

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, JANUARY 6, 1900.

NO. 17.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week.)

The Carter product is a good White Lead, fully up in quality and properties to the old Dutch process lead, and, as the case may be, considered by many experts on White Lead rather better and more uniform in every respect than the product of the latter.

Permit me to state that I myself have found by many quantitative analysis of Carter White Lead produced in different years and given to me for examination, that the constitution and composition of these samples did almost perfectly correspond with the analysis I made of the first keg of Carter's White Lead used by us in our works in 1890.

This uniformity I could not find in samples of White Lead produced by the old Dutch process. The samples under analytical examination showed sometimes a composition resembling that of White Lead made by the so-called precipitation process, that is, their compositions were in some cases very divergent from that which a good White Lead should show, viz: As accurately as possible, two parts carbonate to one part hydrated oxide of lead.

Furthermore, I might state that whenever we had trouble in our White Lead grinding department with White Lead paste getting hard and lumpy, in nine cases out of ten the lead undergoing the grinding or mixing was an old Dutch process lead.

As with so many new methods and processes of manufacturing, the Carter process had, and has still, to meet a certain proposition and prejudice, but the test of time will certainly, and has almost already, given the Carter White Lead its proper place, due to its superiority in quality and uniformity, as well as to its simple and quick method of production.

The main reason that this process is not yet adopted in general, and why so many corrodors don't abandon their old Dutch process, is doubtless because there is at the present time about thirty-five millions of

capital invested by these old style corrodors, and just as long as they can market their product through appeals to prejudice and ignorance, they will continue the antiquity argument, and not sustain the loss of the vast amount of money such a radical change would naturally necessitate. But the Carter process, or a still more scientifically improved one, will and must supplant the old and imperfect method of corrosion which has remained almost unchanged for centuries, the old Dutch process.

We come now to other processes for manufacturing of White Lead, such as the so-called precipitation process and chamber methods. They are not used in America.

The precipitation process of White Lead is either based on the precipitation of basic carbonate of lead by carbonic acid gas or by the alkali carbonates, such as soda or bi-carbonate of soda in a solution of basic acetate of lead.

Its principle is based on the fact that a solution of normal acetate of lead obtained by dissolving litharge or lead oxide in diluted acetic acid is capable to dissolve still more litharge, forming thus a basic acetate of lead solution, and that this superfluous litharge or the basic lead constituent of this solution, is precipitated out, or separated by carbonic acid introduced into this solution, the precipitation being a more or less basic carbonate of lead.

TO BE CONTINUED

What Do You Think of This?

Davenport, Ia. Dec. 26, '99.

Editor THOUGHTS:

For some time I have been thinking of a scheme that would help us to push New Era to the front more rapidly than through the "painter," who, we all know, is not always as reliable as he might be, even after he has been well treated and learned beyond a question of doubt that New Era Paint is a *be ter* article than he can make himself.

Why not assist those painters that are with us, and force those who are working against us to come our way by working a scheme with the "building contractor" from whom the painter gets nine-tenths of his

new work anyway? I would suggest writing the contractors, offering a certain amount of our New Era Paint to every one sending us a copy of an agreement with a certain painter, giving the name of the painter and also the name of the owner of the house. Then I would increase the offer until after he had put New Era Paint on about three houses. The contractor would have enough paint to paint his own residence. This could be worked through our merchant customers without any prejudice. Each representative could send in the names of one or two good contractors in each town.

If you think well of the scheme you can suggest it to the "family."

Respectfully Yours, No. 13.

Granite Floor Paint.

Detroit, Mich., Jan. 2, 1900

Editor THOUGHTS:

I for one believe we should have some scheme inducement of a special nature to further the sale of above goods. Everywhere you may go you will find "Senour's Floor Paint" on same basis of stability as our N. C. P. is with the trade and consumers in general. They have a nice line of advertising matter, with a special assortment price for opening orders, and give a number of sample quart cans for free distribution, letters to consumers, etc. On quality we have them beat, why can't we do the same thing on amount of sales? They also have in the past had special salesmen pushing that line only. If they have succeeded why can't we? Let's hear from some of the other salesmen on this subject. A happy and prosperous New Year for the Acme and all of its employees are the wishes of

Yours truly,

No. 8.

San Francisco, Cal., Dec. 21, '99.

Editor THOUGHTS:

I think the suggestion of No 8 in THOUGHTS Dec. 16, '99, as regards sample cards for painters, an excellent one, and one that I feel positive it would pay you to adopt.

Respectfully,

No. 15.

Thoughts

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VOL. I.

DETROIT, MICHIGAN, JANUARY 13, 1900.

NO. 18.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week.)

The chemical reaction may be expressed in the following:

Lead oxide and acetic acid, or normal acetate of lead.

Normal acetate of lead and lead oxide and water, or basic acetate of lead.

Basic acetate of lead and carbonic acid, or basic carbonate of lead (White Lead), or normal acetate of lead.

The normal acetate of lead which is thus reformed is then used over and over again for the preparation of a fresh solution of basic acetate of lead.

Theoretically there should be no loss of acetic acid or normal acetate of lead, but practically a small quantity of new acetate has to be added from time to time to make up for the little loss which does occur.

The process is used in France, and on an extraordinary large scale at Clichy, hence the name "Clichy" process, or "Thenard" process, after its inventor and promotor.

The litharge is dissolved in diluted acetic acid with the aid of steam, and to this normal acetate of lead solution a certain amount of fresh litharge is added again and dissolved likewise. The principal feature in preparing this (basic acetate of lead) is to obtain it in a certain strength of basicity, in order to obtain a proper and good basic carbonate of lead.

Into this solution, after it is purified by settling and filtering, carbonic acid gas is introduced.

The carbonic acid gas is generated by burning lime stone or chalk abundant in the vicinity of Clichy with coke in a system of furnaces.

The gas precipitates the White Lead, which is left to settle, and is then pumped into extra large vats and washed and dried in the same or a similar manner as in the previous described processes.

The product given by this process is fairly good, but liable to vary considerably in composition from time to time, according to the strength of the solution of basic acetate

of lead and to the basicity or proportion of lead oxide the normal lead acetate has dissolved.

We know that the character of a White Lead, both chemically and physically, effects materially its value as a pigment. The character of the Clichy lead will therefore depend upon the character of the solution of lead used: the temperature at which the reaction between the carbonic acid gas and the lead solution takes place, and last but not least, upon the strength of this solution.

The quantity of carbonic acid should be so regulated that not more than two-thirds of the basic lead in solution is converted into carbonate, if too much gas is used, then more will be liable to be converted into carbonate, and the White Lead has a strong tendency to become crystalline, instead of amorphous; the White Lead will lack then in covering capacity or body.

As a matter of fact it is very difficult to ascertain exactly when sufficient gas has been used and the above mentioned fault is one generally met with in the White Lead produced by the Clichy process. The strength of the solution will not have so much influence on the quality of the product; however, too strong a solution will precipitate a coarse White Lead, and as a rule weak solutions give a fine White Lead. Another drawback of this process is that the precipitation must take place always at the same temperature, that is to say, under exactly the same conditions of density and basicity of the solution in order to obtain a uniform White Lead in regard to composition and texture; for an increase of temperature facilitates the absorption of the carbonic acid gas, and herewith the formation of larger crystalline precipitations. The White Lead will be coarse, less amorphous and will be inferior in regard to body and covering capacity. The increase of carbonate of lead in such a White Lead naturally decreases the percentage of hydrated lead oxide in its construction, and therefore it will take less oil in the preparation into paint, it will cover less, or what is the same, it will not go as far as a good proper White Lead pound for pound. Furthermore, such a White Lead will not be combined with the vehicle "linseed oil" as well as a good

White Lead and consequently it has shorter life, the increased percentage of carbonate of lead causes it to "chalk off."

In the precipitation process, using carbonate of bi-carbonate of soda the tendency of the formation of White Lead with such an irregular constitution and composition, is even more pronounced than in the foregoing method.

The operations as a whole are the same, but instead of using carbonic acid gas as a precipitating agent a solution of soda is used.

No normal acetate of lead is reformed in conjunction with a more or less basic carbonate of lead, but acetate of soda, which is either sold as such or has to undergo a special process for the recovering of the acetic acid. Among many processes based on this, or a simpler method, the "Condy" process is the only one which was operated a short while, but as the result seemed to be so variable it was soon considered a complete failure from a commercial point of view and was therefore discontinued.

The other process for the manufacturing of White Lead which we will discuss more closely is the so-called "Chamber process," which is operated like the old Dutch process in large chambers and is carried on on the same principle; that is, metallic lead cast in grates, strips or plates, or as the Western Lead Co., in Denver, Colo., used to do, in a fibrous or threadlike form, is exposed to the simultaneous actions of acetic acid, water, steam and carbonic acid gas. The difference from the Dutch process is that these corrosive agents are generated, outside of the chamber and conducted or admitted by means of a pipe and spray system. The lead is placed in shallow dishes or trays on shelves inside of the chamber, the door is closed, the currents of steam, acetic acid vapors and carbonic acid gas are turned on.

The chemical action which proceeds is supposed to be the same as that which takes place in the old stack process. The acetic acid acts upon the lead, forming normal acetate of lead. This, under the action of the aqueous vapors, is transformed into a basic acetate of lead, and this in its turn is changed by the carbonic acid into basic carbonate of lead, or White Lead.

TO BE CONTINUED

THOUGHTS.

Papers Read at Our Anniversary Reception.

BY OUR PRESIDENT, MR. W. L. DAVIES.

It is perhaps needless for me to say that it gives me personally, as well as all the officers of the company, the greatest pleasure to have the privilege of meeting you once more on an occasion of this character. The initial gathering which occurred last year was so enjoyable in every particular, that we determined, if possible, that every year would witness a repetition. This yearly gathering gives us one and all a much desired opportunity to meet each other in a friendly, social way, and it is to be regretted that they cannot be held more frequently. It is true that our business association brings us all more or less in daily contact one with another, but the business side of the question is one thing and the social side another.

We should look upon our business organization as a co-operative institution and our interests as mutual, and upon that basis every one connected with the company in any capacity, should feel that in addition to the connection in a business way, there also exists a social connection, somewhat after the manner of a family relationship. We might almost call it. I should say, the "Acme family." In consequence, I look upon this as a yearly family gathering, and inasmuch as I had the honor of originally organizing the company, I presume that I can be looked upon in a measure as the father, and I can assure you, my children, that I am exceedingly proud of my family. I can look around me and see the faces of those that have been with this company almost from the organization of the business, and our long association naturally carries with it a feeling of mutual confidence, trust and esteem that is quite outside of a mere connection in a business way.

Since we last met, we have put into effect our system of co-operative management throughout our works. This system has now been in operation about six months with most gratifying results. As time goes on, and the system develops and becomes more effective through a better and clearer understanding of its possibilities, we hope and have every reason to expect results, which will be in every particular satisfactory to all concerned. We thoroughly believe that the success of any business enterprise depends to a great extent upon the loyalty, devotion and co-operation of everyone connected with it, from the lowest to the highest—not excepting one. Hence our organization should be looked upon by those connected with it from a co-operative standpoint, feeling that all our interests are mutual, and

realizing that the success and prosperity of the business is necessarily the concern of all.

I regret very much that this gathering of the "Acme family" does not include a greater number of our commercial missionaries, or traveling representatives. This important branch of the family is necessarily poorly represented. I have no doubt, that were they all with us, that they would assist very materially in making the evening one long to be remembered. There is no question that they would enjoy being present, as much as we would enjoy having them with us.

You must all have a thoroughly good time this evening. If you do not it will not be the fault of the "Acme." Let us all be merry and enjoy ourselves to the utmost extent. I will close my remarks with the sincere hope that all that are here to-night will also be present at our next family gathering, and that I may then also have the great pleasure of greeting you and bidding you welcome.

BY OUR SECRETARY, MR. THOMAS NEAL.

Mr. Toastmaster, Ladies and Gentlemen:

It is just fifteen years ago that this company began its business career, so that to-night we are not only enjoying the third anniversary dinner since we occupied our new plant, but our fifteenth birthday as well.

It seems to me prophetic that the fifteenth year of our business experience occurs in the closing year of the century, and in that year we incorporated in our business the "committee principle" of business and factory control and management.

It seems to me also that this is a happy combination of circumstances and means more to us than we at present realize. It's about this new business method that I wish to say a word to you to-night.

It has been said that: "The ordinary attitude of capital and labor toward each other is that of a prize fighter guarding against attack and standing ready to plant a blow. We believe the two are related to each other as the wings of a bird. It is when those wings co-operate that the bird rises heavenward, but clip one of those wings and it falls helpless to the ground. Industry is borne up by these two wings, capital and labor, clip either one and industry is crippled; they must move together before industry rises properly."

I think our employees are gradually coming to understand the importance to themselves of this new system. The company believes that employers owe something more than wages to the employees,

and that this system will bring happiness to the workers in our factory.

Now the company cannot do it all. We have the disposition to do a great many things for our employees that requires your co-operation in bringing about. The committees appointed to carry on the work can be aided immensely by the formation of several clubs or societies among themselves, to illustrate: A Young Women's Club, Men's Progress Club, band and orchestra, Glee Club, Relief Association—each society encouraging mental training and happy living.

What we should like to do for you pretty soon, is just this: Have a building erected, or a nice, light, well ventilated and heated room in the factory assigned to you, connected therewith nice bath-rooms, a dining room and kitchen for the preparation of lunches, a nice pleasant smoking room for the men and a library, so that during the rest hours our employees could secure the utmost pleasure and recreation during those intervals. We should like to see palms, flowers and pictures used freely among the furnishings. Then in addition to the coffee you are now furnished with, we would like also to provide a good hot bowl of soup. With your help these things can be brought about.

We want a band of makers who will make nothing but the best of paint, making it as good as they can. The factory to be free from racket, dirt or smoke. The floors as clean as a dinner plate, and if a drop of oil or paint is spilled, the culprit to wipe it up, instead of burying it under a tobacco quid, or leaving it for someone else. The outside to be kept as now, the buildings to be painted a spotless white; also a bright lawn, and plants and vines.

We believe that, by improving the conditions around our establishment our employees will advance in general intelligence, increased business will follow, and lasting prosperity and happiness come to us all alike.

What Do You Think of This?

Editor THOUGHTS:

I would suggest that you get out a sufficient number of postal cards addressed to us to furnish each of our customers with from six to twelve, having printed on the back something like the following:

Date.....

Mr.....
Address.....

is about to paint his building. Please write him in reference to New Era High-Grade Prepared Paint, and oblige, yours truly,

A customer having a postal card at hand like above can notify us easily.

Yours, No. 12.

Thoughts

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VOL. I.

DETROIT, MICHIGAN, JANUARY 20, 1900.

NO. 19.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week.)

After a period varying from four to five weeks, the Denver Co. claimed even three to four days, the White Lead will have been formed and is collected and treated as in the Dutch process.

The quality of the product is usually good, certainly better than that of the precipitation process.

It is, however, inclined to be very variable, and the process requires great experience and care to be carried out in the best possible manner to insure a good White Lead. In order to obtain a White Lead of the desired approximate composition it is absolutely necessary to regulate the currents of gasses and steam in the proper proportions. Thus if an excess of acetic acid vapor is admitted, too much normal acetate of lead is formed, which will not be acted on by the steam and the carbonic acid gas, and too much of the latter tends to cause the formation of an excess of lead carbonate, which, as we know, lessens the covering capacity of the White Lead.

The worst feature of this method, however, is that in case the operator injects too much steam into the chamber, and allows thus the temperature to get somewhat too high, too much hydrated lead oxide will be formed and this by the rise of the temperature will partly be split again into water and lead oxide. This formation of lead oxide, as it is of yellow color, gives then to the final product an objectionable yellow tone and tint.

The same result is brought about by a deficiency of acetic acid, and, as I said before, experience is the only factor which can guide the White Lead maker in adjusting the various gases in the proper proportions.

There is no plant here in America operating this process now, the Western Lead Co. in Denver, starting in 1891, has failed since and went into liquidation.

Various alterations in the details of this method have been made from time to time

by various inventors, but none have so far overcome all these difficulties.

As indicated there are innumerable different processes for the manufacturing of White Lead, and each and every year brings forth new and improved methods but it is not within the province of this small essay to deal with all of them.

I may perhaps say that the time will be not far off in which an electrolytical process (and there are already two or three in experimental operation here and in Germany) will successfully displace all other processes for the manufacturing of White Lead.

Paper Read at Our Anniversary Reception.

OUR REPRESENTATIVES—BY MR. A. M. WOODWARD.

It is a matter of common regret that our representatives, with a very few exceptions, are unable to be with us to-night.

We who are together from one end of the year to the other and watch with pride and satisfaction the constant advancement of our business, are, perhaps, inclined to forget occasionally to what extent the men who are constantly working in our behalf in all corners of the market are responsible for the favorable conditions under which we annually celebrate our success.

It is the rule for the uninitiated to suppose that a representative's life approaches as near a continual round of unadulterated pleasure as is possible to attain. They are apt to think of the many interesting places visited, the luxuriously appointed hotels and railroad coaches, and the attentive service rendered in connection with these accommodations, forgetting that it is not always possible to put up in hotel palaces, or ride in Pullman or Wagner sleeping and parlor cars. Too often the time for retiring is 1 a. m., to be called in three or four hours to catch an early train, and frequently instead of riding in a palace car, an uncouth freight train must be utilized in order to "make time." We think of the lovely drives along picturesque country roads, among green fields and whispering woods. Think of the same roads and fields with the thermometer down to zero, or the mud up to the hubs—

the latter phase of the situation occurs just as frequently as the former. As for sight seeing, when a representative is in a place where there are any sights worth seeing, his time is so occupied in calling on the trade and making reports to the house that he forgets there are "sights to see." He is out for business and knows that he must make the best of his time from that standpoint.

I don't like the word salesman, and the term "drummer" is much worse. Representative is the best, because it implies the proper scope of his duties. A man who represents his house must do so with intelligence and dignity. He must be equipped to meet and overcome difficult situations on the spot. Representation has grown to be a profession requiring a high order of intelligence. Great changes have

and are constantly taking place in the character of this class of work. In years gone by the man who was properly termed a "drummer" was posted on the names and selling prices of the goods made by his house. His whole duty when thus equipped was to go out and sell those goods, and if he could not sell enough to pay expenses he must necessarily lose his job. It is not much wonder that when so meagerly equipped he would resort to vilifying competitor's lines and other narrow minded and unscrupulous methods to gain preference for his own. Neither is it much wonder that in those days of unscrupulous methods he was looked upon with a degree of suspicion as regards his standard of morality and truthfulness. The days of the "drummer" however, have gone by. Modern progression has replaced him with the representative—a man equipped to represent his house in the fullest and best sense of the term. He must be a man of intelligence and tact, a student of human nature, and beyond all, above reproach morally. It would be an unjust imputation upon the business man of to-day to suppose that any other than a representative their equal, morally and intelligently, could succeed in doing business with them.

A representative must know his business in these days, and this means more than being equipped with a complete knowledge of the goods he is offering. He must study

THOUGHTS.

conditions of trade in a general way. He must be in position to make beneficial suggestions to his customers, for the dealer has also learned to lean as heavily upon the representative's judgment as the manufacturer who sends him out to sell goods and watch and report conditions that enable him to keep abreast of the times. Without fear of contradiction, I make the assertion that from no other single source have we derived as much information to guide us on the road to success as has been secured from our representatives. We have a corps of representatives in which any house might take a pardonable pride. Let us think then tonight of the men to whom we are so greatly indebted for this gathering, many of whom have been connected with us for years, and in the performance of their duties have sacrificed to so great an extent the pleasures and comforts of home, family and friends.

This is a Good Idea.

Syracuse, N. Y., Jan. 12, 1900.

Editor THOUGHTS:

I am in hopes of getting a testimonial from each and every one handling New Era High-Grade Paint in this territory. Would suggest your getting one from all New Era customers and putting same in book form. It would be a fine thing to show the trade, and would help greatly in securing new trade. What do you think? Yours truly,

No. 19.

P. S.—I have yet to receive the first complaint on New Era High-Grade. No. 19.

Detroit, Mich., Jan. 5, 1900.

Editor THOUGHTS:

It may be possible, although I hardly think probable, that some members of our traveling force fail to appreciate the excellence of our New Era High-Grade Paint, and I wish at the beginning of this season to emphasize a few facts in reference to it.

From time immemorial white lead has been looked upon generally as the one article necessary to consider as a white pigment to use in the production of a first-class paint. I do not wish to say aught that will in any way reflect upon its desirable features as a paint pigment, nor do I agree with some of the prominent paint manufacturers who condemn white lead and claim that it should be avoided. I claim that it possesses desirable features not found in any other white pigment—I refer now to its use as a primer or first coat.

In the production of New Era High-Grade Paint we recognize white lead as an important factor, using it accordingly. We thus do away with all possible objection to

our paint by white lead devotees. Being fully aware of the undesirable features of white lead used alone as a paint pigment we neutralize its detrimental feature (due to the fact, well known, that acid which forms a part of carbonate of lead in use at the present day very materially shortens the life of linseed oil) by the use of zinc oxide, not sulphate of lead, nor sulphide of zinc, but the best quality of zinc oxide, and let me say here, I consider zinc oxide a very much abused pigment by painters generally. Among other claims made by them, the claim that zinc will peel cannot be sustained where it is properly mixed with pure linseed oil. It has been abundantly proven that zinc will consume more oil, pound for pound, than lead, and consequently will cover more surface.

It is claimed by some that zinc does not cover equal to lead, and I grant that such a statement may be true in so far as the hiding of the surface is concerned; this is due to its transparent nature, and while zinc is transparent, it still, I believe, imparts protection to the surface fully equal to lead, where the same number of coats of each are used.

I have spoken of the above two pigments quite fully, not that I have more than touched upon their respective merits, but to show that in my judgment, based upon over twenty-five years experience and backed by other best authority obtainable, they are not only the two best white pigments known for the production of a first-class paint, but that all other white substances must be classed as adulterants.

In our New Era High-Grade Paint we combine properly lead and zinc, using linseed oil as a thinning vehicle, and thus produce a paint as near perfect as it is possible for any man or set of men in this or any other country to produce. Added to this, our plan of advertising and assisting our customers, and the extreme low price we are permitted to make for the opening of the spring season, the price, which I consider a large sacrifice on the part of our company, I do not see how any dealer, after being made fully conversant with the above facts, can do other than secure, if possible, for his trade in 1900 and all future, New Era High-Grade Paint.

Yours Respectfully,

No. 12.

Creston, Neb., Jan. 11, 1900.

Editor THOUGHTS:

No. 13 has a suggestion in THOUGHTS of December 30th, 1899, that I think is a very good one. Yours truly,

No. 2.

Davenport, Ia., Dec. 12, 1899.

Editor THOUGHTS:

I have a suggestion. A number of people in this city have painted the roofs of their houses a dark slate color. I could have sold one if we had the shade. It may not be necessary to add it to the sample card, but if we had a few samples of the shade we could soon find out if there was sufficient demand. Suggest it to the family.

Yours truly,

A. D. HOAGG.

The above was referred to Mr. S. H. Hart, who gives practically his entire attention to the sale of New Era High-Grade Prepared Paint, and below you will note his comments regarding Mr. Hoagg's suggestion.

In response to Brother Hoagg's suggestion as per above, would say I consider slate color desirable for roofs. While we cannot place it on our regular card this season, we can easily make a slate color upon order, and later on it might be desirable to present a card with light and dark slate color for roofs.

Yours truly,

S. H. HART.

Oil City, Pa., Jan. 11, 1900.

Editor THOUGHTS:

The lumber dealers are getting to be large handlers of paints and varnish throughout the country. My experience has been that they are a good class of dealers to cultivate. They, as a rule, are good liberal buyers, generally very well rated. I do not think they are drummed quite as hard as the drug and hardware trades, as in most instances, they are located some distance from the center of the town, and therefore are overlooked once in a while. Yours truly,

No. 18.

Special.

If representatives will kindly estimate amount of each order and enter the amount in the upper left hand corner (blank) of order sheet; it will greatly assist the credit department, particularly during the busy season. Hope each of you may be able to do this.

G. B. P.

Notes.

No. 14, No. 9 and No. 80—Please put the date at top of your cash account (in new expense books) in future. It is necessary.

A number of the salesmen are getting very careless about marking "ads." on their order sheets when advertising orders are attached; also in specifying "lustrous" or "dead black" in Neal's Enamels. Both of these matters have been called to their attention in THOUGHTS, but are not being attended to.

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VOL. I.

DETROIT, MICHIGAN, JANUARY 27, 1900.

NO. 20.

Paint and Its Solid Constituents—The Pigments.

SUBLIMED WHITE LEAD AND ZINC WHITES.

BY JOHN COLLET.

With all its good and desirable qualities, White Lead, the basic carbonate of lead, has, however, one great fault, and that is, as I said, it is considered of only fair durability. Its chemical composition and constitution is for itself very loose, and in fact, on exposure to weather or to gases ordinarily occurring in the atmosphere, it is somewhat quickly discolored and acted upon. In other words, it is short lived, minute cracks soon appear on the surface of the paint and these cracks deepen until they reach the material covered, and the paint, in case the White Lead was not exactly up to the standard, drops off in minute scales or in form of a very fine white dust. But, nevertheless, under normal conditions and applied in a proper way, we can say that White Lead is a good pigment; however, as soon as these normal conditions are changed, or the White Lead is used in or near localities where it is exposed to the fumes of sulphurous gases, especially sulphurated hydrogen and ammonia, which gases are present everywhere where gas or coal are used for lighting or heating purposes, the White Lead will rapidly lose its white color and will be more or less darkened or blackened. This discoloration is caused by the combination of the sulphur in these gases with the lead by the formation of the black lead sulphide.

Another fault of this white pigment, the basic carbonate of lead, is that it is to a certain extent poisonous, and there was a time when only the old Dutch process alone was in use, when the White Lead works were called with good right: "White cemeteries." Most of you have heard of lead poisoning, and perhaps one or more knows from experience, either directly or indirectly, what it is. The fact is, that White Lead leaves its mark more or less wherever it goes, and its path is indeed a very broad one, for its use enters largely into many industrial processes, and is general, as we know, in the making of paint and for paint-

ing. In these respects it produces what is known as painters colic, paralysis and other diseases.

The unhealthy nature of the White Lead maker's and user's calling has long been recognized and efforts have been made to discover and invent a pigment like the carbonate of lead, but in a practically innocuous form, as a basis. These efforts led to the suggestion of using the White Lead sulphate as a pigment.

This lead composition is much less easily decomposed and is therefore capable of resisting the chemical change which the carbonate undergoes in the stomach and system, so as to render it absolutely non-poisonous. As a matter of fact, in cases of lead poisoning, diluted sulphuric acid is administered by means of which the soluble carbonate becomes converted into the insoluble and harmless sulphide.

The white pigment sulphate of lead as it is met with on the market, is, however, not the straight chemical composition of lead oxide and sulphuric acid, but contains, according to the manufacturing process, more or less lead and zinc oxides, and is sold under various names, thus, abroad as "Patent White Lead," "Non-poisonous White Lead," and here in America under the trade mark "Sublimed" or "Fischer White Lead," the latter is our so-called "A" lead.

However, in the beginning of the period when a great number of inventors and lead manufacturers endeavored to find a better substitute for White Lead, the only ways and means of accomplishing this task was thought to be by precipitation, and in fact the patents taken out on this subject are innumerable.

Each and every one of these patents, for the production of sulphate of lead, were no good, and the manufacturing of sulphate of lead as a pigment was very soon abandoned. The cause is, the precipitated sulphate of lead is too crystalline in order to give to the final product body and covering capacity enough to serve as a pigment, substituting White Lead in regard to these properties.

The principle of these processes, as a whole, were the precipitation of the lead in form of sulphate, from a lead acetate solu-

tion, obtained by dissolving lead oxide or metallic lead in acetic acid, by means of sulphuric acid, the reformed acetic acid to be used over again for the manufacturing of a fresh solution of lead acetate or sugar of lead.

As I said, all these processes were soon abandoned, until in 1880 here in America a vein of ore containing both lead and zinc was discovered, being a mixture of galena and blende, that is, a sulphur combination with lead and zinc.

The proportion of zinc in this ore made it, however, very unfit for the smelting and refining process for the production of lead metal, and as this "galena" is reduced by the regular smelting process into partly lead, lead oxide and partly lead sulphate, it was used as the basis for the manufacturing of sulphate of lead according to patents taken out by G. T. Lewis and Bartlett.

These patents, or at least their principles, are operated at the present time by the Fischer Lead Co., in Joplin, Mo., whose product is known in the market as "Fischer Sublimed White Lead."

The process in its principle is as follows: When lead ore as "galena," the sulphide of lead, is heated in a furnace with access of air, it undergoes oxidation; it is, as I indicated, transformed into lead oxide and sulphate, the degree of the oxidation depending upon the amount of air which comes in contact with the ore. The temperature also has some influence on the result, in fact it is probably the chief factor in the process.

Both the access of air and the degree of heat are to be regulated in such a manner that the main product is the sulphate and not the oxide. This is accomplished in specially arranged furnaces, in which the ore, in connection with the proper fuel, as slack, is operated on, and converted by a proper degree of heat into the so-called "lead fume," consisting of lead sulphate, lead oxide and oxide of zinc.

The plant consists of several furnaces, which are connected by flues with an efficient system of condensers, in which the lead fumes are collected.

TO BE CONTINUED

THOUGHTS.

"What Constitutes Good House Paint."

BY MR. HARRY WALKER.

I feel that our chairman could have selected someone from amongst us who is better qualified to write something of interest than myself, but as the object of these meetings is for educational purposes, I am glad to grasp the opportunity for improving my knowledge. There seems to prevail among the employees the impression that I am a walking encyclopedia on the manufacture of paints, on account of my long connection with the factory. But such is not the case I can assure you, and I am brought to the realization of the fact that my knowledge of paint is very limited when I come to put same on paper. Having had more experience in the manufacturing of mixed paints and house paints in particular I concluded to take this as my subject, and the first thing we will consider is: What is paint? Paint is a combination of finely ground pigments, mixed with a suitable vehicle to a proper consistency for spreading or being applied with a brush. Next we ask the object of paint, and as has been stated in papers read before this committee, the use of paint is twofold. First, for the protection of the object to which it is applied; second, for the purpose of beautifying. The latter we will pass for the present, as it practically has no effect on what should constitute a good house paint. Opinions differ as to what pigments are the most suitable for a good, durable house paint; some claiming a combination of lead and zinc and barytes make the most durable, as well as the most unchangeable, paint on the market, and others that strictly pure lead is the best. This claim is made by the painters on account of the many ready mixed paints on the market, which consists of a combination of the different pigments mentioned, and which enables the consumer to purchase his paint all ready mixed, thus ignoring the painters, especially the painters who rely for their profit on their knowledge of a mixture of their own. Again others claim the combination two-thirds lead, one-third zinc to be superior to either of the former combinations, and now that we have mentioned the principle pigments used in house paints, let us consider the different pigments and find the objections to their use singly or by combining the same. White Lead being the oldest, as well as the most popular pigment, we will consider first and mention some of the objections to its use for paints. White Lead, if used singly, is readily attacked by sulphurous gases in all forms, blackening from the formation of lead sulphide, and these injurious gases are

found wherever coal or gas is burned, in fact everywhere. Therefore, White Lead, especially in cities, retains its fresh color only for a short time. It also is not a suitable pigment to be used in connection with ultramarine blue or any color containing sulphur. White Lead will also powder and chalk after being exposed for a period of say a couple of years, and in some instances much sooner. Another objection is, when lead is used singly it sinks or settles out of the mixture after standing a short time and to remix it, requires about as much work as is usually required to first break up the lead in oil. There are also points favoring the use of White Lead for house painting. In fact white lead is indispensable, inasmuch as it has more of the desirable features for a paint pigment than any other pigments known. Its covering capacity and the freedom with which it works are not to be found in other paint materials.

We now come to the consideration of Zinc White, which is much whiter than white lead, also much lighter in gravity, requiring double the amount of oil to mix same as does white lead. Zinc if used singly has some of the objectionable features found in white lead differing only in the manner of doing business: the white lead crumbling and chalking off and the Zinc cracking and scaling off. Its covering capacity is not near as good as white lead or does it work as free under the brush, having a tendency to pull. However, a combination of Zinc and Lead in the right proportion, say $\frac{1}{3}$ Zinc to $\frac{2}{3}$ Lead is usually considered good and effective. The reason for this is the good qualities of the zinc counterbalance the bad properties of the White Lead, the Zinc giving a smoother and harder surface to the paint, thus resisting more of the chemical actions of the weather and atmosphere, and thereby protecting the rougher and softer coating of lead. On the other side the much more elasticity of the White Lead, when combined with oil will overcome or loosen the more hard and brittle coating of Zinc, the oil combining and thus preventing the scale or pulling of the Zinc in the paint.

In regard to the vehicle, I have to say, a good well settled raw linseed oil in connection with a pure dryer and turpentine ought to be used to mix the pigment in, and the use of boiled linseed oil, especially for the priming coat, as so many painters use it should be condemned for the reason, that the use of boiled oil for the first and second coats of paint gives too much gloss and hardness, preventing the adhering of the succeeding coats of paint, causing them to run, but if

raw linseed oil is used for priming, the oil soaks into the wood and fills the pores better and thus renders the first coat more apt to combine with the second and that with the coats following. As a thinner, turpentine is much more preferable than the cheap treacherous article, benzine, or naphtha. The turpentine contains a certain amount of resinous matter which is left behind after the volatile part has evaporated and helps increase the adhering of the paint, while naphtha or benzine contains more or less mineral oil and other non-drying matter, which is very apt to lessen the life and drying properties of the paint it is used in. As to the necessary dryer, if any is to be used, a good pure linseed oil dryer ought to be mixed with the paint, and then in the right proportion, which, for a good dryer, should not exceed one gallon of dryer to sixteen gallons of linseed oil. However, a dryer made with rosin, when properly made is not objectionable.

With paint made with the ingredients mentioned, and same mixed in the proper proportion and well ground and mixed together and put up in sealed cans and put on the market as a so-called ready mixed paint, like our "New Era" High-Grade Paint, there is no reason to condemn ready mixed paints as a whole, as so many ignorant painters and others do, for a paint well made with a high-grade material and improved machinery and by skilled labor, must be indeed very much superior to any paint made in the old fashion, with a bucket and paddle without previous grinding of the pigments. There is no use or excuse for the intelligent painter to adhere to the old rule of thumb in making paint, as long as he can secure a better and more satisfactory paint by using our "New Era" High-Grade Ready-Mixed Paints.

Oil City, Pa., Jan. 11, 1900.

Editor THOUGHTS:

No. 13's suggestion in regard to making contractors a special offer on our New Era High-Grade, puts me in mind of the fact that there are a great many big contractors who hire their own painters the year around, and who buy their own paint material direct from the manufacturer. In some instances they use up more material in a year than several dealers would sell. It occurs to me that there is a good field to work.

Yours truly, No. 13.

Note.

A good word is an easy obligation; but not to speak evil requires only our silence, which costs us nothing.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, FEBRUARY 3, 1900.

NO. 21.

Paint and Its Solid Constituents—The Pigments.

SUBLIMED WHITE LEAD AND ZINC WHITES.

BY JOHN COLLET.

(Continued from last week.)

