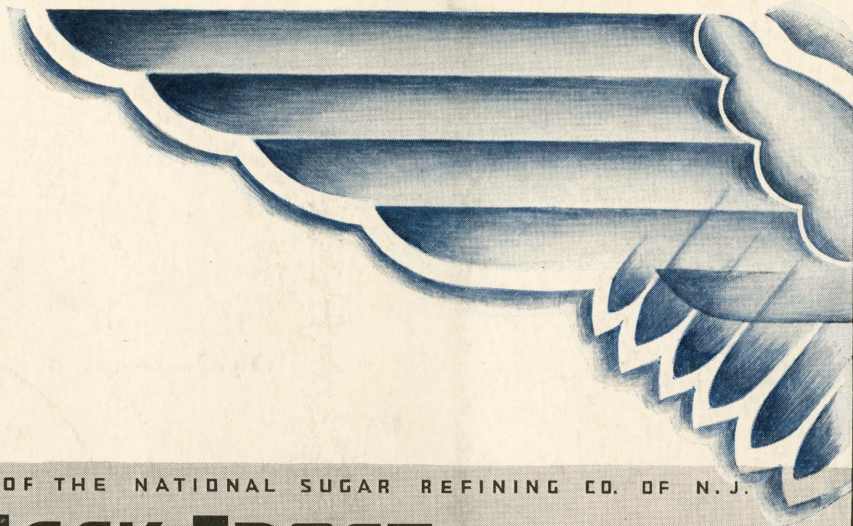
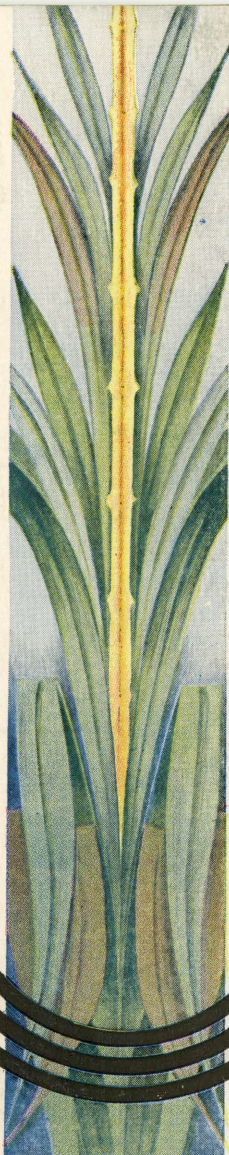


# A CENTURY OF PROGRESS



COMPLIMENTS OF THE NATIONAL SUGAR REFINING CO. OF N. J.

Makers of **JACK FROST** *Packaged Sugars*



SOUVENIR OF  
WORLD'S FAIR  
CHICAGO 1934





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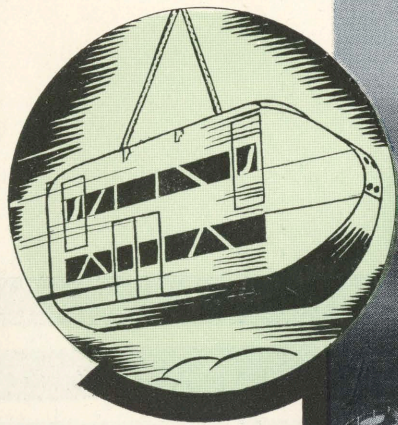
THE  
STORY  
OF  
SUGAR



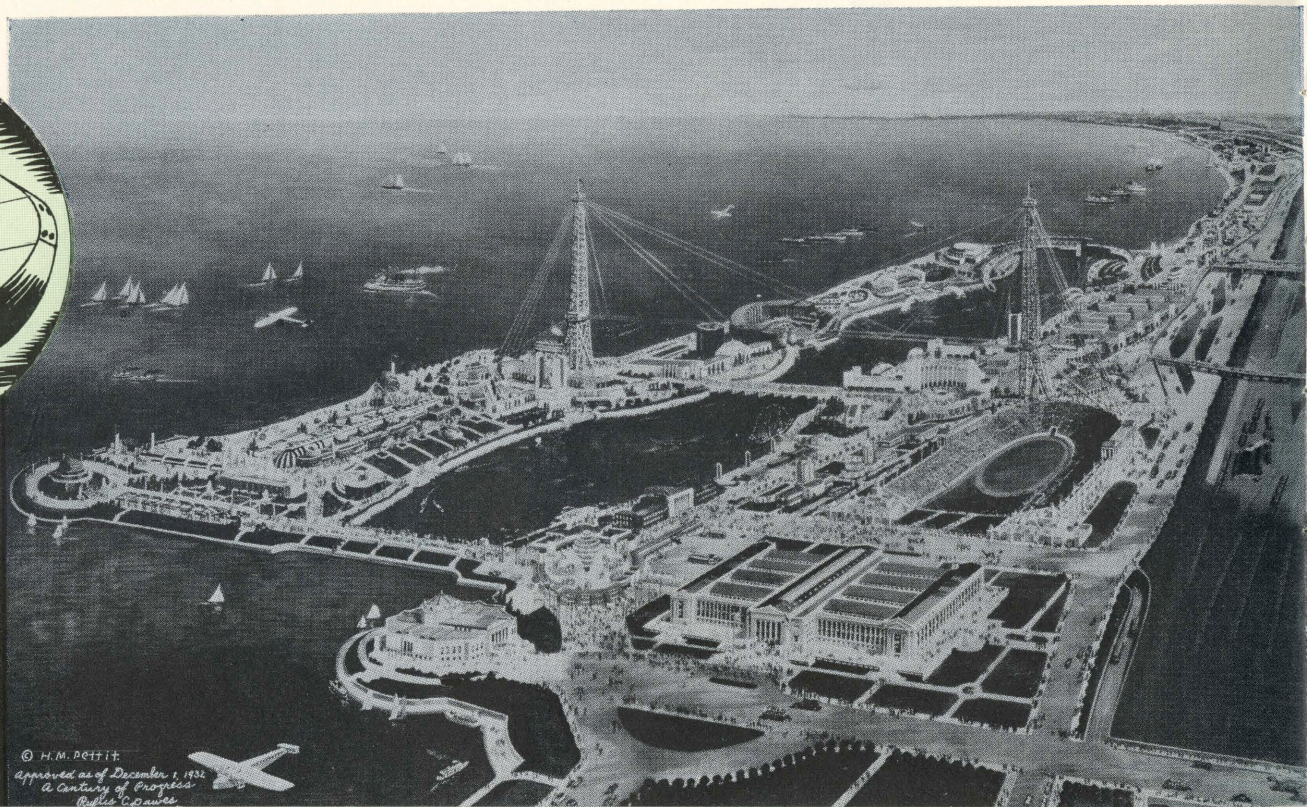


# A CENTURY OF PROGRESS

Panoramic view of the greatest drama of human progress ever staged.  
This magnificent setting occupies 424 acres along Chicago's lake front.



