3

1900-13

908

V. K. Liepelin

Here's a Good One on Polar Discoveries!

IT was a dark night. A man was riding a bicycle with no lamp. He came to a cross-roads where there was nothing but a sign-post. He knew not which way to turn. He felt in his pocket for a match. He found but one. Climbing to the top of the pole, he lit the match carefully, and in the ensuing glimmer read:

"WET PAINT."

The Chame

A brief history of the "OLD DUTCH PROCESS" of corroding lead.

by L.G. Burr

[This is the first of a series of articles to be prepared by Mr. Burr, the Manager of our White Lead Department at Pullman. The series will cover, in addition to this article, "White Lead Processes," "Our Facilities," "Our Motto and Our Brand," and "Looking Forward." We commend the series most heartily to the careful reading of every Sherwin-Williams representative and employee, as it will give the complete details of our new proposition.—Ed.]

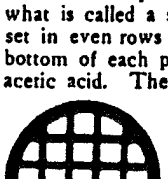
Mr. L. G. Burr.

THE method employed in England and in the United States in the production of white lead, except for a limited amount, is that known as the "Dutch Process." In other words the Dutch are generally credited with the discovery of this successful method, though this contention is disputed by many. For instance, in an old Roman work written about 300 B. C., we find the following: "Lead is placed in earthern vessels over sharp vinegar, and after it has acquired some thickness of a sort of rust, which it does in about ten days, they open the vessel and scrape it off." There are many references which could be quoted to show that lead was manufactured in many other countries of Europe prior to the period usually referred to for the establishment of the industry in Holland, i. e., the sixteenth century.

When metallic lead is exposed to the action of the air and moisture it becomes covered with a white substance composed of carbonate and hydrated protoxide of lead, which is the white lead of commerce. By the Dutch process white lead is produced by artificially creating these conditions and submitting metallic lead to the corroding effects of a warm atmosphere loaded with the vapors of carbondioxide (carbonic acid gas) of acetic acid and of steam. The indications are that the chemical process in the corrosion of lead by the Dutch process involves at the start the oxidation of the lead and the formation of basic lead acetate: that is, basic lead acetate is decomposed by the carbon dioxide present, the basic lead being precipitated as white lead, and the neutral acetate again acting on more metallic lead is changed into the basic form ready to be acted upon again by the carbon dioxide, and so continuing as long as all the conditions requisite are present. Let this suffice for the chemical process which is undergone by the metallic lead and pass on to the method of handling the lead in the corroding stacks.

Quoting from an old work, we have the fol
used in Rotterdam and Amsterdam: "The lead
sheets, which were rolled in a spiral and placed
to eight inches high and four to five inches in
at the top than at the bottom. To prevent th
the bottom they placed inside the pot, and at a
depth, a piece of wood cut the length of the diam
was the Rotterdam method. At Amsterdam t
moulded in the inside of the pot, and at about
three little points which served instead of the woo
The stacks were built in one range of four, ea
square. After the pots had been filled up to ar
vinegar, and the spiral lead placed in position in
arranged in rows in the stack upon a bed of dun
pots were placed together as closely as possible, a
covered with the pots, plates of lead were laid
whole layer covered with boards. These boards w
dung and another tier of pots placed as before, fi
lead and covered in the same manner. This w
tiers or layers were built up. The lead was le
four to five weeks, 'according,' Jars says, 'to the
ity of the dung.'" This method, in so far as co
is virtually the same as is in use today, except tha
which has been used in tanning operations) is use
a flat lead plate (called a buckle) instead of a
further fact that the thermometer and ventilating
tant part in the handling of the stacks of today.