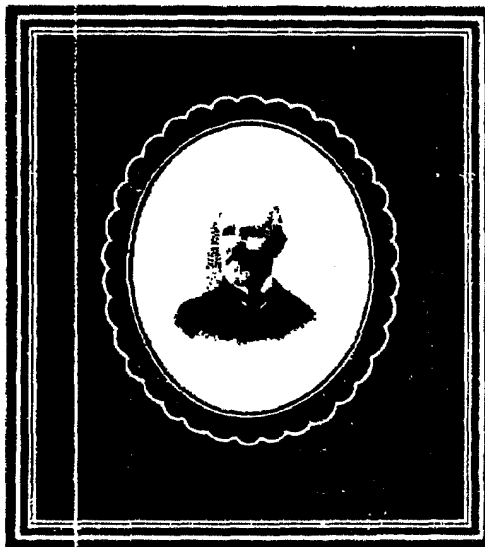
The furnaces are lighted over night, so that in the morning they may be thoroughly heated and the fire bright and clear. The temperature of the furnaces is kept at about 2,400° fahrenheit. All being in good condition, the ore mixed with slack is thrown upon the fire and immediately commences to volatilize, forming the fume which is drawn into the flues by the action of a steam jet. In these flues the fumes are met with a current of hot air which serves to oxidize any "galena" which may have been volatilized unchanged. The fume, after passing through the main flue and meeting with the current of steam and hot air, is conducted by means of a powerful blower through other strongly heated flues into the condensers.

The condensers are chambers constructed of wood or iron, those nearest the furnaces being lined with firebrick to withstand the immense heat. They are provided with partitions, so as to split up the current of gas or vapors as much as possible. The fumes before passing through these condensers have to traverse a layer of water, so that they are gradually cooled down. The fume deposits then in the condensers, and if there be any zinc in the ore, which is more or less the case, it will be condensed as oxide here also.

The condensed fumes are then collected and have to undergo other processes and manipulations for production and whitening, among these the treatment with diluted sulphuric acid in large tanks. The object of this is to change the most part of the lead oxide, which is condensed with the sulphate, into the latter also, depriving thus the final product of its more or less yellowish tint. The Picher Lead Co., however, obtain in

MR. S. H. HART.

Mr. Hart is one of the "old timers" with the Acme, his starting point dating back as far as '85. Although an "old timer," this does not signify that his methods of securing business are in the least antiquated. He is always up to the latest "wrinkles" and a thorough student of the times and business conditions. He is even better looking than his portrait indicates, which, combined with a "smooth" and benevolent manner, are



characteristics which are the envy and admiration of our younger representatives, in whom he takes a most fatherly interest.

Mr. Hart is a man of family, a prominent member of commercial travelers and other fraternal bodies, is much interested in church work, and the fortunate possessor of vocal powers that have won for him the leadership of the Sunday school choir with which he has been identified for a long time. In a business way New Era High-Grade is next his heart, and no doubt the vocal culture in which he has indulged so freely is largely responsible for the excellent results from his constancy in singing the praises of these goods.

their present improved method a product of such perfection in the start that they do not employ this part of the manufacturing process any more.

The pigment is then washed thoroughly, dried and ground in order to render it as fine as possible, and is then ready to be sold.

This lead sulphate, or rather lead sulphate combination, is not as crystalline as the precipitated sulphate of lead, but is amorphous like the White Lead of the Dutch and Carter process. It is of a fine white color, with

somewhat of a bluish tint or hue. It is a good pigment, and if used according to its peculiar properties and composition gives more than satisfactory results.

Its body or covering capacity is good, almost, if not equal, to that of White Lead, and what makes it even superior to the latter is that it is perfectly permanent. Sulphurous gases and vapors have little or no action upon it, and so heat also, which latter changes the basic carbonate of lead into the yellow and orange oxides.

If mixed with oil, and applied as paint, the Sublimed Lead gives a much smoother and harder surface than the carbonate, due to the small percentage of zinc oxide it contains.

It has, as I said, peculiar properties, and must be treated in a special manner by the paint grinder. If ground as a stiff paint or paste with linseed oil, it gets

from the proportion of lead oxide it contains the characteristic usual to all oxides, that is the tendency to dry hard and cake. The way and means by which this is to be prevented, and the chemical action which is supposed to take place, will be discussed later on when we come to the chapter of the so-called "graded leads."

The composition of Sublimed Lead is somewhat variable, but not as much as to alter its properties and qualities. The manufacturing process is, as I said, at the present time complete.

TO BE CONTINUED.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, FEBRUARY 10, 1900.

NO. 22.

Paint and Its Solid Constituents—The Pigments.

SUBLINED WHITE LEAD AND ZINC WHITES.

BY JOHN COLLET.

(Continued from last week)

The composition of our present "A" lead which is 83 per cent. lead sulphate, 10 per cent. lead oxide, 7 per cent. oxide of zinc, is almost the same as that of our first lot received, with an improvement of a smaller percentage of lead oxide and an increase on that of its principal constituent, the lead sulphate.

We come now to the class of white pigments which have zinc as a base, or are manufactured from the metallic zinc, the spelter of commerce or from zinc ores. The latter process is some times called also the American process and its product "American Zinc White."

The manufacturing of zinc white, which is the oxide of zinc, is carried on by the combustion of zinc metal, or spelter, in a special form of plant, or furnace and is based on the properties of zinc being a volatile metal, that is when heated to a white heat it is capable of being readily converted into vapors. If this zinc vapor comes then in contact with air, it undergoes combustion, or what is the same oxidation, and the oxide of zinc will be formed, the zinc combining with the oxygen of the air.

The plant consists essentially of two portions, one in which the zinc metal is melted and heated up to a high degree of heat, transforming it into vapor, and the other of chambers or condensers in which the white oxide is collected.

The vaporizing part of the plant consists of several furnaces provided with retorts or miffles made out of fireclay, and into which the zinc is charged. They open into sort of combustion boxes or flues to which air has free and plentiful access so that a continuous current of air can pass through them. The other ends of these flues open into the first of series of collecting chambers or condensers.

Continued in third column.

MR. J. R. GOLDSBOROUGH.

Mr. J. R. Goldsborough has been an Acme representative since 1895. His record reflects the characteristics of thoroughness and a careful observance of detail that imparts to his customers, as well as the house, a perfect confidence that his statements are absolutely correct and based upon the firm's foundations. There is no guess work in his composition. "When Goldsborough says its so—its so" is a bye word, and he always has the



documents to prove it. Mr. Goldsborough's home is in La Grange, Ky. He has a host of friends in and out of the trade, especially in the Southern States, which form his present stamping grounds. He is probably the oldest in point of years of our representatives and is remarkably vigorous mentally and physically, being able to give many a man much younger in years a tussle in the way of hard and persistent work on the road that would be a revelation. Mr. Goldsborough's length of service with the Acme is only a fraction of the long time he has spent on the road, and can relate innumerable "good stories" and interesting reminiscences of his own experience.

The white hot vapors of zinc when they come from these retorts or miffles into these flues are set on fire, or burn and combine with oxygen of the air drawn into these flues by the continual draught generated by the heat. The results are large and dense volumes of white oxide of zinc, which are then drawn by the same draught into the collecting chambers.

These chambers vary in numbers, from three to five, and more, and are constructed of wood, communicating with one another by means of apertures or openings so placed alternately at top and bottom that the vapors and gases from the retorts and flues must take a circuitous course through the whole series of condensers. The oxide of zinc is deposited into these chambers.

In order to facilitate the collecting of the deposited oxide, the bottom of these condensers are made hopper shaped, so that by placing barrels underneath and opening a slide, the zinc white can be easily taken out, as the density and purity of the zinc oxide formed inside the flues is not uniform, that is, as the process proceeds, the zinc oxide is formed in more or less dense or compact masses weighing more or less, or being fine or coarse as to the particles of oxide. Its tendency to settle out and deposit is therefore different also. We find therefore that the heavier particles and also the least pure ones deposit in the first chamber and partly even in the flue, and that the finest and lightest, and whitest ones are in the last or end chamber of the condensing system.

The zinc white separates thus itself into its different commercial grades. That taken out of the last chamber being the green seal, and that from the first, the lowest and cheapest grade, the yellow seal of commerce, the chambers located between these yields then the medium grade, the so-called red seal zinc.

This combination process is chiefly operated abroad.

TO BE CONTINUED.

THOUGHTS.

Certificate of Purity.

El Reno, Okla., Jan. 23, 1900.

Editor THOUGHTS:

I have received the above and think same best thing I have ever seen. I am positive it will prove to every advantage in our sales of N. E. H. G., and cannot fail to convince that our N. E. H. G. is the best paint on the market. Yours respectfully.

No. 28.

Referring to Mr. Woodward's Paper, Read at Anniversary Reception.

Anniston, Ala., Jan. 25, 1900.

Editor THOUGHTS:

I wish, through the medium that presented it to me, to return my sincere thanks to Mr. W. for his kindly remembrance of the travelling corps of the Acme White Lead and Color Works. "Had he been to the profession born and educated" he could not have delineated more truthfully the many and varied phases of life "on the road." The most impressive feature of his kind article is shown in the evident and true sympathy expressed for us in the woes, trials and perplexities which he certainly has painted in colors of not too dark a tone, which at times fall to our lot. May he never have to experience them; but if he should, he will feel that his exhibited confidence in our representations was not misplaced. Again thanking him, I am.

Respectfully,

J. R. GOLDSBOROUGH.

[The innate modesty of the editor caused him to hesitate somewhat before permitting the above communication to reach the columns of THOUGHTS. The reflection, however, that this is a publication by and for our representatives caused him to "let it pass."—Ed]

Mr. Kelly's Opinion.

Mammoth, Utah, Jan. 23, 1900.

Editor THOUGHTS:

Bulletin No. 13, in regard to new color cards, New Era High-Grade, to hand. I think it an excellent idea for you to get out these special cards, and believe I suggested same some time ago. However, I think it would have been much better had you made the cards 20, 30 and 42.

The dealer who can afford to handle 35 shades would, as a rule, prove to be a jobber, and the difference to him of seven shades on the card would cut but very little figure. Smaller jobbers would prefer to take up 30 shades rather than 35.

With all due regard to the respect and opinion of Mr. Hart, I certainly disagree with him. Of course conditions in his territory may be different from what they are in mine. Here a 16 or 20 shade card would be decidedly preferable.

Where I have a jobber handling the line it does not make much material difference, they will take a 25 shade card just as readily as a 16, but where I have no jobber it will be very hard work, as we are so far away from the market, and 9 shades extra means a very heavy investment, and one that not many will stand. It would be a very easy matter for you to eliminate 6 or 7 shades and then have just as good a card. As it is, on the new cards you have too many shades that are too much alike, too similar.

Respectfully,

ALF. R. KELLY.

Dillon, Mont., Feb. 4, 1900.

Editor THOUGHTS:

I think suggestion by No. 12, in issue of THOUGHTS, Jan. 13th, a very good one.

Yours truly, No. 15.

American Fork, Utah, Jan. 23, 1900.

Editor THOUGHTS:

I cannot agree with No. 18 in THOUGHTS, Jan. 6th, 1900, as to his remarks "everywhere you may go you will find Senour's floor paint on same basis of stability as our N. C. P."

Now that may be the case back east, but it certainly is not so in my territory; here you will find twenty dealers handling "Granite" to one handling "Senour's." At one time Senour did have quite a large trade in this section of the country, but unfortunately for them, they turned out several bad batches of paint, which ruined their trade.

Respectfully,

No. 15.

Anniston, Ala., Jan. 25, 1900.

Editor THOUGHTS:

The suggestion of No. 19, of our family, is a most excellent one. Hoping an amendment will be in order, I submit it: After getting the suggested testimonial, would it be out of place for us to try and see the painters who have spread the paint and get their testimonial also? I tried this with Lucas' T. G. goods, taking the testimonials down in a book similar to an order book, from dealers with painters on opposite page, and found it did me good service in getting other dealers to take hold. I wanted Lucas' to put the book in printed form so that each traveller could have one, but if it was done I never knew it. The third year after getting the testimonials, I got from same parties further testimonials regarding durability, all in same book.

Yours truly,

No. 9.

Editor THOUGHTS:

I am very much pleased with the certificate guaranteeing the quality of our New Era High-Grade Paint, which I received to-day under separate cover. I am sure it will be a great help to the salesmen in placing New Era High-Grade Paint.

Yours truly, No. 27.

Jefferson, Tex., Jan. 26, 1900.

Editor THOUGHTS:

I think No. 12's idea in regard to postal cards for our New Era High-Grade customers, would be a good idea, as the prospective customers will take more stock in our agents talk then if they should get the usual talk direct from the house.

Yours truly,

No. 10.

Editor THOUGHTS:

I called on Danforth & Griffin, of Gloucester, Mass., to-day and heard quite an interesting story in regards to our New Era Paint, inside white. It ran something like this: A lady called on them to see what it would cost to enamel a room. They made her a price, but told her that they had a very fine paint that looked as nice as enamel and was much cheaper. No, she wanted it enameled. So they finally told her that they would put this paint on and if it was not satisfactory why they would enamel it without extra charge. They painted it with our New Era High-Grade Paint, inside white, and then brought her up to see it.

She remarked: "I thought you said you did not intend to enamel it." They said: "Neither we did, but simply painted it with inside white paint." She said: "Well, it looks very nice indeed, and entirely satisfactory." And now they cannot say too much for our goods.

Yours truly,

No. 27.

[This was very nice for New Era High-Grade. The only drawback is the possibility that the lady wanted Neal's Enamels, which we would prefer to sell for this class of work.—Ed]

Notes.

Mr. Barron and Mr. Torrance: Please always sign your name at bottom of cash account.

Mr. F. R. Dougall, please enter amount of order on upper left hand corner of order blank—not right hand corner.

The thanks of credit department are hereby tendered to the salesmen who have so promptly responded to request to put amount of order on order blanks. Hope those who have not yet complied will do so soon. It is a great help.

Thoughts

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VOL. I.

DETROIT, MICHIGAN, FEBRUARY 17, 1920.

NO. 23.

Paint and Its Solid Constituents—The Pigments.

SUBLIMED WHITE LEAD AND ZINC WHITES.

BY JOHN COLLET.

(Continued from last week)

Here in America the process is operated by the Florence Zinc Co., in Philadelphia, which company however is a branch of the American Zinc Trust, the New Jersey Zinc Co., a commercial combination comprising all zinc white manufacturing plants of America, with the exception of the American Zinc Lead Co., of Colorado. This latter company (it went into liquidation, but is now to be reorganized) used to apply a process similar to that of the Picher Lead Co.'s for the manufacturing of a combination zinc lead white, which process is used by the Mineral Point Zinc Co. and the Lanyon Zinc Co., both of Wis., the latter however having been sold out to the former.

They use a zinc lead ore, containing more zinc in proportion to the lead, and obtain by a process, as I said, similar to the Picher process (they mix more slack in the ore) a so-called leaded zinc, that is, a zinc oxide in combination with lead sulphate and oxide.

Our former standard zinc and our present brand of leaded zinc are made according to this process by these firms.

The pigment consists practically of fifty per cent. to sixty per cent. zinc oxide, the rest being lead combination.

There is, however, another process for the manufacture of zinc whites, the zinc oxide, operated by the New Jersey Zinc Co. and by its branch the Lehigh Zinc Co. in particular. This process yields a straight oxide, the "horse head" brand of the zinc white, known under the commercial grades of "xxx," "xx" selected, and "xx" zincs.

This process manufactures zinc oxide from zinc ore also, but uses an ore almost free of lead, the ore being chiefly sulphide and carbonate.

Continued in third column.

MR. A. E. BARRON.

Mr. Barron, whom our representatives will probably remember as the winner of the prize offered for the best paper on "How to Sell New Era High-Grade Prepared Paint," has been an Acme representative since 1891. There are some of us who remember the young man who appeared at the office about nine years ago as an inexperienced candidate for a position "on the road," and we admire the judgment of our President who at that time recognized the possibilities in



Mr. Barron's "make up" that would develop into the well-rounded characteristics that indicate the perfect representative. It goes without saying that he has many friends on his territory in Wisconsin, both in and out of the trade and of both sexes. We are sorry to say that he is unmarried, but we believe this is wholly due to extreme caution on his part, and that in this respect he is exercising the same principle that leads him to invariably work hardest for the best dealer in a town and to take no other, even if it does require more time to win out. Mr. Barron is an up-to-date progressive representative in every sense, a good conversationalist, story teller and a brilliant pianist.

The ore is mixed with coal or slack and undergoes a reduction and oxidation process in a specially constructed furnace. It is first reduced to the metallic zinc but same evaporates as soon as it is formed and becomes oxidized into the white oxide, which is then condensed and collected by means of chambers like in the combustion process.

On account of the necessity to mix the ore with coal or slack, in order to obtain reduction, first the zinc oxide in the first

chamber and especially in the long and extensive flue leading to the condensing system, contains more or less small particles of coal and other impurities. This lower grade of oxide, commercially named "P" (pipe) zinc is either used again in charging the furnace or is sold as a cheap and inferior grade of zinc white.

These fine particles of coal and ore are met with also and always in the zinc lead or the leaded zincs of the previous mentioned process, and as these pigments are made in and as a bulk, no separation taking place into different grades, they all show therefore, more or less, these impurities, which were drawn by the powerful blast with the zinc lead fume into the collecting system.

These fine particles of coal and ore in connection with free oxide of lead, present in zinc leads, are the main cause, but these pigments and the lower grades the horsehead brand are very seldom perfectly white, but always show either a grayish or yellow tone, and tint.

As a pigment, zinc white, speaking of the oxide in particular, is rather bulky, fine and light in gravity. Exposure to the atmospheric influences, as air, light, water and sulphurous gases, has no visible action on it, inasmuch as the latter, so detrimental to white lead, changes the oxide into the white sulphide, the pigment is therefore to be considered permanent.

It mixes well with linseed oil, taking up almost 22 per cent. of the same, having,

THOUGHTS

however, not quite as much covering capacity as white lead.

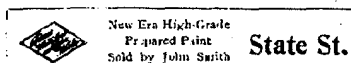
Its properties and qualities in regard to the place it takes as a pigment in the manufacturing of paint, especially in that of house paint and paste goods for painting or dipping agricultural implements and in the preparation of enamels, will be more properly discussed in connection with these specialties of the paint manufacturer.

Concerning Street Signs.

Editor THOUGHTS:

In conversation with a customer not long since, he unfolded to me what was to my mind a rather novel scheme in the way of advertising. He suggested that we add to our advertising feature, street corner signs got up in the following manner: Have the name of the street on the extreme end of a thin board about two feet long or thereabouts, and possibly three or four inches wide, have our trade mark on the other end, have the words New Era High-Grade Prepared Paint at the top of the center and dealers name directly underneath. I asked him if the city would allow them put up, and he informed me that his city would and he thought many other cities of from three to five thousand would, as hardly any of them have the names of the streets on the corners. These could be gotten up and wherever we have a New Era agent, they could be placed. They possibly would not have to be that large. See what the rest of the salesmen think of this

To illustrate



I think one foot long, and three inches wide large enough.

Yours truly,

No. 6.

Detroit, Mich., Feb. 4, 1900.

Editor THOUGHTS:

I note there has been a few cases where our representatives have advised us that they were unable to get their customers to adopt the twenty-five shade card on account of there being too many shades. I expected there would be cases of the kind, and am glad there are so few of them. It would be too much to expect every customer to fall in line at once, but I believe that we shall be able to show to all of our customers in the near future, the desirability of carrying at least twenty-five shades. There is never a season passes without our being asked to add this or that shade to our card, hence the great

number of shades we present on our full card. It is not an easy matter to keep down the number of shades: no one card can be made that will contain all of the desirable shades, neither can we take from our forty-two shade card all the desirable shades and place them upon our twenty-five shade card. Some good ones must be left. The question has been how to select from the forty-two shade card, twenty-five shades that would do the greatest amount of good to the greatest number of customers. The future alone will demonstrate the wisdom of the choice made, every customer has the privilege of a choice between the twenty-five, thirty-five or forty-two shade card. The promptness with which dealers generally are taking to the twenty-five shade card and their willingness in many cases to increase their stock in order to carry the full line represented by their card is gratifying, and will, I believe result in increasing their trade.

Yours truly,

No. 26.

Toledo, Ohio, Jan. 28, 1900.

Editor THOUGHTS:

I wish to try and express my appreciation of the very able way Mr. Woodward (in edition of THOUGHTS, January 20th,) states the facts in the case pertaining to the ups and downs of one of your humble representatives and concur in every word as to what he says are necessary requirements and ability in the representative of today in order to be a success. I am no spring chicken but realize every day of my life that I have got to keep on the alert constantly, and need a clear head to do it, in order to keep up with the procession in this rapid (electric) going age. I trust I appreciate fully and truly my position as one of the small army of advance guards, representing the up-to-date Acme White Lead and Color Works, and think we all (I know I do) should feel a great deal of satisfaction in knowing there are those on the inside competent and willing to look at both sides of the case, and do justice to all parties interested.

Yours truly,

No. 4

Mr. Woodward wishes to explain that he was not merely expressing his personal views on paper regarding our representatives, but was viewing the ideas of the entire "inside corps" from the president down, in expressions of appreciation and good will towards our representative body of workers.

La Grange, Ga., Feb. 13, 1900.

Editor THOUGHTS:

I have to-day received the list of analyses of New Era High-Grade, as found by different chemists throughout the country, and some of them bearing a very recent

date, which will beyond doubt be of the greatest value in convincing a prospective customer of the merits of New Era High-Grade. I find most dealers when you begin to talk the purity of New Era, say "that's what they all say" and when you tell them we sell New Era High-Grade subject to chemical analyses, they then say "you can easily do that also, as you know we are not going to the expense of having them analyzed;" but with our certificate guaranteeing quality and these analyses sheets, we should have no trouble in convincing the trade of the desirability of New Era High-Grade, and I hope by them to very materially improve my sales.

Respectfully,

No. 29.

How to Approach a Customer.

AN INSTRUCTIVE LESSON.

It is probably well known to our readers that the National Cash Register Co., of Dayton, O., maintains a school for the teaching of its traveling salesmen. Every one of its salesmen has to graduate from this school before he is employed. In this school he learns everything about the goods he is to sell so he can talk about them intelligently and also how to approach prospective customers and induce them to buy. The company considers this department of greatest importance. It pays the railroad fares and hotel expenses of all the scholars during their attendance at the school in Dayton.

It may interest our readers to learn how the company instructs its prospective salesmen in the art of approaching a customer with the best possible effect. That this instruction department has been of great benefit to the company and its salesmen is best proven by their wonderful success, and it might be well for our readers employing salesmen, and the salesmen themselves, to profit by their example.

The instructor in the art of selling employed by the company divides his subject into three parts to wit:

1. The approach.
2. The argument.
3. The demonstration.

He elucidates the first step as follows:

The first thing a salesman must do is to get at a customer, approach him properly, make a favorable impression and gain a hearing.

TO BE CONTINUED.

Note

W. C. Neal, please remember to date your cash account. You seem to forget this.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, FEBRUARY 24, 1900.

NO. 24.

Paint and Its Solid Constituents—The Pigments.

BARYTES.

BY JOHN COLLET.

(Continued from last week.)

Of all the inert materials, or so-called extenders, at the disposal of the paint manufacturers as well as of the painters, Barytes, the natural sulphate of barium, is doubtless the most important pigment. It is found mostly associated with other much more valuable mineral products of the earth, the ores of gold, iron and especially of lead, which ores it accompanies as a matrix or so-called gangue. As it occurs in vast and immense quantities it is obtained by a regular mining process. Missouri, Virginia, the New England States and Illinois being the principal States where Barytes here in America is found and mined, and where manufacturing concerns as Dingee and Weinman, Kephan & Klein and the Arrow Rock Mining Co., and others are located, which grind and purify the natural product in order to render it adaptable for the various industries, especially for the manufacturing of paint and colors.

Chemically, Barytes is the sulphate of barium, a chemical combination of the metal barium with sulphuric acid. It is generally crystalline, sometimes transparent, irregular in structure, but often also opaque or of milk-white color. This latter variety is much softer and therefore most commonly looked for and used in the manufacturing of Barytes intended for the use in paints.

If merely powdered, Barytes ore is so stubbornly irregular in structure and hardness that it is very difficult to reduce it to a uniform powder by grinding or crushing even with the heaviest and strongest machinery. Again it is so transparent from its crystalline structure that it has little or no color when used as a pigment and for this

Continued in third column

MR. ALF. R. KELLY.

Mr. Kelly has been connected with the Acme almost since the inception of the business, the first relations dating back to 1885. He has been an Acme representative since 1892. Everybody on the Pacific Slope and the States of Idaho, Montana, Wyoming, Utah and Nevada who knows anything about paints and painters' supplies is acquainted with him. He has been in the paint business practically all his life, and understands it "from the cellar up." He



is prime advisor for a larger clientele of paint buyers and users than usually falls to the lot of any one man, and on disputed points "Kelly's word goes" because he never makes mistakes, no matter if its figuring the cost of freight per gallon, or pound, on goods shipped to his territory, or explaining the chemistry of paints to a customer.

Mr. Kelly's family reside in San Francisco and with the exception of our President, no one connected with the home office has had the pleasure of meeting him, although we are reliably informed that he is a most genial Irish gentleman, enjoying advantages derived from a particularly liberal and broad education.

reason it has to undergo several more processes assimilating, bleaching and washing.

In the first place the manufacturer of Barytes has to take great care in selecting only the very white and opaque ores. These are carefully washed to free them from all earthy matter, then they are heated to a certain degree to break up and loosen the crystalline structure, rendering thus the rock or ore more fit for the following crushing and grinding process. The crushing is done by very heavy and powerful machinery and the coarse powder

thus obtained is further pulverized under flat stone mills, with the aid of a constant current of water passing through these mills. From these mills the finely powdered Barytes runs into tanks where it is treated with a mixture of sulphuric and muriatic acid; it undergoes there a bleaching process, that is, the acids free it from iron and other mineral impurities which impart to the product a more or less yellow tint. It is then washed with pure water and sometimes ground again in flat stone mills under a current of water, which carries the now impalpable powder off to the tanks.

The floating process consists in running the pulp-Barytes into large vats, the lighter and finer particles will naturally be last to settle out, and these are run off into other vats in succession. Those that float the furthest are then naturally the finest and most opaque. This

product after settling is removed to pans where it is dried by steam or other drying arrangements, and sold as the best grade, the so-called "floated" Barytes.

The sediment in the tanks or vats nearer to the second set of mills is sold as a inferior grade, or is ground over and floated again.

Barytes is a fine and very heavy, white powder, insoluble in all acids, unaffected by any injurious influences of the atmosphere and therefore the most permanent white pigment known. When mixed with oil it is positively inert and for these reasons it never chalks or cracks like white lead, or peels like zinc white.

TO BE CONTINUED.

THOUGHTS

How to Approach a Customer.

(Continued from last week.)

GETTING AT HIM.

Sometimes you cannot see a storekeeper at your first visit, or you have to wait before you can get at him. Such occasions should be improved to acquire some knowledge, if possible, concerning the kind and amount of business he does, his methods and special needs. It would be well to do this any way, if you have time. But sometimes you can only make one visit to a store. In that case, on entering the store, you should go directly to the proprietor, or to the one whom you take to be, and say to him, "Is this Mr. Johnson?" Mention the name. Don't say, "Is this the proprietor?" If it should be a clerk, he will be flattered by being mistaken for the proprietor.

DON'T BE SIDE-TRACKED.

If he is a clerk and says, "No; Mr. Johnson is busy," you can say, "very well, I will wait a few minutes until he is at liberty." Or if the proprietor is out "very well, I'll call again. When is he likely to be in?" If the clerk says, "what is your business? What do you want to see him about?" say, "I wanted to see Mr. Johnson personally. I'll wait until I can see him." If the clerk is very stiff about it, and says, "what's your name? Who shall I tell him wants to see him?" there is no harm in giving your name, but don't state your business to the clerk, and don't send in your card.

ON A BUSINESS BASIS.

On the other hand, as soon as you do succeed in reaching the proprietor, and have said to him, "good morning! Is this Mr. Johnson?" then say, directly, "I represent the National Cash Register Co." This immediately puts you on a square footing, and if he has anything to say against your business it will draw his fire immediately. If he has nothing to say, proceed to business at once, but don't under any circumstances say, "I called to sell you a register," or, "I called to tell you about our registers," but put it rather in this way, "I want to interest you in our methods for taking care of transactions with customers in your store."

The difference between the two ways of saying it is that one begins with *your* end of the business—the thing that interests *you*; while the other begins at *his* end of it—the thing which presumably interests *him*.

THE FIRST FIVE MINUTES.

The first five minutes in which you speak to a man is likely to make or break you as

far as a sale is concerned. If you are in any way antagonistic or offensive to him, you have hurt your chances badly from the start. If you have failed to definitely please or attract him, you have not done enough. It isn't sufficient to be merely a negative quantity. You should make a positive favorable impression, and not by cajolery nor attempted wit nor cleverness. The only right way to gain a man's liking is to deserve it.

The majority of men do not often know just what the characteristics of a man are which make him pleasing or displeasing to them, but they *feel* pleased or displeased, attracted or repulsed or indifferent, and the feeling is definite and pronounced, even though they can not understand just what makes it. A storekeeper in the smallest way of business in a little country village is just as susceptible of being pleased or offended as any merchant prince. It should never be forgotten that whatever his position may be, "a man's a man, for all that."

YOUR APPEARANCE.

First impressions are of immense importance. If a man likes your looks the instant he sets eyes on you and is pleased with your manner from the start, you have gained a great point. Appearances "out ice." They are worth all they cost. The "well-groomed" man has a distinct advantage.

You never know how fastidious a customer may be. Nine men out of ten will think better of you for having a clean shave, a clean collar, a fresh looking tie, a becoming hat, shoes well cared for and a coat free from dandruff or stray hairs. Even men who are not neat themselves usually appreciate neatness. They don't always know what makes a man appear well, but they see that he does, and they feel personally complimented by it. Bright eyes, clear skin and sound white teeth are always an attraction. These come from plenty of sleep, good digestion and soap.

Men like to talk to a man who appears healthy, active and wide awake. His physical vitality affects their minds favorably toward him and his goods. They miss that satisfaction in talking with a man who looks jaded, heavy-eyed and sallow.

Every man is not gifted with good taste or a fine complexion, but every man can at least be neat and wholesome. There is no excuse for any salesman wearing a shabby hat, soiled collars or frayed ties, or exhibiting black fingernails, or a smutty, oily face. In the end soap is cheaper than dirt.

CARRY YOURSELF LIKE A MAN.

Do not approach a man with a shuffling, shambling, lopsided gait. Carry yourself erectly—which does not mean stiffly. It would pay many a salesman to learn how to walk. This is a thing which ought to be taught in our schools. The majority of children are taught to "go alone," as the saying is, but they never learn to walk.

Look in a man's face when talking to him—not at the ceiling, nor the floor, nor all around in other directions.

YOUR MANNER.

Manner comes next to appearance. Manner is a different thing from manners, yet if a man's manners are correct, his manner stands a good chance of being acceptable. There are three things that will give a man an attractive manner, earnestness, politeness and confidence. If you are in dead earnest about what you have to say, if you are at heart a gentleman, and if you believe you are going to succeed, your manner will be all right. But never stop to think about it; nothing spoils a man's manner like self consciousness. Think of your facts, consider respectfully your listener's rights and opinions; feel certain that you will close him, but forget yourself.

TO BE CONTINUED.

Gold Silver and Aluminum Enamels.

Editor THOUGHTS:

I am very much pleased to receive new sample card showing our gold, silver and aluminum shades of Neal's Enamel. It is going to be of great value to the salesmen. As far as I know of, we are the first ones to put this line before the public, and now is the time for the salesmen to drive their wedges in.

Yours truly,

No. 27.

Stockton, Cal., Jan. 12, 1900.

Editor THOUGHTS:

Do you think it would be a good idea to pack your quarter pint enamels in paste-board boxes, containing one dozen cans of a color? I think dealers, instead of buying two or three cans of color, would be apt to take a dozen of each.

What do our other representatives think?

Respectfully, No 15.

Note

Mr. A. E. Barton and Mr. R. S. Brown: Please sign your name at bottom of cash account leaf.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

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VOL. I.

DETROIT, MICHIGAN, MARCH 3, 1900.

NO. 25.

Paint and Its Solid Constituents—The Pigments.

BARYTES.

BY JOHN COLLET.

(Continued from last week.)

Zinc white has one fault, that is it is very translucent, and consequently has poor body or covering capacity. If, however, mixed in certain proportions with other pigments, as per instance with zinc white, it gives to these mixtures qualities and superior properties to those of these pigments in regard to especially durability and covering power.

In the discussion of graded leads, zincs and prepared paints, we shall see later on that Barytes is not alone used as an adulterant or so-called extender as so many believe, but that a certain amount of this so frequently unjustly condemned pigment—and a pigment it is—added to other pigments in the manufacturing of dry, paste, or liquid paints, quasi necessary either in order to bring out all the good qualities of certain so-called body colors, or in order to counterbalance or compensate many an inferiority these pigments may possess, and show if used straight or alone.

Beside the natural product of Barytes, there is another white pigment of exactly the same chemical composition, Baryta-sulphate, which is used to somewhat a large extent in the manufacturing of paint, especially in dry colors and colors in pulp form for paperstainers. This pigment is the artificially produced Baryta-sulphate, the blanc-fix or satin-white of commerce. Not long ago here in America it was brought on the market as an American product, under the name of baso-fine, and was as much extensively used instead of natural Barytes. It is obtained by the precipitation of the barium-sulphate from a soluble Baryta combination by means of sulphuric acid. It is a very fine and excellent white precipitate, showing somewhat better body and covering capacity than the natural Barytes. *Continued in third column*

MR. DANIEL DAVIES.

This is a likeness of Dan that does not half fill the bill. This statement may be considered as somewhat obscure, as we do not say in what respect the picture is lacking, but we don't believe that any man whose appearance and manner were not calculated to please could have so many warm friends among the ladies. Everybody in the trade embraced in the area from Missouri to Colorado and Nebraska to Indian Territory inclusive, looked after by our Middle-West representative, knows "Dan," and the majority of them do not know he

from the manufacturing, jobbing and store trade, and his work indicates a degree of shrewdness, thoroughness, persistency and carefulness that is highly commendable. Dan's list of "kids" at Christmas time is something remarkable, the express company being taxed to its limit in delivering reminders from "Uncle Dan" to his numerous little friends. No; he is not married.

This impalpable white powder forms the principal constituent of another white pigment, belonging to the group of body whites, the so-called lithophone. Same is a combination or chemical-mechanical mixture of blanc-fix or Baryta-sulphate with zinc sulphide. It is obtained by the following process:

Common rock Barytes from the mines is ground together with a certain amount, about twenty-five per cent., of soft coal, to a fine powder and mixed in a chaser or under edge-runners with a small percentage of chloride of lime and water.

This mass is then calcined in special constructed furnaces, by which process the Baryta-sulphate is reduced or converted into the soluble Baryta-sulphide and chloride; these Baryta compounds are then dissolved in water and to the solution is added a certain amount of zinc sulphate, obtained by dissolving zinc in sulphuric acid.

The result is a white precipitate consisting of Baryta-sulphate and zinc sulphide in the proportion of about twenty per cent. of the former to thirty per cent. of the latter, according to the strength and proportion of the solutions applied.