Observation cable cars travel over the Exposition grounds at a height of 200 feet. Their cruising speed is 5 miles an hour.



© H.M. PETIT  
approved as of December 1, 1932  
a Century of Progress  
Ralph C. Graves





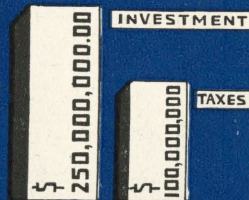
## THE STORY OF SUGAR

You eat your own weight in sugar every few months. But what do you know about the sugar you eat? Where does it come from? What happens to it on its journey from the plantation to your table? The pages that follow will give you a picture of the colossal organization required to bring pure cane sugar to your table, clean, sanitary, and dependable.

Pure cane sugar as you know it today is the result of years of tireless effort, exhaustive scientific research, and the expenditure of millions of dollars in plant and equipment. The sugar refining industry in the United States now represents an investment of more than \$250,000,000.00. It pays the United States Government, in customs duties and taxes, nearly one hundred million dollars annu-

ally. It spends almost one half billion dollars each year for materials, fuel, and electrical energy. Thousands of people are employed in the industry, and their yearly payroll exceeds twenty-two million dollars.

During 1932 this country refined 8,671,340,000 pounds of cane sugar. The capacity of The National Sugar Refining Company's plants alone is over 10,000,000 pounds daily. In one year (277 working days) this enormous production if

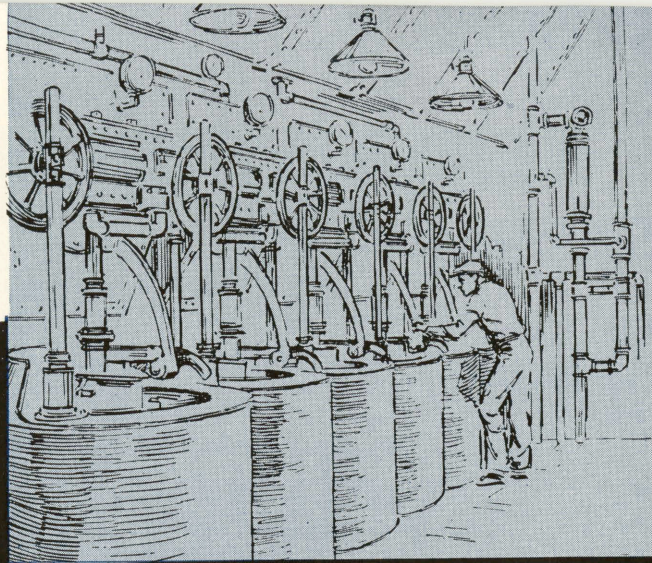


put into one pound Jack Frost packages, placed end to end, would stretch 218,165 miles—nearly nine times around the earth's equator.

This tremendous growth in the industry

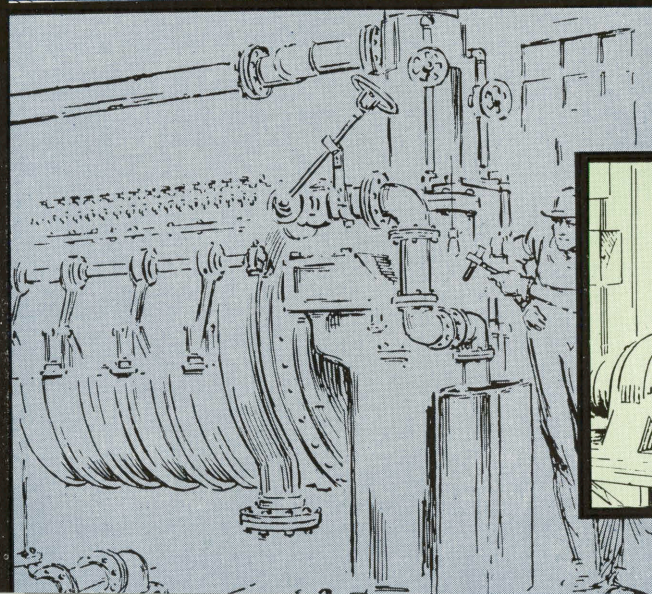
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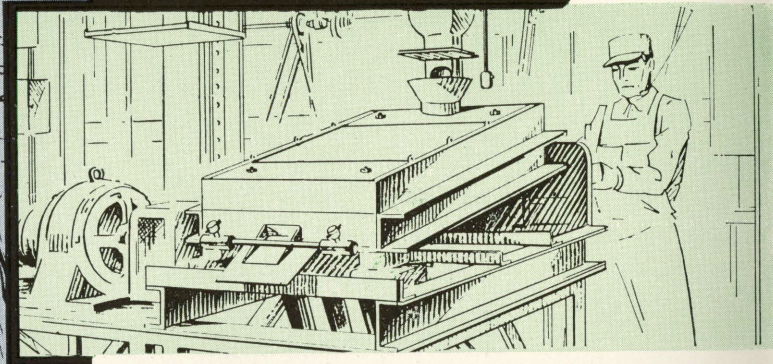
### SUGAR CENTRIFUGALS

Great batteries of whirling centrifugals extract impurities in the process of refining Jack Frost Sugar.



### SUGAR LIQUOR FILTER PRESS

Before you secure the pure, clean sugar in the sanitary Jack Frost packages, it must be changed from its raw state into liquid form. In one of the refining processes this liquid sugar passes through huge filter presses. It is then carefully tested.



### SCREENING MACHINE

Used for grading sugars according to size. That's why Jack Frost Sugars are so uniformly fine.



has been made in comparatively recent years. During Lincoln's administration, sugar was 31c a pound. In 1797, Mrs. John Adams wrote her husband complaining that sugar cost four dollars a pound. Even at this price, it was not the pure, sparkling sugar that comes to your household in the neat, well-sealed blue

produced is a gigantic grass with a bamboo-like stalk, growing to a height of more than 12 feet.

Sugar cane thrives in Cuba, Java, India, British West Indies, the Philippine Islands, Hawaii, Mexico and Puerto Rico. Most of the raw cane sugar that comes to this country is from Cuba, which is the world's largest single producer.

When the crop is harvested natives cut down row after row of the cane with a machete, a long, sharp knife that cuts

package. It was a chunk, or crude loaf, that was chipped off sparingly as needed.