The process of today is as follows: A bed
tanbark of say fourteen inches depth is spread
what is called a stack. Upon this bed of bark a
set in even rows hundreds of corroding pots. In t
bottom of each pot is placed about a pint of 2½
acetic acid. The pot is then filled to the top wi
lead buckles, each of which weig
about three-quarters of a poun
When the entire space is fille
except for a tan wall on four side
a ventilating pipe with a two-in
placed in position at or about the
surface is covered with a layer
boards. Upon the boards is pla
another layer of tanbark, then m
pots, acid and lead, and so on until the stack is fil
to its limit, and the stack is then finished and rea
to be manipulated by the corroder. The hole in
top of each vent pipe is provided with a small pe
shaped button, which is used to regulate the fl
of the vapor from each bed, as the temperature



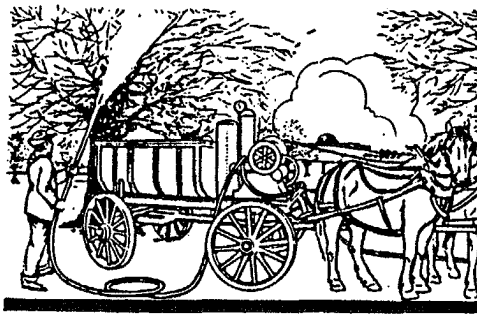
A Lead Buckle.

indicated by the thermometer and as the judgment of the corroder indicates. When the beds are closed, heat is generated by slow combustion in the tanbark, and at the same time oxidation takes place. The heat also evaporates the acetic acid, which attacks the lead oxide and forms a basic acetate of lead, which, when combined with the carbonic acid gas generated by the combustion in the tanbark, forms what is known as the white lead of commerce. The process requires approximately one hundred and twenty days from start to finish, or from the time of starting to put the lead in until it has all been taken out.

The results as to the percentage of lead corroded and the percentage of increase in weight vary in nearly every stack. The former is likely to be anywhere from 70 to 100 per cent, and I venture to say that year in and year out the average of all factories will not show over an 80 per cent corrosion. The increase does not vary greatly and it will be found that for every one hundred pounds of metal corroded there will be taken out from one hundred and twenty-four to one hundred and twenty-six pounds, or an increase of 24 to 26 per cent.

This ends the first step in the process, and all that remains is to put the lead in proper shape for the market. To do this the lead is first passed through a system of screens and rolls so that all metallic lead may be taken out; it then passes over to where it is put into water in order to pass it on to the mills to be ground to a proper degree of fineness and then pumped to a washing and floating system. The lead must be thoroughly washed to take out the acetic acid which remains in the lead from the process of corrosion. There then remains only to take out any tanbark which may have dropped in with the lead, settle out the coarse parts to be reground and float on the fine particles to the settling system, from whence it is pumped on to dry pans and the water evaporated. We then have our strictly pure dry white lead, ready to be pulverized, packed in barrels and sent to our various plants or ground in oil and sent into the market.

A Pig of Lead.



An Address on Insecticides Deliv
Richland County, Ill., Horticult

PREPARED BY H. M. ASHBY.

HE two most important spray material today are Lime-Sulfur and Arsenate of is steadily gaining ground that with t orchardist can combat any insect or fu two possible exceptions.

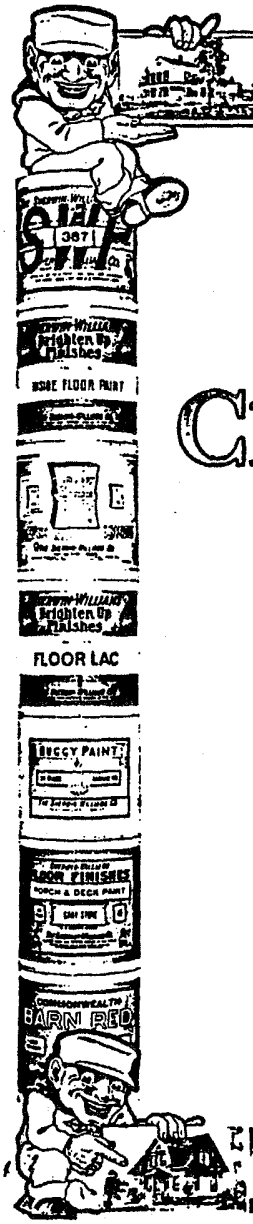
Since the Illinois Horticultural Soci paign I have had the pleasure of attendi society meetings in which it was brought out very p most advanced orchardists had experimented duri Lime-Sulfur as a summer spray in place of Borde had entire satisfaction. It is also being definitely meetings that Lime-Sulfur as a winter spray for the great deal in controlling subsequent development of the summer spray very materially.