The precipitate white is then washed and left to settle. It is filtered off and dried. The dried pigment, however, has to undergo another calcination, which is done either in large crucibles or better in a so-called ruffle-furnace. This second calcination gives to the pigment more body or covering power, whitens its color and fastens the combination between the Baryta-sulphate and the zinc sulphide to a great extent, in fact it makes this combination more chemical.

TO BE CONTINUED.



has another name. His first break as a representative was made in 1886, when with satchel in hand he walked back and forth before a prospective customer's door, and finally, when his courage was screwed up to the highest notch, made a rush for the inside, landed safely, and was told by the dealer that he had been watched all the time.

"Dan" says he told him a few good stories, demonstrated a number of "steps" from the latest stage dances, sang a song or two, and the merchant rewarded his maiden effort with an order, and has been a steadfast friend ever since. We don't know whether this was a sample of the method pursued by him ever since, or not, but the fact remains that his trail is marked everywhere with good strong business friends

THOUGHTS

Speech Delivered at Our Third Anniversary by Rev. S. S. Marquis.

It is necessary in every manufacturing establishment to determine at least once a year just how much the plant has produced. The result of the year's work must be reduced to a statement in terms of dollars and cents. But there is something produced in every factory which is not, and cannot be, included in the annual financial statement. You have been producing something more than paint and varnish at the Acme White Lead and Color Works. You have been making or unmaking manhood and womanhood. Every factory great or small has been doing this. Every industry is elevating or degrading labor. Character tells in a man's work, and work the motive for doing it, the spirit in which it is done and the conditions under which it is performed—work tells upon character. He who weaves cloth is consciously or unconsciously into it, and out of it: his character. He who works at the forge is to a great extent in the way in which he is doing his work forging his moral strength. And in making and mixing colors, men and women are consciously or unconsciously making and mingling the elements of character. You have taken account of the material products of your factory for the last year. I shall ask you to-night to take with me an inventory of other things which you have produced, the history you have made, your contribution toward the solution of the labor problem, and the work you have been doing in building up a true manhood and womanhood.

This gathering is unique. Employees meet alone and in discussing matters which concern themselves, get to think of the absent employer as an enemy. Employers meet behind closed doors and in discussing matters which concern them apparently often forget the rights of the laborer. But here to-night employer and employee meet as friends. Here you mingle upon a common paternal level. Here interests are felt to be common, and out of the discussion of the problems of labor in just such gatherings as these will eventually come the solution of our industrial difficulties.

There are three conditions in which a laboring man may live. He may be a slave, an hireling or a free, self-directed man.

1. The laborer as a slave, until comparatively recent times, seems to have been the lot of a large, perhaps the greater portion of humanity. There is in every man a desire to get something for nothing. We are all born with a love for power. We like to rule, to feel that we are masters of others' lives.

This desire to use the bodily power of others for our own comfort and pleasure is as old as the race, and is the foundation of that now all but extinct institution of human slavery. It was once the recognized right of the conqueror to make slaves of the conquered. There was a time, where if a man became a debtor to another without the power to pay, he must give himself and oftentimes his children as slaves to his creditor. Men reduced to the verge of starvation went into voluntary slavery to save their miserable lives.

Morally this regime was debasing to both master and slave. Greed ruled the one, and fear the other.

Financially slavery paid, but only in a restricted individual sense, and never in the broader, truer sense that society became generally and permanently enriched thereby. A country is not rich when a few men are possessed of abnormal wealth and the masses are slaves. Wealth to be wealth must be fairly equally distributed. The millionaire is poor when, because of the poverty of the masses, he cannot make use of his wealth in the channels of trade. Slavery never produced the general wealth and individual fortunes that relatively free labor has produced, and had it not been put down by force of arms would doubtless have disappeared with the rise of a truer financial policy.

2. The laborer as an hireling Having escaped from slavery, the laborer next became an hireling. He is as a rule that today. He goes into the market and sells his labor. He agrees to work so many hours for so much money.

The moral effect, while better than slavery, is still relatively bad. It has engendered greed in both employer and employee. It has produced strife and bitterness that have greatly retarded the moral development of man.

Financially it has paid better than slavery, but still does not give the full return to human labor. It is a regime maintained at great expense to both employer and employee. The struggle between the two has cost both dearly. Neither feels safe. Neither eats his bread in security and happiness.

When one looks into the motive which actuates men in this second stage of labor, he finds it at its highest to be *duty*. The employers aim to do what he calls his duty by his employee. But when a man makes duty his rule of action in business, it means he is going to do what he considers his duty by himself first. That is business he will tell you. This is also true of the laborer. He will do his duty, work the hours agreed upon and not a minute more, and in that time do

no more than it is his duty to do, which as a rule will be less, rather than more than he ought to do.

3. A new motive is wanted for both the laborer and the employer. The old motives of fear and greed and duty are morally degrading, and financially considered they do not pay.

What shall the new motive be? Let it be the building of character—the making, through the work done in the factory, of true, strong men and women.

Honest labor is the cheapest. Then let us do, as you are doing at the Acme Works, put a premium on honesty. When you do away with the "boss," who is the old slave driver in modern dress, and offer a half holiday to that department which shows the highest grade in attendance, and in the character of the work done, you are appealing to the better side of men and women and you are building up character in them. You are training men and women so that they will do better work and more of it without oversight than with it. You are making honest, intelligent employees, who enjoy their work and it pays you financially to do so.

Thinking men are much cheaper as employees than thoughtless ones. Let us then conduct our business so as to make thinking men. This, again, I know you are doing. When you offer a prize for the most practical suggestion handed in by employee, you are stimulating every one in your factory to think and watch every day for some device that will save you time and money. Such things as these build up character, and looked at from the financial point of view, they pay.

Well fed men are cheapest as laborers. Then let us pay the best wages we can, and furnish at the factory the cup of coffee as you do, and the bowl of soup as you propose doing.

It is one of the most hopeful signs of the times that I have seen—this movement in the Acme Works towards calling out that which is best in men and women through the work they do and the surroundings in which they do it. It is one of the greatest principles yet worked out in the labor world, namely this: that that which is best from a financial point of view is also best from a humanitarian point of view. It pays to build up character in the employees of a great factory. It pays neither to make men slaves, or hirelings but freemen. That you are doing. You are making men and women of character, calling the best physically, morally and intellectually out of them, and in doing this, you are getting well along toward the solution of the problem of labor.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. 1.

DETROIT, MICHIGAN, MARCH 10, 1900.

NO. 26.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

BARYTES.

It is then ground, preferably under water, dried and sold under the name of lithophone or zinc-sulphide-white.

This pigment is an excellent substitute for white lead, its color is good, its body nearly equal to that of white lead, and therefore much better than zinc oxide or combination lead-zincs.

It possesses the great advantage of not being decolorized by sulphurous gases or pigments containing sulphur, and of not being poisonous. It mixes well with all vehicles and is very permanent in regard to the influences of the atmosphere and others.

It has, however, one drawback and that is that it cannot be used with such colors or pigments that contain lead in one or another form. Thus a white paint made from white lead and lithophone, or a tinted paint made on a lithophone base and tinted with chrome green or yellow, will be very soon decolorized owing to the action of the sulphur in the zinc-sulphide on the lead in the white lead or in these tinting colors, forming thus the black sulphide of lead, the paint in question will become brown or dirty gray.

WHITING OR PARIS WHITE

The next important inert pigment used by the paint manufacturer and painter is doubtless, Whiting or Paris White, names and designations given to powdered, levigated and purified chalk. The Latin name for chalk, Creta; German, Kreide, is derived from the island of Crete from which the Romans obtained their supply. But chalk was used as a pigment, as we know, not alone by the Romans, but also by the Greeks, and by the ancient Egyptians, and furthermore by the Chinese, even long before these former nations were in historic existence.

(Continued in third column.)

MR. C. F. MCCAULEY.

Mr. McCauley has been with us as a representative since 1891. His home is in Fredericksburg, Va., about the centre of his territory. He is a methodical and hard worker, and a man whose many friends in the trade place absolute reliance upon his judgment and advice. He "wears well" and is a steady builder of business. His field is a large one, as he goes as far south as Georgia and reaches north to towns in the southern part of New York State.



Mr. McCauley is a Southern man and understands his customers "like a book," and is successful in a field that could not be cultivated satisfactorily by a representative who was not specially fitted for the work. He has been identified with the paint and kindred line of business in the capacity of a representative for a large portion of his lifetime, or at least since he has been able to "shift for himself." He joined the "Acme family" immediately after leaving the employ of a prominent varnish manufacturing house. He combines with energetic and convincing methods, the faculty for making "a good impression" from the start, and we are in position to know that this impression "stands," as the first criticism from the trade regarding him has yet to be received.

The immense chalk deposits of such great depth which are formed in the Thames and Paris basins, in some of the Danish islands and on the islands of Rugen, Usedom and Wollin on the mainland of Germany, have by their preponderance given their name to a whole aggregation or group of rocks. This group constitutes the chalk or cretaceous system of geologists, a group or classification which stands between the Jura and the tertiary formation; that is, it was formed after the volcanic forces of our globe were compar-

atively at rest, and the vegetable and especially the animal life in the immense and enormous bulk of water covering then the earth, gave or formed in the length of time, say millions of years, sediments and precipitations, which after laying on the bottom of these great basins of prehistoric seas came to light or to the surface at the beginning of the so-called tertiary period of our mother earth. I may say here that these precipitations and sediments are still going on in our fresh and salt water seas, and therefore, the formation of this group of rock or earth may be considered continual. But as a matter of fact, the whole bulk of these cretaceous aggregations are not pure chalk, or in other words are not adapted to furnish the Whiting or Paris White of commerce, but they include besides pure chalk, deposits of clay, sand and common lime stone, the latter, although having the same chemical

composition as chalk, is however, too hard to be used for the manufacturing of the above named painters' pigment. Besides that, the origin of chalk and limestone, notwithstanding they belong to the same group of rock geologically, are very different from each other, and may easily be recognized by an expert familiar with their natures and sources of formations.

The only and chief way to discriminate the one from the other is by means of a microscopical investigation. The limestone is formed by the precipitation of limesalts held in solution by the water.

TO BE CONTINUED.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, MARCH 17, 1900.

NO. 27.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

WHITING OR PARIS WHITE.

These lime compositions are in form of basic carbonate, oxide or gypsum, and will be precipitated by the carbonic acid of the air, the chalk, however, the raw material for the manufacture of Whiting or Paris White is formed and consists of minute shells of so-called forameniferae analogous in every way to those being still deposited at the bottom of the Atlantic at the present day.

These very small, microscopical small, bodies have the property of secreting a shell of calcium carbonate, and chalk is, therefore, nothing else than carbonate of lime, the remains of a deposit of these shells which has been formed after the death of the animal that inhabited them, and furthermore, chalk may be considered almost pure carbonate of lime with only mere traces of silica, alumina, magnesia, ironoxide and sometimes with very small traces of phosphoric acid.

These immense deposits of chalk are met with in form of very soft, smooth, friable white masses, interspersed with layers and boulders of flint, which latter intermixture, natural to the origin of chalk deposits gives no little trouble and extra work to the manufacturer of Whiting and Paris White.

Before chalk can be utilized for the many purposes to which it is applied in the arts and manufactures, especially as a painters' pigment, it must be purified by grinding and levigation.

When required for paint purposes it should be in as fine a condition as possible; chalk, as quarried, cannot be used for that purpose. Small pieces of flint may get caught in the paint mill and play havoc with the stones or eyes of same, in addition thereto the gritty particles of silica, invariably disseminated

Continued in third column

MR. A. D. HOAGG.

Mr. Hoagg has been "on the road" for us since 1891. He is "business" all the way through. We find that no two representatives work the trade on exactly parallel lines, although the same general characteristics may be noticeable in the work of different men. Mr. Hoagg probably represents the extreme of those who may be considered as "determined" workers. His plan is on the vigorous order and his method is to "come to the point at once," and confine



the talk to business facts, a policy that evidently meets the approval of the trade in that section, as he has many good customers that have been established for years. He is aggressive, persistent and not easily discouraged, and usually when he makes up his mind that we *must* have a certain customer he *gets* him. Mr. Hoagg has worked Eastern Iowa since he started with us and is familiar with "every foot of the ground" and takes good care of the jobbing, store and manufacturing trade that has been established on that territory. He is a man in the prime of life and resides with his family in Davenport.

through the body of chalk, are not properly crushed, neither by an edge-runner nor by a paint mill. Therefore the chalk has to undergo first a crushing process in a powerful disintegrator, and the then finer grit can be removed by levigation after grinding.

From these disintegrators the chalk is carried to flat-stone mills in which it is ground very fine under and with the aid of water. But even the finest grinding fails to crush all the hard grit; this can only be completely removed, as I said, by levigation.

The levigation plant is very simple and is worked on the same principle as stated previously with white lead, and especially with barytes in regard to the floating process of this inert material. After all, or after almost as much as possible of the grit is removed, the chalk suspended in water is allowed to settle down and after that the water is drawn off.

The chalk has now been converted into Whiting or Paris White and forms a thick, heavy, white, pulpy mass. It is lifted out of the tanks and dried either by natural or artificial heat, but as the weather being such an unreliable factor, artificial heat is now-a-days mostly applied, using specially arranged drying kilns.

Care, however, must be taken not to overheat the Whiting or as the technical term is, "roast and stew" it. Whiting dried in this way is always more or less caustic.

owing to its having been overheated and thus partially converted into quick-lime.

In order to make the Whiting finer and more purified, that is, in order to obtain a still better and higher grade of article, it undergoes a bolting process and comes then as English Cliffstone Paris White, Extra Bolted Gilders' Whiting, on the market.

It is furthermore evident that the purer the crude material was, and the farther the purifying and levigation processes have been carried out, the higher is the grade of article obtained in the end.

TO BE CONTINUED.

Thoughts

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Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, MARCH 24, 1900.

NO. 28.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week.)

WHITING OR PARIS WHITE.

Thus we know that the lowest article, as common commercial Whiting, is made of the lowest grade of raw chalk and with the simplest and quickest process, while the highest grade, as English Cliffstone Paris White, has undergone the most elaborate manufacturing process of preparation and the natural raw material was the purest and whitest selected.

Whiting or Paris White by itself, like Barytes, has little or almost no covering power, that is, as we understand, when mixed with oil, it has not sufficient opacity to prevent the surface underneath shining through. It is therefore of no value by itself as an oil pigment for the painter, yielding as it does, only a dirty semi-transparent yellowish or grayish white. But it is in virtue of this transparency in oil, or want of opacity, that we may say enormous quantities, perhaps now-a-days, larger ones than Barytes are used as extender and are added to other pigments of good body or covering power, may it be in good faith, for the purpose of cheapening the price of the article, or for fraudulent purposes as adulteration.

Different, however, it is, when we consider Whiting or Paris White as a pigment in regard to distemper colors. For this kind of painters' material, it must be considered the ideal pigment, for white as well as for a basis for other colors.

Mixed with water and the necessary adhesive agents it shows good and sufficient body, much more than it does with oil, and furthermore, and this being one of the main points in regard to its appliance, it is the best adapted, the cheapest and most economical pigment for this style of painting.

Another article pertaining and allied to the manufacturing of paint, and in the manu-

Continued in third column

MR. W. H. CONNOR.

Mr. W. H. Connor, the subject of our sketch this week, is one of those quiet, unassuming men who, while not possessing the "gift of gab" which it is sometimes erroneously believed is an absolute necessity to make a success as a representative, has a habit of "getting there" with his trade, which indicates that *thinking*, intelligent and persistent effort will win out where frequently a flow of oratory would fail to accomplish the same result. The general



manufacturing trade in Ohio, which is Mr. Connor's field, is being cultivated by him assiduously and on scientific principles, and as many of our representatives will appreciate, such soil is not the most fertile. It is his habit to study the requirements of his customers, and those whose business he is endeavoring to secure, very carefully, and being thoroughly posted upon all the up-to-date methods of finishing and fully understanding what is best to suggest in each particular case, his judgment is always good and he wins and merits the confidence imposed in him by his trade. Mr. Connor has been with us since 1888, and has called upon all classes of trade in Michigan and Ohio. His home is in Toledo, Ohio, where he resides with his family.

facturing of which Whiting and especially its lower grades are used, is putty; the so-called glaziers' putty of commerce. This consists of Whiting and linseed oil, at least it ought to, ground and mixed under edge-runners, into an impalpable stiff paste.

In regard to the durability of Whiting, we may say that we can consider it quite a permanent pigment, especially if it was dried in the proper way, that is, if it shows no traces of causticity. It is not acted on by any of the atmospheric agents, which are often so destructive to other pigments.

If, however, Whiting shows small traces of causticity, its permanency as pigment to be used with linseed oil is somewhat, we may say, greatly diminished; for it is apt then, under all circumstances, and some paint experts as Messrs. Pease and Dudley, chemists of the Pennsylvania R. R. say, all and every Whiting, may it be caustic or not, to cause a certain degree of saponification of the free acids in the linseed oil. The consequence is, there is a lime-soap formed, a soap very brittle and without any elasticity and permanency, and furthermore, very soluble in water. Therefore the paint containing such a defective whiting as a constituent in its pigments cannot be permanent; wind and other external influences act on the brittle lime soap, moisture and rain dissolve it out of the protective coating, rendering same loose and incoherent in texture, the paint is apt to and will crack and chalk off.

The element or metal calcium gives not alone in its combination with carbonic acid in form of chalk, or when same is powdered and purified by grinding and levigation as Whiting or Paris White, a valuable inert pigment for the painters' use, but also gives in another form of carbonate of lime, that is not in an amorphous form as the chalk, but in a crystalline structure, a very adaptable white pigment for the painter and in particular very adaptable and much used by paint manufacturers.

TO BE CONTINUED.

THOUGHTS

Special Notice.

The price for carbonate of lead (strictly pure lead of the various brands) has ruled so low during the past few years that the demand for graded, or zinc-leads, as a result diminished considerably. Since the price of carbonate has advanced so greatly, the demand for other brands has increased proportionately. While these have naturally advanced along with carbonate, the price to the dealer and consumer is less, and consequently they meet with more favor than under former conditions. You can increase your sales largely by pushing "Michigan Seal," "Pyramid," "Painters" and "Bristol." Try it next week and see what good results you will meet with.

We desire to call your *special* attention to our "Michigan Seal" brand. This is an article of unusual merit in every particular. As regards opacity, or body, and covering capacity, it will be found to possess *great superiority*. It is also *extremely durable*. Our "Pyramid" brand will also give great satisfaction.

Varnish and its Constituents

I will not enter into detail regarding the amount of varnish and Japan we are making. During my eleven years connection with the Acme, the output in this department has more than doubled. Some days we turn out 1400 to 1500 gallons per day, while our paint department consumes more varnish, annually, than the total output of some varnish factories. In my remarks I shall mention but two classes of varnish. Fixed Oil Varnish and Shellac, these being the only kinds we manufacture at present.

The following gums are the most prominent in use:

AMBER—This is the hardest known fossil resin. It is found on the Prussian shore of the Baltic Sea. It fuses at a very high temperature which discolors the finished product to a certain extent. Its use in varnish making is limited.

ZANZIBAR—The next hardest gum is also a fossil deposit. It is found in the Isle of Madagascar, is partially opaque and partially transparent, the price ranging from 35 cts. to \$1.25 per lb. The use of this gum has decreased greatly in the last ten or twelve years. It is also becoming more or less scarce every year. The finished product from this gum has a brilliant lustre.

KAURI—This being the principle gum used by us, I shall enter more fully into details of its production. It is found only in the province of Auckland, New Zealand, where it is dug out of the earth, a few feet below the surface, in pieces from the size of a man's fist to some nuggets weighing as much

as 50 lbs. It is covered by a coating resembling gravel. The general theory is, that the Kauri Pine trees have, by decay of nature, left their resin sap behind to agglomerate and fossilize for ages, while not a trace of wood remains. Another theory is, that at some previous time, the large forests had been destroyed by fire, and the gum, bubbling out, deposited itself in the ground and there changed its nature into the hard product we now use. It is largely dug by Australians and natives of Great Britain, who have emigrated to that country. They live out of doors, and for tools, carry a spade, pick and an iron rod about 5 ft. in length by $\frac{3}{4}$ inch in diameter, tapering to a point. The digger goes over the field, thrusting his rod into the earth, he having become so expert as to tell when the point comes in contact with gum. He then proceeds to dig away the earth with his pick, and shovels out the gum, which he partially cleans and places it in a bag carried for that purpose. The gum is traded at stores for provisions, tools, etc., or sold for cash. There are stores on every gum field, where the digger can dispose of his gum. These gum fields are either in the hands of native owners, the New Zealand government, or Europeans. The production of Kauri gum has reached the immense quantity of 11,000 tons per year. It has doubled in price in the last 10 or 12 years, the increase being more apparent in the higher grades, which are growing scarcer every year. The price of Kauri ranges from 5 cts per lb. for dust, to from 60 cts. to 70 cts. for higher grades.

MANILLA—This gum holds second place to Kauri in point of consumption. It is a fossil gum found in the Dutch East Indies. It is not as hard, nor as satisfactory for varnish making as Kauri, and is only used in cheaper grades of varnish. It is highly impregnated with acid and is a difficult gum to work, although it is a soft gum it is more difficult to fuse it properly than Kauri or Zanzibar.

DAMAR comes from the island of Java. It is a soft gum procured from a specie of palm tree and is gathered annually, it oozes from the tree in tears from the size of a pea to a large walnut. It is one of the softest gums and can be cut in cold turpentine or naphtha.

BENGUELA, ANGOLA and SIERRA LEON are gums in very limited use.

SHELLAC—The manner in which gum Shellac is produced is very interesting. It is a resinous incrustation formed on the bark, twigs and branches of various trees in India, by an insect known as the *Coccus Lacca*. The branches are collected with the incrus-

tation, after which the resin is detached and thrown into reservoirs, containing warm water, where it is thoroughly washed for several hours, which separates the coloring matter from the resin and wax. After it has been thoroughly washed it is fused in thin layers, on a smooth surface, where it congeals rapidly. It is then packed in cases ready for shipment.

Next in order, comes Linseed Oil. It is very essential that it be a pure article, free from foots and foreign matters. Some 15 years ago a varnish maker would not attempt to use other than cold pressed Calcutta seed oil, which is now in very moderate use. At present, American Varnish Oil is in general use. This is ordinary commercial oil from which the foots and glutinous matter has been extracted by artificial means. This oil being made by what is termed the hot or steaming process, which softens the seed so that the glutinous matter is pressed out with the oil. This substance, ordinarily termed grease by a varnish maker, is non-drying and interferes with the hard drying necessary in making varnish. The quality of linseed oil depends greatly on the quality of the seed from which it is crushed. The seed varies in quality. Sometimes it is harvested before it gets ripe, also weeds grow up with it, the seed from which is gathered with the flax seed. Both of these conditions affect the quality of the oil. Ordinarily the quality of linseed oil can be ascertained by tasting it. A good oil leaving a sweet, pleasant taste in the mouth, while an inferior oil is bitter. In preparing oil for making varnish, it is boiled in connection with Manganese, lead oxide, or some other oxidizing agent at a temperature of from 400 to 500° Fr. The length of time the boiling is kept up varies from 3 to 5 hours. I will not enter into the details regarding solvents for shellac. We use only two, grain and wood alcohol.

We now come to the manipulation of the various products used in making varnish. (Copper kettles are universally used) for fusing gums. The action of the acid on iron causes discoloration, therefore, iron kettles cannot be used. A kettle containing 100 to 200 lbs. of gum is placed over a coke fire and kept there until fused to a liquid. It is then necessary to watch it closely, testing it from time to time with a small iron rod which is passed through a hole in the cover. When a liquid gum is of a proper consistency, the kettle is removed from the fire and the requisite amount of hot oil added. It is then taken to the mixing room and cooled down to about 400° Fr. When the turpentine is added, after which it is pumped into tanks to clarify.

This process takes from 4 to 6 weeks. This necessitates carrying a large stock, as it cannot be made and shipped the same day, like paint.

Orange and white shellac are made simply by cutting the gum in wood or grain alcohol.

Thoughts

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VOL. I.

DETROIT, MICHIGAN, MARCH 31, 1900.

NO. 29.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

WHITING OR PARIS WHITE, GYPSUM AND CHINA CLAY.

I relate here to the white pigment, used by us under the nomenclature of "white filler." It is nothing else than a very finely ground and levigated marble-dust, chemically like Whiting or Paris White "carbonate of lime." It is, as I said, not amorphous, but of a crystalline structure, and in virtue of this, it has the properties similar to those of barytes, to appear under oil not as dirty or yellow, grayish white, like whiting, but whiter and more transparent; that is, it is as an oil pigment whiter than Paris White, but has naturally, according to its molecular crystalline construction, very much less body or covering power.

But as it is used as an extender only, and as it is very much lighter in gravity than barytes, it was found that it may be used with great advantage in connection with white lead, zinc whites, and especially in the so-called "graded leads," the white color of which it will not impair, but which would be greatly deteriorated by the use of carbonate of lime in form of Whiting or Paris White.

Another advantage this pigment has, is that it will not settle hard or caky in a paint put up as can or shelf goods or to be used in dipping tanks, owing to its light gravity it stays very well in suspension, and owing to its crystalline structure it will not settle hard, but is easily broken and stirred up again.

Another white inert pigment, the basis of which is calcium or lime also, is Gypsum, or hydrated plaster of paris. It is the sulphate of lime of chemistry. However, it is not used extensively as a paint pigment in the manufacturing of liquid paint, its chief use is as an inert or extender in the manufacturing

Continued in third column

MR. M. J. REYNOLDS.

Mr. Reynolds has "grown up" with the Acme. His knowledge of the intricacies of a representative's calling has been gleaned entirely in our service, a matter of considerable satisfaction to us, as we have no reason to be ashamed of his accomplishments in this direction.

He is a diligent student and apt scholar, and an enthusiastic worker, and everything he does, from the "landing of a big jobber" to the care exercised in writing orders, indi-

of dry colors, such as red-iron-oxides, and sometimes it is found to form the basis of chrome greens and chrome yellows, especially in the so-called "golden ochres."

It is mined or quarried in its native state, and needs only little further preparations to be used as a pigment. Artificially prepared by precipitation, it forms in connection with alumina-hydroxide, which latter is precipitated simultaneously the valuable white pulp pigment the "satin white" of the paper-stainers and color-lake manufacturers

Besides Barytes and Whiting, usual met with in paint and among its raw material, also-called extenders or inerts, china clay is found also frequently. It is, however, at the present time not as much used as it was ten or fifteen years ago. Its appliance is nowadays more restricted to the manufacturing of specialties, or rather articles which being not in the strictest sense of the word paint, nevertheless are allied or relative to paint and to its appliance, and therefore are mostly more or less also manufactured by paint manufacturing concerns. I refer here to wood fillers and other sundries, in which china clay and mostly also another inert pigment, "sillex," or ground quartz are the chief and main constituents.

China clay, or kaolin, as it is named sometimes, is chemically a silicate of alumina, varying in composition according to its location and origin. This is the more com-



prehensive and natural when we consider that china clay is the product of decomposition of the mineral felspar, the chief constituent of the vast and immense aggregations of granitic rocks. This felspar, intermixed with sand and sometimes with mica—falsely named isinglass—the mica giving the glittering appearance to the granite, is chemically a silicate of alumina, potassium or sodium, and when coming in contact with the atmosphere, that is, the carbonic acid and water, as rain, is decomposed, that is, the carbonic acid transforms the potassium and sodium components into the soluble carbonates. TO BE CONTINUED.

cate the result of thoughtful work. Enthusiasm probably explains the cause of his success better than any other word. It is the element in the work of any representative that overcomes more obstacles and discouragements than anything else. Mr. Reynold's work as a representative commenced in 1888, and for the past twelve years he has been hard at it with unabating energy. He is a young married man, his home being in Rochester, N. Y., and his field the State of New York. His work with all classes of trade indicates the result of concentrated and persistent effort and the inevitable result that invariably follows such a course.

THOUGHTS

Comparative Cost to Consumers of New Era High-Grade Prepared Paint, and Strictly Pure Lead and Oil.

100 lbs. White Lead.....	\$ 7 00
4½ gallons Linseed Oil @ 70c.....	3 15
¼ gallon Dryer.....	25
¼ " Turpentine.....	25

\$10 65

Making 7½ gals. of paint at a cost of.....\$1 40 per gallon

New Era High-Grade will cover at least 15 per cent. more surface than paint as per above, and it would require, say, only 6½ gallons for the same surface for which 7½ gallons of above paint would be needed.

7½ gallons above paint.....\$10 65

6½ " New Era High-Grade @ \$1.40 per gallon..... 9 10

Actual saving.....\$ 1 55

A difference in favor of New Era High-Grade of about 15 per cent. No allowance is made here for time and trouble required to break up lead in oil, which should be figured at least five cents a gallon, for the cost of the colors used in tinting, nor for the much greater durability of our goods as compared with white lead alone, due to the addition to the lead paint of the zinc oxide, and also the consequent greater quantity of oil per pound of base we are enabled to use.

NOTE—The above we consider correct. The ideas of our different representatives on this subject will be published, so that comparisons may be made and a proper understanding of the subject arrived at.

Mr. A. R. Kelly's Ideas Regarding the Comparative Cost of New Era High-Grade and Lead and Oil Paint.

At the present time lead and oil are very high out here on the coast, the established retail price of same being, white lead, 7½ cts. per lb.; boiled linseed oil, 75 cts. per gal. Figuring upon this basis, we find that the cost of the two are about alike, taking the general retail price of \$1.75, which is the established figure out here.

To illustrate, I give you the generally accepted standard, adopted by the master painters of this coast, figuring out my volume of lead, or in other words the number of gallons it bulks, according to the figures of the National Lead Trust, 2½ gals. to the 100 lbs., these figures are based on two-coat work, outside.

4½ gals. Boiled Linseed Oil @ 75c.....	\$ 3 74
¼ gal. Turpentine @ 75c.....	19
100 lbs. White Lead.....	7 75
2 lbs. Tinting Color @ 25c.....	50

\$12 18

Making 7½ gals. paint, at a cost of say.....\$1 56 per gallon.

To this must be added the cost of labor in breaking up the lead, and mixing above, say

5 cts. per gallon, making a total of \$1.61 per gallon.

Now, to finish a job in an equal manner with above mixture of lead and oil, it would take:

6 gals. New Era H.-G. @ \$1.75.....\$10 50

1½ gals. thinner oil and Turps. @ 75c 1 12

\$11 62

Making 7½ gals. paint costing, say, \$1.55 per gallon.

Seven and a half gallons New Era High-Grade, thinned as above, will cover as much surface as the lead and oil mix ures given.

In addition to the advantage of price, there is also the advantage of the cans, which are certainly worth something for use as paint pots.

In answer to your second question, as to who it is that decides as to whether lead and oil, or prepared paints shall be used for house-painting, would state that in my experience on new work, this question is generally decided by the architect; on old work, by the painter, as a rule, although in some instances by the owner; but even the architect is influenced in most cases by the painter.

I find the better plan is, if possible, to see all three, but by all means to work the painter, as I suppose you are aware, the painter, as a rule, is generally very bitter against the use of prepared paints. Many call this prejudice upon his part, I do not, as I believe in nine cases out of ten, he has very good reason for this prejudice, owing to the very many worthless paints now being sold with all sorts of cast iron guarantees.

I have seen many and many a framed certificate of purity, guaranteeing pure lead, zinc, linseed oil and turpentine, and nothing else, hanging upon the walls of dealers, signed with the manufacturers names, and offering to forfeit the goods if not as represented, when I knew, and the dealer handling them knew that they were adulterated, all the way from 20 per cent. to 40 per cent., hence it is not astonishing that the poor painter becomes mixed up, and places all prepared paint in the same category.

How to overcome this is a hard question. The best results that I have noticed so far, are attained by the samples you send out to the painters.

Now, as to your third question: "who is it that applies the paint?" In large cities, in ninety-nine cases out of a hundred, the goods are applied by a painter; in smaller towns and villages, the work of application is about equally divided between the house painter, owner, or some handy Andy around the place.

As a rule, in the cities, the painter furnishes both labor and material, in the country the

owner generally supplies his own stock, furnishing such material, however, as suggested or recommended by the painter.

With the New Era High-Grade, all cans of the same shade of color are identical. If a painter opens up a dozen cans today, and in a month from now opens up another dozen, to finish a job, there is no trouble of tinting to match the first lot; whereas, in the case of lead and oil, the contrary is the case, the painter very frequently loses hours of valuable time, in the endeavor to match a first lot, and in many instances makes a botch of it; as in all my experience I have never known a painter to work by rule or formula, always by guess work; whereas, the mixed paint grinder works entirely by rules, and carries out his formulae with mathematical nicety and accuracy.

Respectfully,

A. R. KELLY.

Queries.

When you call on a merchant and sell him a nice little bill of specialties, how is it you never also sell him, say a few pounds of oil colors?

What's the reason you cannot do just as well as some of our other men and include in your orders a few pounds of Japan colors, black?

Select some one item in each line; make a leader of it; get in a few pounds this trip, and next time you can undoubtedly increase it, and thus increase your sales and the volume of our business.

Next trip make a leader of something else, and finally you will establish every line we make.

Some men on the road take orders, others sell goods. We like the latter class best. Which class are you in?

Who can offer the best suggestion, based on the foregoing items?

Indianapolis, Ind., Feb. 25, 1900.

Editor THOUGHTS:

I think our sample cards are all right as they stand, no doubt that a twelve color card would be a good thing in some sections, but believe we can get along very nicely with what we now have. Yours truly,

No. 8.

St. Paul, Minn., Feb. 24, 1900.

Editor THOUGHTS:

What is the difference between an old hat and Acme New Era High-Grade Prepared Paint?

An old hat will cover a multitude of sins, and New Era High-Grade Prepared Paint will cover a multitude of dark spots in your home. Yours truly,

No. 1.

Thoughts

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VOL. I.

DETROIT, MICHIGAN, APRIL 7, 1900.

NO. 30.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

WHITING OR PARIS WHITE, GYPSUM AND CHINA CLAY.

Water, as rain or snow, dissolves these potassium or sodium carbonates and carries them away, the insoluble component, the silicate alumina, is left behind, or sometimes washed down to lower localities where in the length of time immense beds of pits of silicate alumina, that is China Clay, are deposited.

These beds are quarried similar to the method employed in the quarrying of chalk; the China Clay is soft enough to be cut or sawed in large square blocks, which are then crushed in disintegrators, and the powdered mass is then purified from sand, mica, grit and other foreign matter by levigation and dried in almost an exact way as in the finishing process of Whiting or Paris White.

In case the deposit or pit of China Clay is not large enough to afford a regular mining or quarrying, and in case a plentiful supply of water is on hand, the China Clay deposited in the pit is transformed, first in a soft pulpy mass by means of a constant stream of water, and then pumped by special arrangements up to the washing and levigating plant. This method is mostly in vogue in England, while the former regular mining process is generally used in Germany and France.

In regard to the properties of China Clay, making it adaptable for a painter's pigment, I have to say, that it must be considered not a very good one. Its body and covering capacity is very inferior; with oil it produces a yellow-grayish, very transparent mixture, and although it is very permanent as a pigment for itself, it does not give a fairly permanent coating when applied as oil paint.

The reason is its nature is rather repelling

(Continued in third column)

We are in receipt of advice that Mr. Dougall's family has been increased by an $1\frac{1}{2}$ boy.

MR. F. R. DOUGALL.