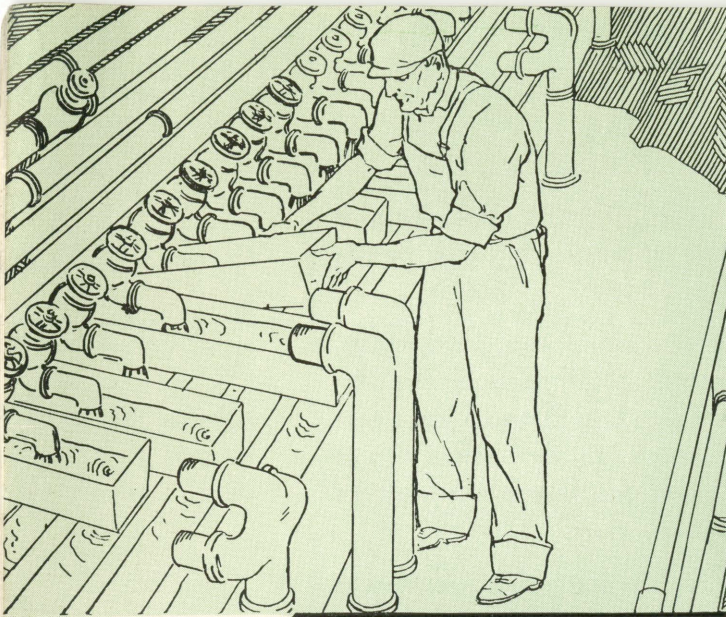
Before we tell you how and why modern refining methods enable you to purchase pure cane sugar for but a few cents a pound, let us first sketch briefly the story of what happens before the raw sugar reaches the United States . . .

The sugar cane from which cane sugar is

through the stalks with amazing speed. Carretas, or wagons, drawn by oxen, carry the stalks from the plantation to the

Continued on page 7





### TEST TUBE RACKS

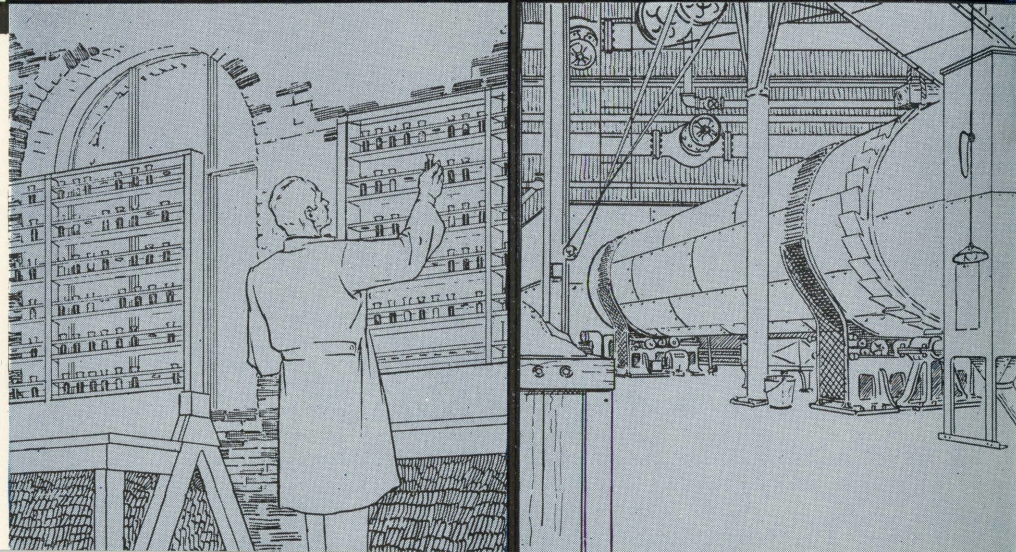
Experienced chemists test Jack Frost Sugars each day throughout the process of refining. Thus the standard of all Jack Frost Sugar is rigidly maintained.

### GRANULATOR MACHINES

In modern refining, the wet sugar is dried in huge drums—called granulator machines.

### LIQUOR GRADING GALLERY

Where the various sugar liquors are graded to make the different kinds of sugar.

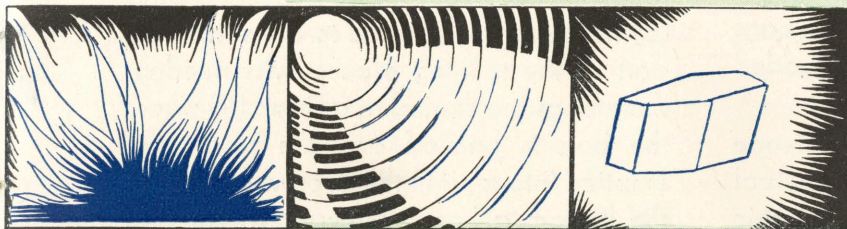




railway, where trains continue the journey to the mill or central.

The picturesque acres of green-leafed "bamboo" reeds stretching as far as the eye can see—the stolid, easy-moving oxen drawing their neatly stacked carretas—contrast strangely with the modern scene at the mill. It is a jump from biblical times to the twentieth century.

On arrival at the mill the stalks are con-



veyed automatically to crushers which tear the cane to shreds and pass it on to pressure rollers. These rollers, capable of an increasing pressure up to 560 tons, squeeze out more than 95% of the sucrose, or juice. To this, milk of lime is added, mixed, heated and allowed to

settle. The clear juice is then boiled down until crystals form in the heavy liquor. To separate these crystals from the liquor, or "molasses," the entire mass is run into centrifugals which rotate at a speed of from 800 to 1200 revolutions per minute. The crystals are caught by a perforated screen while the liquor passes through and is collected by an outer jacket. These crystals are known as raw sugar and in this state it reaches the refinery.





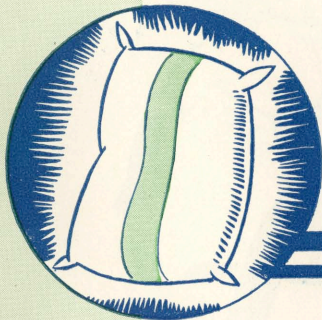
WE are now ready to begin our journey through one of The National Sugar Refining Company's modern plants. Turn to the illustration inserted in the rear of the book. This is an actual photograph of the model exhibited at the Century of Progress Exposition, Chicago. It has been reproduced to exact scale, complete and accurate in the smallest detail. This is what you would see if a giant knife sliced off the outside wall of the refinery itself.

To the left of the picture raw sugar, in bags weighing 325 pounds, is being unloaded from the freighter "Jack Frost (1)."

Several bags are handled at once in a rope sling (2) and lowered to a platform or stool (3) and then rolled onto small electric trucks (4). At this point, United States Customs men take a sample from each bag. This sample is tested and the test decides the amount of import duty which must be

paid before the sugar can be used. This import duty is very great in proportion to the value of the sugar, and helps to pay a large part of the expenses of our Government. After sampling, the sugar is weighed by Government weighers on their own scales (5) and then reweighed on the purchaser's scales (6).