Sherwin-Williams Lime-Sulfur Solution is a st Calcium Pentasulfide—that is to say, it is a very st composed of calcium combined with all the sulfur it and still stay in solution. This material tests not and is less liable to crystallize than those solution the old combination of lime and sulfur salts contain very apt to crystallize out in a hard, granular crystal clogging up the spray nozzle.

The use of Lime-Sulfur as a summer spray has experimentation behind it to warrant any careful, co using it, at least to a limited extent on his orchard, tatingly recommend any man to try it on a portion great care in so doing. We do not feel, however sufficiently far advanced for us to go out and make tions that Lime-Sulfur mixed with Arsenate of Lead

GEE, but these birthdays and short months have put a crimp in me for fair. Guess I'll have to stay out of Saint Patrick's parade on the 17th of March to make up for lost time.

The Little Paint Man



The Chamele

MARCH 191

The Chamel

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Canal Road, N. W., Cleveland, for the interes
benefit of THE SHERWIN-WILLIAMS Co.'s loyal

VOL. XIII. MARCH, 1910

S W P vs. LEAD AND

BY J. K. KENNEDY, OF THE MISSISSIPPI VALLEY

Mr. J. K. Kennedy.

MUCH has been writt
said concerning the re
paint and lead and oil, ar
toward showing why mixe
nomical to the house own
to the dealer than white
mixed by hand.

It seems to me that
viz., the painter, has been
due mainly perhaps to the
in most cases would use wh
sired in order to get the
dealer handled or recomm
quality.

Again, the painter, th
building mechanics—the
for all the other mechanic
to be the very last one to be consulted as to wh
is due largely to the erroneous idea, perhaps, that a
beat and will dope a job whenever they get a chanc

My experience is that if folks would trust the
much as they do their contractor, and put him on h
get even more from him than he agrees to give ther

But the point I wish to call to your attention in
the practical painter should use S W P."

The idea that a painter will be ridiculed, conc
not knowing his business because he uses S W P is
great delusion that has kept white lead and oil as th
idolized by painters.

And, again, some cling to lead and oil because
of mystery around their manipulation of it and c
of their superior knowledge. This is another fall
painter tells his intelligent customer that white lead
paint to use on his building he is literally insulting

client by practically telling him that all trades and sciences have advanced during the past twenty-five years, but that the paint business has stood still and remains just where it was twenty-five years ago.

Now you can't cram that statement down any thinking man's throat, for every well posted house owner today knows that the advances in good paint making have kept pace with the triumphs of modern engineering skill. The durability and economy of S W P have been proven by the most searching investigations and tests, and the unswerving conclusion is that (by reason of its admitted superiority under tests) the S W P of today is the correct paint for general use. In other words S W P is your old-fashioned lead and oil prepared in an up-to-date manner.

Does the painter *know* his lead is strictly pure? Is he certain it does not carry 5%, 10% or even 15% adulteration? Does he know that all proper care and precaution have been taken in its manufacture? How about his oil? is he absolutely certain that it is not adulterated? And his turpentine—does he *know* it is chemically pure?

Then there is that probability of trouble with the drier. What is it made of? Does the painter know? And his tinting colors—are they strictly pure and does he know what kind of oil they are ground in?

How is the painter to know that the above ingredients are all pure and just what they should be? Does he test each and every one of them out himself or have them analyzed by an expert paint chemist to be sure they are right?

Is the painter certain that his japan will not burn the very life out of his oil? Does he put just exactly the same amount of oil, turpentine and japan to each 100 lbs. of white lead for second coating on outside work or does he *guess* at the amount each time he mixes up 100 lbs. of white lead?