"Frank" has been with us since 1894, and has demonstrated beyond the shadow of a doubt his ability to sell our goods. He is one of the kind of men whom, after a few meetings, you never think of "calling by his last name." It is not a "familiarity that breeds contempt," either. He is liked for his good natured genuineness. His easy-going and genial style may not at first indicate the strength of character and degree of resoluteness of which he is capable, but

towards linseed oil, than assimilating or combining with this medium, it will therefore not act as a protector for the oil film, the consequence is that the external influences will freely act on the oil, destroying its protecting properties, and the pigment having then no other support, will peel, powder and chalk off.

If properly prepared and of good quality China Clay is a white amorphous very light powder, having a somewhat greasy or soapy feel.

As I said before, it is not much used nowadays in the manufacturing of liquid and paste paints. However, it is not long ago that in virtue of its very light gravity and of its fineness and freedom of grit, it was used as an extender, or as means to give to other heavier pigments more buoyancy in the vehicle; that is, it was used especially in so-called dipping paints and as a preventer against settling of the paint in canned and shelf goods. But experience taught very soon that the use of China Clay in such paints was rather a drawback than an improvement; the paint did not alone lose its durability, but showed still another very bad feature, the feature of "livering-up."

The reason and cause of this in general is not yet clearly understood, and many theories are sprung and laid down by paint experts, contradicting often themselves and one another. The only right and

doubtless very adoptable theory is that the water of combination in the China Clay, a hydrated silicate alumina, causes a partial saponification in one or another way, in the linseed oil, similar to that which occurs in paints containing Gypsum. This, my theory, I intend to make later on, the subject of a special paper, dealing with "hardening and livering-up" of paint.

Of all the China Clay yielded by nature to the arts and industries, only a comparatively small percentage is used by paint manufacturers; the main bulk, however, finds its way into the manufacturing of pottery, and fire bricks, and as filling-up of paper and textile



THOUGHTS

goods, and last, but not least, is used as raw material or basis for the manufacturing of ultramarine blue and green.

Previously in connection with China Clay, there was mentioned also "silex," as an inert pigment, stating that it was ground or pulverized quartz. I will only state here that in comparison with China Clay it has almost the same properties in regard to its appliance as a pigment, and the same relations to linseed oil or other vehicles, as the white filler has in comparison with Whiting. That is, it gives with oil a whiter and clearer but less opaque mixture than China Clay, owing to its more or rather almost perfect crystalline structure. If ground very finely and having undergone a levigating or floating process, it has even more buoyancy than China Clay, but its crystalline structure is of such a system that it is very apt to form a somewhat so id and hard-to-break-up cake or mass after it has settled down out of the paint in which it has been used as a pigment extender.

Its chief use, however, is only as pigment for fillers and sometimes for so-called surfacers. It is a white more or less fine powder, according to the perfection of its preparation, and at the same time of an exceedingly hard grain or composition, harder than even barytes; in fact, the hardest and least affected pigment known.

Among other white inert pigments, as carbonate and oxide of magnesia, carbonate of baryta and others of inferior importance, there is perhaps only one that may still deserve special mentioning, as it is now used by many paint concerns, and among these by ourselves.

This pigment is the so-called asbestos-pulp, or if in a finer state and less fibrous, the talcum or soap-stone of commerce.

It is, however, not used as an extender, or as we may call it, as an adulterant, but its use in certain classes of paint has a certain and defined reason and cause. We use it, and that in very small quantities only in certain paints, as a buoyant, in order to keep the pigments in suspension, for which purpose its very light gravity and its molecular construction, the latter being of a fibrous form, seem to and in fact proved to make it the ideal and proper medium. The quantity used, however, must not exceed 5 per cent., or at the most 10 per cent. of the total pigments, as it would then greatly interfere with the covering, or rather spreading properties of the paint; the fibrous nature of the asbestos-pulp would cause a more or less rolling of the paint under the brush.

TO BE CONTINUED.

Comparative Cost to Consumers of New Era High-Grade Prepared Paint, and Strictly Pure Lead and Oil.

100 lbs. White Lead.....	\$ 7 00
4 1/2 gallons Linseed Oil @ 70c	3 15
1/2 gallon Dryer.....	25
1/2 " Turpentine.....	25
	\$10 65

Making 7 1/2 gals. of paint at a cost of.....\$1 40 per gallon

New Era High-Grade will cover at least 15 per cent. more surface than paint as per above, and it would require, say, only 6 1/2 gallons for the same surface for which 7 1/2 gallons of above paint would be needed.
7 1/2 gallons above paint.....\$10 65
6 1/2 " New Era High-Grade @ \$1.40 per gallon..... 9 10

Actual saving\$ 1 55

A difference in favor of New Era High-Grade of about 15 per cent. No allowance is made here for time and trouble required to break up lead in oil, which should be figured at least five cents a gallon, for the cost of the colors used in tinting, nor for the much greater durability of our goods as compared with white lead alone, due to the addition to the lead paint of the zinc oxide, and also the consequent greater quantity of oil per pound of base we are enabled to use.

NOTE.—The above we consider correct. The ideas of our different representatives on this subject will be published, so that comparisons may be made and a proper understanding of the subject arrived at.

MR. F. R. Dougall's Ideas Regarding the Comparative Cost of New Era High-Grade and Lead and Oil Paint.

The following is about right, at present costs:

Cost to consumers of lead and oil.	
100 lbs. White Lead	\$ 8 00
6 gals. Linseed Oil @ 70c	4 20
1/2 gal. of Turps. and Dryer.....	80
	\$13 00

9 gals. of paint cost \$13.00, or 1 gal. would cost \$1.44 4-9.

New Era Paint is pretty generally held to the consumer at \$1.40 per gal. That would make lead and oil cost, per gallon, \$1.44 4-9; New Era High-Grade Paint, per gallon, \$1.40. Difference in favor of New Era High-Grade Paint, per gal., 44-9c., or practically 5 cts. per gallon in first cost, that of course is not taking into consideration the difference in covering capacity and the saving in time and labor effected by using New Era High-Grade Paint. In the large majority of cases a man who wants his house painted, goes to a painter and gets him to estimate on the job, the painter to furnish everything—labor, brushes and material. What is to be used in the way of material is left to the painter

to decide, the man who owns the house generally contenting himself with telling the painter to use the best, then the painter proceeds to use what ever he sees fit.

This is particularly the case in the larger cities. This is the reason there is such a small percentage of prepared paint used in the large cities, as compared with the lead and oil used, as painters, as a class, are dead against mixed paint. We all know the principle reason: They think it detracts from their prestige, as artists.

In the smaller places, I should say, the consumer who recommends the material to be used and the one who leaves it to the painter, is about evenly divided.

Yours truly,

F. R. DOUGALL.

How Do You Vote on This?

What do you think of putting up Davies' Varnish Stain in two shades of oak, light or dark? A number of our competitors are doing it, and customers are asking for it. I suppose it has come from light or dark oak graining.

No. 9.

Notice.

One of our representatives has sent us a one pound can of empire permanent green, manufactured by Benj. Moore & Co., N. Y. Papers regarding same have been mislaid in some unaccountable manner and we have no means of knowing who sent it in, or what was wanted. Will the person who sent it in please advise us?

Certificate of Purity.

The above certificate sent to Cottonwood, reached me O. K. to day. I think this is a grand thing to have, and you surely have my compliments for same. I think this gives a salesman additional evidence of the good faith of our officers in the superior quality of our products, and deserving the compliments of our entire traveling family.

Yours truly, No. 22.

Notes.

Some of our representatives are very careless about marking samples sent us to be examined and duplicated, and in some cases samples come in without being marked in any way, which causes annoyance and delays orders.

Salesmen, when sending in orders for two firms to be shipped together, should always make notation to this effect on both orders. When only one is marked, it some times happens that the order sheet not marked passes through and is shipped before the other one is ready, and so often leaves a very small order to be sent alone.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, APRIL 14, 1900.

NO. 31.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

WHITING OR PARIS WHITE, GYPSUM AND CHINA CLAY.

We have herewith reached the end of the list of "white pigments" used either as "body colors," or as "extenders," and may proceed now to that of the so-called "color-pigments," the blacks, blues, yellows, greens and reds.

Before, however, I shall go further and give you more details in regard to these pigments, their manufacturing and their properties and qualities as paint pigments, I shall attempt to give you a fair and prehensive understanding about the commeaning of the various chemical operations and expressions, as oxydation and reduction, calcination, sublimation, striking or precipitation of colors and others, operations and expressions used in explaining same, we are naturally to meet with in discussion of such a matter. I shall not attempt to convert you into expert chemists or expert colormakers, but will try to make our meetings here more interesting for us all, by enabling you to follow me better in my explanations regarding the different chemical operations and the various chemicals used, by which the final result in form of apigment of such or such a color is obtained.

CARBON, BONE AND LAMP BLACKS.

Nearly all the black pigments in use by the painters and paint manufacturers are composed either of Carbon itself, or have that element as their coloring principle. Although Carbon exists naturally, as you know, in form of coal, yet this, its native form, is not used as a pigment in painting as it lacks the properties required for that purpose: therefore, all the black pigments are made artificially or are products of the arts and industry.

(Continued in third column)

MR. M. TAYLOR.

Mr. Taylor is tall, good looking, married and a hustler. He joined us in 1897 with these qualifications and a thorough practical knowledge of paints and painting, derived from years of actual experience in the shop and with manufacturing concerns. We think he is better looking than when he first came, and also knows more about paints and painting, but otherwise his qualifications



remain the same. As a result of hustling and a perfect knowledge of the requirements of the manufacturing trades, combined with tact, persistency and ability to handle this class of business as it ought to be handled, he has been particularly successful in this direction.

The store and jobbing trade has also been looked after carefully, and we consider his territory of Illinois one of our best for all-round business. Like all other successful representatives, his work indicates thoroughness and a carefully studied plan of action that must win out in time. His home is in Peoria.

The principle of their manufacturing is based on the following: When combustible bodies, such as wax, fat, rosin, coal gas and other so-called hydro-carbons, that are bodies composed of hydrogen and Carbon, undergo combustion, the hydrogen which these substances contain, is the first element to undergo oxidation, or be consumed, that is, it will burn off first, while the Carbon, especially if the flame be suddenly cooled by bringing a cold surface in contact with it, may almost entirely escape combustion and be deposited as soot.

When the burning substance is very rich in Carbon, the flame may smoke without being cooled, and it will do so all the more strongly the less the supply of air present.

This simple fact, as I said, is the basis which underlies all processes for the manufacture of the finely divided Lamp or Carbon Blacks.

As I stated in my first paper, the ancients used to make their Lamp-black, and this was the only black they had, exactly in the same way as we do it at the present time, that is, we obtain it on a large scale by collecting the smoke produced during the imperfect combustion of oils, resins, pitch and other oily or fatty residues of other industries. These substances all yield Lamp-black of various grades and quality. The operation is quite simple and consists merely in consuming all the constituents of the burning body except the Carbon and pre-

serving as much of that as possible.

Lamp-black is prepared in large quantities from the impure resins and other refuse matters that remain after the distillation of turpentine. These are burned in iron pots or sometimes in specially arranged furnaces supplied with a very limited access of air, the dense smoke produced by the combustion being conveyed into chambers hung with sacking or cloth, upon the surface of which the Lamp-black is deposited. It is scraped or shaken off from time to time, collected and packed in barrels, and is now ready for the market.

TO BE CONTINUED.

THOUGHTS

Comparative Cost to Consumers of New Era High-Grade Prepared Paint, and Strictly Pure Lead and Oil.

100 lbs. White Lead.....	\$ 7 00
4 1/2 gallons Linseed Oil @ 70c.....	3 15
1/4 gallon Dryer.....	25
1/4 " Turpentine.....	25

\$10 65

Making 7 3/4 gals. of paint at a cost of.....\$1 40 per gallon

New Era High-Grade will cover at least 15 per cent. more surface than paint as per above, and it would require, say, only 6 1/2 gallons for the same surface for which 7 3/4 gallons of above paint would be needed.

7 3/4 gallons above paint.....	\$10 65
6 1/2 " New Era High-Grade @	
\$1.40 per gallon.....	9 10

Actual saving.....\$ 1 55

A difference in favor of New Era High-Grade of about 15 per cent. No allowance is made here for time and trouble required to break up lead in oil, which should be figured at least five cents a gallon, for the cost of the colors used in tinting, nor for the much greater durability of our goods as compared with white lead alone, due to the addition to the lead paint of the zinc oxide, and also the consequent greater quantity of oil per pound of base we are enabled to use.

NOTE—The above we consider correct. The ideas of our different representatives on this subject will be published, so that comparisons may be made and a proper understanding of the subject arrived at.

Mr. A. D. Hoagg's Ideas Regarding the Comparative Cost of New Era High-Grade and Lead and Oil Paint.

The average cost or selling price of New Era High-Grade in my territory is \$1.50 per gallon in 1's, retail. Taking as a basis:

100 lb. keg "Trust Brand" White Lead, retail.....	\$ 6 75
5 gals. pure Linseed Oil @ 60c.....	3 00
1/4 gal., the average painter's amount of Dryer in 100 lbs. Lead.....	30
Tinting Color.....	35

\$10 40

Cost of average time in mixing.....\$ 1 20

\$11 60

Amount in gals.—2 1/2 gals. in 100 lb. keg, 5 gals. pure linseed oil, 1/4 gal. japan dryer. Total 7 3/4 gals. Actual cost to painter, \$1.50 per gal.; covering capacity, 250 feet per gal.; cost per square of 100 feet for pure lead and oil ready for the brush, 60c. per square.

Now, taking New Era High-Grade at its advertised covering capacity, viz.: 300 feet to the gallon, the cost per square, @ \$1.50 per gallon, would be only 50 cts. per square, making New Era High-Grade 20 per cent. cheaper for actual cost of material.

Now add the difference in wearing or lasting qualities, which is the true way to estimate the cost of material, and the New Era High-Grade is at least 40 per cent. less in cost.

You ask me who it is in my territory that decides what class of material shall be used. Well, it varies somewhat. Some consumers are prejudiced in favor of mixed paint—all will be, when they are thoroughly posted as to the merits of a pure mixed paint and any lead and oil. But I am sorry to say there are many consumers that will not have anything but lead and oil. 99 per cent. of the painters in Iowa are solid against mixed paint of any kind. Many of them will take a turn, however, and for the time being say pure mixed paint is all right, and what they will do for you in case you send them a prepared paint that is made from pure material. But they will laugh at the idea when your back is turned and in nine cases out of ten they will give your paint a black eye when you are helping them right along. I helped a painter here to several good jobs on which he was applying New Era, and during the time, he was always bringing up some argument in favor of lead and oil, although he acknowledged New Era had fine covering capacity and was as good as he could make himself.

In nearly all new buildings the architect specifies what material is to be used. Almost all large buildings that are repainted are done by contracting painters who furnish the material as well as do the work. Only those living in country places or on farms do their own painting.

Very respectfully yours,

A. D. HOAGG.

Working With the Jobber.

We consider the jobber an absolute necessity to the success of our business, and our representatives are expected to co-operate with them in every possible way for the furtherance of our interests. We make no better prices to the retail trade than the jobber can do, and it must be manifest that the dealer will prefer to order our goods from the nearest point, and especially when they can be shipped with other items that he secures regularly from the wholesale house with which he deals. The jobber's business is to distribute manufacturers' goods, and we cannot possibly expect to give as prompt and efficient service in every section of the country as can the local jobber. Let the jobber understand that we recognize his usefulness and want to help him. Send him orders you may secure from customers he has been supplying regularly, and also from new trade in his territory. Try to get

acquainted with the jobbers' representatives, cultivate their good will and interest them in our line by giving them orders to turn in that will help swell their sales. See that they all carry our monthly Rapid-Seller booklets, and send us their names so that the books will be mailed regularly. When you find that a prospective purchaser is interested in our line, notify the jobbers (all of them) in that vicinity by means of the cards with which you are provided for that purpose. By methods of this character you will gain their good will and preference for our goods. This means that their men will have instructions to *push* our brands, and instead of working the territory alone you will be supported by the representatives of all our jobbing friends. A great many "open orders" are sent to jobbers where the kind of goods only are specified, without reference to any particular brand, and in such cases the stock, or shipping clerk, uses his own judgment or has standing instructions as to whose goods shall be preferred. See to it that when "carriage paints" are ordered that "Neal's" will be shipped, and that "enamels" means "Neal's," etc. Work to have them endorse and prefer the "Acme" line every time.

Accommodating Customers.

A salesman sent in with an order for paint, an order for one-third of a dozen each, of three kinds of Stucco brushes, at \$10.40 per dozen. We went to considerable trouble to try and purchase these goods, and finally succeeded in getting them at an average cost of \$11.33 per dozen. We assumed this would be satisfactory to the customer, and did not delay shipment of the order, but wrote the customer stating what we had done, and that we would charge the brushes at the actual cost on account of the fact that the salesman had made the price of \$10.40.

This is the reply we received:—

"Mr. — told me you carried these brushes in stock, and had only a few days ago sent in his samples. If there is any difference charge it to him."

We cite this case simply to emphasize instructions in our recent bulletin, that on all these sundries of a jobbing nature, salesmen must carefully avoid specifying prices, except where a customer insists that he wants goods at a certain figure, and then the order must be accepted with the understanding that if we cannot buy at the figure named, that part of the order will be canceled. In almost every case there is a good deal of trouble and annoyance in buying such goods, and even at the small percentage we add on to the cost, in many cases we only come out about even. We do not propose to do this sort of thing in future, unless we make a profit on the transactions, so salesmen will be guided accordingly.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. 1.

DETROIT, MICHIGAN, APRIL 21, 1900.

NO. 32.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week.)

CARBON, BONE AND LAMP BLACKS.

This, and a more crude way in which the resin and pitchy matter is burned in digged trenches within a brick chamber or stall, do not produce a very fine and pure Black as it still contains a certain amount of resinous and bituminous substance together with ammonical and other matters. By heating it, however, to redness, packed in air-tight retorts, muffles or iron cylinders, nearly all of these impurities are driven off and almost pure, impalpable black remains.

In most cases, now-a-days, the process just described is more or less modified and not only ordinary Lamp-black but the better grades too, are obtained at the same time. This is brought about by interposing between the fire-place and the soot collecting chamber, a brick work gallery or a series of flues or condensers in which the successive deposits increase in fineness and purity, and therefore in value, until the last chamber receives the finest Lamp-black of all. The whole construction of these condensers is very similar to that used in the manufacture of zinc oxide out of speller.

Another process for the manufacture of Lamp-black is based on the collecting of the soot produced by a series of lamps burning heavy oils or other fatty matter. These lamps are arranged in a row or in a circle underneath an iron plate against the bottom of which the flames from the lamps impinge, and consequently the combustion is rendered incomplete, especially as these iron plates are kept cooled by a constant stream of cold water. This system was very soon improved by employing a revolving circular plate, thus continually bringing with the revolution of the plate, a fresh surface for

(Continued in third column)

MR. C. MEHLIG.

Mr. Mehlig is one of our "new men," having joined us in 1899, but is an old timer as regards presenting goods in our line. The avidity with which he "tackled" the trade on our brands indicates that he fully realized that he "had a good thing" and wanted everybody to know it. He possesses in an unusual degree one of the very best qualifications of a successful salesman—enthusiasm. It is infectious and the many customers in Mr. Mehlig's territory



who are enthusiasts of our goods, particularly New Era High-Grade, are practical evidences of the success attending his efforts. Mr. Mehlig calls on all classes of trade in Minnesota and North Dakota. His particular hobby is New Era High-Grade, and he has made a most creditable record in placing stocks of these goods. A prospective customer must feel ashamed of himself should he fail to order the goods after listening to Mr. Mehlig's arguments, as he is a most convincing talker, with a justifiable faith in the line he presents. He is a married man in the prime of life and resides with his family in Sioux Falls, South Dakota.

the deposition of the black. As the plate revolves it comes into contact with scrapers which scrape off the black into suitable receptacles so that a fresh, clean, cold surface of the iron plate is always exposed to the flames, and herewith almost the maximum amount of black is produced by the combustion of the oil.

The same method or a similar process is employed here in America for the production of the so-called gas or Carbon Black. The oil-burning lamps are substituted by small gas-jets, the gas being the natural gas so abundant in our country, especially in Pennsylvania. However, artificial gas is used also.

The first Carbon-black factories used the old "bench process" also, that is, they used a stationary iron plate, but very soon adopted the revolving plate, or rather, rollers, which, of late, however, are almost universally superseded by the improved system of iron cylinders with automatic scrapers.

This gas or Carbon Black differs from the oil or other genuine Lamp-Black in that it is rather granular in texture and denser in form and in color, it is blacker in hue than any other black, giving, however, not the rich bluish gray tone and tint when reduced or mixed with any of the white body colors, as white lead or zinc whites, as real genuine Lamp-Black will: the gray produced with Carbon Black is of a brownish tone and tint. But we may consider it the purest form of black quite free from any traces of the unburnt oil often present in Lamp-Blacks and especially free from any traces of mineral matter or ash.

There is another Black, the so-called vegetable Black, which, however, may be considered a Lamp-Black also. It leaves or contains a very small trace of ash or mineral matter due to its production from the combustion of cork, wine-tendrills, and other vegetable matter. As pigments, these Blacks are very permanent; atmospheric influences have almost no action on them, thus we may often see a sign-board from

THOUGHTS

which the white ground may have been white lead or zinc or any combination has completely disappeared, the black of the lettering still stands out in raised and bold form. (Example on corner of Smith and Joseph Campau Aves., where the white of the lettering on sign has gone, and the black ground is retained as a considerably raised surface.)

These Blacks are furthermore very fine, and with the exception of some Carbon-Blacks very soft and velvety, so that they do not require a subsequent grinding before they are put on the market. They are all very light in gravity, especially some Carbon-Blacks, which makes them very difficult to pack and require, therefore, for packing, specially arranged automatical packing machines and presses.

Mixed with oil, of which they take or absorb a proportionally large percentage, they all dry very slowly, but show great covering power and spreading capacity, so that they stand more than 60 per cent. of inert material without losing their excellent qualities as covering and protecting pigments.

As I said, these blacks are straight pure Carbon, or nearly so, that is, they have no base or mineral matter in their composition; the next black pigment, however, the Bone, Ivory, or Drop, or Animal Black, or under whatever name or designation this pigment is put on the market, shows besides a certain amount of Carbon, the amount of which varying with the grade, quality and source of the pigment, also more or less inert mineral matter in the form of phosphate and carbonate of lime with small traces of iron, alumina, and sometimes magnesia oxides.

The first named inert mineral constituent, the phosphate of lime, is characteristic for this Black and is the chief and principle base for recognizing and determination of this Black in comparison with others, especially in chemical analytical work. The presence of these mineral matters is due to the raw material used for the manufacture of Bone-Blacks and the process employed. As the name Bone-Black (or Ivory-Black) designates, they are made from bones or allied animal matter. They are the black carbonaceous powder obtained by grinding the product of bones burned at a red heat in close vessels.

The name Ivory-Black, should, however, be properly limited to the finer and more expensive article prepared from ivory dust or turnings.

When bones are subjected to heat during the process of making Bone-Black, certain volatile products are given off, consisting of

an empyreumatic oil, fetid gases and ammonia vapors. The ammonia may be collected but the other products are generally burned.

TO BE CONTINUED.

Comparative Cost to Consumers of New Era High-Grade Prepared Paint, and Strictly Pure Lead and Oil.

100 lbs. White Lead	\$ 7 00
4 1/2 gallons Linseed Oil @ 70c.....	3 15
1/4 gallon Dryer	25
1/4 " Turpentine	25
	\$10 65

Making 7 1/2 gals. of paint at a cost of\$1 40 per gallon.

New Era High-Grade will cover at least 15 per cent. more surface than paint as per above, and it would require, say, only 6 1/2 gallons for the same surface for which 7 1/2 gallons of above paint would be needed.

7 1/2 gallons above paint	\$10 65
6 1/2 " New Era High-Grade @	
\$1.40 per gallon.....	9 10

Actual saving.....\$ 1 55

A difference in favor of New Era High-Grade of about 15 per cent. No allowance is made here for time and trouble required to break up lead in oil, which should be figured at least five cents a gallon, for the cost of the colors used in tinting, nor for the much greater durability of our goods as compared with white lead alone, due to the addition to the lead paint of the zinc oxide, and also the consequent greater quality of oil per pound of base we are enabled to use.

NOTE—The above we consider correct. The views of our different representatives on this subject will be published, so that comparisons may be made and a proper understanding of the subject arrived at.

Mr. Dan Davies' Ideas Regarding the Comparative Cost of New Era High-Grade and Lead and Oil Paint.

In reply to yours of the fourth, I have this to say: In estimating the cost of material for a job of painting, it is necessary to estimate the cost of all the materials actually used in the painting and left over in the form of unused mixed paint and partially used package of color, lead, etc., which cannot be returned to the dealer, and also the time required to mix the paint and make the shade in case lead and oil are used.

If mixed paint be used, there is no extra time in mixing or making colors and should be no material left over, as it is always possible to get a quart or one-half gallon to finish up, or to return unused cans and to exactly match the shade which has been used. For these reasons it is hardly fair to compare the cost per gallon to a well made,

thoroughly mixed and uniformly proportioned, prepared paint with a gallon of made-by-hand paint. If that cost be based on the amount of material it takes for a gallon of paint, but leaving out the particular percentage of waste, the time required to mix and color the paint and the left-over material in the hand-mixed paint, the cost per gallon may be stated as follows:

100 lbs. of Pure White Lead, at 7c.....	\$ 7 00
4 1/2 gals. Linseed Oil	2 70
4 lbs. of Tinting Color, at 20c.....	80
Total.....	\$10 50

Making about seven and one-half gallons of paint, weighing about eighteen pounds in the gallon, and costing \$1.40 per gallon.

As lead is usually bought in small kegs, in which the consumers pay for the wood in keg, and it is usually necessary to use some turpentine and some japan, the cost per gallon is usually about \$1.50 per gallon for small lots, exclusive of the time to mix.

The white lead paint weighing eighteen pounds, has no better body than a lead and zinc paint weighing from fifteen to sixteen pounds, consequently New Era High-Grade Paint will stand more reducing with linseed oil, at about sixty cents per gallon, as it weighs from 17 lbs. to 17 1/2 lbs. per gallon.

Now, as to who decides what material shall be used, I think it is usually the house owner, influenced more or less by the advice of his painter, because of the prejudice against mixed paints, generally advises lead and oil. The average painter is afraid that the use of mixed paint will reduce his earnings by making it easier for any one to do a job of painting.

Respectfully yours,
DAN DAVIES.

Note.

I am carrying a bunch of these cut-outs with me and leaving one wherever I find it to our interests, and I think they will do a great deal to increase the sale of enamels.

Respectfully yours,
No. 13.

All our representatives should be doing the same thing.—Ed.

Editor THOUGHTS:

Answering number nine in a recent issue of THOUGHTS, on two shades of oak, Davies' Varnish Stains, I will say that I have never had a call for either light or dark oak, and think one shade of oak is O. K., and will answer for either light or dark.

Yours respectfully,
No. 5.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

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VOL. 1.

DETROIT, MICHIGAN, APRIL 28, 1900.

NO. 33.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

CARBON, BONE AND LAMP BLACKS.

The process of making of Bone-Black varies according as the ammonia vapors are saved or allowed to go to waste. In the former case, the bones, freed from the fatty matter, flesh and tendons, by boiling and other manipulations, are carbonized or burnt in closed retorts or cylinders of fire-clay or cast-iron, in furnaces not unlike those used in the manufacture of coal or illuminating gas. A connection with the condensing apparatus is made by means of pipes, but the volatile products aside from ammonia are either allowed to escape or discharged under the fire, while their offensive odor is destroyed. When the retorts have been subjected to a red heat for thirty-six to forty hours, the charred bones are raked while hot into an iron box which is then hermetically closed till they are cold. They are then ground in mills to the desired fineness.

The better quality of Bone-Black, however, is made by a second process, where the volatile products are entirely destroyed. Here the bones are placed in cast-iron pots containing each about twenty-five pounds which are then placed together in pairs opening to opening, and closed or luted with clay. These pots are then piled up, 100 to 150 at the time, in a sort of kiln or furnace, the entrance of which is tightly bricked up. The pots are well heated for eighteen to twenty-four hours by the flame or fire playing around them, and the heat is still increased by the combustion of the combustible vapors which issue from the bones. Finally the contents of the furnace are allowed to cool, and the pots are taken out, and when thoroughly cold, opened and the product ground. The greatest degree of fineness is obtained by a so-called air-float-

Continued in third column

MR. H. C. CATER.

Mr. Cater graduated from a course of tuition in the way of "experience in the house" in '99, and is therefore a comparatively new addition to our corps of representatives. We can do some bragging about him in our own behalf, because we feel that in a certain degree the success that has attended his efforts is due to his previous training. He was a venturesome fledgling without a vestige of timidity, and a supreme confi-

ing process, the powdered and ground pigment being blown by a regulated air blast through a series of chambers or collecting boxes, the one located at the farthest end of the system yielding the finest and softest, and therefore, the best black.

As a paint pigment Bone-Black is of good permanency, not quite as good as Lamp or Carbon-Black. In tinting strength it is also naturally not quite as efficient as these Blacks as it contains less Carbon, the coloring principle of black pigments. In regard to density

of color, or as we may express it, in regard to its power or properties to absorb light, for, as we know, absorption of light and black coloration are the same phenomenon, Bone-Blacks are not as dense or black as Carbon-Blacks, but have more of a grayish tint or tone.

It works and mixes well with oil, and also with water as a distemper color. It is regarded a slow dryer, but dries under oil still better and quicker than the pure Carbon-Blacks.

CHROME YELLOW.

The different shades of Chrome-Yellow, ranging from a pale lemon to a deep or almost orange red, are chemical compounds of chromic acid and lead oxide, or in other words are lead chromates; they belong to the oldest known artificial inorganic dye stuffs or coloring matters as well as to the oldest known artificially produced color-pigments for the painter's use.

According to their production and composition they exhibit the most varying shades from a pale sulphur or lemon color to a red with a tinge or hue of blue.

These differences of shades are caused partly by the chemical composition, partly by physical properties as density and crystalline form or structure.

In the manufacture of dry colors, the Chrome-Yellows are produced by precipitation, occurring when a solution of a soluble lead-salt as nitrate or acetate of lead is mixed with a solution of normal or bi-chromate of potash or soda.

Under precipitation, a process and manipu-



dence in his ability to soar to success. He did not believe in over-cautiousness, and immediately wanted "something hard" to keep him busy. He got married and we gave him the New England territory. This was a combination that would appall an ordinary mortal, and it has kept him busy ever since. But he is just as enthusiastic now as the day he started out, and is making progress with our line in a particularly hard territory in a way that can only result from hard work of the right kind, and the encouragement to persist that is derived from the happiest of home ties.

THOUGHTS

lation very often and frequently applied in chemistry and in the arts and industries the manufacturing principles of which are based on chemistry, we understand or mean the separation of an insoluble new or newly created body, created or formed by the combination of part or of all the constituents of two or more chemicals applied or mixed together as solutions. Thus we have in the manufacturing of Chromo-Yellows two chemicals, a lead-salt and a chromate of potassium, a combination of chromic acid and potash; both are applied in form of solution, that is, they are dissolved in water.

We mix the two together, by pouring the chromate solution into the lead solution, a precipitation takes place immediately, as the new-formed chemical body chromate of lead is insoluble in the liquid medium, water. This newly-formed chromate of lead, the Chromo-Yellow, has been formed by the combination of the chromic acid in the potash solution with the lead in the lead solution, and as I said it is not soluble in water, it is separated out, or technically termed "precipitated."

TO BE CONTINUED.

Comparative Cost to Consumers of New Era High-Grade Prepared Paint, and Strictly Pure Lead and Oil.

100 lbs. White Lead	\$ 7 50
4½ gallons Linseed Oil @ 70c.....	3 10
¼ gallon Dryer	25
¼ " Turpentine.....	25

\$10 65

Making 7½ gals. of paint at a cost of\$1 40 per gallon.

New Era High-Grade will cover at least 15 per cent. more surface than paint as per above, and it would require, say, only 6½ gallons for the same surface for which 7½ gallons of above paint would be needed.

7½ gallons above paint	\$10 65
6½ " New Era High-Grade @ \$1.40 per gallon.....	9 10

Actual saving

A difference in favor of New Era High-Grade of about 15 per cent. No allowance is made here for time and trouble required to break up lead in oil, which should be figured at least five cents a gallon, for the cost of the colors used in tinting, nor for the much greater durability of our goods as compared with white lead alone, due to the addition to the lead paint of the zinc oxide, and also the consequent greater quality of oil per pound of base we are enabled to use.

NOTE—The above we consider correct. The ideas of our different representatives on this subject will be published, so that comparisons may be made and a proper understanding of the subject arrived at.

Mr. Goldsborough's Ideas Regarding the Comparative Cost of New Era High-Grade and Lead and Oil Paint.

Gentlemen—In answer to your inquiry of January 4th, regarding the relative cost of Lead and Oil Paint and New Era High-Grade, I have learned from several painters that the following combination forms the Lead and Oil Paint as generally made up, that is, for an all-round finished job, (of course priming coat being thinner, and all subsequent coats thicker or heavier). These being the average and aggregate prices:

100 lbs. of Strictly Pure Lead, @ 7½c S 7 50	
5 gallons Oil, @ 63c.....	3 15
1 quart Dryer.....	15

Total cost.....\$10 80

Making seven and one-half gallons of paint, about the consistency of mixed paints of recognized standard brands and costing \$1.44 per gallon. Consequently any mixed paint will have to be sold at \$1.44—to the consumer—to be placed on equal footing per gallon. The above prices are about what the consumer has to pay now for lead and oil paint, of course, when lead and oil are lower, a mixed paint to compete in cost (if above calculation is correct) will have to be correspondingly reduced. I believe the above calculation to be about what is claimed by the National Lead Co. I have never seen it actually tested, but as above stated it is the calculation made by the majority of painters.

In my territory there are a large number of property holders who have inherited the idea that lead and oil makes the only reliable paint and will have nothing else used. It is a sure waste of time for contractors, dealers or painters to try to change them, consequently with this class lead and oil is always used; there is another class who believe the painter should and does know best and his decision is final, and in the very large majority of cases is for lead and oil simply from the fact that he knows it to be a matter of self-protection, knowing that a good reliable mixed paint is more durable by a "large majority" than a mixture of lead and oil, and that lead and oil work comes oftener out of shape than work done with a good mixed paint, consequently they are the natural and persistent enemy of anything better than lead and oil. The dealer who has the confidence of his patrons and who honestly believes in and takes the trouble to push mixed paint is the best friend to it, and more frequently determines the consumer in favor of its use. In this section the farmer when he wants to paint, unlike the northern man, who with the assistance of his boys or hired help does his

own painting, hires a painter who generally gets the town boys and loafers to help him, and while he puts on anything the farmer wants, always advises the use of lead and oil and most frequently carries his point. With this condition of things as detailed it is hard to come to a satisfactory conclusion regarding who it is that carries the most weight for or against mixed paint. My opinion is that the painters and the indifferent dealers (who, if they have an opinion rarely express it) are the two worst enemies to mixed paints and probably influence the larger number of consumers to use lead and oil.

Respectfully,

J. R. GOLDSBOROUGH.

Concerning Analysis from University of Wisconsin.

ROCK RAPIDS, IOWA, April 20, 1900.