Then the rope sling is attached to suspended electric carriages, called Telphers (7) which raise the bags and convey them to piles (8) where they are stored to await the real start of the refining process. As needed, these bags are carried to a dump (9) where the bag is opened and the raw sugar emptied into a pit in the floor, which has at the bottom a heavy screw conveyor that breaks up any lumps and carries the sugar to a bucket elevator (10). This elevator delivers, in a continuous stream, the sugar to the top floor of the wash house, which

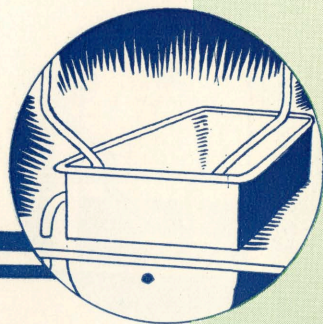




is the building adjoining the storage shed. The sugar is then dropped into a mingler (11) which thoroughly stirs in syrup from a preceding batch. This process of mixing softens the film of molasses that envelops the crystals of raw sugar, and the mass gradually moves toward the end of the mingler, from whence it finally drops into the mixer (12). Here it remains with further stirring until finally allowed to flow through gates into the centrifugal machines (13) below. Sugar centrifugal machines are round metal baskets holding more than a barrel of sugar at a charge. They are suspended by means of a shaft passing down through the middle of the basket, have perforated sides, and are lined with brass screens with very fine perforations. These baskets are very strongly made, and when revolved at speeds of 800 to 1,200 revolutions per minute, the mass of sugar crystals

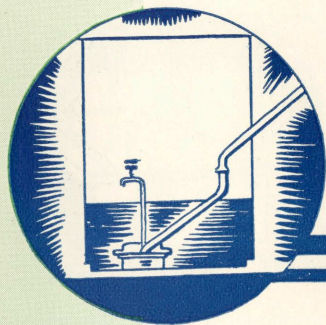
and molasses is thrown against the perforated sides, through which the molasses escapes, to be caught by an outside casing, and draining into a tank (14) from which a portion is pumped back to the mingler, the remainder going through the refining process as will be later shown.

The sugar crystals remaining on the inside of the centrifugal are washed with a little water, after which the basket is stopped, and the sugar is dropped through holes in the bottom into pre-melters (15). Here hot water is added, and the mixture is slowly moved forward until it drops into the large melter (16) below, where the dissolving of the crystals is completed, and further water is added to make a mixture containing about 60% sugar and 40% water. A considerable amount of foreign substances may be present, ranging from bits of string and fibre from the bags, to stones and bolts





and even pieces of money that were lost by the men who filled the bags in the far-away country of origin. It is therefore next necessary to pass this solution through a rotating screen (17) to remove such material before it is pumped by means of a centrifugal pump (18) into round tanks with cone-shaped bottoms at the very top of the refinery. Because these tanks are heated with steam, and also are supplied with air for the agitation of the sugar solution, they are called "blow-ups" (19). In the very early days of sugar refining, it was considered wise to locate the refining plant near a slaughter house, so that fresh blood could be readily obtained to mix with the sugar solution, and which upon heating caused a coagulation of the fine suspended matter in the extremely cloudy raw sugar solutions. The solutions were then filtered through cloth bags. When ox blood



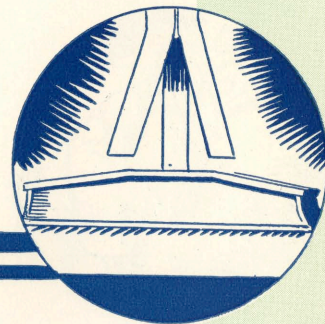
was not available, whites of eggs were used, and sometimes clay. Later on, these materials were replaced by phosphate of lime, which was formed in the sugar solution as a soft precipitate to entangle the fine particles. At the present time a peculiar kind of earth is largely used, being composed entirely of very minute skeletons of fresh water animals called "diatoms." Since these skeletons are not soluble, they make a wonderfully porous mat through which large quantities of solutions may be filtered rapidly, resulting in a very brilliant and clear liquid. Another very satisfactory filtering material is paper pulp, which, if properly used, produces results fully equal to diatomaceous earth, and at much less expense.

The mixture of sugar and water, called at the refinery "washed sugar liquor," together with the filtering material, is pumped



through filter presses (20) which are composed of many large, hollow, metal discs covered with cloth, and enclosed in a cast iron housing. The filtering material collects on the cloth, and permits the sugar liquor to pass through, with all cloudiness removed. The clarified liquor then flows to open tanks (21) which act as reservoirs to supply liquor to the bone char filters. Bone charcoal has a remarkable capacity for decolorization and purification, and merely by passing these sugar liquors through a layer of this charcoal, or bone char as the refiner calls it, a wonderful result is obtained, for the filtered material is found to be perfectly colorless and remarkably pure, having lost its mineral and other impurities, these having been retained by the char. The liquor is led from the tanks through swivel connections (22) to the char filters (23) and passes slowly through the 18 to 20

feet of bone charcoal, eventually arriving at the char filtered liquor gallery (24) where rows of samples, taken periodically, indicate the efficiency of each char filter. The syrup or molasses, which was washed from the raw sugar, and flowed into the tank (14) is commonly called "washings" or "greens," and is treated much like the washed sugar liquor, having its own system of blow-ups, filter presses and tanks, and it is also allowed to flow into the char filter, after the char has been partially exhausted by the washed sugar liquor running through for some hours. These washings flow through the char filter, forcing out the washed sugar liquor ahead of them. The char filters have been able to decolorize the washings to a remarkable degree, but they are still considerably darker than the washed sugar liquor, and the man in charge readily notices the change of color, and turns the





flow into another one of the several channels which are provided, the darker material going back for further char filtration, and eventually producing soft or brown sugars.

The washings are followed upon the char filters by hot water, which forces out the washings, producing some dilution due to mixing of the two over a short period. This diluted material is called "sweet water," and after it has become so dilute that the sugar content is not worth recovering, the wash water is allowed to flow into the sewer for several hours, until the char has been washed nearly free from all soluble substances. When washing of the char has been stopped, compressed air is turned into the filter, and all possible water is blown out. Then a large manhole is opened at the bottom of the filter, and the char drops through discharge pipes (25) to the spent

char hopper (26) below. At this point, the recovery of the bone char begins, and by suitable treatment the char may be used over and over for at least 200 times.

First, the char moves down through the dryer (27) which is heated by the flue gases from the kiln (28) on the floor below. This kiln is composed of a large number of oval shaped cast iron pipes standing on end on either side of a large firebox. The char passes from the dryers down through these pipes, and is heated to a dull red, which burns off such impurities as the wash water did not remove. It then flows down through sheet iron cooling pipes (29) below the firebox, and finally issues slowly at the bottom through a gate which opens occasionally to permit a small quantity to drop into the receiving hopper (30). It then flows on to belt conveyors (31) carrying it to a bucket elevator (32) where it again starts





on its cycle of usefulness through a spout (33) to the char filters.

A refinery may have as many as 120 char filters, each holding 25 to 40 tons of bone charcoal, and these filters are used in rotation; some being used for sugar liquor, some for other refiltered products, and others being washed, discharged or refilled. The kilns have a special smokestack (34) to carry away the gases from the kiln fires.