There is not one painter in a hundred who is positive of these conditions, and there is not one in twenty that can tell you offhand how much oil, turpentine and japan are required to correctly reduce 100 lbs. of white lead to the proper consistency for second coating; and, furthermore, there is not one in twenty that can tell you offhand how many feet of surface 100 lbs. of white lead properly mixed for second coating will cover.

The majority buy whatever is offered as pure and go ahead *guessing* as painters have done from time immemorial. Sometimes they hit it right and get a fairly good job, and again it goes all to pieces in a short time, and they wonder why. Their customers also wonder why, and blame or praise them accordingly.

And this is the real reason that painters are largely looked upon as dopesters. It is their idolized lead which is causing them all their trouble. But they close their eyes to the real cause and blame something else, refusing to see the clay feet of their idol.

Does the painter know what chemical changes will take place when he mixes together all this lead, oil, turpentine, japan and coloring matter that he doesn't know is pure? And after he has his paint all stirred up with a paddle, what has he? The result is a mixture of paint that is coarsely ground with one grinding in oil, while the lead is still wet from

its washing; a mixture which upon examinatio
would reveal undissolved lumps of lead; one whi
cover only 450 square feet one coat to the gallon
and plenty of elbow grease will have to be used to

When all this is done the painter must confes
what he has done or how long it will last after he h
other hand when he opens up a gallon can of SWP
a standard U. S. gallon of pure paint weighing 19
last degree of impalpable fineness. It is a pure w
blue or black added to kill the color of the oil, fo
extracted from the lead and zinc, and the oil cla
that will make a white mark on any other white ma
one that will work better and cover better than an
make or buy, one that carries more raw linseed o
all paint) than any other paint he could buy or poss

In other words, he has a strictly pure paint cor
mixed by the best skill known to science—by manu
their business over 40 years ago upon the rock
known today as the largest paint and varnish ma

Sherwin-Williams Paint, Prepared (S W P),
upon the label. This enables the painter to know a
tion of the paint.

Now let's see what the comparative costs of th

100 lbs. white lead costs		$7.50—	makes	2
4 gallons oil	"	3.28—	"	4
¼ gal. turpentine	"	.20—	"	
¼ gal. japan	"	.15—	"	
Labor mixing		.50		
		$11.63		7

7 gallons lead and oil covers 3,150 square feet, one c
4½ gallons S W P covers 3,150 square feet, one c

Clear saving first cost of material . . . . . .

In using lead and oil one is required to dip
gallons of paint to cover 3,150 square feet of surface
is required to dip up only 4½ gallons to cover the
means that on the given surface one is required
more of the lead and oil than S W P, to say nothing
ing down off the ladder or stage to get this extra
words, one is expending 30% more labor in appl
than would be required to apply the S W P. You
stop to pick up a nail that he had dropped, for his ti
the nail.

For illustration, let us say a painter spreads sev

NOTE—Mr. Kennedy's figures in the above are very conservat
existing a few weeks ago before they were as high as they are now.—E

oil in a day; his wages are $4.00 per day; 30% of this makes an additional $1.20 for labor above what SWP would require. This $1.20 lost labor plus $2.95 saving in the first cost of material plus 50c for mixing the lead equals $4.65, which is the actual loss on every 100 lbs. of lead he uses or $93.00 loss on every ton of white lead. Now, then, if he uses 10 tons per year, this would equal $930.00 per year, which is a pretty fair salary in itself. If he had been in business for 20 years this would amount to the handsome sum of $18,600.00.

Look at every one of our prosperous and successful machanics of to-day. They are the men who yesterday paid close attention to the details of their business—men who did not stop to pick up the nail, because, if they had, they never would have been successful.

Our representatives should call the painter's attention to the details of *his business.*

If the writer is right, it will be to your advantage to tell the painter to lay aside his old-time prejudice against everything but lead and oil. Tell him to try it out for himself—to paint two houses just alike in size and conditions, one with hand-mixed lead and oil and the other with SWP—and ask him to watch the results. He will be convinced that you are right and will make more money in his business this year than he ever made before.

My contention is based on 24 years of experience with S W P in many sections of the United States and the Philippine Islands at prices ranging from $1.75 per gallon in the United States to $2.50 per gallon in the Philippines.