Editor THOUGHTS:

I was talking with Mr. Prideaux, of Adrian, Minn., concerning the purity of our New Era Paint. I let him see the different analyses of our paint. He finally ran across our analysis from the University of Wisconsin. Mr. Prideaux happened to be at Dodgeville, Wis., visiting his brother-in-law, Mr. Louis Ryall, when he (Mr. Ryall) sent the can of New Era to the analytical chemist to be examined. Mr. Prideaux handles our full line of goods—he says he handles the best line of paints in the United States. He is very much interested in our line. He just bought a nice bill of paints of me and he didn't kick a bit on the five cent advance.

Yours respectfully,

No. 2.

P. S.—I think those analyses are the best things on earth to sell Acme paint.

Note.

Would suggest that representatives again read over Bulletin No. 47, of April 2, 1900, concerning "sundries heretofore sold in a jobbing way." We notice a few of the salesmen still send in orders for such goods and in some cases specify prices. We would prefer that you avoid taking orders for those goods, but where compelled to do so you must not fix the price unless in accordance with instructions in bulletin referred to. We are crossing goods off orders every day owing to prices being as low or lower than actual cost to us.

I am using the postal cards to the jobbers in good shape, and am sure if their men push them along we will have a lot of our goods scattered around these diggings this year.

No. 6.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, MAY 5, 1900.

NO. 34.

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

CHROME YELLOW.

I do not intend to give here a series of working formulas for the manufacture of the various shades and qualities of Chrome Yellows, but will content to give you a general understanding how and by what means the dry color maker produces or strikes his large list of these important pigments. To begin with—the lemon yellow, and I will say here that I am speaking of the C. P. or chemically pure Chrome Yellows only, that is such pigments which are not adulterated or as we may call it extended with any inert materials as barytes or others.

It is now, however, a well known and well understood fact that a strictly pure lead-chromate cannot be produced in this modification in a serviceable form. The first condition for the production of a pale yellow, but at the same time brilliant, is the finest division and the lowest possible specific weight. If the solution of lead salt, in practice sugar of lead, is almost exclusively employed, in great delution and at a temperature not exceeding sixty degrees, fahrenheit, is precipitated with the properly computed quantity of bi-chromate of potassium or sodium, a very pale and slight deposit results at first; same, however, very soon changes its physical structure, turning denser and darker, and losing all its fire on drying. The last named drawback, it is true, can be obviated by using from the beginning an excess of about five per cent. of lead solution, and washing the precipitated Chrome Yellow very rapidly by repeated decanting. But the product obtained, though brilliant, after drying never shows a pure sulphur yellow, but always a shade with a cast of orange, it is more of a light medium shade.

Continued in third column

MR. R. M. BILLINGS.

Mr. Billings is another of the graduates of our class of '99. His training as a representative was under the guidance of one of our oldest and most careful men with whom he at first worked as an assistant. From Mr. Goldsborough he learned particularly well the lesson of thoroughness and the many "tricks of the trade" that usually are gleaned only after years of experience. Credit for his success is due in equal measure



to both teacher and pupil. His field is in the Southern States of Kentucky, Tennessee, Louisiana, Mississippi, Alabama and Georgia. Mr. Billings is fast making himself "solid" with all classes of trade in his territory, and is building up a good business in our specialties and is a particularly enthusiastic advocate of New Era High-Grade. He has demonstrated his ability to exercise proper judgment in looking after the interests of his house as well as his customers, and we predict for him a successful career. His home is in Jackson, Tenn.

In order to obtain the palest shade, which as I said before, is the consequence of the finest subdivision, it is necessary to produce another body together with the formation of the lead-chromate, which prevents the contraction of the former.

Lead sulphate has been known as such for a long time. Frequently the presumption is expressed, and I found this statement in many an essay and paper on Chrome Yellows, that the said yellows of the palest shade are a chemical combination of one molecular part of chromate of lead, and one molecular part of lead sulphate.

This is indeed erroneous, as a far slighter quantity of lead sulphate than this theory required, is sufficient to prevent the contraction of lead chromate.

I would like also to state here that it is entirely erroneous and wrong to presume that the pale shade of a lemon yellow is due to the admixture of a white pigment, the lead sulphate, presuming thus that the shade is lightened or weakened by the white; the sulphur or lemon color is only due to the very fine subdivision of the chromate of lead crystals, the contraction of which into larger, and therefore darker crystals, is prevented by the interposing crystals of the lead sulphate.

However, as the co-precipitation of sulphate of lead for the pale Chrome Yellows is regarded as self understood, these shades are termed chemically pure also, as far as no admixture of barytes or other inerts is made or shown. Such additions are made in large quantities, for these as well as the following chrome colors, with the exception of chrome red, which is always placed on the market really chemically pure. The process consists in that the barytes is well stirred up in the solution of the lead salt, and adding the chromate solution whereby the inert admixture is completely enveloped by the lead chromate formed, which way is far more advantageous for covering power and brilliancy than stirring in after precipitation, or even as it is

THOUGHTS

sometimes done, by a dry mixing. Thus extended yellows are known under the name of commercial yellows, and are naturally much weaker in tinting strength and covering power than so-called C. P. or chemical chromates of lead.

But nevertheless they have one or more good points to be well considered, and these are that they can be ground much finer. The pure chromate of lead is a soft flocculent powder, which, when ground up with oil makes a rich unctuous pasty mass, but it does not grind fine, and as a matter of fact is much more easily decomposed by the oil vehicle as well as by other influences, than a yellow that is struck on a solid inert base.

Chemically and physically considered, therefore, the extended commercial Chrome Yellows are better pigments for the painter's use than the chemically pure article. I shall later on refer again to this matter with more and clearer explanations, under the heading of chrome green, a pigment met on the market also in C. P. and extended form.

The yellows with only a faint cast of orange, the medium shades, are produced by precipitating the lead solutions with bi-chromates only.

The lead solutions may be normal or basic, in using the former only a small excess is to be necessary to produce the desired shade, or else a quantity of basic acetate of lead proportional to the percentage of lead oxide may be employed. The chrome lead or yellows, whether produced by neutral or basic acetate of lead are neutral chromates. For their production the following common and general rule may be considered an established fact:

The greater the dilution, the lower the temperature, the more vigorous the stirring and the quicker the washing out, the purer and more brilliant will be the shade. Another matter of consideration, and this applies to the manufacturing of all dry colors by precipitation, is the quality and pureness or softness of water employed. A hard water, which contains much lime, magnesia or iron, is not good and fit for the manufacturing of dry colors, as all these impurities are taken up by the precipitated color, and thus sometimes are the cause for much annoyance to the color maker, as they are apt to change the tone and even shade of the color produced.

Far less difficulties in the production are presented by the yellows with a stronger tinge of orange. It is entirely in the color-maker's power to render the shades more or less reddish. Firstly, by using a more or less basic acetate of lead, the bi-chromate of potash to be used in that case being only

computed or calculated for the neutral acetate constituent, whereby a more or less basic chromate of lead is obtained.

As we know from former papers, such as treat of white lead and its different processes of production, a basic acetate of lead is formed or produced by the taking up of one, or two, or three molecular parts of lead oxide, by the normal acetate. In our case now, the computed chromate takes up all the lead of the normal acetate, setting free the lead oxide, forming the basic part of the employed basic acetate of lead.

TO BE CONTINUED.

Comparative Cost to Consumers of New Era High-Grade Prepared Paint, and Strictly Pure Lead and Oil.

100 lbs. White Lead	\$ 7 50
4½ gallons Linseed Oil @ 70c	3 10
¼ gallon Dryer	25
¼ " Turpentine	25
	\$10 65

Making 7½ gals. of paint at a cost of.....\$1 40 per gallon.

New Era High-Grade will cover at least 15 per cent. more surface than paint as per above, and it would require, say, only 6½ gallons for the same surface for which 7½ gallons of above paint would be needed.

7½ gallons above paint	\$10 65
6½ " New Era High-Grade @ \$1.40 per gallon.....	9 10
	\$ 1 55

Actual saving.....\$ 1 55
A difference in favor of New Era High-Grade of about 15 per cent. No allowance is made here for time and trouble required to break up lead in oil, which should be figured at least five cents a gallon, for the cost of the colors used in tinting, nor for the much greater durability of our goods as compared with white lead alone, due to the addition to the lead paint of the zinc oxide, and also the consequent greater quantity of oil per pound of base we are enabled to use.

NOTE—The above we consider correct. The ideas of our different representatives on this subject will be published, so that comparisons may be made and a proper understanding of the subject arrived at.

Mr. W. C. Neal's Ideas Regarding the Comparative Cost of New Era High-Grade and Lead and Oil Paint.

Replying to same I wish to say that I believe the average amount of linseed oil used by painters in combination with white lead is six gallons to the hundred pounds. On that basis, and at present prices of materials, it would figure up as follows:

100 lbs. White Lead, at 7c	\$ 7 00
6 gals. Linseed Oil, at 65c	3 90
1 hour's time-mixing, at 25c	25
¼ gal. Turp. Dryer, at \$1.00	50
	Total.....\$11 65

148 pounds of paint as a total, and about nine gallons of paint that will weigh sixteen pounds to the gallon, and at a cost of \$1.30 per gallon or 8½ cents per pound. The average dealer sells New Era at \$1.35 and on a basis of seventeen pounds to the gallon, would be about 8 cents per pound of paint composed of zinc and white lead, which is not only a more desirable paint, but cheaper in every way because it covers better, goes farther, and is white, besides outwearing the pure lead by from one to three years. I think the painters have more to say, as a rule, as to what shall be used, but of course the owner in some instances buys his own material without regards for the painters wishes. I think the painters, as a rule, will use New Era and assist in getting it in if you go at them right. I think it is about an even thing which furnishes stock, painters or property owners.

Yours truly,

W. C. NEAL.

CYNTHIANA, Ky., April 18, 1900.

Editor THOUGHTS:

I can truthfully say that I have not heard one word of complaint against goods manufactured by the Acme White Lead and Color Works. And can also say that it is only a short time and earnest work on part of representatives until Acme product will be away ahead in all parts of Ohio and Kentucky that I have visited so far. Your system of advertising and corresponding with customers and prospectives I hardly think can be improved upon. I will cite you one instance that I came across yesterday in Georgetown, Ky., Mr. G. W. Fitzgerald said to me "If you had only visited me sooner in season, I would willingly handle your goods. I like your way of advertising and the way goods are put up." I hear such remarks in every town I visit.

Yours truly,

E. J. RUANE.

Note.

One of our city customers called at our factory the other day to order more New Era High-Grade Paint, he told us our paint was the best in the world, and that a customer of his bought two gallons of New Era and two gallons of linseed oil, mixed them together, thus securing four gallons of paint, and with it painted a good sized cottage. When we expressed our surprise at this he emphasized it by saying the man was so well pleased he brought a neighbor in and he bought the same quantity of paint and oil and had done the same thing, and also that we ourselves did not realize what a good paint New Era was, but that consumers and painters were fast finding it out.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, MAY 12, 1900.

NO. 35

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

CHROME YELLOW.

As this lead oxide cannot exist as such in its free state (as the circumstances are) and as it has a very strong affiliation toward chromic acid, it links itself to the precipitated chromate, forming thus a basic chromate of lead, as it did as a constituent of the basic acetate of lead, employed. In other words, a basic chromate of lead is a normal or neutral chromate, plus oxide of lead.

Secondly by a concentrated solution, and thirdly by working at a higher temperature. Thus pronounced shades of orange are obtained by employing strongly basic acetate, working at about 120 to 150 degrees fahrenheit, and neutralizing the bi-chromate before use with carbonate or caustic soda.

However, as the manufacturer of Chrome Yellow mostly uses only one grade or strength of basic acetate of lead, he helps himself in order to increase the basicity of his solution by the use of caustic alkalis as caustic soda and especially as for a matter of cheapness, caustic lime or quick lime. He regulates his shades by employing more or less of a lime solution, and by a longer or shorter duration of boiling, obtaining thus shades ranging from deep to orange.

The production of the other extreme, that is, a handsome fiery red with a more or less bluish tint, the so-called derby reds or American chrome vermillions, offers far greater difficulties in practice.

In chrome red we have a highly basic lead chromate of very crystalline structure, the color being of a so much more blue-tinted and fiery red the more strongly developed or larger the crystals are. As will be readily seen and understood, and this is a fact, however these coarsely formed crystals possess the least covering and spreading power.

Continued in third column

MR. H. H. HALLADAY.

We propose to tell the truth only in these articles and are compelled, therefore, to say that Mr Halladay is not a handsome man, and in the portrait below the photographer has done his very best. If you are inclined to chuckle complacently over this statement, please bear in mind that there are other of our representatives who are no better looking than he is.

Mr. Halladay came with us in '95, having previously had considerable experience

The chrome red or American vermillion is, however, in practice not obtained by the precipitation of a lead solution with bi-chromate, as the other Chrome Yellows of lighter shade, but the starting material for it is the insoluble lead compound—white lead, the basic carbonate of lead. The reason is, while the production of chrome red from acetate or nitrate of lead is highly laborious and uncertain, one readily succeeds with little practice, to obtain an always uniformly handsome and brilliant red from white lead, or even under proper circumstances by a special treatment from lead sulphate.

The white lead employed is in the form of a watery pulp, and is heated or boiled with the bi-chromate solution and sometimes with a small percentage of caustic lye also, until the desired shade is produced. The deposited pigment is washed rapidly, first with clear water and then with a very weak and diluted sulphuric acid, and then thrown on a filter and advantageously dried on a bed of chalk.

The *modus operandi* in the manufacturing of Chrome Yellows is very simple, the different solution of chemicals used are made in separate vats or tubs, and are then allowed to run together in one larger vat, the so-called striking vat, in which the color pigment is precipitated. It is then washed, that is, after settling of the pigment the supernatant water is run off and

the vat refilled again with fresh clear water. This washing process—the yellow is always stirred up and allowed to settle again—is repeated as often as is deemed necessary or practical. The deposit is then thrown upon filters, or pumped into filter presses. It is then dried in one way or another, mostly on steam coils, and then powdered and put as such on the market.

The Chrome Yellows are good pigments, possessing as good if not the most tinting and covering power of all other color pigments. They are also more than fairly durable, standing atmospheric influence fairly well, but have like white lead, on



representing paint manufacturers in the Canadian market. Since that time he has covered territories for us as far south as Mexico and north to the Upper Peninsula of Michigan. His vim and enthusiasm have carried him through with honors in all climates and at present he is doing general work among the jobbing trade in a manner that is in perfect harmony with his previous work. Mr. Halladay is a "quick convincer." He possesses an "energetic magnetism" that does its work usually in the first interview. He has his arguments "down pat" and never tackles a prospective customer without having previously determined upon a course of procedure and being prepared to meet all possible objections. *He does most of the talking, expects to succeed and generally does so.* His home is in Ypsilanti, Mich.

THOUGHTS

account of the presence of lead in their composition, the one drawback of darkening when coming in contact with sulphurous gases or pigments containing sulphur, as ultramarine blue. They mix, as I said before, well with linseed oil, but have, especially the darker shades, the basic chromate of lead, the tendency to turn more or less greenish in hue or tone, owing to the liberation of chromic acid by the combination of the lead with the linolenic acid of the linseed oil, or in other words by the lead-saponification of the oil.

If mixed also with white lead or with carbonate lime, they appear to get a trifle darker in shade, due to the formation or an increase in basicity in their constitution. But as a fact we may consider them very permanent.

In my first paper I stated and explained that the red color of the American vermilion is only caused by the molecular structure of its crystals, that is, that as soon as we break these crystals by grinding, making them smaller, the pigment will be rendered more or less yellow, or lighter in shade or color. I refer to the statement in order to affirm the approved theory or rather fact, that the shade of a Chrome Yellow is depending solely upon its molecular structure or what is the same, on the subdivision or contraction of its crystals.

TO BE CONTINUED.

Working the Trade Thoroughly

This is something upon which we insist. You will be provided with a list of customers that have been established in the territory in which you will represent us, but you are especially cautioned not to assume that the volume of business from these customers is satisfactory. We expect you to *build up new business*. That is what we send you out for. It is a comparatively easy matter to "look after" old customers who are well satisfied with our goods, but this is only part of your work, and the *smallest* part. You must devote your energies and abilities as a salesman to secure *new* business, without which your work cannot fail to prove unsatisfactory. We have known men who "felt satisfied" in getting what they were pleased to term "their share" of the business when one customer in a town had been secured. We don't want those kind of men. A man to represent us properly must call upon *all of the trade* of the class or classes he is looking after *every time he makes a town*, and must be on the alert continually for new openings. We don't want the trade "skimmed over"—it must be worked thoroughly.

Department Store Trade.

The question of selling this class of trade is one that requires the exercise of good judgment. There is a strong feeling against Department Stores by the regular trade handling our class of goods, and it is not good policy to sell the former our regular brands with labels bearing our name in places where the goods are carried to any extent by regular dealers. The Department Store invariably cuts prices—that is their strongest selling point. They advertise "cut prices" as "loudly" as they know how, and the effect of an announcement that certain "Acme Paints" will be sold at a figure away below what the regular dealer is willing to accept can easily be conjectured. That is why, as a rule, we don't want to sell Department Stores our regular brands, or goods bearing our name on the labels. We are, however, always willing to sell them goods under a special label, providing their requirements are sufficient to warrant the extra expense. We will use any name for a brand that they may suggest, or that the representative may select for them, and print on the label "manufactured for (their name) especially." *The exception* to our rule as regards regular brands are the line of Neal's Enamels. These goods are advertised so extensively to consumers that we find the Department Store one of the best channels through which to supply the demand. They naturally will not take any brand except that demanded, and we must therefore furnish the goods properly labeled. The fact, however, that the Department Store wanting Neal's Enamels must pay the right price for same is a safeguard against cutting prices to which the regular trade object, as unless they sell the goods at a loss, the price they can advertise does not represent any special advantage to consumers as compared with what they may be purchased for from the regular trade.

Sending in Orders.

Don't wait two, three or four days, or a week, before sending in your orders. One of the most important factors in retaining the good-will of a customer is that his orders receive prompt attention. It has happened that men have carried orders around for several days, and also written us that their customers are inclined to object at the length of time required to deliver goods. You can avoid this by doing your part promptly, and are assured that every effort will be made by us to give satisfaction in this respect.

Crediting Orders.

Each regular representative is credited with the amount of orders sent in by him direct, or secured by mail from towns on his list. Representatives do *not* receive credit for business from towns not appearing on their list, whether sent in by themselves or received by mail, as it is part of their business to have these lists represent accurately the points at which they call. A town may be added to or canceled from list at any time they see fit. Representatives are always notified of all mail orders received from the territory they cover, whether such come from towns on their list or not, and in the latter case can promptly notify us to add the town and they will then receive credit for future business from same. When orders are turned in to jobbers for execution, a *duplicate* must always be sent us so that we can place the amount of same to their credit.

Notifying Jobbers of Prospective Customers.

Next to sending a jobber a bonafide order for goods, the best thing that you can do is to tell him where there is a chance to secure business. See that this is done *every time you have an opportunity* by means of "Jobber's Notification Card." You can probably realize what effect the constant receipt of these cards will have, as it indicates that instead of trying to take customers away you are helping to secure new ones. Use these cards *liberally*, but don't ruin their usefulness by sending the jobber to a dealer when there is no possible chance to do business, and thus earn for yourself and the house the reputation of being "*fakers*." We want to maintain confidence, not destroy it.

Answering Correspondence.

Answer all letters promptly. Don't delay the matter of replying "until you have more time." Nine times out of ten the answer can be written "on the spot." "Putting off" acknowledgments usually means piling up work for some indefinite time with the chances of receiving a reprimand from the house for delay or negligence.

Bristol Line of Goods.

Received the cut of rack and labels of Bristol line of goods for 5 and 10 cent stores and think you have a good attractive label, and a line that should become very popular with that class of trade. Enclosed find order for an assortment of above and hope to send in many more.

Yours respectfully,

No. 20.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, MAY 19, 1900.

NO. 36

Comparative Cost to Consumers of New Era High-Grade Prepared Paint, and Strictly Pure Lead and Oil.

In previous comparisons under this heading we have indicated the difference in cost of pure white only. In this we show the difference when lead must be tinted. It is, of course, considerably more expensive to tint white lead than to merely reduce it with oil and thinners, on account of the cost of color and extra time involved.

It is less expensive for the consumer to use New Era High-Grade at \$1.50 per gallon than white lead and oil.

The tint selected to make the comparison (No. 44) represents a fair average, few tints requiring less color. When more color is required it, of course, adds to the expense of tinting white lead.

Here are the figures:

Cost of White Lead Paint.

100 lb. keg Fahnestock S. P.	
White Lead (the net contents weighed 95 lbs.) 70c.	\$ 7 00
4 1/2 gals. Linseed Oil (33 1/2 lbs.) at 70c.	3 15
1/4 gal. Turpentine	25
1/4 gal. Turp. Japan (2 1/4 lbs)	25
1 lb. Prus. Blue in Oil, at 60c.	60
2 lbs. Chrome Yellow in Oil, at 30c.	60
1 lb. Venetian Red in Oil, at 15c.	15
Time consumed mixing and tinting the paint.	80

Total cost....\$12 80

The above makes 7 1/2 gallons, weighing 17 1/2 pounds to the gallon.

Total weight, 135 pounds. Costing practically \$1.75 per gallon or 9 1/2 cents per pound.

This makes a paint thin enough for the priming coat and really too thin for finishing coats, which goes to show that painters' claims as to quantity of oil, turpentine and dryer are not born out by facts.

New Era High Grade Prepared Paint will stand considerable reducing. Some of our friends using same even claim a gallon of oil to a gallon of paint, but that we cannot recommend. It will stand fully 25 per cent. but in order to be on the safe side, let us say 20 per cent.

Continued in third column

MR. A. S. DOUGALL.

Mr. Dougall, "grew up" with the Acme. While not certain of his age, we don't think he has been able to vote at a Presidential election. In 1897 he made his first venture into the field of salesmanship. Prior to that time he held various positions in the office with credit to himself and to the satisfaction of the house. He is not bad looking and is possessed of an extra amount of good natured persistence and a degree of discretion in handling important transactions that would



do credit to an older head, and indicates that he has profited by his earlier experience and by carefully watching the work of our older representatives, which he was in exceptional position to do when in the office. His territory has been Detroit and immediate vicinity from the start, and his hustling among all classes of trade have resulted in a very satisfactory volume of business. His particular hobby is New Era High-Grade, and the prospective customer on this line who escapes him must be able to make very ingenious excuses. He is still single, with no serious prospect of becoming a benedick that we have learned of.

Comparative Cost at \$1.50 Per Gallon for New Era High-Grade.

4 gals. New Era High-Grade	\$7 20
1 gallon linseed oil	70
Total cost	\$7 90
Making five gals. at \$1.58 per gal. Difference in favor of New Era, 17 cents per gal.	
Comparative Cost at \$1.75 Per Gallon for New Era High-Grade.	
4 gallons	\$6 80
1 gallon linseed oil	70
Total cost	\$7 50
Making five gals. of paint at \$1.50 per gal. A difference in favor of New Era of 25 cents per gallon.	

If New Era was sold at \$1.60 per gallon and it would bear no reducing whatever, there would be a difference in its favor of 10 cents per gallon, but if reduced

4 gallons	\$6 40
1 gallon linseed oil	70
Total cost	\$7 10
Making five gallons costing \$1.42 per gallon.	

Difference in favor of New Era, 33 cents per gallon.

New Era High-Grade Paint will cover 50 per cent. more surface than lead and oil paint. This we know by actual test and our assertion can be proved by anyone caring to make the test, therefore, as can be seen by the following example, any intelligent person conversant with these facts would prefer New Era High-Grade Paint at an even price.

15 gals. White Lead Paint, at \$1.75	\$26 25
9 days' labor to apply it, at \$2 per day	18 00
Total cost	\$44 25
10 gals. New Era High-Grade Paint, at \$1.60	\$16 00
6 days' labor to apply it, at \$2 per day	12 00
Total cost	\$28 00

A saving in cost of material and labor in favor of New Era High-Grade Paint of \$16.25.

Then the question of durability must also be considered. If, as it is claimed, white lead paint will last three years, then the cost per year would be \$14.75, or 98 1/2 cents per gallon per year. On the other hand New Era High-Grade Paint will last at least five years at a cost to the consumer of \$5 60 per year, or 56 cents per gallon per year.

In the last comparison it will be noted we have figured the cost of New Era at the price to the consumer without any addition of linseed oil, which it will certainly stand and will still further reduce the cost.

Finally we believe that the actual value of one gallon New Era High-Grade Paint is worth to the consumer about two gallons of any mixed-by-hand white lead and oil paint.

Three Trade Winners

THAT ARE

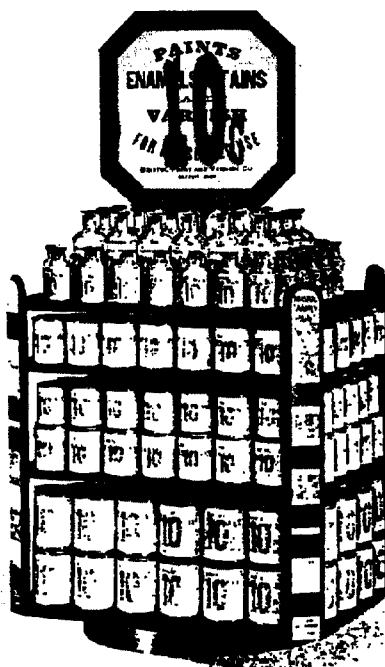
"GOING LIKE HOT CAKES"

1. "Rapid-Seller" Assortment with Display Stand.
2. Neal's Enamel Assortment with Display Stand.
3. Bristol Assortment with Display Stand.

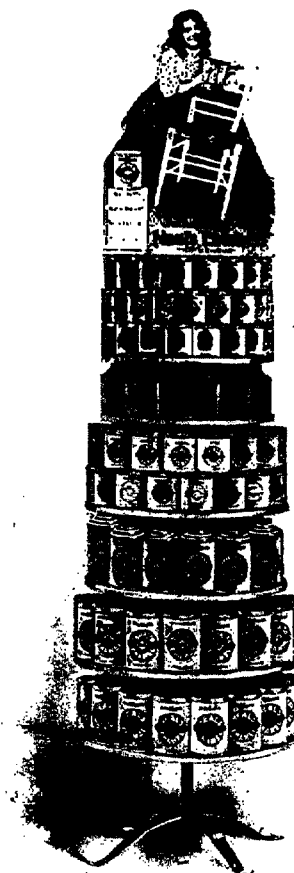
We have been obliged to order more of these Stands to fill orders taken by our representatives from new customers.



How many new dealers have you started with this offer?



The "Bristol" Assortment is for 5 and 10 cent stores. Always sell this brand to this class of trade. We will furnish the "Bristol" stand with assortment of "Wayne" goods when sold to department stores to start them. In a short time the spring season will close. Push these propositions hard. Make the next few weeks tell.



Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, MAY 26, 1900.

NO. 37

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

PRUSSIAN BLUE.

Next to ultramarine blue, Prussian or Berlin Blue and its finest, strongest and most brilliant variety, the Chinese blue, is the most valuable blue pigment in use by painters and paint manufacturers.

It was discovered or invented by an accident, in 1700, by a German dyer and color maker, named Diesbach, as many such and other discoveries have been made.

I will only state that Diesbach in making one of his celebrated red-lakes or dyes, mixed accidentally the crude materials which we still use in the manufacturing of Prussian Blue, or rather in the manufacturing of the chemicals to be used in the manufacturing of this pigment, and was not little surprised to find that he had obtained instead of a red a most brilliant blue. He investigated further and was soon able to produce this blue in better and more brilliant qualities and put it in the market as Prussian or Berlin Blue. Since this time the composition of this blue pigment has been the subject of numerous researches by chemists, so that very little remains to be learned as to its composition and constitution.

Prussian Blue is a compound of iron-carbon and nitrogen. However, the two latter elements consist not in its composition in form of single constituents, but are combined into or linked together in a chemical group, the so-called radical "Cyanogen," a chemical combination characteristic to a group of chemicals called cyanides, such as cyanide of potassium, cyanic acid, both as you know very deadly poisons, and combination with potassium and iron, the yellow and red prussiate of potassium. The discovery of Prussian Blue led consequently to the discovery of the true character of these compounds, and to further researches into the true chemical compositions, as their nucleus, carbon-nitrogen group, is the principal cause of the formation of blue, or Prussian Blue, they are called

(Continued in third column)

MR. H. N. TURNER.

This cut is made from a photograph of our representative to the railroad trade, and aside from the favoring of the original by an indulgent photographer and further enhancing of the best features by the photo engraver, who is always anxious to please, is a very fair representation of Mr. Turner *at his best*. Railroad men, however, are not very particular as regards appearances, and we presume this is why he has "taken so well." Mr. Turner's earlier experiences were gained in



our offices, and when starting to visit the trade he now calls on regularly, he was well equipped with a knowledge of what was needed to finish the rolling stock of a railroad from "Front End Black" to "Caboose Enamel." He has since "learned the ropes" with which it is necessary to be thoroughly familiar to succeed in calling on this class of trade, and is intimately acquainted with all the Presidents of railroads worth knowing and most of the other officers down to the sub-painters, and judging from the result of his efforts, seems to be well liked all along the line.

His home is in Pontiac, Mich., but he particularly requested the editor not to mention the fact that he was unmarried.

prussiates, or as the Greek word for blue is "cyan"—cyanides.

Prussian Blue is formed, or precipitated whenever we mix an iron compound, such as the sulphate of iron, the green vitrol or copperas with such a prussiate. The prussiate used in the manufacture of Berlin blue is the cheapest and most simple obtained one, the yellow prussiate of potassium. But as it is also the weakest from a chemical point of view, the color-maker helps himself, or increases its activity by the addition of strong acids or other chemicals, such as chlorate of potassium, manganese or chloride of lime.

This is not the place to go further into detail in regard to the chemical composition of Prussian Blue, or as the techno-chemical part of its manufacture. Each and every color-maker has his formulas and working orders for different qualities of blues, the principal of which formulas are, however, as I said before, the mixing of a computed quantity of copperas with a compound quantity of prussiate of potassium, and developing the thus precipitated blue with one of the above named chemicals. The washed and filtered, pressed and dried pigment has a very deep blue color and tint, with a slight greenish hue. This depth of color or shade cannot be obtained with any other blue pigment.

Prussian Blue when dry has a bonzy appearance, which is the greater and more pronounced the purer the pigment. It finds its highest degree in the purest and best, in the variety known as Chinese blue. It is very hard and exceedingly difficult to grind, and for Prussian Blue to develop its full coloring power it is very essential that it be ground as fine as possible.

As a pigment Prussian Blue is quite permanent, and resists exposure to air, light and most of the other atmospheric influences which act on pigments. Its coloring or tinting power is very great, being by far the best of all the blues, especially the ultramarines in this respect, but it is rather a transparent color, so that its covering power is not very great, but nevertheless Prussian Blue, in virtue of its semi-transparency and of the necessity that it ought to be ground very exceedingly fine in order to serve as a pigment, has very great spreading capacity.

THOUGHTS

and further more, in virtue of its very great tinting or coloring power, it stands an extra addition of over 60 per cent. inert material, as barytes or others, without losing as pigment any of its good qualities. In contrary such an addition will rather improve the blue. The reason is, that pure Prussian Blue takes so much linseed oil for grinding into a semi-paste or liquid paint, that no paint at all, at least for covering purposes, is obtained while the addition of any inerts will lessen the amount of vehicle necessary for grinding or mixing, in other words a heavier bodied paint will be the result.

The same advantage will be found with an extended Prussian Blue used for tinting purposes, and this is the principal use Prussian Blue is put to. This fact was clearly shown to me and demonstrated when I, about a year ago, analyzed and tested the various brands of colors in oil on the market. I found then that in fact our regular Prussian Blue extended about 60 per cent. is stronger in tinting, pound for pound, than our C. P. Prussian Blue given to me for examination. That is, our extended Prussian Blue has more actual blue in a pound of semi-paste than a C. P. Prussian of same character or consistency. The increase of oil necessary to grind the pure pigment in, decrease naturally the amount of pigment to that extent.

TO BE CONTINUED.

About Advanced Prices.

Note below copy of circular issued by the Senour Manufacturing Co., of Chicago, which is merely another item of evidence regarding the necessity of advancing prices all along the line.

Chicago, May 17th, 1900.

To the Retail Paint Trade of the United States:
 Gentlemen—There has never been a time in the history of the paint manufacturing industry when the same peculiar trade conditions have prevailed as at present. We are confronted, not only by greatly advanced prices in paint-making materials, but by corresponding increases in every class of goods used in marketing our product.

The entire business world has undergone a change in the past twelve months—a change that has greatly affected prices and conditions in all raw product markets, rendering the transaction of business along old lines impossible.

Some idea of the enormous increase that has taken place since the season of 1899 may be had by citing the following principal articles used in manufacturing and marketing paint products, not saying anything about linseed oil :

Lead, 25 per cent. Tin Cans, 80 per cent.
Zinc, 21 per cent. Packing Boxes, 35 per cent.

Making the general average of the total increased cost of these articles alone over 40 per cent.

In view of the situation, we are compelled to advance the price of some articles, principally our Monarch Paint and Painter's Stock White, the same taking effect on May 25th. Orders received after that date will be billed at the new prices.

	MONARCH MIXED PAINT.	
Barrels	\$1 20	per gallon, net.
Half-barrels.....	" 23	" "
5 and 10 gallon cans	" 25	" " "
1 gallon cans.....	" 30	" " "
$\frac{1}{2}$ " " ".....	" 35	" " " "
$\frac{1}{4}$ " " " ".....	" 40	" " " "
$\frac{3}{8}$ " " " ".....	" 50	" " " "
1-16 " " " ".....	" 70	" " " "

These prices are net—no rebate.

PAINTER'S STOCK WHITE.		
Barrels.....	\$1 25	per gallon, net.
Half-barrels.....	1 28	" " "
5 gallon cans.....	1 30	" " "
1 " " ".....	1 35	" " "

We will send on application a new catalogue with revised prices.

The total advance we have made over last year's prices does not cover the total increase in cost of raw materials, so that we are dividing the advance with our customers, hoping they will appreciate the situation and continue to favor us with their orders. Very truly,

Advertising Matter Carried by Distributors.

We must depend upon our representatives to see that the stocks of advertising matter carried by our distributors are kept up and properly used. There are certain kinds of this material that we cannot expect jobbers to distribute. Fence signs and matter upon which the dealer's name must be printed cannot be carried by them. Distributors should always be in position to supply sample cards with orders turned in to them, and when fence signs, full sheet cards, books of plates, etc., are needed attach a requisition for these to the duplicate of the order that you send us, and we will ship with next order to distributor, marking cases for dealer. Such supplies should then be sent on to dealer with his next order. Don't permit your distributor to run out of needed supplies, or allow him to waste expensive material. See that the shipping, or stock clerk, is carefully posted regarding the proper way to handle same.

Keeping in Touch With the Jobbers.

Don't forget that we want you to make a special feature of working closely in connection with the jobbers in your territory. Keep them advised of chances to do business in our goods by means of special postals with which you were provided. You may not be using these as freely as you should. If not, you are losing chances for co-operation that will eventually mean loss of business. Keep in touch with your jobbers by every means at your command. Make them realize that we are willing to help them, and endeavor in every way to have them take more interest in our specialties.