The high grade liquors from the liquor gallery are pumped to receiving tanks (35) on the pan floor, where they are drawn into the vacuum pan (36) to be evaporated, and again formed into crystals. A vacuum pan is a large enclosed tank, usually made of copper or cast iron, from which the air is pumped, so permitting the liquor to boil and evaporate at 100 degrees, or more, cooler than would be possible in the open

air. Vacuum pans are capable of producing up to 250 barrels of sugar at a charge. They are heated by internal copper coils or steam chests, the condensed steam passing from the coils through steam traps (37) which permit the condensed steam to issue from the heater coils. The picture shows a coil pan with a steam manifold (38) where the coils enter the pan, and a condensate manifold (39) below. The boiling of sugar is an art requiring considerable experience on the part of the sugar boiler. Crystals are formed in a small amount of liquor, and are built up by successive additions of liquor until the pan is filled to the required height. Small samples are removed from the pan at intervals by means of a proof stick (40). By inspection of these samples, the size of the grain may be controlled. The front of the pan is provided with sight glasses and control gauges (41) which enable the sugar



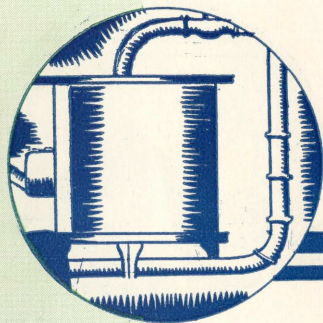


boiler to observe the material inside the vacuum pan, and also to control the temperature. The thickened mass is called "massecuite" or "magma," and care is taken that it shall not fill the pan too full. If small amounts are carried over with the escaping vapors, they are caught in the catch-all (42) which contains plates arranged to intercept any droplets containing sugar. The vapors pass into the condenser (43) where a spray of cooling water condenses them.

On the floor below, a vacuum pump (44) continually exhausts the air from the vacuum pan, together with any incondensable gases which may form during the boiling. When the pan is full, the steam is turned off, the air let in, and the pan discharged into a mixer (45) beneath, similar to that used in the wash house. A sample is taken, which is kept in a rack on the pan floor,

and the warm magma then goes to centrifugal machines (46) where the uncrystallized syrup is spun from the crystals, and after washing with water, the crystals are discharged through the bottom of the centrifugals into a wet sugar bin (47). The syrup from these machines runs to tanks (48). This latter syrup is reboiled as long as white sugar can be obtained from it, and then it is returned to the bone char for further purification.

Near the bins, we usually find evaporating equipment to remove the water contained in the diluted sweet water previously described. This evaporating apparatus is usually a triple effect (49) in which a vacuum is used in such a way that the first body is heated by exhaust steam from the power plant, then the second body is made to boil by the warm vapors coming from the first body, and the third body by vapors from

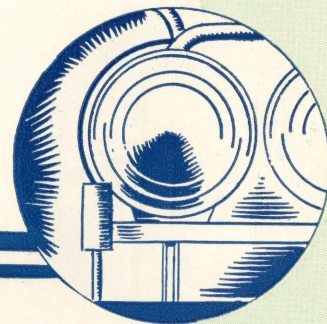




the second body. This is accomplished by gradually increasing the vacuum in the successive bodies. As considerable sweet water has to be evaporated, this method saves a very great amount of steam. The vapors from the third body pass into a small condenser (50) in the same manner as the vapors from the vacuum pan. The evaporated sweet water from the triple effect apparatus flows down to a receiving tank (51) and is pumped from there to the blow-ups. Most of the sugar from the wet sugar bin (47) flows down to the upper granulator (52) which is a revolving iron cylinder, having flights or steps inside, which repeatedly raise the sugar and drop it through a current of warm air, which is heated by the large radiator (53) and is sucked in by a fan (54) at the opposite end. It then passes to the lower granulator (55) where the drying is finished, and the sugar is

cooled before packing. This granulator has an exhaust fan (56) but no radiator. Large pumps (57) are required to provide the immense quantities of cooling water for the condensers. A sealpot (58) is provided on the lowest floor, and a hot well (59) for condensed steam. A wet sugar conveyor (60) carries part of the sugar from the bin (47) to the wet sugar hopper (61) over the tablet machine (62). It is mixed in the mixing scroll (63) with syrup and goes on into the tablet machine, where it is pressed into small blocks, and dropped upon plates which are placed in a drying oven (64) until the blocks or tablets are dry. Then they are removed, and packed with various automatic packing equipment (65). The final packages are put in containers, and rolled to the shipping floor on a rollator (66).

The sugar from the lower granulator is raised





by a bucket elevator (67) and passes through a vibrating screen (68) which classifies the sugar according to the size of the crystals. It then flows down to the dry sugar bins (69), barrel packing equipment (70), bag filling machines (71) and small package machines (72). These mechanical devices seem more than human in the exactness with which they weigh and pack the sugar without contact with human hands, and in a wonderfully clean and careful manner. The small packages are put into various containers, and passed to the floor below from which shipments are made by trucks (73) for local delivery, freight cars (74) for more distant shipment, and from tank (75) sugar in liquid form is delivered by tank trucks (76) to various manufacturers, to preservers and to blenders of syrup.

The steam requirements for sugar refining

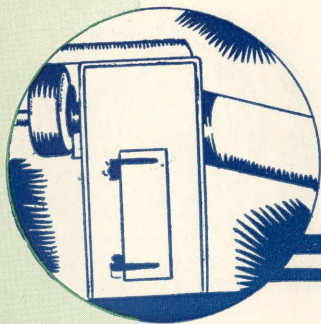
are very large, and an efficient modern type of boiler house (77) is required to produce sufficient steam and power to operate these great plants.

It is hoped that you have gained a greater appreciation of the work that the sugar refiner is doing to produce for your satisfaction the sugar which is such an essential part of your diet, and which comes to you in many convenient forms and packages. It is hoped that in the future sugar will have an added meaning, because you will know more about the manner in which it is prepared for your use.

Innumerable grades of sugar are manufactured, a list of which is included later in this book.

DO YOU KNOW that . . . .

Sugar, although known for more than 2,000





years, has been in everyday use for but 200. . . .

We owe the discovery of cane sugar to the Bengalese in India. As long ago as the third or fourth century A.D., travelers from India brought back news of "Indian Salt." From the fifth century we can trace its spread into Arabia, Egypt, Spain, Portugal, Canary Islands, Brazil, Cuba, and so on around the world. . . .

Columbus, on his second voyage to the New World, brought sugar cane with him and planted it in San Domingo, according to legendary records of that country. This was in 1493 or 1494. . . .

Sugar in the fourteenth and fifteenth centuries in England cost from \$5 to \$10 a pound. . . .

When Queen Elizabeth established the

elegance of the custom of using sugar in the conservative British world by serving it at her table, its place was assured in the dietary customs of Europe. . . .

In 1816 the combined output of the refineries of New York City was 9,000,000 pounds—for the whole year. Now, The National Sugar Refining Company's daily output is more than 10,000,000 pounds. . . .