The first argument a practical painter will usually advance is, "Mixed paint is no good; I use pure lead and oil and then I know what I have got." Well, let's pause a moment and see what he's got. The so-called strictly pure white lead is made by treating metallic lead with weak acetic acid (venegar), this gives Lead Acetate, which is treated with a carbon dioxide and water, leaving the white lead in a powdered form to be washed and ground in oil. If not sufficiently treated with carbon dioxide and water, the lead, instead of being washed, remains in the form of lead acetate, which will burn the life out of the oil, and, furthermore, if not sufficiently washed, free acetic acid remains, which also attacks the oil, killing its life and the durability of the pigments with which it is mixed. Thus the life of the paint is impaired.

When the dry white lead is being ground in oil it is possible to add 10% of an adulterant (usually Barium Sulphate) (Barytes).

Mr. Fallis Gives an Address.

Mr. W. S. Fallis, Sales Manager of the Winnipeg Sales Division, delivered an interesting address on "The Evolution of Paint and Varnish Manufacturing, and Application to Standardizing in Railway Finishes" before the Western Canada Railway Club recently.

The Sherwin-Williams Order of T
to December 1st, 190

Top-Notcher Manager,	Top-Notcher Pr
Mr. J. A. Bowman, Savannah Sales Division.	Mr. J. R. Stout,
Top-Notcher Salesman,	Top-Notcher Ca
Mr. H. McCallum, Cleveland Sales Division.	Mr. J. S. Covert,
Top-Notcher Superintendent,	Top-Notcher Ra
.....	Mr. W. B. Albri

Top-Notcher Mfg. Sales Representative
Mr. F. E. Draw, Eastern District.

General Standing Managers' Top-Notcher Competition. De

DIVISION	SALES MANAGER	PLACE	DIVISION	
Savannah,	Mr. J. A. Bowman, T. N.,	1	Kansas City,	
Los Angeles,	Mr. J. B. Kurtz, T. N.,	2	Chicago,	
Philadelphia,	Mr. C. P. Jarden, T. N. 3,	3	Dallas,	
Cleveland,	Mr. A. E. Kydd, T. N.,	4	St. Louis,	
Newark,	Mr. R. L. Graves, T. N.,	5	Winnipeg,	
Cincinnati,	Mr. W. W. Haynes, T. N.,	6	Omaha,	
Montreal,	Mr. R. C. Hisson,	7	Portland,	
San Francisco,	Mr. L. W. Wolcott, T. N.,	8	Boston,	

DIVISION	SALES MANAGER	PL
Minneapolis,	Mr. J. P. Coleman, T. N.,	

Top-Notcher Traveling Representatives. December

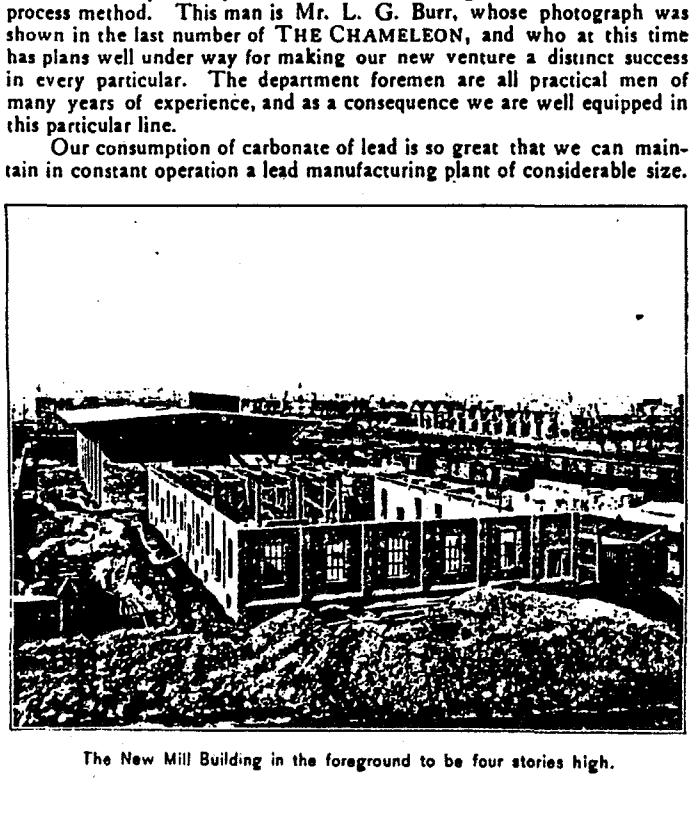
TRADE SALES DEPARTMENT	TR
Central District,	Pacific Coas
1—H. McCallum,	1—G.
2—B. L. Reynolds,	2—W.
3—F. B. Kellogg.	3—S.
Western District,	Atlantic Coas
1—F. A. Bush.	1—A.
2—R. Cluxton,	2—M.
3—G J. Manassa.	3—F.
Mississippi Valley District,	
1—W. V. Hammond,	New Englan
2—I. A Steger,	1—E.
3—G. K. Lois.	2—J.
Southwestern District,	Canadian Di
1—K. Miller,	1—J.
2—W. F. Hall,	2—H.
3—F. C. Kenower.	3—J.