New Era High-Grade Paint.

BRATTLEBORO, VT., May 14, 1900.

Editor THOUGHTS :

I called on Robbins & Cowles, of Brattleboro, Vt., to-day and they told me the

following story: "A customer of their's came into buy paint to paint his house with. They asked him how much it would take and he said it took eight gallons the last time he painted it. Well, they only had five gallons of the shade that he wanted in stock. So they told him to go ahead with the five gallons and in the meantime they would order more from E. and F. King & Co., our distributing agents, in Boston. Well, to make a long story short, he came back in the course of a few days and wanted to know if they would not take back one gallon, as four gallons had painted his house and had gone as far as the eight gallons that he had previously used. He was the most pleased man you ever saw and cannot say too much for New Era. But he was no more pleased than Robbins & Cowles were, as it surprised them also, and they are highly delighted with our paint and are pushing it for all they are worth.

Yours truly,

No. 27.

Editor THOUGHTS:

During the past week, while I was calling on a firm I have been pounding for some little time, something happened which I think will be of benefit to some of our tribe of younger paint hustlers. While talking to my man I noticed a traveling man walk in the store and when the clerk went up to him Mr. Traveling Man gave him the "side look" and turned his back on him—to the traveling man he was simply the clerk. When I was through Mr. Traveling Man went at the proprietor and interested him enough for proprietor to call the clerk to look at a line of toilet soap. Mr. Clerk looked surprised and said "why, surely you are not thinking of stocking more soap with the stock now on hand," and Mr. Voigt said "guess you are right," and that settled it. Now the point is simply this, I have made it my business ever since I have been on the road to get on personal terms with every one about a store I call on, from the errand boy to the clerk, and it has always paid me big. No. 5.

Note.

Received copies of testimonials sent me and have found them quite useful already as I met a painter at Vermilion who knew Jos. Stoneman, of Chagrin Falls, and when I showed him what he said about our goods, it did the work in two minutes that two hours talking would possibly not have done for me, as he was perfectly satisfied and said he would use them if stocked by customer, and hope they will be.

Yours respectfully,
No. 20.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, JUNE 2, 1900.

NO. 38

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

PRUSSIAN BLUE.

As I said, Prussian Blue finds its principle use as a tinting color, that is in connection with a white body pigment, such as white lead or zinc whites. It is true Prussian Blue is permanent, indeed very permanent concerning the action of the elements, such as moisture, light and carbonic acid, in fact it is permanent against the action of any acid if not employed in concentrated form. However, if we let an alkali or a chemical compound of an alkaline character, such as a metallic hydroxide, act upon Prussian Blue we will find that it will have lost a good deal of its permanency. We will notice that the blue will be easily decomposed, or its color changed into a yellow, due to a separation or formation of iron oxide. This is the main reason that a paint made on a white lead base alone, or on white lead and zinc and tinted with a Prussian Blue will not retain its original clear and bright tint, but will be more or less changed into a greenish or yellowish red. The change is due to the action of the basic constituent of white lead—the hydroxide of lead—in the basic carbonate. This action it seems is more powerful and more pronounced in case of absence of light. Thus we find by opening a sealed can of such a tinted paint, having stood for a while in stock, that almost all the blue is converted into the yellow oxide of iron. But we find also that after stirring up the paint and applying it, exposing it thus to the influence of light—indeed a very strong chemical influence—that the same tint of the paint will return, that is, the chemical action of the light and air will recombine the separated iron oxide with the cyanide compound of the original Prussian Blue.

Numerous were, and are still, the complaints we receive from customers that our shades No. 33, No. 42 and No. 35 of our New Era High-Grade ready-mixed paint are not uniform, or that we have forwarded the wrong shades, or that the cans were wrongly

Continued in third column

MR. W. C. NEAL.

Mr. W. C. Neal has been connected with the Acme "off and on" since the inception of the business, in '84, at which time he was a mere boy. It naturally follows, therefore, that his experience has rendered him thoroughly familiar with all lines of our products and methods of doing business. In the fall of 1899 he "took hold" of the Indiana territory, and by careful detail work in connection with an assistant has succeeded



in making good headway in developing "all the possibilities" from this section. "Nothing too large" and "nothing too small" is the plan upon which he is working. Like the majority of our men he recognizes the fact that a good house paint is the best foundation for business on the general line, and works every possibility, from the consumer up, to get these goods in. He is a "planner" who watches conditions closely and is always "figgering" some good scheme to corral business on a plan that has been overlooked by the "other fellow."

Mr. Neal is married, not quite so good looking as might be surmised from the illustration, and has many friends in and out of the trade.

labeled, etc., because the customer found by opening the cans that the shade of its contents does not correspond with the shade on label and number on sample card. All these shades contain Prussian Blue as tinting constituents, and as our New Era High-Grade is a white lead-zinc paint, the shades are more or less altered by the action of the basic constituents of the white lead on the Prussian Blue. If the customers were familiar with the circumstances, or would take the trouble of not alone opening the can, but apply a practical test, also by mixing the paint thoroughly and painting a panel with his apparently off shade paint, he would find that he is in the wrong and we are in the right, for he could see in less than ten minutes that the tone and proper shade of the paint in question will be developed again as fast as his paint sets or dries, and he would save himself and our Mr. Joy much time, trouble and annoyance.

The ideal body white for a Prussian Blue tinted paint would therefore be "zinc white," the neutral character of which would have no altering influences on the tinting pigment. But as we know zinc white alone used as a pigment in a paint put to the use like our New Era High-Grade, as house paint for exterior decoration, is not very desirable, for it lacks especially durability. We have therefore to choose among two evils the most favorable one, for a substitute for Prussian Blue in the above named number of shades cannot be found, as the peculiar rich tone and tint of same is only due to a pure well prepared Prussian Blue, and ultramarine blue as you learned by the last paper, is entirely barred out on account of its strong sulphurous action on white lead.

As I said, Prussian Blue is permanent under ordinary circumstances, such as temperature, or action of the atmosphere. But such is not the case, as soon as the pigment in a dried state is heated near or above 300° Fahrenheit, it is then rapidly decomposed, even the radical compound "cyan" undergoes decomposition, and that so quick and sudden that the latent or molecular bound heat thus liberated ignites the set-free carbon of the cyanogen, the result is a sudden combustion, sometimes accompanied with a more or less heavy explosion.

THOUGHTS

The heat generated by friction in grinding a dry Prussian Blue in a stone mill or even in a heavy chaser is sufficient to cause such a decomposition and often explosion, and has been the cause of many a disastrous fire in paint and color factories. Thus, if I am right, the burning and destruction of the four story factory of Cary-Ogden Company, in Chicago, was due to such a Prussian Blue explosion, and thus also the destruction of the dry color plant of the Mound City Paint and Color Works, of St. Louis, Mo., when about five years ago my colleague, Mr. Ernest Mass, finished his career of dry color maker for this firm with a dry grinding of Prussian Blue, resulting in an explosion and almost entire destruction of the newly, under his supervision, erected plant.

TO BE CONTINUED.

Co-operate with your jobbers and they will co-operate with you.

Advanced Prices.

Prices have so far been advanced on the following lines:

New Era High-Grade Prepared Paint,
Adamant Prepared Paint,
Neal's Carriage Paints,
Acme Wagon and Implement Paints,
Granite Floor Paints,
Acme Household Paints.

Our customers, with very few exceptions, have recognized the necessity for the advances and accepted same gracefully. As a matter of fact it was either necessary to cut quality or get more money, and we, in common with the principle manufacturers of reliable goods have adopted the latter course. Our representatives will have no difficulty in maintaining same.

What have you done to make your jobbers feel that we deserve their special co-operation?

New Era High-Grade.

Editor THOUGHTS:

Mr. Benningfield, of Benningfield & Cane, Walnut Ridge, Ark., has given our New Era High-Grade a great send off. He painted three houses, one with Platt & Thornberg's paint, one with Heath & Milligan's and one with ours. All houses are exactly the same and he says he can pick New Era High-Grade out a block away. I saw the houses and you would be surprised to see how much better the house with New Era High-Grade on looks than the other two. He intends using our paint exclusively and will send in order as soon as guarantee is raised.

Yours respectfully,

No. 28.

How many orders have you turned in to your jobbers this season?

Advance Prices.

BUFFALO, N. Y., May 28, 1900.

Editor THOUGHTS:

In reply to Bulletin No. 72 would say that I can readily understand that it will be necessary to advance prices in order to keep up the high standard of quality. All I have to say is to keep up the quality, and what goods I sell you may rest assured I will get the price or will not sell the goods. I intend having a uniform price on New Era High-Grade in this territory and treat every one alike, and let the trade know we have but one price on New Era. I believe it lessens the quality in the dealers estimation when you cut the price on high-grade goods, and beside, I don't believe you can sell any more goods by so doing. High-Grade paint, like other high-grade goods must be sold for high-grade prices. I believe now is the time to establish a price on New Era as well as the balance of the line. Let the advance come as soon as you wish and I will do my part in securing same.

No. 19.

How many friends have you with each jobber looking after your interests when you are absent?

New Era High-Grade and Painters.

DETROIT, MICH., May 19, 1900.

Editor THOUGHTS:

I have quite often, in talking to painters, heard them say: "Oh, I can't afford to use mixed paint as it knocks out the painter." Now I come back at them this way: "Yes, I'll admit Mrs. Smith can, if she is so inclined, buy ten gallons of mixed paint and have her hired man stir it up and put it on. She can also go to the same dealer and buy 100 pounds of lead, five gallons of oil, one-half gallon of dryer and two pounds of National Lead Co.'s tinting colors and mix them up and have the same hired man put it on. In which instance does the painter get the worst of it?" And then I wind up by showing him that in no case do we guarantee results to be satisfactory unless a practical painter is employed in putting New Era High-Grade on. I have found that in every instance it has been a pin in their argument and closes them up every time on that subject and gives them something to think about during their idle hours on cold days.

Yours truly,

No. 8.

Do you know the names of your jobbers' representatives? Do you know them personally?

Mileage.

Don't overlook the fact that we always want mileage used *when it can be done to advantage*. This does not mean that it is necessary to buy same when it cannot be used within a reasonable time. About as near as we can approach to a rule on this subject is to state that if the amount it is necessary to purchase could not be used during either the spring or the fall season, it will not be good policy to buy.

Did you ever turn over an order to a jobber's representative? One good turn deserves another.

Editor THOUGHTS:

During a conversation with one of our New Era customers last week, I made the statement that the goods would cover at least 33⅓ per cent. more surface than any strictly pure lead and oil in the market. Then he asked me how much paint it would take to cover (two coats) naming dimensions of a house and I replied, six gallons if in good condition and, of course, more if not. Then he told me that the painter had figured on painting the house with lead and oil and said it would take nine gallons, but our customer persuaded his man to use New Era and sold nine gallons. The man brought back two gallons and said that he only used six and one-half gallons. I find many of our customers simply ignorant of the high standard of New Era, and such illustrations do an immense amount of good.

Yours very truly,

No. 12.

How many postals have you used to notify jobbers of chances to do business on our line?

DETROIT, MICH., May 19, 1900

Editor THOUGHTS:

Henry Heines, the leading painter at Mishawaka, Ind., is using New Era High-Grade Paint in preference to white lead, and during my last visit there he told me he had just painted a new house (three coats) with it, using outside white, and that he had reduced it with linseed oil and a small quantity of turpentine, gallon for gallon, and that he not only had a paint that would cover more surface, but one that would go further and was whiter than strictly pure white lead, reduced with oil at an average of five gallons to the hundred pounds. I consider this worth knowing and hope the other boys may find it of value in introducing New Era High-Grade Paint.

Yours truly,

No. 8.

How many friends have you who will "speak a good word" for your line when ever opportunity occurs?

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, JUNE 9, 1900.

NO. 39

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

GREEN PIGMENTS, AND CHROME GREEN IN PARTICULAR.

Among all the greens, and we may say almost the only one used as a pigment now-a-days by the painter, as well as by the paint grinder and manufacturer, the so-called Chrome Greens, belonging to the special group of compound colors, are the most important and interesting. I shall, therefore, not discourse other green pigments, as the various copper and arsenic, the poisonous paris or Scheele's greens, the use of which as painter's pigments is altogether superseded by that of those compound Chrome Greens, but will proceed in my explanations and demonstrations by taking these Chrome Greens as typical representatives of the green pigments used in paint manufacturing.

I call these greens compound colors, because they are not primary coloring pigments, but are, as a rule, simply a mechanical mixture of yellow chromate of lead, the chrome yellow of commerce, with prussian blue, or rather with its variety, the more violet tinted paris or millori blue.

These pigments may be mixed either by the dry or wet process. The production by the wet process, however, either by simultaneous precipitation or striking, or by mixing the two primary pigments, the yellow and the blue, in a wet pulp form together is more preferable, since the mixture, owing to the greater mobility of the substances in their finest divisions of particles, becomes more homogeneous in a shorter time, and furthermore the unpleasant and unhealthy dusting is entirely avoided.

Every dry color maker has his own special ways and formulas for making these Chrome Greens. The principle of the process is, however, always the same, that is, he manufactures first his prussian or paris blue and

Continued in third column

MR. T. W. CONNOR.

This is a correct likeness of Mr. T. W. Connor. Like Napoleon or Lord Roberts, he is "done up in a small package," and would not be "shoulder high" to some of our really good looking representatives. He is a thinker who anticipates by carefully considering conditions and possibilities, and has his plan of campaign so carefully arranged that he very seldom fails. It may be a long siege, or a sudden attack, but the result is generally the same. He is not

mixes this with the bi-chromate solution of the necessary chrome yellow, and strikes then the green by running in the properly computed quantity of lead solution. This way is generally in use when the lead constituent for the chrome yellow is in form of an acetate of lead solution. If the color maker, however, prefers the use of the much simpler, but somewhat more expensive nitrate of lead, he mixes this with the blue and strikes with the bi-chromate of soda or potassium. In either case, however, he must wash his

prussian or paris blue more than fairly well before he proceeds in the manufacturing of his green.

Both these ways of process are used in our own dry color plant, and the Chrome Green produced now by us excels in every extent and by far in tone, tint and brilliancy of color, those we used to make eight years ago by the so-called dry or edge-runner mixing process.

Other color makers use the so-called pulp mixing process, that is, they have always a stock of ready made prussian or paris blue in pulp form on hand, of which they add a certain amount, required according to the shade of green to be produced, to a certain amount of freshly prepared or precipitated chrome yellow and by mixing both together obtain a Chrome Green, which they have then still on hand to change or improve in depth of shade by adding more or less pulp of blue in case the color is desired to be of a darker and bluer shade.

This latter process is certainly much simpler and requires less care and skillfulness than the process used by us, where the dry color maker is compelled to know exactly in advance how much blue and of what degree of strength and density he has to make in order to strike his Chrome Green in the proper way and in the proper and right shade, tone and tint. On the other hand, however, if this, our process, is handled right, and I may say here that handsomer, brighter and more brilliant Chrome Greens than our C. P. and Bull Frog



much of a talker ordinarily, but when he corners a "prospective" he can advance and meet arguments with a suddenness and rapidity that would cause a Philadelphia lawyer to retire in despair. He has made a thorough study of the general manufacturing trades and knows what they want in our line better than they do themselves, for which reason they have grown to depend upon his advice. He watches all business from this class of trade received by us, making suggestions to our other representatives in connection with same and working directly with them when it is deemed advisable.

Mr. Connor has been connected with the Acme since 1888, is married and a resident of Detroit.

THOUGHTS

No. 100 cannot be found on the American market, the product obtained is then far better and more homogeneous than that of the pulp mixing process. It stands to reason that it is so, because the color pigment is not alone precipitated in its two constituents simultaneously, but as a matter of fact they are mixed together in the finest subdivision of their molecules or particles, which circumstances, as you know is the first and principle condition of the production of a bright and brilliant pigment, at the same time possessing a clear and pure tone and tint of its respective shade and color.

TO BE CONTINUED.

Comparative Cost to Consumers of New Era High-Grade Prepared Paint, and Strictly Pure Lead and Oil.

In previous comparisons under this heading we have indicated the difference in cost of pure white only. In this we show the difference when lead must be tinted. It is, of course, considerably more expensive to tint white lead than to merely reduce it with oil and thinners, on account of the cost of color and extra time involved.

It is less expensive for the consumer to use New Era High-Grade at \$1.80 per gallon than white lead and oil.

The tint selected to make the comparison (No. 44) represents a fair average, few tints requiring less color. When more color is required it, of course, adds to the expense of tinting white lead.

Here are the figures:

Cost of White Lead Paint.	
100 lb keg Fahnestock S. P. White Lead (the net contents weighed 95 lbs.) at 7c	\$ 7 00
4 1/2 gals Linseed Oil (33 1/4 lbs.), 70c..	3 15
1/2 gal. Turpentine	25
1/2 gal. Turp Japan (2 1/4 lbs)	25
1 lb. Prus. Blue in Oil, at 60c	60
2 lbs. Chrome Yellow in Oil, at 30c..	60
1 lb. Venetian Red in Oil, at 15c.....	15
Time consumed mixing and tinting the paint	80

Total cost.....\$12 80

The above makes 7 1/2 gallons, weighing 17 1/4 pounds to the gallon.

Total weight, 135 pounds. Costing practically \$1.75 per gallon or 9 1/2 cents per pound

This makes a paint thin enough for the priming coat and really too thin for finishing coats, which goes to show that painters' claims as to quantity of oil, turpentine and dryer are not born out by facts.

New Era High-Grade Prepared Paint will stand considerable reducing. Some of our friends using same even claim a gallon of oil to a gallon of paint, but that we cannot recommend. It will stand fully 25 per cent.

but in order to be on the safe side, let us say 20 per cent.

Comparative Cost at \$1.80 Per Gallon for New Era High-Grade.

4 gallons	\$7 20
1 gallon linseed oil	70

Total cost.....\$7 90

Making five gals. at \$1.58 per gal. Difference in favor of New Era, 17 cents per gal.

Comparative Cost at \$1.70 Per Gallon for New Era High-Grade.

4 gallons	\$6 80
1 gallon linseed oil	70

Total cost.....\$7 50

Making five gals. of paint at \$1.50 per gal. A difference in favor of New Era of 25 cents per gallon.

If New Era was sold at \$1 60 per gallon and it would bear no reducing whatever, there would be a difference in its favor of 10 cents per gallon, but if reduced

4 gallons	\$6 40
1 gallon linseed oil	70

Total cost.....\$7 10

Making five gallons costing \$1.42 per gallon. Difference in favor of New Era, 33 cents per gallon.

New Era High-Grade Paint will cover 50 per cent. more surface than lead and oil paint. This we know by actual test and our assertion can be proved by anyone caring to make the test, therefore, as can be seen by the following example, any intelligent person conversant with these facts would prefer New Era High-Grade Paint at an even price.

15 gals. White Lead Paint, at \$1.75..\$26 25
9 days' labor to apply it, at \$2 per day 18 00

Total cost.....\$44 25

10 gals. New Era High-Grade Paint, at \$1.60

6 days' labor to apply it, at \$2 per day 12 00

Total cost.....\$28 00

A saving in cost of material and labor in favor of New Era High-Grade Paint of \$16.25.

Then the question of durability must also be considered. If, as it is claimed, white lead paint will last three years, then the cost per year would be \$14.75, or 98 1/2 cents per gallon per year. On the other hand New Era High-Grade Paint will last at least five years at a cost to the consumer of \$5 60 per year, or 56 cents per gallon per year.

In the last comparison it will be noted we have figured the cost of New Era at the price to the consumer without any addition of linseed oil, which it will certainly stand and will still further reduce the cost.

Finally we believe that the actual value of one gallon New Era High-Grade Paint is worth to the consumer about two gallons of any mixed-by-hand white lead and oil paint.

He's A Happy Father.



MR. M. J. REYNOLDS

Our special reporter on "salesmen's statistics" has promptly notified us of the following telegram, received by a relative of Mr. Reynolds:

Rochester, N. Y., June 7, 1900.

Nell has a ten-pound girl.

Mert.

We present Mr. Reynolds' picture as an illustration of what a really happy man looks like, but cannot show the broad smile that illuminates his countenance, as the news was so sudden there was no time in which to secure a new photograph. We extend congratulations for ourselves and representatives.

Note.

Representatives will please remember that we do not ship goods "C. O. D." or "sight draft attached to bill of lading" unless enough money is sent in with the order to guarantee express or freight charges both ways, in the event of consignee refusing to receive the goods. You will save embarrassment to your customers and us by regarding our deas in this direction.

HUMBOLDT, IOWA, May 30, 1900.

Editor THOUGHTS:

I think No. 5 has the right idea as to treating the clerks—get well acquainted with them. It may do us a whole lot of good. It can never do us any harm. Don't be afraid to tell him what you are selling. If he has the time show him your line, he may go in business himself some future day. I remember one time I sold a stock order by getting in with the clerk, it happened this way: I went into a drug store up at George, Iowa, and inquired for Mr. O'Connors, the buyer of the firm of Bradshaw & O'Connors. The clerk told me that he was at supper, I then introduced myself to the clerk, bought him a cigar, and then asked him if he could take a few minutes time to look at my line of goods. He gave me about ten minutes of his time. When I was through talking he said that he thought our paints were the best paints on earth, he told me that he would help me talk to Mr. O'Connors in regard to putting in a line of our goods. The result was, I sold Mr. O'Connors a nice bill.

Yours respectfully,

No. 2.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, JUNE 16, 1900.

NO. 40

Paint and Its Solid Constituents—The Pigments.

BY JOHN COLLET.

(Continued from last week)

GREEN PIGMENTS, AND CHROME GREEN IN PARTICULAR.

The explanation and instructive information given to you so far in regard to Chrome Greens are, perhaps, as you may have noticed, pertaining only to the so-called C. P. pigment. These C. P. Chrome Greens are met, however, very sparingly on the market and were not made at all about ten or fifteen years ago.

The Chrome Greens generally found and used by the painters and paint grinders are, however, all more or less extended with Barytes and other inert material, the Barytes being the principle and general extender met with in at least almost all dry commercial Chrome Greens. These extenders are mixed into the precipitated or formed Chrome Green, previous to filtering, drying and disintegrating of the pigment.

I can remember very well, and it is not so very long ago, that among the dry color makers there was a general understanding that it would not be advisable, if not almost impossible to manufacture a C. P. Chrome Green for the general market, and one of the largest of the American paint and dry color manufacturing concerns was the strongest opponent against such a C. P. pigment, while another firm, as its strongest advocate, caused many a controversy in its behalf in the technical trade papers of this country. As a matter of fact, properly extended Chrome Green is, in regard to its properties as a paint pigment, much better than a C. P. one.

The reasons are: There is evidently, and it is proved, in the length of time a chemical action between the prussian blue and the chrome yellow which causes a decomposition of both, and therefore a change in the color and shade of the green. The addition of Barytes—a perfect inert—will lessen this

Continued in third column

MR. H. V. DEMING.

Mr. Deming joined our family of representatives at the beginning of this year. He is an "old hand at the business" however, having travelled for another house in our line for a number of years, and is thoroughly familiar with the goods and all classes of trade to which we cater. Mr. Deming's "strongest hold" is probably in the presentation of varnish. He has given this branch of the business special attention and is constantly

chemical action considerably, owing to the quasi dilution of the two constituents in their mixture.

Furthermore, the addition of Barytes will facilitate the grinding of Chrome Green considerably also, as a much finer and more homogeneous paste in oil or japan can thus be obtained, and in regard to grinding or disintegrating of the dry Chrome Green, or its beating into a very fine impalpable powder, we find that an extended Chrome Green is much easier and quicker working than a C.

P. one. Besides this a dry C. P. Chrome Green, especially one made with chrome yellow, in the process of which nitrate of lead as constituent was used, is very apt to explode in grinding or crushing owing to the heat generated by the friction and transformed in a more energetic and active chemical action, causing thus the explosion, or at least a burning out of the blue. These, and that an extended Chrome Green is much more durable, and faster against the influences of the atmosphere, and that it will take less linseed oil to form a paste or liquid paint than a C. P. green, is the reason that by far more extended Chrome Greens are manufactured than C. P. Greens. As a matter of fact commerce and a general understanding among color makers and painters, have established a certain standard quality of commercial Chrome Greens, adopting a Chrome Green showing a constitution or

proportion of 75 per cent. of extender to 25 per cent. of actual C. P. Chrome Green as a standard commercial Chrome Green. This standard is represented by our bull-frog green No. 100.

In the last three or four years, however, a considerable number of industries, as paper stainers, shade cloth and wagon and implement manufacturing concerns, are equipped with facilities to grind and mix their own colors and paints, and these concerns are now-a-days buying to a great extent a C. P. Chrome Green, and extent same themselves with whatever extender or inert they choose or see fit for their special purposes. The



on the alert for anything new that may turn up, and devotes considerable attention to developing new lines that offer advantages in the way of economy or better results.

He is an enthusiastic worker with a determination to win that is bound to bring the desired result. His special mission is presenting the line to the furniture and wood finishing trades, and he covers the North Middle States, working the trade independently or in connection with the regular representative, depending upon the exigencies of each particular case.

Mr. Deming is unmarried and makes his headquarters in Detroit.

THOUGHTS

out-put of C. P. Chrome Green is therefore naturally increasing, but as I said, it is not, or almost never used as such in painting, for the reasons already given.

The commercial Chrome Greens are good pigments, especially the quality adopted and accepted as a standard in the market. They have good body or covering capacity, mix well with oil, producing a paint of good spreading quality. As tinting pigments they have the same advantages and disadvantages as their constituents, prussian blue and chrome yellow.

Mixed with a pigment of a basic or alkaline nature, like white lead, the blue will, to a certain extent, be reduced to the yellowish red oxide, and with a pigment containing sulphur, the chrome yellow will be darkened and therewith the shade of the tinting green. Under regular conditions they are, however, we may say, more than fairly permanent when exposed to light and air.

Comparative Cost to Consumers of New Era High-Grade Prepared Paint, and Strictly Pure Lead and Oil.

In previous comparisons under this heading we have indicated the difference in cost of pure white only. In this we show the difference when lead must be tinted. It is, of course, considerably more expensive to tint white lead than to merely reduce it with oil and thinners, on account of the cost of color and extra time involved.

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¼ gal. Turpentine.....	25
¼ gal. Turp. Japan (2¼ lbs.).....	25
1 lb. Prus. Blue in Oil, at 60c.....	60
2 lbs. Chrome Yellow in Oil, at 30c..	60
1 lb. Venetian Red in Oil, at 15c.....	15
Time consumed mixing and tinting the paint.....	80
Total cost.....	\$12 80

The above makes 7½ gallons, weighing 17½ pounds to the gallon.

Total weight, 135 pounds. Costing practically \$1.75 per gallon or 9½ cents per pound.

This makes a paint thin enough for the priming coat and really too thin for finishing

coats, which goes to show that painters' claims as to quantity of oil, turpentine and dryer are not born out by facts.

New Era High-Grade Prepared Paint will stand considerable reducing. Some of our friends using same even claim a gallon of oil to a gallon of paint, but that we cannot recommend. It will stand fully 25 per cent. but in order to be on the safe side, let us say 20 per cent.

Comparative Cost at \$1.50 Per Gallon for New Era High-Grade.

4 gallons.....	\$7 20
1 gallon linseed oil.....	70
Total cost.....	\$7 90

Making five gals. at \$1.58 per gal. Difference in favor of New Era, 17 cents per gal.

Comparative Cost at \$1.70 Per Gallon for New Era High-Grade.

4 gallons.....	\$6 80
1 gallon linseed oil.....	70
Total cost.....	\$7 50

Making five gals. of paint at \$1.50 per gal. A difference in favor of New Era of 25

cents per gallon.

If New Era was sold at \$1.60 per gallon and it would bear no reducing whatever, there would be a difference in its favor of 10 cents per gallon, but if reduced

4 gallons.....	\$6 40
1 gallon linseed oil.....	70
Total cost.....	\$7 10

Making five gallons costing \$1.42 per gallon. Difference in favor of New Era, 33 cents per gallon.

New Era High-Grade Paint will cover 50 per cent. more surface than lead and oil paint. This we know by actual test and our assertion can be proved by anyone caring to make the test, therefore, as can be seen by the following example, any intelligent person conversant with these facts would prefer New Era High-Grade Paint at an even price.

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9 days' labor to apply it, at \$2 per day 18 00

Total cost.....	\$44 25
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6 days' labor to apply it, at \$2 per day 12 00	
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A saving in cost of material and labor in favor of New Era High-Grade Paint of \$16.25.

Then the question of durability must also be considered. If, as it is claimed, white lead paint will last three years, then the cost per year would be \$14.75, or 98½ cents per gallon per year. On the other hand New Era High-Grade Paint will last at least five years at a cost to the consumer of \$5 60 per year, or 56 cents per gallon per year.

In the last comparison it will be noted we have figured the cost of New Era at the price to the consumer without any addition of linseed oil, which it will certainly stand and will still further reduce the cost.

Finally we believe that the actual value of one gallon New Era High-Grade Paint is worth to the consumer about two gallons of any mixed-by-hand white lead and oil paint.

A Suggestion.

Sometimes a dealer will say: "Yes; I have calls for Neal's Enamels, but I sell So-and-so's and can't carry two lines." Tell him: "Well, you know what the principle items are, why not try a dozen or so of each, Neal's Enamels and Bath Tub White, along with some N. C. P. Black and some other to make a shipment." Next time you call you will enlarge the line.

MT. STERLING, KY., May 29, 1900.

Acme White Lead and Color Works.

Detroit, Mich.

Gentlemen:—With all the talking points in your favor the goods are half sold when bought. Such has been our experience with your products for many years.

Yours truly,

R. H. WHITE & Co.

INDIANAPOLIS, IND., June 7, 1900.

Editor THOUGHTS:

Here is another hot one for New Era High-Grade. Frank Jenkins, one of the leading painters here, who has been a Carter lead man for years, through my efforts agreed to try New Era. He bought of Johnson-Woodbridge Co. thirty gallons to paint three houses, stating that that was the amount he figured on if he used Carter's lead and oil, and he knew it would take more of the New Era. But as he could buy New Era at \$1.30 and it would cost \$1.50 for the lead and oil paint he could afford to use that little amount more necessary. Last Saturday he brought back thirteen of the thirty gallons, having done his job with seventeen gallons, which, figuring at the difference in cost of material alone, was the small amount of \$22.90, which under ordinary circumstance is worth considering. Mr. Jenkins was not only pleased at that but said it was more easily and quicker applied, thereby saving considerable money for him in time, and above all two coats looked better and covered as well as three coats of pure white lead. I am going to try and have him write a testimonial and forward to you.

Yours truly,

No. 8.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, JUNE 23, 1900.

NO. 41

Printing Colors on Acme Household Labels.

As the result of communications received from a few of our representatives, stating that their customers objected to *printing* colors on Acme Household labels to indicate contents, we issued a general bulletin asking for an expression from each of our representatives. The answers in all cases have not been as definite as they might have been, but we have been able to determine in each case whether customers were complaining or not, and if not have considered that the report did not indicate a necessity for changing from our present plan of *printing* colors. Below is the result of the reports in detail:

Shall we print colors on Household labels?

W. C. Neal.....	Yes
R. M. Billings.....	Yes
A. D. Hoagg.....	Yes
H. C. Cater.....	Yes
O. F. Richmond.....	Yes
C. F. Elliott.....	Yes
H. Scratch.....	Yes
H. P. Torrance.....	Yes
W. P. Wiggins.....	Yes
C. Mehlig.....	Yes
S. J. Olson.....	Yes
J. R. Goldsborough.....	Yes
H. V. Deming.....	Yes
A. E. Barron.....	Yes
Dan Davies.....	Yes
C. F. McCauley.....	No
M. Taylor.....	No
A. R. Kelly.....	No
M. J. Reynolds.....	No
J. R. Newell.....	No
H. H. Halladay.....	No
F. R. Dougall.....	No
A. S. Dougall.....	No
S. H. Hart.....	No

Fifteen "yes" and nine "no."

From above we think it unnecessary to make any change.

Note.

While "laying off" this summer, get your list of towns in proper shape—sample books, advertising matter, etc. Don't wait until a day or two before it is time to start out and ask for a quantity of supplies that might just as well be prepared during the slack season.

MR. H. P. TORRANCE.

Mr. Torrance is one of the sort of men who make friends wherever he goes. He does not make a *business* of doing so—it just comes natural for him to be agreeable. He combines with this characteristic a determination "to do business" and a degree of persistency (of the right sort) that are bound to make him succeed. He is a thorough and systematic worker with ideas of his own for securing and holding business that are up-to-date in every particular.



His territory is the northern part of the State of Ohio, where he gives particular attention to the jobbing and store trade and such manufacturing business as is not looked after by the special representative. Like the majority of our salesmen he has a decided leaning towards New Era High-Grade and is pushing it hard and successfully. Mr. Torrance came with us last fall and was familiar with our line of goods in a general way, having some years prior to that time represented a Canadian manufacturer of the same class of goods. He is a steady builder of business and a man who wears well with his trade.

This will be the last issue of **THOUGHTS** before the beginning of the fall campaign—about the first or second week in August.

New Era High-Grade.

OKLAHOMA CITY, June 12, 1900.

Editor THOUGHTS:

Our New Era High-Grade is going better than any paint sold in this section. I sold two bills for Scott & Co., our agents here. One of them being for a man who used to handle Sherwin-Williams paints. He said himself our paint showed up better than any paint he had ever seen.

Yours respectfully,

No. 28

Advertising Matter.

Editor THOUGHTS:

I think your instructions to salesmen, through THOUGHTS of recent date, to see that customers were provided with advertising matter came none too soon. I find very few have sample cards and are trying to sell paint from the forty-two color booklets or the old rack which does not represent the shades correctly. The framed sample cards are excellent. The twenty-five shades are wanted by ninety-nine out of every hundred customers in Michigan.

Yours respectfully,

No. 26.

Note.

Opportunity has hair in front; behind she is bald; if you seize her by the forelock, you may hold her; but if suffered to escape, not Jupiter himself can catch her again.

(Happy) Thoughts

PUBLISHED WEEKLY BY ACME WHITE LEAD & COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

DETROIT, MICHIGAN, JULY 11, 1930.

Special Edition, by Assistant Editor.

The wrinkles on the Adamant-line brow of our High-Grade advertising and sales manager, Mr. A. M. Woodward, have relaxed into a broad smile since the arrival of a bouncing baby girl this morning, and the happy event represents a New Era in his heretofore Granite imperturbability. His Enamel countenance reflects a lustre which for the time being out-shines that "glossy finish" so well described in the various emanations from his pen.

Mr. Woodward is a handsome man and we regret in this hasty issue that we cannot present his picture. We feel safe in conveying to him and his better half, however, in this manner the heartiest best wishes of the entire Acme family.



Ah, there!

(Happy) Thoughts

PUBLISHED WEEKLY BY ACME WHITE LEAD & COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

DETROIT, MICHIGAN, JULY 11, 1920.

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A. M. Woodward Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, SEPTEMBER 1, 1900.

NO. 42

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from June 16, 1900)

RED PIGMENTS.

Of all the various color-pigments at the disposal of the paint manufacturer and painter, the "Red Pigments" are by far the most numerous and important class of colors. They are derived from both inorganic and organic sources, but are as a matter of fact, all or almost all artificially manufactured. Their manufacture being one of the most important branches of the dry color or color-pigment manufacturing industry.