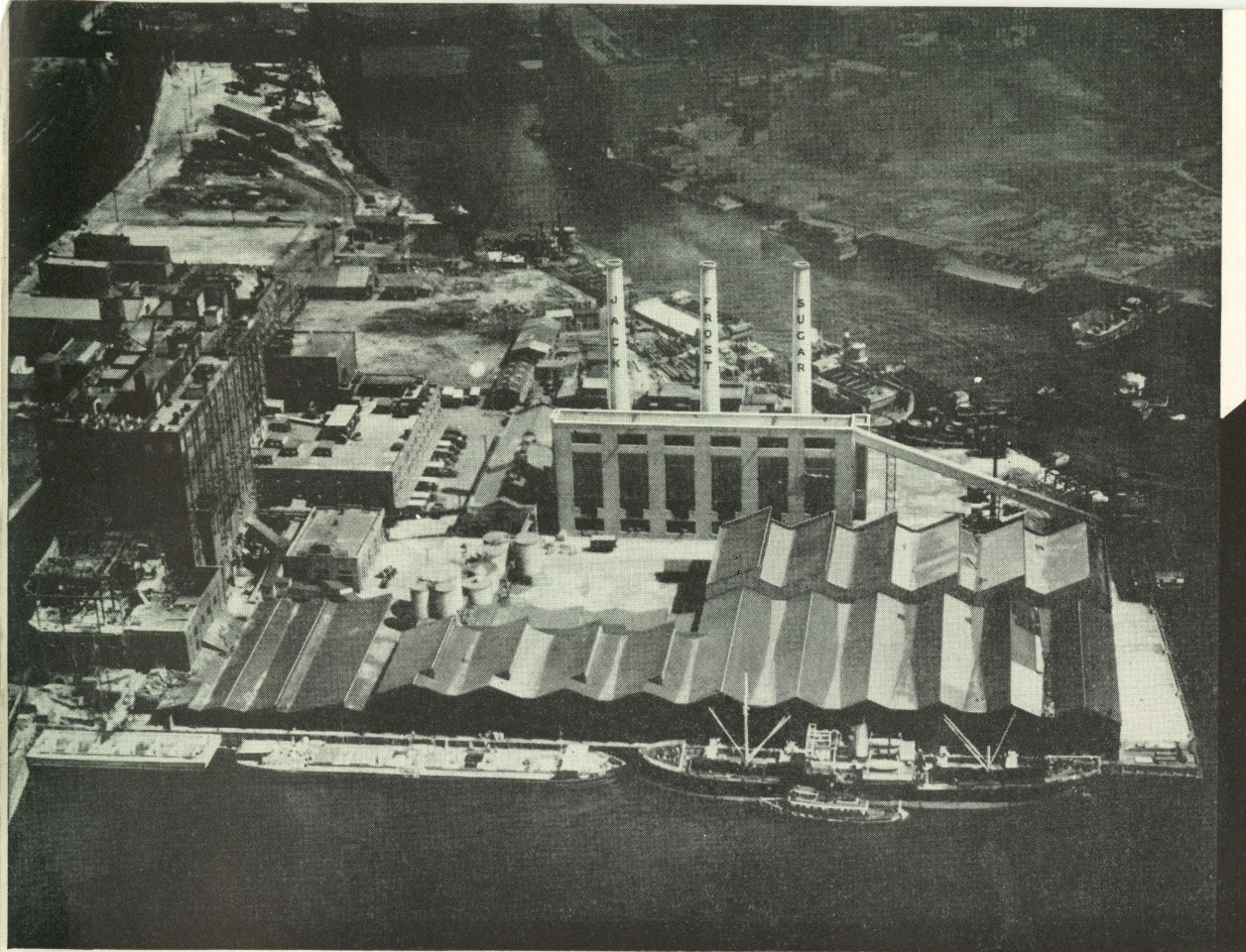
During the middle ages sugar was delivered wrapped in straw in the shape of hats. . . .

Moorish apothecaries prized sugar as a valuable medicine. . . .

During Oliver Cromwell's rule in England, prisoners of war were sold to Barbados sugar planters for about 1500 pounds of sugar. . . .







A Home of Jack Frost Sugars,  
on the East River, Long Island  
City, N. Y., "across the  
bridge" from Manhattan.

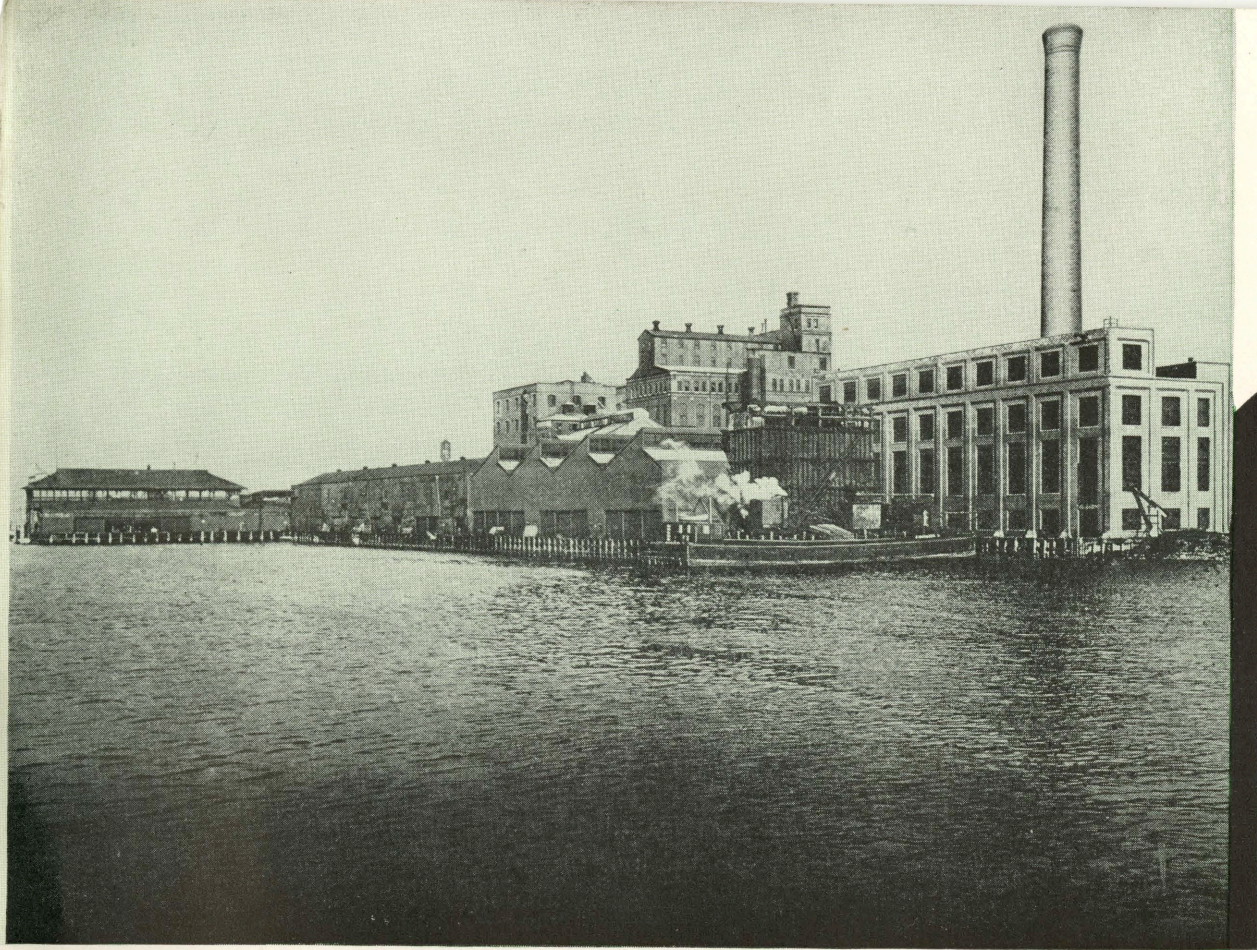




Another home of Jack Frost Sugars at Edgewater, N. J., on the Hudson River, within view of New York's magnificent sky-line.