Our Modern White Lead Facilities at Chicago.

THE Sherwin-Williams Company has for a long time produced the most important raw materials that enter into its manufactured products. That white lead has been left until nearly the last is due to the fact that it has required immense property, large investment and considerable preparation to install a corroding plant. But now, after our recent purchase of twelve acres of land adjoining our present plant property at Pullman (Chicago), which gives us a total of about thirty acres, we are able to set aside space for a lead plant and still leave room enough to enlarge it, as we expect will be necessary after we are once well under way in the business.

In starting a line of manufacture, the first thing to do is to have the right man in charge. We have secured as superintendent of the plant a man who has spent 26 years in lead manufacturing under the Old Dutch process method. This man is Mr. L. G. Burr, whose photograph was shown in the last number of THE CHAMELEON, and who at this time has plans well under way for making our new venture a distinct success in every particular. The department foremen are all practical men of many years of experience, and as a consequence we are well equipped in this particular line.

Our consumption of carbonate of lead is so great that we can maintain in constant operation a lead manufacturing plant of considerable size.



The New Mill Building in the foreground to be four stories high.

But as it is the policy of the company to make, sel
plete line of everything in the paint and varnish l
addition to manufacturing lead used as an ingred
products, we are called upon to offer to our trade
white lead of such quality as will be recognize
of the country. For this reason we have adapted
explained in detail in the last CHAMELEON.

Our new lead plant is well under way and t
being pushed vigorously, so that we expect to hav
all equipment installed and in active commission e
fact, we expect to be in a position to ship Sherw
Process (O D P) Strictly Pure White Lead not l
and we are prepared to book small orders now fo

In our illustrations we show two exterior vie
stands. The building which is practically comp
It is 213 feet long and 84 feet wide and contains
a capacity of 10,000 pots—each pot containing a