We may divide them into two separate groups. The first comprising pigments of exclusive mineral or inorganic origin, such as Red, and Orange Lead, English or Chinese Quicksilver, Vermillion, and the various Red Oxides, as Indian and Venetian Reds, the coloring principle of which is iron in a state of more or less high oxidation. The second group we may designate as "Lakes," that is, they are color-pigments with bases of inorganic mineral natures—mostly one of the number of inerts you are familiar with through previous articles, as Barytes, China Clay, Whiting or Paris White, and Blac Fix and others. These white inert bases are colored with an organic coloring principle, which latter may be obtained, as it was in the early times and until very recent years, from natural coloring matters, such as Lac, Cochineal, Brazil and Log-Wood, or it may be derived from the large series of coal tar or aniline colors, a source which has lately come into prominence for lake and color making, and which will, if it has not done so already, supplant altogether the natural coloring matters for this purpose, as they have very nearly done so for the dyeing of textile fabrics.

These red coloring matters—and others also, as the manufacturing of lakes comprises

Continued on other side.

MR. R. S. BROWN.

Mr. Brown is our general representative to the carriage manufacturing trade. He has grown up in an atmosphere of "carriage finishing," having learned the business practically in his father's carriage factory, where as kid, journeyman and foreman he wielded the brush and learned in detail the intricacies of the business from lead priming to the application of elastic wearing body varnish. He is a man fitted by nature



and education to be a perfect judge of color, for in addition to the significance of his name, he wears as handsome a covering of Tashmoo Red hair as a carriage maker could desire, and peers through a pair of azure blue eyes that delight the most fastidious of his customers. No wonder he has been an entire success during the past ten years that he has been with us. He is a hustler in every way, and a man who has the faculty of "sizing up" a possibility and getting after the business in a persistent and intelligent manner that usually lands a customer. He lives in Detroit and has a large and constantly increasing family.

The Fall Campaign.

The fall season has now been opened for about three weeks and we are pleased to note that results from the majority of territories, up-to-date, are most encouraging. The usual every-fourth-year-talk of "bad business on account of Presidential election" is being indulged in by those croakers whose time is more occupied in framing excuses for failures to sell goods than in hustling. "High prices," "low prices" and "unsettled prices" are the titles of songs that

are sung continually and with some people "bad times" always exist and prosperity is an unknown quantity. If the salesman who feels that his business is unprofitable, will commence his investigations "at home" he will find the cause much sooner and be able to apply the remedy more promptly than by listening to cant and "throwing up his hands" because the "conditions beyond his control" were too much to withstand.

A *salesman* (the genuine article) makes his own "good times," and our observation teaches that they are balanced to a nicety by the amount of skill, energy and perseverance that are expended in securing them.

Tell your trade how *good* times are, not how *bad*. If everybody *thought* times were good they *would* be.

Periods of depression in the history of a country are like "a fit of blues" in an individual, and a dose of salts or the sharp end of a pin applied in the right spot will always induce an activity that brings a better feeling.

There are so many good things to say in favor of our general line that it is almost unnecessary to caution our older representatives against giving away to "business blues." All it needs to make "business good" is the right kind of goods and the right kind of talk. We furnish the former and you must look after the latter. Enthusiasm is the key note of a salesman's success—that enthusiasm born of the confidence he feels in his line backing

THOUGHTS

up his honest claims for merit. A salesman who knows he has "as good as can be made" has nothing to fear from competition and every incentive to do himself and his house justice, especially if this is backed up by liberal advertising and good business methods. There is "nothing in sight" in the way of business that he cannot have if he wants it bad enough to make the effort to figure out the proper way to get it and persevere until he succeeds. That is just where the average new man falls down—and occasionally the old one, too. He gets scared and thinks that the "other fellow" is entrenched too strongly for him, forgetting that his own batteries are as powerful as anything that can oppose them and that his skill as a diplomat is, or should be, equal to that of his opponent.

"Tend to your knitting" and keep your eyes open for chances and the business will come.

Paint and Its Solid Constituents—The Pigment.

Continued from other side.

all kinds of color pigments, green, blue, as well as yellow—are fastened or mordanted upon the inert bases by means of metallic salts or chemicals, so that the combination of the white inert base with the coloring matter is more than a single mixture of the two, or the mere staining of the former with the latter, but the coloring matter is fastened on, and in the most, is almost molecular combined with the base, so that it cannot be separated out again by washing or other mechanical means.

Of these salts, called mordants, principally used in lake-making, I will only mention such as nitrate and sugar of lead, alum and aluminium sulphate and acetate, the chlorides of barium and tin.

RED AND ORANGE LEAD.

Red Lead is one of the oldest pigments known, as already the ancient Greeks and Romans used it in their decorative work, but there is no record of how it was obtained or made by these ancient nations. Chemically Red Lead is a higher oxide of the metal lead, or rather the combination of the two oxides, namely, monoxide and the di or bi-oxide of lead, combined in the proportion of two parts of the former to one part of the latter.

However, as in its manufacturing out of the monoxide, a certain part of same does not go into the real chemical combination, no matter how carefully and completely the process is watched and operated, Red Lead contains always a certain amount of free and uncombined monoxide or litharge, the presence of which is the most efficient signifi-

cation for Red Lead in case a chemical analysis has to be made of a sample of Red or Orange Lead, for the determination of the properties, nature and manufacturing process and completeness of same and therewith for the right and proper nomenclature of the sample in question. For we shall see later on, a chemically pure Red Lead—if it could be made in practice—has the same chemical constitution as an Orange Lead of Orange Mineral, although they are made from different materials, but by similar process and are furthermore of a like, even often of the same, shade and color.

The manufacturing process of Red Lead is in short as follows:

It consists of two stages. The first stage has for its object the conversion of metallic lead into monoxide. It is done in a so-called reverberatory or drossing furnace. The metallic lead is melted and kept at a constant heat, high enough to maintain the lead in a molten state. The construction of the furnace is such that the molten lead forms itself into an even, flat, large area or surface, over which by adequate means a current of air is passed, the molten lead being constantly paddled or agitated by working men with long iron stirrers.

The melted lead rapidly becomes coated with a layer of oxide, formed by the combination of the oxygen of the air with the lead; the formation is hastened by the paddling of the lead and the pushing of the oxide as it is formed to the back of the furnace, so that a fresh surface of lead is always exposed to the oxidizing action of the air.

The process is called in technic, "drossing," and the product is known as "dross." It is not a perfectly pure monoxide of lead but contains more or less unoxidized lead—blue lead. To get rid of same, the dross is broken up and ground and levigated with water, by which process the lead is flattened out and removed very similarly as in the manufacture of white lead.

The main feature of this first stage of the manufacturing of Red Lead is that great care has to be taken not to bring the temperature too high, as then the dross will melt and bake together and will be transformed into litharge, which although is isomeric with dross, that is, it is chemically lead monoxide also, can by no means be converted into Red Lead.

The ground and collected dross, freed as much as possible from the blue lead is then ready for the second state of the process.

It consists in heating the dross in another similarly constructed furnace, but with a more plentiful supply of air and with only a dull red heat. After eight to ten hours heat-

ing with occasional stirring or agitating, samples are taken out and examined for color and progress of conversion. When the Red Lead has attained the correct and proper color and shade, the fires are drawn out and the furnace allowed to cool down; when cool the Red Lead is allowed to be taken out of the furnace, ground under water, or disintegrated and separated in different grades of fineness by an air blast, dried, and is then ready for the market.

ORANGE LEAD OR ORANGE MINERAL.

As I said before it is identical in its composition with Red Lead, and almost similar in shade and color, being only somewhat paler and lighter. Physically it is of a lighter specific gravity and therefore more voluminous and bulkier than Red Lead. It is manufactured in a similar furnace to that used for the manufacture of Red Lead, but requires only one single firing or calcination.

The material used is white lead or rather as I indicated already under white lead, scum and other imperfectly corroded white lead particles, obtained by the various purification, levigation and grinding processes which white lead has to undergo before it is ready for the market. However, nowadays, as the demand for Orange Mineral is very largely increased—the dry color maker using it chiefly as a base for other Reds—white lead proper is converted into Orange Mineral to a large extent.

The white lead is charged into the furnace, spread out into an even layer, and heated to a dull low red heat for from 18 to 36 hours, according to the quantity charged and to the depth of color desired in the future product.

As a whole the process of calcination and final manipulations are identical with those referred to in regard to the second stage of the manufacture of Red Lead.

Red Lead and Orange Mineral belong to the best and most efficient group of body pigments, they have both an excellent body and covering capacity and very far reaching and spreading qualities when mixed with oil and applied as paint.

TO BE CONTINUED.

DENVER, COLO., Aug. 24, 1900.
Acme White Lead and Color Works.

Detroit, Mich.

Gentlemen:—We enclose you check for \$51.00 in settlement of account. The paint was used on Mr. Lewis' house and it is considered one of the best looking jobs in Denver.

Respectfully yours,

The Lewis & Wheeler Mer. Co.

It was New Era High-Grade, of course. The Denver salesman will please note and see that their business increases.

C. M. Woodward Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, SEPTEMBER 8, 1900.

NO. 43

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week.)

RED PIGMENTS.

They are the best dryers known, that is, they will, owing to their chemical composition, help to convert a film of linseed oil into a hard but elastic varnish, or in other words, a Red Lead paint will dry and harden much quicker than any other straight or composition paint under similar and equal conditions. The strong oxidizing and metallic basic character of these two lead compounds—even stronger than that of white lead—gives to them an energetic and powerful action on linseed oil, or its fatty acids respective, converting same by partly incorporation, as linoleate into the composition, or chemical constitution of the oil into a fatty varnish, or in other words causes linseed oil or the paint to dry. This property of Red Lead in particular makes it a good article for the varnish makers use in preparing and manufacturing varnishes and liquid dryers, for which purpose a comparatively large amount of Red Lead is consumed annually.

A closer discussion of the character of Red Lead and its affinity for linseed oil and its properties in regard to durability and protecting qualities when used as a paint, will be given later on in special articles under the head of "Varnish Making and Oil Boiling," and "Protective Paint for Iron Structures." I will here only say that Red Lead as well as Orange Mineral—the latter in a somewhat lesser degree—cannot be kept under ordinary conditions for any length of time as a soft, easily to break up paste, ground in linseed oil, as the strong oxidizing action of the lead compounds on the oil causes the paste to harden in the keg, or in whatever form it is put up. The same is to say in regard to paste or paints containing an artificially Eosin Red Lead Vermilion as base, and especially if

Continued in third column.

MR. W. P. WIGGINS.

Mr. Wiggins has been with us for about a year, but prior to that time had had experience on the road as representative for another house in our line of business. His territory embraces part of Missouri and Kansas and Arkansas, Oklahoma and the Indian Territory.

We have never had the pleasure of meeting him at the house, but other representatives report to us that he is a "mighty nice fellow, and a hustler," an opinion that we are all the more ready to accept as it corre-

sponds to deductions arrived at from inspecting a record of his work. Mr. Wiggins, besides being an enthusiastic believer in the superior quality of our specialties and their rapid-selling properties, is a hard pusher for New Era High-Grade and is scattering agencies all over his territory, based upon his correct representations that if dealers, painters and consumers really want a perfect paint there is no reason why they should not have it. We understand that in his leisure minutes he is a base ball crank and an expert player, refraining only from signing with the National League because he likes the paint business better. His home is in St. Louis, Mo.



they contain as is mostly the case with latter, rosin varnish or Japan in their vehicles, they all become hard and unfit for use, some rapidly, others after a certain length of time of standing or storing, by the settling out and hardening of the Red Lead containing pigment, if not, special devices and special other ingredients have been employed, also in the manufacturing and appliance of such a class of paint.

CHINESE OR ENGLISH QUICKSILVER VERMILION.

It is an artificially prepared pigment of bright scarlet-red color and shade; the darker

and deeper variety showing somewhat a bluish tone and tint. Chemically it is a combination of the metal quicksilver and sulphur, a so-called sulphide, and occurs as such naturally in large quantities, as the mineral cinnabar in California, Spain and the southern part of Germany; at Idria; but this natural product is lacking sufficient brightness to be used as a pigment; it is in fact mostly brown or almost black in color and heavily condemned with other earthly matter or minerals.

Sometimes, however, small quantities of natural cinnabar of bright red color are found, and we may therefore consider that all the Red Cinnabar used by the ancients was derived from natural sources, although the Chinese, as we are well aware, knew the artificial production of Quicksilver Vermilion, and used it in their decorations many thousand years before Christ.

TO BE CONTINUED.

Don't fail to attach a business card or some other printed matter to orders from new customers. It is essential that we get names and addresses right when opening an account or getting out advertising matter.

We do not send any goods C. O. D. or sight draft with bill of lading, unless a sufficient sum is remitted with order to guarantee express or freight charges both ways. Do not complicate matters by submitting orders to us without having a proper understanding with customers who buy in this way.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, SEPTEMBER 15, 1900.

NO. 44

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week.)

RED PIGMENTS.

As I said, the natural cinnabar and our artificial Quicksilver Vermilion are identical in chemical composition, both are mercury-sulphide. The color maker does not use the natural cinnabar as a direct raw material for the manufacturing of the vermilion, but uses its two constituents, namely the metal mercury or quicksilver and sulphur. The process, of which are two modifications, a "dry" and a "wet" one, is conducted in two separate stages.

In the first stage the mercury is mixed with a computed amount of powdered sulphur, by either shaking the two in iron cylinders in special arranged machinery, or by simple mixing in a shallow iron pot by means of paddles or stirrers.

The mercury and the sulphur combine chemically in this process of mixing to a more or less extent, forming a black amorphous mass, the so-called "ethiops" of the leech, resembling much the black or brown natural cinnabar.

This first stage of the manufacturing process is identical in both processes, the "dry" as well as the "wet" one.

In the second stage of the dry process, especially used by the Chinese,

and to a considerable extent in Europe and here in America also, the manufacturer of vermilion makes use of a chemical-physical phenomena, namely of "sublimation," or as we say he lets the "ethiops"—the mercury-sulphur mixture—undergo a sublimation process. This latter process is based on the following principle or rather fact:

There is quite a number of solid chemical bodies known elements as well as compounds, which when heated to a certain degree volatilize without chemical decomposition and if the vapors are cooled down by one or another means, as entering in an other receptacle or striking on the surface of a cooler body, held over them, condense or crystallize out again.

TO BE CONTINUED.

MR. S. J. OLSON.

Mr. Olson is one of our '99 men. Before coming with us he was engaged with one of our large western distributors and became very familiar with our line of goods; so much so, in fact, that he thought he could present and sell the goods to advantage.



He was not mistaken, and since taking hold of the line has, by careful and persistent work, demonstrated the fact that there is some of the stuff in his composition that goes to make up a salesman (the genuine article).

Mr. Olson covers western Iowa and Nebraska and works closely in connection with our distributors in that section. His home is in Sioux City, Iowa.

Concerning Unjust Claims.

One of the most profound truths enunciated at a recent conference of implement men was this:

"Every business man who allows a claim he knows to be unjust helps to educate the claimant in dishonesty."

This truth applies to dealers as well as to manufacturers and jobbers. The dealer who passes an ill-founded claim of a consumer as a stroke of policy teaches the claimant that it pays to be dishonest. Many claims that

will not bear the light of competent investigation are carelessly accepted, others not well-based are allowed through errors of judgment by dealers who aim to pass none but just claims, while many are accepted to avoid giving offense that may result in the loss of trade.

The dealer's position is not an enviable one and he makes it worse by not taking the stand that the above remark suggests. When it is clear that the claim is unjust it should receive no recognition at his hands, not even to the extent of laying it before the manufacturer. This encourages dishonest claims whether or not the first is allowed. If there is a doubt as to the validity of the claim the dealer may properly act as intercessor, while if the justness of the demand is obvious it should be allowed without hesitation. Mistakes of judgment may result in the acceptance of claims not well founded, but if the dealers

apply these rules faithfully, investigate claims carefully, and are sincere and honest in their judgment, there will be little cause for complaint.

In claims arising from breakages in transit, delays in payment, verbal promises by representatives and other causes in which the consumer does not appear, apply the golden rule, the contract governing and the accepted ethics of trade. Never file an unjust claim knowingly and never withdraw a just one.

Editor Thoughts:

Am glad to welcome THOUGHTS once more.

No. 5.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, SEPTEMBER 22, 1900.

NO. 45

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week.)

RED PIGMENTS.

Sometimes the color and molecular construction are not changed as p. i. in iodine, sulphur and quinine and others. Sometimes the color and herewith the molecular construction is changed, as it is the case with cinnabar, but in both instances the chemical composition is not changed or altered, that is, the cinnabar is mercury-sulphide after its sublimation, as it was before, but it is now of a bright scarlet-red crystalline formation, while it was before a black, not crystalline amorphous mass.

The apparatus in which this process of sublimation of cinnabar or black-ethiops is performed, is very simple and consists of a suitable furnace or a series of fire places built side by side to form a range. In each of the fire places is placed a cylindrical earthenware pot, so arranged that the lower two-thirds of the pot are within, the upper third is outside of the furnace.

The pots are filled about half full with the mercury-sulphur mixture and then closed with well fitted iron lids, which, however, have a small charging hole in the center.

The fires are lighted and the pots heated to a dark red heat. The free sulphur contained still in the mixture burns off through the charging holes, and when all consumed, new charges of ethiops are added through the center holes.

The firing is maintained for 24 or 36 hours after which time the pots are allowed to cool. When cold the covers are removed and the Vermilion will then be found as a red crust of crystalline formation on the under side of the covers and all around the sides of the upper portion of the pot. The red crust is carefully removed and ground up as fine as possible under water, collected, dried at a gentle heat and sent into the market as English Quicksilver Vermilion.

TO BE CONTINUED.

MR. C. F. ELLIOTT.

Mr. Elliott is in our "infant class" of representatives, having only started with us in the spring of this year. An aptitude to "sell things" seems to have been born in him, however, and with the many good things that can be said of our New Era High-Grade and line of "Rapid-Sellers" it is no wonder that he is making rapid strides in winning the friendship and orders of the trade in Pennsylvania and New York on whom he calls.

Mr. Elliott, in addition to his good looks,



possesses a genial and earnest manner and a convincing way of offering his arguments that "tells," and if he don't land his customer on the first visit, it is only a matter of time before he will. His work indicates that he is building a solid foundation for future business by working in a manner that creates a favorable impression with the trade and gains their good will for himself the house he represents, and the line of goods he offers. He has been particularly strong in working in connection with our distributors, whom he has convinced by selling a good example, that it is a comparatively easy matter to sell our goods. Young a hustler, good looking and unmarried.

An Addition to Our Factory.

The volume of New Era High-Grade business from all parts of the country, due, first, to the quality of the goods, and second, the establishment of general distributors in nearly all territories, has rendered it necessary to largely increase our facilities for turning out these goods. For this reason, as well as the fact that increased facilities are required to take care of our constantly growing manufacturing trade (contracts for next year are far in excess of any previous season), we

are building a large addition to our main factory, the lower story of which will be used principally as a store room for New Era High-Grade and the balance for our advertising department, which has long required more room for extra presses and other machinery needed to enable us to do all this class of work on our own premises. With the latest in cylinder presses and other facilities we shall have as perfect a printing and sample card plant as it is possible to secure. The space left in main factory by removal of advertising department and New Era High-Grade stock to new addition will be utilized for new mills, mixers and machinery required to take care of our orders properly and promptly.

Contributions, Please!

Contributions from our representatives for the columns of "Thoughts" are about as scarce as oyster, in church fair soup. It can't be that our salesmen have nothing of interest to contribute, as in the course of their travels and experiences it would be very strange if the least observant of them did not find something that could be aired through the columns of this paper for the entertainment or benefit of their brother missionaries.

When an order is taken for direct shipment from factory, and customer wishes same to be billed through a jobber, such an order must be sent to the jobber by the salesman with instructions to forward to us if the credit of customer is O. K. If you neglect to do this and send such orders direct to us we have to delay same until we get the jobber's consent to ship. All such orders should be made out in the following manner: "Charge Smith, Jones & Co., Chicago, Ill., ship to Ole Oleson, Mohawk, Wis." Please note these instructions carefully.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT MICH

Devoted to Matters of Interest to Our Representatives.

VOL. I.

DETROIT, MICHIGAN, SEPTEMBER 29, 1900.

NO. 46

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week.)

RED PIGMENTS.

The Chinese method is even more simple as they do not use extra arranged furnaces or pots, but sublime the cinnabar from one iron pan into another placed over the former. But as the Chinese have long been renowned as makers of vermilion, their product being finer and more brilliant in tone than that made by others, they employ certainly a final treatment to their vermilion, which up to the present time we were not quite able to find out or to duplicate.

The same change of the black mercury-sulphur mixture into a red combination can also be obtained by another process, the so-called "wet" process, a process, however, not very much used, as its product lacks considerably in fineness, brightness and brilliancy of color, shade and tone.

It consists in principle of boiling the black ethiops with potash lye of certain strength, by which process the red color is gradually developed, according to length of time of boiling and strength of lye employed. In order to obtain good results the color maker has to watch the operation very carefully and has to wash the final product with weak acids and plenty of water.

As a pigment Quicksilver Vermilion is now-a-days not as much used as formerly, its place being almost entirely taken up by the artificially made Eosine Red Lead or Orange Mineral Vermilion, which, although by far not as stable and durable, are almost and in general of same body or covering capacity and much cheaper to manufacture.

The English Vermilion, if of good quality is of a handsome and fiery red, possesses great body and opacity, and finely ground an immense spreading quality, but owing to its high specific gravity, it is the heaviest pigment known, it is somewhat difficult to handle as mixed paint, in which form if used, it is almost invariably extended with a lighter inert.

For years ago it was considered the best red pigment in regard to durability also, but progress and the general advancement in the manufacturing of color pigments has here also taken it from the first place and put it several degrees lower on the scale for durability of colors.

It is not as durable as it was supposed to be, which fact was learned and established by proper comparison with other red color pigments, as it becomes by exposure to the atmospheric influences darker and in the length of time almost brown black. This is due apparently to a return to its former molecular construction, to that of the black or brown mercury-sulphide.

The manufacturing output or production of Quicksilver Vermilion is comparatively limited, owing to its very sparingly use in the manufacturing arts, and its high price, same ranging from fifty-five cents to sixty-five cents per pound.

It may be therefore rather classed among the artists colors than under those color pigments used by the painter in general and the paint manufacturers in particular.

RED OXIDES, OR IRON REDS.

As their name indicates all these red pigments of varying shades and tints subdivided and put upon the market as rouge, colcothar, indian and venetian reds, purple, scarlet and derby reds, have as their coloring principle the red oxide of iron, the "ferric oxide" of chemistry.

They are either natural products ground and purified by levigation, as the well known American brands, the Princes', Lowe's and Frontier Mineral Oxides, or they are produced in the color-maker's striking vat and calcination furnace, as the various indian, venetian and scarlet reds.

The preparation of Oxide Reds from the iron mineral or iron ore is comparatively simple. The mineral mostly found on the surface of the earth, or at least imbedded not very deep, is first ground under edge runners or in other disintegrating machinery and then put through a mill from where it undergoes the well known levigation process. It is then collected, dried and put as such on the market.

Sometimes, and this is mostly the case if the mineral contains somewhat large amounts of organic matter and combined water as hydrated oxide of iron—the mineral is then of more or less ochery nature—it undergoes a slight calcination process, whereby it is not alone freed of these but rendered also a grade deeper and richer in shade and color.

TO BE CONTINUED.

Credit Information.

Salesmen will please be careful when writing concerning a customer's credit to always avoid writing about prices or other matters on the same sheet of paper. We are pleased at all times to get information regarding our customers' standing and progress, whether the customers are old or new, and we should like to have our salesmen report more frequently on old customers than they do. At the same time we want this information separate from any other, because it is always noted and filed with our commercial reports, etc.

Please bear this in mind, as it saves us the trouble of copying those portions of your letters, or cutting them to pieces in order to save such information.

Salesmen are again requested to kindly note the amount of their order in the upper left hand corner of order sheets before sending same to us. It is not necessary to be exact as to the amount, just approximate same as near as you can, and thereby assist the credit department in handling orders promptly. We are glad to acknowledge the assistance rendered us by a number of our representatives, and we trust the balance will fall in line.

Salesmen are requested, in all instances where it is necessary to telegraph us, to always prepay their messages and charge the expense of same to regular expense book.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. II.

DETROIT, MICHIGAN, OCTOBER 6, 1900.

NO. I

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week)

RED PIGMENTS.

They are very seldom pure iron-oxide colors as they almost all contain more or less other inert mineral matter, as silicates and sometimes lime, which mineral gangue is due to the formation of these natural beds of color.

There formation is mostly not local but is due to various geological changes, as decomposition of iron-oxide bearing granitic rock and depositions of same in lower locations, or they may be due to volcanic evolutions or plutonic causes, in either case of which a certain amount of sand, clay and other mineral matter will be naturally mixed with the iron-oxide. As a rule they are hard to grind, their hardness coming almost next to barytes.

In regard to body and covering capacity it has to be said that these natural pigments stand high, and also in regard to durability and permanency. The degree of the former is naturally corresponding to the amount of iron-oxide they contain.

Among the class of natural oxides we may also number those which are manufactured by the calcination of various yellow ochres, the iron constituent of which is in form of a full or partly hydrated oxide, that is, the iron is of a chemical combination with the elements of water. By more or less strong calcination in a suitable arranged furnace this chemically combined water is driven off, resulting thus in the production of an iron-oxide, as it was that chemically combined water that imparted to the ochre its yellow color.

The red-oxides derived from these mineral sources are as a rule much softer and lighter in color and shade than those obtained directly from nature, they are also poorer in iron-oxide and therefore not as good pigments as the latter. Much depends on the nature of the ochre employed for calcination in regard to the quality and properties of the final product.

In the artificial manufacturing of oxides or iron reds a great variety of materials and chemicals is employed, some of which are

obtained as waste or by-products in other branches of industry, while others are used directly for making them.

The manufacturer is able, within certain limits, to prepare any shade of red-oxide desired, by regulating the amount of iron-oxide, the nature of the inert material used, if any, and last but not least the degree of heat employed in the calcination process.

The processes which are used in the preparation of artificial red-oxides may be grouped under two heads: 1. dry process; 2. wet process. In the first, the dry process, the reds are made by heating or calcining an iron compound, usually the sulphate of iron, the green copperas of commerce.

As its name indicates, this iron compound is a chemical combination of iron and sulphuric acid, and if in a crystalline form, as it is commonly found on the market, contains seven molecules of water of crystallization, to which latter its green color is due.

Its manufacture out of iron-pyrites, the natural bi-sulphide of iron, a mineral resembling gold, of which it has often been mistaken, is of no special interest to us, and may here be passed over.

Copperas, when strongly heated, loses all its water of crystallization and becomes a white amorphous mass, by strong calcination it is then further split into its two constituents, namely iron-oxide and sulphuric acid.

The calcination of copperas may be carried out with a view of obtaining therefore red-oxides as the principal product and sulphuric acid as a by-product, or vice versa, as the latter was in fact the first process for the manufacturing of this acid, but it is now displaced to a large extent by better and more advantageous processes.

TO BE CONTINUED.

An Enterprising Dealer.

The dealer to whom the following letter was written is of the class that with whom we like to place agencies for New Era High-Grade. He is of the kind that do not "wait for business to come," but use brains, common sense and energy to get after it.

MR. J. J. HARTZ,
Portland, Ore.

Dear Sir:—We duly received photograph of your store front, and note with great pleasure the display

accorded our New Era High-Grade Prepared Paint. We wish to compliment you upon same. We consider it particularly striking and effective. The large New Era can is a mammoth affair that certainly should draw attention. How did you reproduce the label in that size?

Yours truly,

ACME WHITE LEAD AND COLOR WORKS.

This idea of good window displays should be encouraged by our representatives to the fullest possible extent.

Neglect of Correspondence.

Salesmen are particularly requested to be prompt in answering correspondence. We have noticed lately that a number of our men have had to be written to twice on a subject, before they found time to write us. This should not be, as it involves a lot of detail that can be avoided. We always allow at least ten days for reply on letters written to salesmen, which we should imagine to be sufficient, and for far away points, we allow longer time.

Please co-operate with us in this direction and help to reduce the detail of correspondence to a minimum.

Our salesmen are requested to remember our instructions regarding reports for credit department, which should always be sent in with first order from a new customer. The same blank can be used, also, when you have anything of interest to communicate regarding the credit of an old customer.

Some of our men are in the habit of writing about the customer's credit in connection with remarks regarding prices, etc. Please bear in mind that all credit instructions are filed with mercantile reports, etc., and that is why we want instructions on a separate sheet.

Another thing that should be particularly noted, is changes in names. Our attention should always be drawn to such when you send in the order. For example: We have been selling B. F. Jones; an order is sent in for Jones & Smith or Jones Hardware Co., and in all cases of that kind, our attention should be called to the change in name, and a report should be made out for the credit department giving some information as to whether the change strengthened the concern or not.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. II.

DETROIT, MICHIGAN, OCTOBER 13, 1900.

NO. 2

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week.)

RED PIGMENTS.

When the process is carried out with the view to obtain red-oxide as well as the acid, which is evolved, the operation is generally done in cast-iron stills or muffles, the latter are sometimes built of fire bricks also. A number or series of these muffles are enclosed in a furnace and connected with a suitable condensing arrangement. The muffles are heated to a red heat and after evolution of the acid vapors, which are collected and condensed into liquid form in the condenser, has ceased, the furnace is allowed to cool down and the residual oxide raked out, ground with water, and washed very well. The washing is necessary to free the red-oxide from all traces of acid, which would reduce its value as a pigment if left in.

If the process is carried out, so that the gases evolved are allowed to pass away without being collected, the operation takes place either in a regular muffle-furnace also, or in a special one provided with upright standing muffles or pipes, in which the copperas is charged, or as it is sometimes the case, the operation is carried out in large open iron pans or caldrons provided with a hood and a high chimney.

By regulating the temperature at which the calcination is carried on, and also its duration, the shade of the resulting oxide may be modified to suit the requirements of the color maker. Thus, if carried on at a dull red heat a bright shade of red is obtained; if at a red heat, a darker red, while at a white heat the oxide will take a dark or violet shade.

During the calcination it is necessary to take out samples from time to time to see how the operation is proceeding. When the mass has acquired the right shade the operation is stopped by drawing the furnace fire, and the furnace and its contents are allowed to cool down, or as it is the case where a regular muffle-furnace is used, the oxide may simply be withdrawn while still hot, leaving

the furnace in a condition to take another charge without loss of time and with saving of fuel.

The color maker as a rule does not employ other ingredients or chemicals with the copperas in this muffle calcination process, but the straight copperas alone. However, in the calcination process carried on in the iron pan operation, the copperas is mostly mixed with certain percentages of alum and for the deeper shades with about one-half to one per cent. of common salt also, the whole mixture is charged in the form of a wet pasty mass.

The resulting calcination product of both processes must be washed very carefully and repeatedly to which end, and in order to arrive at the finest division of particles in the color pigment, the oxides are ground under heavy mills with water.

The result is naturally, as no inert materials are used in connection with the copperas, chemical pure or nearly so, pigments which are met with in the markets, as rouge, colcothar, C. P. venetian and indian reds, scarlet and derby reds, and in form of very deep and blue tone colors, as purple metallic oxides.

In order to extent these colors for the requirements of the trade, the color maker mixes them after the first grinding and washing with inerts, commonly carbonates of lime and gypsum.

As a rule, however, the "dry" process for the manufacturing of red oxides yields only C. P. or straight goods, which are as such only put on the market.

Generally and mostly the so-called extended reds, principally cheaper venetian and indian reds, showing 80, 60, 50 and 40 per cent. of inert material, are manufactured by the second process—the "wet" process—a combination of precipitation and calcination.

The raw materials in this "wet process" are first either iron liquors produced in a large number of metallurgical operations, as in galvanizing or tinning iron, and others as in the separation of copper from iron pyrites, liquors containing iron in solution as sulphate or chlorides, and which formerly were thrown away as useless, but are now used up for the production of iron-reds by

the recovering of the iron they contain in form of oxide, or the raw material may be a special prepared solution of copperas in water; 2nd, a solution of common soda, when the iron liquor contains the iron in form of chloride, and 3rd, common caustic or quick-lime, mixed up with water to a semi-fluid consistency, used in case the iron-liquor or solution is that of iron-sulphate or copperas.

TO BE CONTINUED.

Billings Has A Baby.



R. M. BILLINGS

We are just in receipt of the following telegram:

JACKSON, TENN., Oct. 8, 1900.

Am father of a twelve pound boy. Mother and boy doing well.

R. M. BILLINGS.

These sort of announcements are coming in at such regular intervals that we are seriously considering of devoting a column of THOUGHTS to the care of children, believing that the combined knowledge of our representatives upon this subject will be of material benefit in rearing the numerous and constantly increasing families of our salesmen. The supposition that traveling representatives do not make good family men is all nonsense. When Mr. Billings was in Detroit, about a year ago, he failed to mention that he was a married man, and in fact we supposed he was not. This telegram is rather sudden. We congratulate Mr. and Mrs. Billings. May the boy wax strong and vigorous and be a source of pride and comfort to his parents. Congratulations to Mr. Billings are in order from our other representatives, especially from those who may be contemplating surprises of a like nature.

THOUGHTS

Mail Points.

When a representative advises us to send mail to reach a designated point at a specified time, we naturally expect him to be there, and send mail accordingly, and, if occasion demands, send a telegram covering urgent business requiring prompt attention that we, of course, suppose will be received.

Recently we had occasion to write a man to make a long jump from the mailing point to which the letter was addressed, care of "general delivery" as we were advised to send it. We wished him to meet another representative with whom it was necessary for him to work. He evidently did not call at the postoffice for his letters. The consequence was that the other representative lost a whole day waiting for him and had to wire the house asking for instructions.

Another recent instance is where two men were notified to be at a certain place on a specified date to meet some one sent from Detroit to instruct them regarding matters on which they were to act in unison in their respective territories. One of the men failed to materialize, and on returning to Detroit the man sent to meet him found a letter stating that for certain reasons his plans had been changed. This was extremely annoying. His letter was written a day before he was due at mail point, and, of course, his mail had left the office. We are wondering what arrangements he made to get it and also what business matters will be delayed.

Another case where we wanted two representatives to meet promptly was handled about in this way: We wired A to meet B in a certain town, naming the date and asking for acknowledgment of wire. We also wired B in the same way. A prompt acknowledgment was received from A stating that he would leave the same night. The telegraph company reported that B had left town and gone to a place which we recognized as his home, although it was away out of the route that he sent us. We then had to wire A to wait for further instructions as B had changed his route, and it was not until we had sent telegram after telegram for the best part of two days that they were successfully headed to a meeting place.

It is sometimes necessary and advisable not to make points at which we have been advised to send mail, but our representatives should never lose sight of the fact that we may want to wire them at any time and expect to reach them at these points without fail. The least that should be done is to send us a special delivery letter or telegram *the minute the change has been decided upon*, and not wait until after the time to advise us that the point was not made, or fail to advise us at all. This is a mighty poor way to handle business, and we hope there will be no more cases of this kind.

Our Prize Offers.