The third home of Jack Frost Sugars, also on the Hudson River, at Yonkers, N. Y., facing the beautiful Palisades of New Jersey.



**A**N announcement appeared in the New York Gazette, August 17, 1730, to the effect that: "PUBLIC NOTICE is hereby given that Nicholas Bayard of the City of New York has erected a refining house for refining all sorts of sugar and sugar candy and has secured from Europe an experienced artist in that mystery." That was the beginning of sugar refining in this country. Glance at the cross section illustration of a modern refinery inserted in the back of this book and see what a highly scientific procedure it is today.

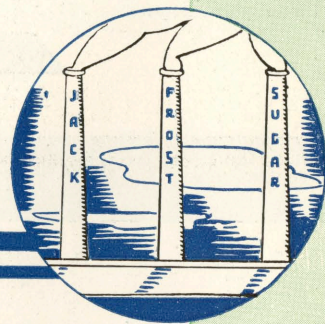
Three such modern plants are operated by The National Sugar Refining Co. of N. J. At each plant the same procedure is followed. Raw sugar is received at the wharf, weighed in, mixed, melted, purified, boiled, crystalized, dried and packed, as shown graphically in the illustration of the model exhibited at the Chicago Exposition. To-

gether the three National Sugar Refining Co. plants represent a working area of 1,652,593 square feet, with a river frontage of 7,413 feet, and occupy a total land area of 61 acres. Such is the vast machinery and organization required to satisfy America's gargantuan sugar appetite of 5,500,000 tons a year.

The distribution of this enormous sugar tonnage furnishes employment to countless thousands of brokers, jobbers, grocers, bakers, confectioners, truckmen, trainmen.

On its way to the public, sugar passes through 634,000 retail outlets—433,000 American grocery, bakery and other food stores, 66,000 candy stores, and 135,000 restaurants.

These figures will help you appreciate the tremendous influence the sugar industry exerts upon the wealth—as well as the health—of the country.





# NATIONAL SUGAR FOR MANUFACTURERS

To best meet the requirements of the many manufacturers using sugar for a wide range and variety of purposes, the following grades of sugar are offered, these, however, not being listed in the order of their relative importance.

## Coating Sugar

Fruit Powdered Sugar

Extra Fine Granulated

Fine Granulated

Manufacturer's Granulated

Medium Granulated

Standard Granulated

Coarse Granulated

Sanding Sugar

Coarse Sanding Sugar

Brilliant Confectioner's A Sugar

Confectioner's Standard A Sugar

XXXX Powdered Sugar

XXXXXX Powdered Sugar

Standard Powdered Sugar

Coarse Powdered Sugar

XXXX Powdered Non-Caking Sugar

Standard Powdered Non-Caking Sugar

Thermophree Sugar

## Soft Sugars:

No. 1 Admiral "A"

No. 2 Berkshire "A"

No. 3 Cascade "A"

No. 4 Dartmouth "A"

No. 5 Excelsior "A"

No. 6 Aurora Ex. C

No. 7 Bedford Ex. C

No. 8 Calumet Ex. C

No. 9 Diamond Ex. C

No. 10 Lenox Ex. C

No. 11 Oriental Yellow Ex. C

No. 12 Sunrise Yellow Ex. C

No. 13 Neptune Yellow Ex. C

No. 14

No. 15

Invert Sugar Syrup

Invert Sugar Mush

50-50 Invert Sugar Syrup

Krist-o-Kleer Invert Sugar (in cans containing 50 lbs. solid material)

Sugar Liquor No. 1

Sugar Liquor No. 2

Syrugold Syrup

## TRANSFORMED SUGARS

Transformed Sugars made by The National Sugar Refining Co. of N. J., are perhaps the most startling development in the refining industry. Made only by The National Sugar Refining Co. of N. J., under an exclusive process, this group of transformed sugars has enabled many manufacturers to materially increase the quality of their products while radically decreasing production costs.

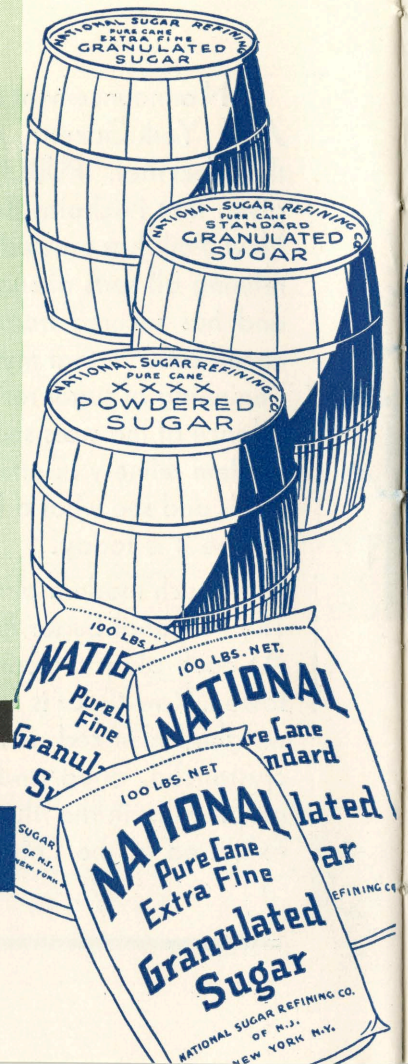
## Transformed Sugars:

Frostolite Sugar Duskolite Sugar

Clarolite Sugar Dimolite Sugar

Ambolite Sugar Fluffolite Sugar

Ebolite Sugar





# JACK FROST PACKAGED SUGAR

## IS THE QUALITY SUGAR OF AMERICA

There is a kind for every cooking need and table service. Packed in neat, distinctive, sanitary packages of convenient size. Each is 100% pure cane sugar.

Pure cane sugar, as refined in this country, has established a definite standard of quality by which America's sugar values are measured and judged.

The principal items in the Jack Frost Packaged Sugar family for home use are:

Granulated (2 lbs.)

Granulated (5 lbs.)