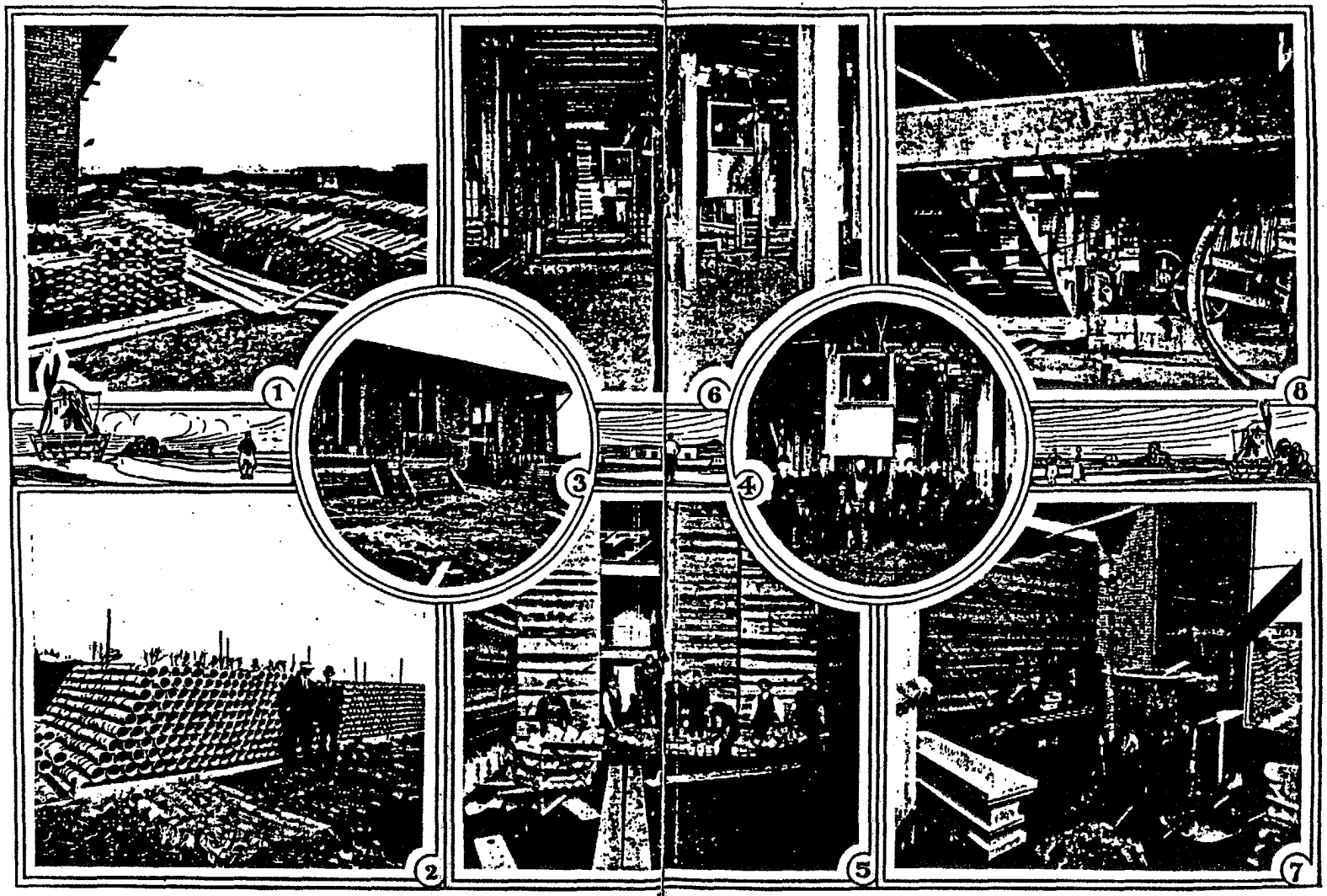
The mill building, the walls of which are onl
story, is 150 feet long and 75 feet wide, and whe
stories high. This building will contain the grin
kettles, the buckle casting machines, etc.

In the group illustration shown on our two c
number of views which have been taken around
and in order to give our readers a better understand
we have numbered them and the following is a de

Of course, the basis of all white lead is pi
shows a part of the large supply of pig lead which
and are putting into shape to put into the stacks.
be seen in this picture there is a total of about 3,2
sents, including labor, approximately $150,000.00
lead is the best double refined, silverized lead that
analyses which we have received from our Chemic
an infinitesimal amount of impurity. The signific
when you consider the fact that only the purest of
Old Dutch process, whereas, in all other processe
will answer the purpose. The conclusion natu
white lead in the market is therefore made by the

