be re-established in even a more intensified form.

This country is the leading export nation of the world, and the future growth of that trade seems illimitable, provided, always, that we have an abundance of ships in which to send our products abroad. But a check at this time, when the broad foundation for an enormous export trade is being laid, would have a most serious and far-reaching effect upon our people and our resources.

The stability of our foreign trade can never be assured so long as 90 per cent. of it is carried in foreign ships. We send three-quarters of all of our exports to Europe, and American ships carry the ridiculous proportion of but 1.30 per cent! Foreign ships carry a billion dollars' worth of our products to Europe, and our own ships carry less than thirty million dollars' worth.

No greater danger confronts the United States to-day than that caused by our dependence upon foreign ships for the carriage of nearly all of our exports. Of our exports to all the world less than 7 per cent. are carried in American ships. Apart from the commercial calamities possible, and, as some people believe, probable, through the withdrawal of the larger part of the vast foreign shipping upon which we are now dependent, for the auxiliary naval and military uses of the great powers, our great weakness upon the sea emphasizes our only real national danger.

Congress cannot remedy this condition too soon. Proper provision must be speedily made for the attraction of American capital into ship-building and ship-owning, so that at the earliest moment possible we shall become possessed of the ships we may require for all of the necessities of our foreign commerce. Our export trade is closely approaching a billion and a half dollars in value. At its present rate of growth less than a score of years will find it valued at three billions and requiring double the shipping of to-day for its carriage. Foreigners will then have us all the more at their mercy if we do nothing to establish our own ships upon the seas.

Foreseeing just such a possibility as this, Thomas Jefferson, as long ago as 1793, in a great state paper, predicted that a nation which allows foreigners to do the great bulk of its foreign carrying, "will be disarmed of its defense, its productions will be at the mercy of the nation which has possessed itself exclusively of the means of carrying them, and its politics may be influenced by those who command its commerce." These words were prophetic of a condition that actually exists in respect of the United States to-day.

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