Granulated (10 lb. bags)

Granulated (25 lb. bags)

Powdered

Confectioners XXXX

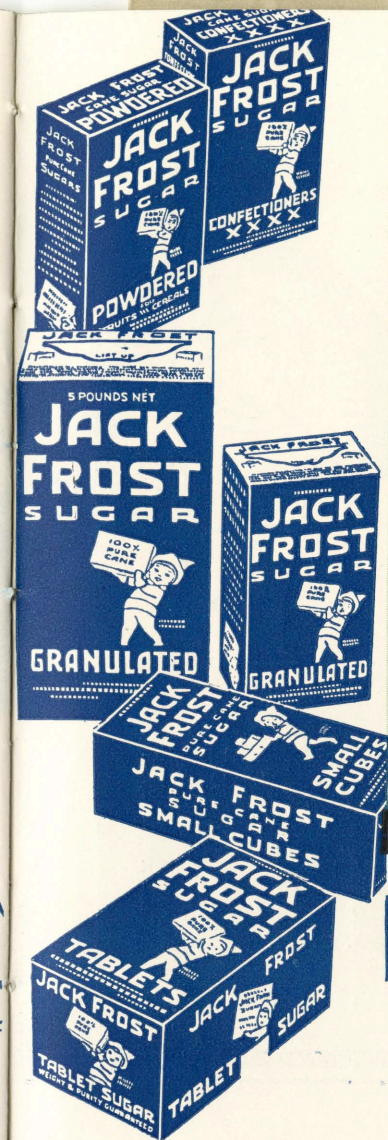
Light Brown

Dark Brown

Tablets (2 lbs.)

Small Cubes

Cinnamon and Sugar





THE NATIONAL SUGAR REFINING CO. OF N. J.  
129 Front Street New York, N. Y.  
Refineries at Long Island City, N. Y.; Edgewater, N. J.; and Yonkers, N. Y.



PURE Cane Sugar as refined in this country has established a definite standard of quality by which America's sugar values are measured and judged. Be certain that the sugar you and your family use is pure, clean, wholesome cane sugar. You can know this if you buy Jack Frost Packaged Sugar.

For your protection Jack Frost Sugar is sold in packages that are at once identified by the Jack Frost trade mark. Each is 100% Pure Cane Sugar, absolutely clean, uniformly fine. Every pound of Jack Frost Sugar is refined in the U. S. A., and guaranteed by The National Sugar Refining Co. of N. J.

PRINTED IN U. S. A.



25 LBS NET WEIGHT

# JACK FROST



## CANE SUGAR GRANULATED

THE NATIONAL SUGAR REFINING CO. OF N.Y.  
129 FRONT STREET NEW YORK

This is the well-known family of  
Jack Frost Packaged Sugar

*The Quality Sugar of America*

A kind for every purpose, in neat,  
convenient, sanitary packages or bags

5 POUNDS NET

# JACK FROST SUGAR



## GRANULATED

THE NATIONAL SUGAR REFINING CO. OF N.Y.  
129 FRONT STREET NEW YORK

# JACK FROST SUGAR



## GRANULATED

# JACK FROST SUGAR



## CONFECTIONERS XXX

# JACK FROST SUGAR

## LIGHT BROWN



## LIGHT BROWN

10 LBS NET WEIGHT

# JACK FROST



## CANE SUGAR GRANULATED

THE NATIONAL SUGAR REFINING CO. OF N.Y.  
129 FRONT STREET NEW YORK

# JACK FROST SUGAR

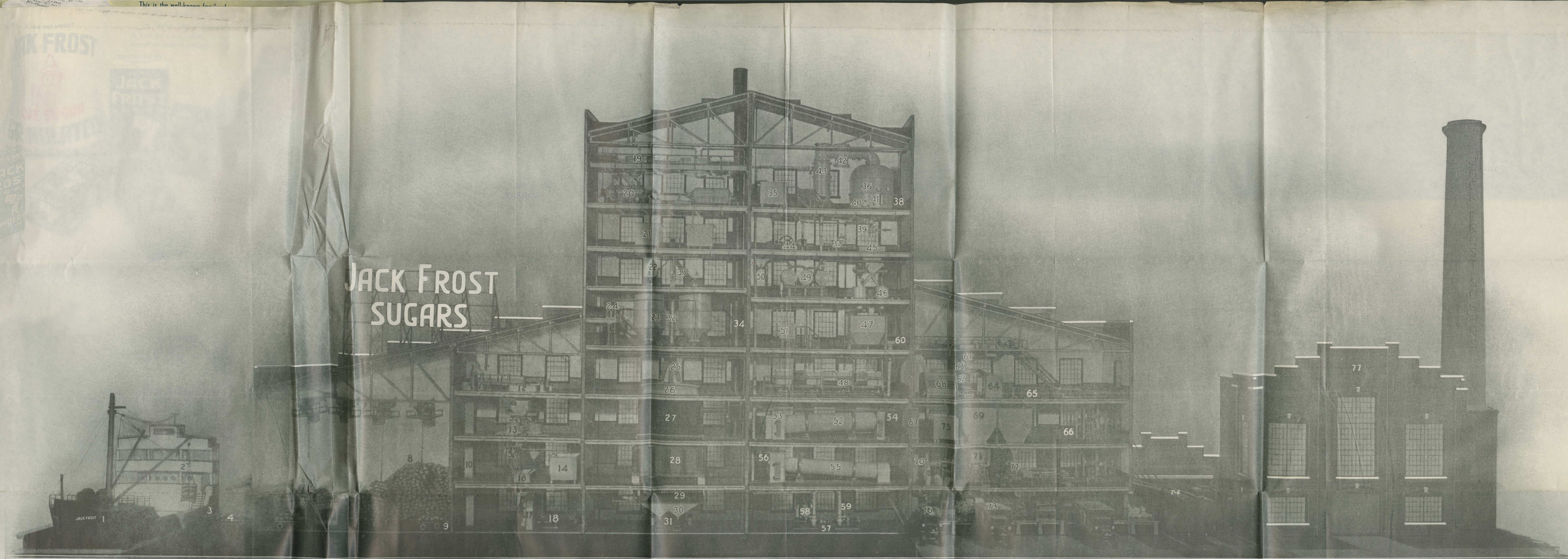
## DARK BROWN



## DARK BROWN







JACK FROST  
SUGARS

## HOW CANE SUGAR IS REFINED

Model of one of The National Sugar Refining Company's modern plants, as exhibited at "A Century of Progress" International Exposition, Chicago, Ill., 1933

Explanation of the numbers that appear in the illustration above will be found in "The Story of Sugar", prepared by The National Sugar Refining Co. of N. J. as an appropriate souvenir of the Chicago Exposition. On page 8 of this book the reader is started on a journey through a modern sugar refinery. Each stage in the manufacturing procedure is explained and iden-

tified by numerals that correspond with those shown on the picture above. With this picture before you as you read the text you will see just how cane sugar is refined. The original model from which this illustration was made measures 19 feet across, is reproduced to exact scale and is complete and accurate in the smallest detail.