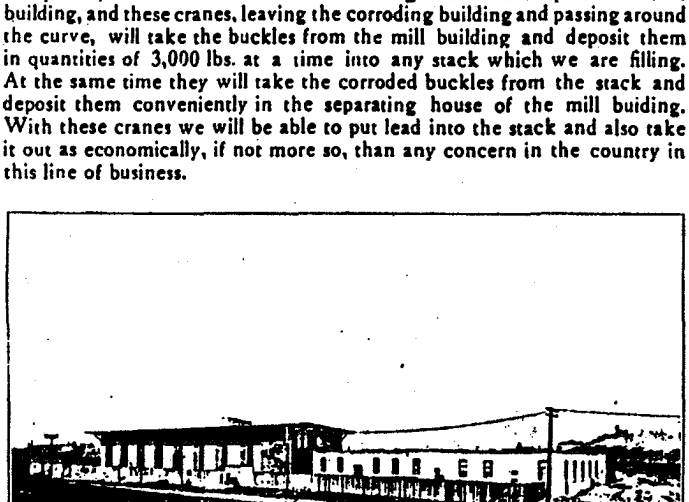
In view No. 2 is shown a pile containing 15,
ware corroding pots and is only a small part of the
rapidly being set into the stacks at this time. Wh
pletely filled we will have used about 160,000 of
pot will contain about 25 lbs. of lead you can ea
have over 4,000,000 lbs. of lead in the stack w
While there is some breakage each time that these
quite small, and they are used over and over many

View No. 3 does not require any special men
portion of the end of one side of the corroding bu
25,000 or 30,000 more of the corroding pots show



View taken in and about the new corroding building where we are corroding lead by the Old Dutch Process.

Views No. 4 and No. 6 show the upper deck between the two rows of corroding stacks, and the reader will notice the rail-guard for the stairways which lead to the decks below. There are three of these decks and their purpose will be better explained in connection with view No. 8 The upper deck is used only by the foreman or superintendent to enable him to readily direct the operations going on in various stacks on each side, and also to enable him to conveniently reach the top of each stack for the purpose of taking the temperatures. These two pictures show the two traveling cranes, which not only operate backwards and forwards through the entire space shown, but which also are so arranged as to leave the bridge behind to travel out over any individual stack. The work of these cranes is very important, as it makes the handling of material both into and out of the stacks very economical. When our mill building is completed, the buckle machine and a casting kettle will be placed in that building, and these cranes, leaving the corroding building and passing around the curve, will take the buckles from the mill building and deposit them in quantities of 3,000 lbs. at a time into any stack which we are filling. At the same time they will take the corroded buckles from the stack and deposit them conveniently in the separating house of the mill buiding. With these cranes we will be able to put lead into the stack and also take it out as economically, if not more so, than any concern in the country in this line of business.



Corroding Building, on left, containing 16 stacks.

View No. 5 shows the interior of the stack, which the pots are set, some of the pots in posit and three of the decks which are used for stori shows the crane in the operation of lowering a v down into the stack for use in filling these pots. the act of putting buckles into the pot, but this is the bed of bark shown is entirely covered with po lead, a layer of boards is placed over the top of i boards is placed another bed of tanbark, upon wh of pots, and so continuing until the entire stack successive layers of bark, pots and lumber.

View No. 7 shows the casting, kettle and buc porary location, and through the doorway can be supply of pig lead, explained in description of vie also shows the hoisting hook of one of the trave tach to a wheelbarrow loaded with buckles and re of the stacks. The buckle machine is simply an e upon which we will cast approximately 75,000 t You will also notice a pig of lead being fed into t chased our pure pig lead, it is only necessary to into these buckles in order to put it into convenie

View No. 8 was taken on one of the lower d store empty corroding pots. It also shows the deck above. The machinery which is shown is being only the temporary drive for the buckle stack is gone, instead of going to the expense of t pots outside and filling them, they will be rapidly decks and stored there until the stack is reset, w handily packed back into the stack. The saving considerable.

The above descriptions will enable our reade operations used in the manufacture of our white le of accuracy than could have been possible withou

We hope to show in the next CHAMELEON our packages, labels, and to tell how these goods trade. These matters have not yet been definitel being discussed at the present time.

The Little Paint Man

I'm ready any time now to write those full p our agents. I enclosed an order blank with the your agents haven't got it handy, tell 'em to just w write them the ad. But be dead sure to give me be either 7 columns wide, 6 columns wide or 5 col