In each department of our factory we have a "Suggestion Box" in which the employes can deposit suggestions covering any improvements to our goods, facilities, methods or improvement of any character pertaining to our business. While our representatives cannot very well avail themselves of these boxes, they must not feel that they are barred from competing for the prizes we offer semi-annually for the best suggestions. It seems to us that they are in better position than the rest of us for making good suggestions along the line of improvements, as they are constantly in contact with conditions that bring ideas that could be adopted to advantage. Don't be backward in sending your thoughts in under a heading of "Suggestion Box." No matter if it pertains to advertising matter or methods, labels, cans, packing cases, correspondence, shipping, a new use or brand for paint, or *anything* that you actually think can be adopted to advantage. We don't know it all at this end. There are new fields for our goods as yet undiscovered, new methods of securing and holding business, and better ways of handling details of business. No class of men with us are in better position to find these things out and express their ideas than our representatives. Here is a new one we have just offered our factory people. How many of our salesmen will try their hand at it?

Bulletin No. 67.

CASH PRIZES FOR BEST SUGGESTIONS FOR WINDOW DISPLAYS.

For the best display suitable for store windows of the following specialties, viz.:

Neal's Carriage Paint,
Davies' Varnish Stains,
Neal's Enamel,
Neal's Bath-Tub Enamel,
Granite Floor Paint,
New Era High-Grade Prepared Paint.

We offer five prizes, as follows:

1st.....	\$10.00
2nd.....	8.00
3rd.....	6.00
4th.....	4.00
5th.....	2.00

For the best display that can be used for any of the above lines singly, we offer five prizes of the same value. The average size of a store window would be about 3x5 feet, and a space of the proper size will be laid off in the committee room in which employes, after submitting a sketch of proposed display, can build same, or special permits will be given to employes to do so before submitting a sketch when it is deemed advisable. All facilities for making these displays will be placed in the committee room. All details from competitors for prizes must be in by Saturday, December 1st, at 4 p. m. The General Management Committee will act as judges and award prizes immediately thereafter. Prize winners will be expected to place their displays in shape to be photographed, so that they may be utilized for advertising purposes.

General Management Committee.
P. S.—Permits for employes to build displays can be had on application to the General Management Committee.

Lost or Damaged Goods.

Customers will occasionally complain to representatives regarding goods received in a damaged condition, or goods that may have been lost in transit, and in some cases the representative will commit himself to the extent of promising that he will see that the loss is made good to the customer. Our salesmen should consider always the equity of such matters and bear in mind that after we deliver goods to the railroad company and have their receipt for same as received by them in good order, our responsibility ceases at that point.

If the goods are damaged in transit, or lost, the claim of the customer is against the transportation company and not against us. Furthermore, when there is a shortage or loss through damaged goods, customers should in all such cases see that a proper notation is made on the freight bill, and in that manner make it easy for them to substantiate and collect their claim.

A customer will say that we are responsible nine cases out of ten, where goods are sold "delivered" to them. Now, that word "delivered" is misnomer and our representatives should studiously avoid using same. It is manifestly impossible for us to "deliver" goods anywhere, except in this city, and we can only agree to lay the goods down at certain points, *freight paid*, and this phrase should always be used when the matter of delivery is referred to by customers.

Whenever a customer claims a shortage or a loss, and insists that we make it good, the representative will simply ask for an itemized memorandum of the goods, the original shipping receipt and the paid freight bill, and if there is a notation on the latter that the goods were received in a damaged condition or a package short, tell the customer that you will send the papers to the house and see if they cannot collect the loss, and credit same, if collected, to the customer's account.

This should only be done when customers insist upon our doing so. The usual plan to follow is not to acknowledge any responsibility on our part in such matters.

Editor THOUGHTS:

Allow me to say a few good words about our stand of color plates. I consider that the best advertising matter of its kind I ever saw. All my customers say it helps them to sell the paint and takes considerably less time to sell a bill. I have displayed my stand of color plates in a number of stores, and while going over the different combinations with some dealer someone would walk in and make a note of some certain combination and tell the dealer, "that's the combination I want my house painted." I always show my stand of color plates first, last and above all. It's the best ad. out. Yours respectfully, No. 2.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. II.

DETROIT, MICHIGAN, OCTOBER 20, 1900.

NO. 3

THE DOUBLING OF DAN.



Just wish him God speed and a long happy life.
For this is the time that Dan takes a wife.

The following announcement, which our secret service department has been able to obtain in advance of the date of issue, is explanatory:

*Mrs. M. R. Lawler
announces the marriage of her
daughter,
Violet,
to
Mr. Daniel Davies,
on Wednesday, October twenty-fourth,
nineteen hundred.
St. Louis.*

We had become firmly convinced that Dan would lead a life of single blessedness; not because he was at all indifferent to the fair sex, but rather that his attentions to them were so general and with such marked cordiality in *all* cases that we did not know or suspect they were being concentrated. There

is a general air of gloom among the young ladies in the office since the knowledge of Dan's approaching marriage was imparted, that may be due to the prospective loss of boxes of candy, or —(?)

Domesticated Dan is a role that we think he will fit to perfection. He has been the adopted uncle of innumerable youngsters as long as we can remember, and knows so much about reaching the hearts of the "kids" that we shall not even offer him the advantages to be derived from the "Kindergarten Department" of this publication, but in future shall hope to look upon him as one of our most experienced contributors.

We know of no particular faults in his character that by proper training on the part of Mrs. Davies cannot be overcome. His worst habit perhaps is that of indulging in fish stories. He can tell more romantic and thrilling yarns about the commonest, undersized, every-day fish of any man we have heard relate anecdotes of this character. The only *real* fish he ever catches are bought in advance and anchored in spots where they

can be easily located. We *do* hope that Mrs. Davies will break him of the habit of even mentioning such exploits.

For the information of Mrs. Davies will state that Dan has a thorough knowledge of household duties, from shining the stove to making pies, and we hope that she will insist that the proficiency he has attained in this direction does not become a lost art. Dan is especially fond of wiping dishes, beating and laying carpets and will be exceedingly useful at house cleaning time. He also has advanced ideas upon washing windows, hanging pictures and polishing hardwood floors, and can join stove pipe, turn the wringer or thaw out water pipes without swearing. If he cannot always be utilized to advantage at home for these odd jobs, loan him to the neighbors. He may object a little at first, but by being firm at the start there will be very little trouble. Don't permit his talents to deteriorate for lack of practice.

Laying aside all nonsense, however, to say that Dan "will receive the hearty congratulations of a host of friends" is adopting a commonplace phrase that through every day usage has lost its best meaning and does not properly convey the earnest, genuine congratulations we desire to express, and which we know are echoed by the many whose honest friendship he has earned in recognition of the unselfish and generous characteristics of a man whose greatest pleasure is to please his friends. God speed you, old man, and may your married life be happy, long and prosperous.



Dan's favorite pastime—in the past.

THOUGHTS

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week.)

RED PIGMENTS.

The process is as follows: The iron is in either case precipitated by the soda or lime in form of the yellow hydrated oxide of iron, and in case the iron-liquor was a sulphate, the lime combines with the sulphuric acid of the liquor and precipitates out as insoluble sulphate of lime or gypsum. The two precipitates after being well mixed by paddles or stirrers, are filtered off and dried.

The air dried mass is then charged into muffles or pans of a furnace and calcined to the desired shade of color. The products are venetian or other reds on a gypsum base.

In case the iron-liquor was chloride, soda or common soda is added in excess and then sufficient lime to produce the desired percentage of inert carbonate of lime, or carbonate of lime in form of whiting or marble dust is added, simultaneously with the soda or lime solution. The mass is stirred and left to settle out. After one or two washings the ironhydroxide-carbonate of lime mixture is filtered off, dried and calcined also to the required shades. The products finished by grinding are the various venetian, and indian reds on a carbonate of lime base.

As it is very difficult for the color maker to produce always by calcination the right and proper shade, color, tone and tint, especially in the manufacture of the better class of goods, produced mostly by the dry process, he takes very often refuge to a mixing and blending method, similar to that used by the ultramarine blue manufacturer.

As pigments these extended red oxides are naturally not as good and efficient as those obtained directly from nature or those made by the dry process and not extended. They are neither as permanent nor of equal covering capacity or body. The reds made on a carbonate of lime base must be considered superior to those made on sulphate or gypsum, as these pigments, especially the darker and therefore higher calcined shades, have a tendency, if used or ground and mixed in oil, in not a perfect dry state, to harden and to liver up. The cause is that the gypsum of their base is deprived of a certain amount of its water of crystallization, which is not entirely restored by their subsequent grinding in water, it is therefore mostly not fully hydrated gypsum that they have as their bases, and this only partly hydrated gypsum, is bound to take up more water in any form it comes in contact with.

TO BE CONTINUED.

"Cinching" Orders for Spring Business.

Now is the time that we should endeavor to "make sure" of customers on New Era High-Grade for next spring. You can explain to the merchant whom you have interested, that at this time, while his stock is low, the change can be made to better advantage than at any other season and that the proper amount and kinds of advertising matter that will accompany the goods will cause his customers to become thoroughly familiar with the line before the active demand starts in the spring. One of the strongest reasons from our own standpoint, however, is the fact that when we get our goods in, the competition ceases, and no matter how faithfully your prospective purchaser promises "to put your line in in the spring" he must listen to arguments and propositions from other makers until the goods are actually in his store, and somebody is likely to sway him from his original intention of doing business with you. "A bird in the hand is worth a whole flock in a bush."

The very strongest reason that can be advanced for securing goods for spring trade this fall is the fact that prices are almost sure to advance. We know that many dealers are holding off under the impression that exactly the reverse will happen. The linseed oil situation alone should settle this point. We don't want you to take orders for delivery in spring at prices now existing.

Stocks must be taken this fall at existing prices. We are willing to give a dating of February, March or April 1st on goods shipped for spring stocks, and would not refuse to accept orders occasionally with the understanding that the goods be shipped in the spring, *provided* the dealer agrees over his signature to permit us to ship at any prior date upon which it may be necessary to advance prices. Above all things, do not guarantee prices for 1901, because based upon existing conditions it will undoubtedly be necessary to advance present prices.

The above remarks we naturally assume you will understand applies to the securing of new customers, as there is nothing to be gained by offering advanced datings to regularly established agents on the line.

Notes.

The employees of our factories expect very shortly to issue a monthly publication, and by way of gentle hint to our representatives, would state that it might be well to *think* along the lines of contributions to THOUGHTS, if they wish to make their medium equal to or outshine the new publication.

We have adopted the up-to-date method of operating our factories on standard time, thereby acting in harmony with the principle business establishments of Detroit, and with her progressive business men and citizens generally.

The new addition to our works is progressing nicely. Most of the new machinery for the advertising department (including one elegant up-to-date four-roller Miehle press) has been ordered, and together with new mills, mixers, etc., for other departments, will be in place about December 1st.

Owing to the very unusual conditions prevailing in the flax seed and linseed oil market, our men are cautioned to exercise watchful care and not accept business for future delivery for unusual quantities without first laying facts before us. On June 1st, cash flax seed was selling at \$1.80 and oil seed at \$1.21. An unusually large crop of seed seemed assured and was confidently expected. It now develops that the India and Russia crops are failures, and our own crop on account of wet weather in the northwest has been affected somewhat, and while a reasonably large crop is assured, it will not be as large as at first supposed, and foreign markets will want all of our supplies. One year ago to day flax seed was selling at \$1.17½ and to-day it is \$1.78. Where will it end? No one can tell. One thing is sure, we cannot see how paints can continue to be sold much longer at prevailing prices, and we predict much higher prices after the first of the year.

Editor THOUGHTS:

I wish to make a suggestion relative to our line of varnishes, which will, I think, although seemingly a small matter, tend to make our line more popular with the trade, especially painters, and I would like an expression from each of the boys. I would suggest your supplying with every gallon can you turn out, and also every half gallon, a tin or wood cap to act as a cork, but more like a slip cover. Painters have complained to me, and two only yesterday, that when they opened a can of our varnish they had to scour around to find a cork and would probably be obliged to use a piece of rag or paper, whereas, if they used Berry Bros. Varnishes they had the cork in the shape of a close fitting cap, right with every can purchased, and that was one reason why they did not like to buy our varnish. Would like to see this suggestion acted upon. Those caps, it seems to me, would be comparatively inexpensive and would make the line more popular. I am satisfied.

Yours respectfully, No. 7.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. II.

DETROIT, MICHIGAN, OCTOBER 27, 1900.

NO. 4

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week.)

RED PIGMENTS.

As the iron oxide for itself acts to a certain extent as a dryer when in connection with linseed oil, and as in the drying of linseed oil, as we shall see later in a special article—water is liberated, the partly hydrated gypsum of the base, will and must link itself to or absorb this liberated water, forming thus fully hydrated gypsum, or in other words "sets" like plaster paris, in fact the process is the same as in the hardening of a quantity of plaster paris stirred up with water into a paste.

The gypsum will thus set or harden throughout the whole paint, the consequence is that same will liver and by length of time cake.

Another draw back of these gypsum red oxides is, that the gypsum is slightly soluble in water, which draw back comes especially in evidence, when such a red is used in so-called flat brick or mortar paints.

These paints contain not much oil, in fact very little, lack therefore considerably in binder, and especially in protecting vehicle.

The gypsum, not sufficiently protected by a film of oil is therefore strongly exposed to the elements, particularly water in form of rain and dew and the drying rays of the sun. It takes all the water up necessary to its full hydration and after that more by absorption, in which water it is soluble to almost a saturated solution.

The drying rays of the sun drives or forces now this saturated solution of gypsum out again to the surface of the coat of paint, evaporates the water and leaves the gypsum in form of minute white crystals upon the surface, which later will then appear as coated all over with patches of meal-dew.

Many a painter was thus not little surprised after leaving a bright and finished flat brick job in the evening, to find the next day the house covered all over with these white patches.

The nearest and best explanation for this phenomenon the house owner and the painter himself could find was "fading of paint," and would then naturally blame the manufacturer of the paint in question or the jobber who sold the pigment, while the real and only cause was the use of a gypsum based venetian red in connection with the above stated circumstances, as the writer sometime ago had the pleasure to explain and to demonstrate with experiments to one of our most prominent master painters of the town.

TO BE CONTINUED.

Prices Affected by Recent Heavy Advances in Linseed Oil.

The recent advances in linseed oil have confronted us with a serious problem as regards prices for our goods. From indications at this time it would appear that the present price of oil will not only be maintained, but further advances will occur, and dollar oil would not surprise us. Our representatives will readily realize that new conditions, if maintained, mean a greatly increased cost of production, so much so in fact that the situation cannot be covered by any "law of average" that might apply to a temporary advance that was not so great and did not bear evidence of "coming to stay." We have deemed it good policy to issue the following notice to our trade generally:

DETROIT, MICH., October 24, 1900.

TO THE TRADE:—

Owing to existing unsettled and abnormal conditions covering the present and prospective market for raw material, particularly Linseed Oil, we are reluctantly forced to withdraw all firm prices for our manufactured product, and herewith beg to advise you, that for the time being, and until the market becomes steadier, we can only accept orders subject to such revisions in prices as may be found necessary. We propose to handle any necessary revisions in the most conservative, reasonable manner possible. We regret that the market conditions force us to take this action, and beg to remain,

Yours very sincerely,



We wish our men to bear out our policy fully. To-day our prices are the same as heretofore; to-morrow they may be advanced, as no manufacturer can afford to hold

old prices in face of the present situation for any length of time. *We don't want you to book business for future delivery at present prices under any conditions.* This means that you must not accept business at present prices agreeing to permit customer to order goods shipped at any time we may decide to advance. We are not anxious for orders from established trade under existing conditions, in fact we prefer to discourage such business. We will make a partial exception to this position as regards new customers for *New Era High-Grade*. Note our instructions carefully in this connection as follows: You are at liberty to book a limited number of orders from strictly first-class new customers at the present price for New Era for immediate shipment with usual spring dating, if necessary, or, if customers do not wish goods shipped at once, they must agree over their signatures to permit us to forward goods upon any day that prices may advance. All prices must be made subject to change based upon market conditions. *It is important that you realize that these instructions must be lived up to to the letter.*

These instructions in some particulars are contradictory to our views as expressed in THOUGHTS of last week, in article entitled "Cinching" Orders for Spring Business, but are rendered necessary, based upon later developments.

Note.

A few of our representatives have not yet complied with our request to enter the "approximate" amount of each order in the upper left hand corner of order sheet. Please attend to this hereafter.

Coach Color Sample Books.

ROCHESTER, N. Y., October 21, 1900.

Coach color sample book received, and must say same is a dandy. If you do not note an increase in the sale of coach colors from now on it will be no fault of the book, I can assure you.

Yours respectfully, No. 19.

THOUGHTS



Which of Our Representatives Will Wear This Hat.

We are particularly desirous of pushing sales of Michigan Seal White Lead, and wish our representatives to make an especially active effort in this direction. It should not be difficult to place a line of the quality of our Michigan Seal at the difference in price in favor of the goods as compared with figure demanded for standard brands upon the market. Michigan Seal as now presented is an article that is certain to give perfect satisfaction in every particular—working properties, covering capacity and durability. In order to secure an interesting contest among our representatives we offer a silk hat to the salesman who places the largest quantity of the goods before March 1st, 1901, and shall publish the record of sales for each man in every issue of THOUGHTS. Contest to commence Wednesday, October 31st. The numbers of our representatives who do not call upon a class of trade to whom the goods can be sold are omitted for obvious reasons:

QUANTITY SOLD TO DATE

No. 1.....	.....
No. 2.....	.....
No. 3.....	.....
No. 4.....	.....
No. 5.....	.....
No. 6.....	.....
No. 7.....	.....
No. 8.....	.....
No. 9.....	.....
No. 10.....	.....
No. 11.....	.....
No. 12.....	.....
No. 13.....	.....
No. 14.....	.....
No. 15.....	.....
No. 16.....	.....
No. 17.....	.....
No. 18.....	.....
No. 19.....	.....
No. 20.....	.....
No. 21.....	.....
No. 22.....	.....
No. 23.....	.....
No. 24.....	.....
No. 25.....	.....
No. 26.....	.....
No. 27.....	.....
No. 28.....	.....
No. 29.....	.....
No. 30.....	.....
No. 31.....	.....
No. 32.....	.....
No. 33.....	.....
No. 34.....	.....
No. 35.....	.....

A Suggestion.

New Era High-Grade Prepared Paint, the paint that made Detroit famous.

Yours respectfully, No. 1.

Passing of The Red Barn.

Farmers Now Use Ready-Mixed Paints of Various Colors.

"There was a time," said a paint manufacturer, "when every farmer painted his barn red. The paint used was called venetian red and was made of oxide of iron instead of white lead and zinc. It cost about half as much as lead paint and stood the weather well. The farmer bought this paint dry and mixed it with oil himself, and put it on himself. Now I suppose about one-third of the country's barns are painted red and about two-thirds in other colors, with the proportion of red barns still decreasing. This change is due somewhat to fashion and more to the wide introduction of mixed paints ready for use.

"Nowadays prepared paints are put up in simply scores of colors and shades, and many of them are manufactured and sold as cheaply as the old venetian red was. In the old days if the farmer wanted to paint any color but red he had to mix his own colors. He couldn't get a painter to come from town to mix the colors, unless he could also have the job of doing the painting. Now the farmer can buy paint in any color or shade that he wants from sample card and when he knows the area of surface to be painted he can ascertain just the quantity required.

"There are district fashions in barn painting. It might be, for instance, that in one place the 'squire painted his barns red and thus set a fashion that his neighbors would follow. It might be that some city man who had bought an abandoned farm would paint the old barns in modern style. Then the neighbors would say: 'I don't know how much Mr. Cityman knows about farming, but he certainly knows how to paint a barn.' And the people thereabouts would be likely to paint their barns more or less like his. Thus you might find districts where the barns would run much alike.

"In modern barn painting the body is of one color and the trim of another. The present prevailing style is colonial, in which the body is of a light yellow and the trim white. But barns are painted also in grays and in other colors and various shades of color and with various kinds of trim, and take everything together the old red barn is being more and more crowded by those painted in modern fashion."—New York Sun.

This is Not Politics.

DAVENPORT, IA., October 18, 1900.

On September 26th the people at St. James hotel here opened up a ballot-book for traveling men, and results to-day are: McKinley, 416; Bryan, 53.

No. 30.

Watch the Linseed Oil market and you will realize that prices must advance.

Editor THOUGHTS:

THOUGHTS, dated October 20, 1900, is received. Guess it will not be necessary for me to state that the future Mrs. "D" will not have the chance to read same.

Yours respectfully, No. 5.

Editor THOUGHTS:

Regarding salesman No. 7's suggestion, wish to say that I agree with him as regards caps for varnish cans.

Yours respectfully, No. 5.

P. S.—I still think a varnish sign is necessary.

Editor THOUGHTS:

I find a good many of my customers would just as soon have their goods packed in barrels as cases. It is quite a saving both in freight and cost of packages. I now ask my customers if they would just as soon have their goods packed in barrels, and if they say yes, I so specify on bottom of my order sheet.

Yours truly, No. 18.

Editor THOUGHTS:

It strikes me that the general run of retail dealers throughout the country is firmly convinced in his own mind that the spring will bring lower prices on paints and oils, and that some paint salesmen coincide with them is a well known fact. Now, if a dealer feels that lower prices will prevail in the near future, he will not urge and in fact will sometimes discourage his customers from painting at this season, advising them to wait till spring and secure the benefit of lower prices. Now, this is a mistake. In the first place, there are not going to be any lower prices at the first of the year and perhaps not till the middle of 1901, and I firmly believe it would be desirable for each of our boys to put the matter before the trade now in such a light that they will be prepared for the advance in New Era to \$1.30, which advance will probably come at January 1st, and will therefore be more anxious to have their farmers paint now than in the spring, when paint will be so high that it will scare them out altogether. Do not allow your trade to expect lower prices, for they will be disappointed in all probability.

Yours respectfully, No. 7.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. II.

DETROIT, MICHIGAN, NOVEMBER 3, 1900.

NO. 5

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.
(Continued from last week.)

LAKES, AND RED LAKES IN PARTICULAR.

For many years past constant endeavors have been made to utilize the numerous and beautiful coal-tar-colors for the preparation of pigments suitable for the painter's use, and these endeavors have met with more or less success, and there is now available many pigments which owe their color indirectly to coal-tar and some of which have now acquired a place of their very own alongside with the older pigments, especially among the reds.

The old-fashioned lakes, such as carmine, the carmine No. 40 of commerce, crimson and rose lake, rose and dutch pink and many others are made by precipitating the natural coloring matter obtained by extraction from various bodies, as cochineal, Brazil wood, Persian berries and others with metallic oxides, such as those of aluminum, tin and antimony applied in form of their soluble salts.

Generally the coloring principle of these natural organic coloring matters is of a slightly acid character, and has the property of combining with the metallic oxides above and previous mentioned to form insoluble colored compounds. The tint of these thus formed pigments is dependent not only on the coloring matter itself, but also on the metallic oxide used. Thus cochineal with alumina gives a bluish red, with tin rather a more scarlet shade, and so on.

I do not intend to give a detailed explanation as to the manufacturing and striking of these pigments in the color-maker's vat, but will only say that when the coloring matter and oxide are used by themselves they make or yield a pure lake—carmine for example. These are, however, rather expensive, and when a cheaper body is required it is customary to add, as I mentioned before, a quantity of barytes, china clay, whiting or other inert as a base, as it is called, which then is more or less stained so to speak with the lake proper, and thus inferior cheaper pigments—as rose and dutch pink—are produced which still have sufficient

color and staining property for a variety of purposes.

As the pigments are characterized by being insoluble substances, and as the greater their insolubility in a variety of solvents, the more useful they likely are to be as pigments, and as all the coal-tar-colors are characterized by their solubility in various solvents, which property is indeed an essential feature, that is to be used for dyeing and fabric-printing, the problem was to convert these coloring matters into insoluble compounds or pigments, just as the soluble acetate of lead is converted by bi-chromate of potash into the insoluble chrome yellow. The problem was solved by combining the soluble coal-tar-color with the oxides or salts of metals, as chiefly the acetate or nitrate of lead—the sulphate of alumina—or alum and the chloride of barium, with which metallic salts, the soluble coloring matters form insoluble compounds, or lake pigments. The combination is obtained by simple precipitation, that is by mixing the two constituents, the color and metallic salt in form of solutions together, the precipitated color lake is allowed to settle, is washed and filtered off and dried at a moderate temperature.

As a matter of fact, however, these compounds or lakes are usually or almost always combined with some inert substance like barytes, china clay, whiting or as in the case of the eosine lakes, the artificial vermilions of commerce, with the red or orange oxides of lead, first, to make them cheaper and second, at the same time to develop the tint and shade of the coloring matter better.

TO BE CONTINUED.

Withdrawal of Prices to Manufacturing Trade.

Our representatives will, of course, understand that our notice to the trade withdrawing prices, affects the manufacturing trades to as great an extent as any class of customers. In fact, as this class of trade is very frequently sold on close margins, figures will have to be considered with the greatest care. Prices must not be guaranteed for the future, and no contracts made in which prices are not subject to revision, should conditions render it necessary.



MR. O. F. RICHMOND.

We have had considerable difficulty in obtaining a photograph of Mr. Richmond. The following letters explain his reasons for holding back:

Will lend to this at once, as I am aware that I have neglected this matter. Seeing so many good looking men among our representatives, I have naturally felt reluctant about having my picture alongside. But I will chance it, and send same in the near future.

Yours truly,

O. F. RICHMOND.

Later he writes as follows:

Enclosed find my picture which I promised you some time since. This was taken out in the short grass country in western Kansas, and it is not a very commendable work of art. However, I assure you that it does me justice, as I am not one bit better looking than the photo. I am,

Yours very truly,

O. F. RICHMOND.

Mr. Richmond need not apologize for his appearance. He is no worse looking than the rest of our western representatives. In any event it is evident he does not bank on selling goods "on his looks," and also that in Kansas and western Missouri the trade must think beauty is only skin deep, as he has been able to make a very favorable impression for himself and our goods. Mr. Richmond was formerly a druggist, having had practical experience in this line, from running the soda fountain to compounding prescriptions. We should judge his age to be about twenty-five, single, but with matrimonial prospects, and an all-round good fellow whom it is a pleasure to know. His home is in Atchison, Kan. He has been with us about a year.

THOUGHTS

Flaxseed and Linseed Oil Record Figures.

Thursday of last week flaxseed scored a record in prices which equaled that of last year, and on Friday the 1899 top price was distanced by 1¢/2c. The first day named displayed the distress signal, and the American Linseed Company made haste to put linseed oil prices on a safe footing. Accordingly they advanced the selling basis at 10c per gallon at noon, making 70c the inside figure for raw oil in car load lots, f. o. b. Chicago. The advance was as startling as it was unprecedented, for oil prices generally move up and down by 1¢/3c jumps. On Monday a further advance of 2c occurred. The consuming trade generally have no important stocks of oil, and the market performance on Thursday amounted to a douching of their warm hopes of "35c oil before January 1st" with water as icy and chilly as are the election returns to a defeated candidate. The factors in the advance are the extraordinary high prices ruling in the foreign seed market, same ranging above 60s per qr., compared with 44 1/2s last year, and 35 1/2s in 1893; the big damage to the seed crop in the northwest, principally in North Dakota, making the total outturn of seed from all the flax-producing sections of the country relatively small, more particularly contract seed; and lastly, the firm control over the market exerted by the American-Dickinson oil and seed people in the interest of liberal profits for handling the crop and its resulting products. It is now believed that the current American crop will not exceed 18,000,000 bushels.

Mr. Adams, President Major's assistant, was asked by a press reporter to give the American Linseed Company's view of the situation, and made the following very frank and interesting statement:

"It is simply a question of supply and demand. We raised our price of linseed oil because we had to. Almost all the flaxseed, from which the oil is made, is grown in North and South Dakota, and the recent rains and drouths in that section have so deminished the crop that an advance in price was imperative. The fact that the average amount of seed brought into Duluth, Minn., this season has been only thirty-seven car loads per day, whereas it was 217 car loads last year, shows what is the difference in the crops of the two seasons. In this business we reckon on our year from August to August. The consumption of linseed oil in the United States in ordinary times is about 800,000 barrels, or 40,000,000 gallons per year. This season I think it will be cut at least 40 per cent. for the simple reason that not enough oil will be produced to supply the trade.

"Business men who are affected by any change in the cost of linseed oil are dealers

in linoleum, oilcloths, patent leathers, paints, varnishes and other such materials. The cost of these articles is bound to go up, as far as I can see, for I do not see any possibility of the oil resuming its wonted prices after the scant crop of seed that we have had. It looks now as if oil would continue to rise fast. I should say that it might go as high as \$1.50 per gallon."

Manager Rugg, of the oil sales department, talked much in the same strain to a Review man. He said:

"I guess Mr. Adams is about right. Supply and demand regulate prices. We are not responsible for the flax crop failure in the northwest, neither did we have anything to do with the Indian crop failure a year ago. Unlike some people who claim to be in league with Providence, we cannot say that the Almighty and us are running the universe. Seed is worth what is asked for it on the basis of world values, and we have to pay those prices for it as crushers and take our chances. Oil prices follow the course of values marked out by seed. We cannot make cheap oil out of famine-priced seed. If oil does not go higher I shall be agreeably surprised. I hope it will not, but as I said before the Lord and the American Linseed Company are not operating as a joint partnership, and we of the American Company will have to take things as they come, exercising such judgment, foresight and conservatism as we may be able to command."

A representative of the Albert Dickinson Company, undoubtedly the best posted seed house in the country, had this to say about the situation Friday:

"A most peculiar condition exists in the flaxseed crop of the northwest, first there came the dry period, which made the seed slow to sprout. Next, along in July the rains began to come, and the fields were covered with patches of growing grain. Heavy rains later in the season damaged the crops by affecting that already out and keeping that in the process of growth too long green.

"The conditions are so mixed that I believe no one can tell what the yield will be. Such situations as this may come only once in a lifetime. The speculative price of flaxseed may have in part an artificial value. The reason for that would be that much of the grain is being rejected as No. 1, which is the only grade speculated in. The buyer getting rejected flaxseed, in order to complete his sale, must enter the market and buy No. 1 seed at the increase in prices. In the public warehouses in this city to-day there are but 10,000 bushels of the seed. However, nobody knows what there is in the private warehouses excepting the owners of the seed."

Prior to last summer when 65c was the top price, the highest figure at which linseed oil sold for many years was 60c. This price was obtained in the year 1850, 1869 and 1882. The lowest price on record was made in 1897 when oil was quoted regularly at 24c, and some few sales were made at 1c under this figure.—*Paint, Drug and Oil Review*, October 24, 1900.



Which of Our Representatives Will Wear This Hat.

We are particularly desirous of pushing sales of Michigan Seal White Lead, and wish our representatives to make an especially active effort in this direction. It should not be difficult to place a line of the quality of our Michigan Seal at the difference in price in favor of the goods as compared with figure demanded for standard brands upon the market. Michigan Seal as now presented is an article that is certain to give perfect satisfaction in every particular—working properties, covering capacity and durability. In order to secure an interesting contest among our representatives we offer a silk hat to the salesman who places the largest quantity of the goods before March 1st, 1901, and shall publish the record of sales for each man in every issue of THOUGHTS. Contest to commence Wednesday, October 31st. The numbers of our representatives who do not call upon a class of trade to whom the goods can be sold are omitted for obvious reasons:

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S. J. Olson.....	
Dan Davies.....	
O. F. Richmond.....	
A. S. Dougall.....	
W. C. Neal.....	
J. R. Goldsborough.....	
J. R. Newell.....	
C. F. Pulfer.....	
S. H. Hart.....	
A. D. Hoagg.....	500 lbs.
A. R. Kelly.....	
C. F. McCauley.....	
Geo. R. Smith.....	
F. R. Dougall.....	
M. J. Reynolds.....	
H. P. Torrance.....	
M. Taylor.....	
C. Mehlig.....	
H. F. Whitaker.....	
H. C. Carter.....	
W. P. Wiggins.....	
R. M. Billings.....	
R. A. Irvin.....	
M. G. Smith.....	
C. F. Elliot.....	
Herman Scratch.....	

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. II.

DETROIT, MICHIGAN, NOVEMBER 10, 1900.

NO. 6

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week.)

LAKES, AND RED LAKES IN PARTICULAR.

The best principle of treating coal-tar coloring matters for the production of lake-pigments is as I said, to precipitate them from their solutions by suitable precipitants, the nature of these depending upon the properties of the coloring matter to be precipitated.

As, chemically spoken, every lake-pigment is a salt, it is obvious that the organic coloring matter to be capable of and used in forming a lake must be either a base or an acid, this explains why indigo, which possesses neither of these qualities, is quite incapable of forming lakes, and its unique method by which indigo is applied to the fibre of fabrics is another illustration of this fact.

We may therefore divide the organic coloring matters, and especially the coal tar colors, commonly called aniline colors, according to their lake forming qualities, into two large classes, basic and acid coloring matters, to which correspond fundamentally different methods of producing lakes.

There is, however, among the vast variety of aniline colors, which comprise in themselves 16 different groups, one kind or special group named the so-called adjective coloring matters, the chief constituent of which is alizarine. These approach more nearly the natural coloring matters in their properties, having a very slight acid character as they require also metallic oxides to form lakes. As a rule this class of coal-tar preparations have little or no color for themselves, but the coloring matter and the lakes are both formed simultaneously by the taking up of and subsequent precipitation with the metallic oxides.

As one must be familiar with the chemistry, that is, the constitution, composition and properties of this immense large number of organic coloring matters, their manufacturing and that of their raw materials, from which they are obtained, in order to get a full and exact comprehension of their nature and properties, which makes them available for the color-maker for the manufacturing

(Continued in third column.)

MR. J. R. NEWELL.

This is a correct likeness of "Jack" Newell. We have had a very hard time getting it. Presumably the innate modesty, which is one of his chief characteristics, has prevented him from responding before to our frequent and urgent appeals for a pasteboard that would enable us to "show him up" to the rest



of the boys. He covers Texas and spreads over to a section in Louisiana and a few towns in Mexico. He is about the only one of our salesmen who would not dare tell his customers that he was competing for a silk hat to be worn should his sales of "Michigan Seal" reach the necessary volume. They don't believe in "plug" hats in his territory and it probably would not last five minutes. A wide-brimmed "slouch," with store clothes and guns, is his usual make-up, and he graces the costume as if he were a born ranger. Although only on the territory for about a year, and without any previous training that would fit him specially for the undertaking, he has succeeded by careful application and a few "experiences" in learning "the ways that win and the arts that please" in a land where the rules of society demand personal independence, but the expression of too radical views is apt to get you into trouble. We will venture the assertion that he is one of the best liked paint men in that section, and know by material evidence that the trade appreciate his intrinsic value and the merits of his line. He will be at the convention next month and we will all have an opportunity to call upon him for a recital of personal reminiscences of Texas life, that no doubt will prove highly interesting. He is a hustling, conscientious, level-headed worker, with the stuff in his composition that is sure to win success.

of lake pigments, I shall not go into further details. I will explain and show you all this better and more interesting to you by a few experiments, as precipitating various color lakes, especially reds, such as we manufacture in our dry color department.

Among these lakes, especially two kinds have a prominent place. They are the different shades and grades of cosine vermilions and scarlet, or azo reds.

The former, although first introduced into commerce about 20 years ago, as a substitute for English quicksilver and American chrome vermillion, have failed to displace these two reds, but have instead made a distinct place for themselves, filling as they did, and still do, the demand for a cheap bright red pigment. The number of shades of these products, as you are well aware, is infinite. Many color makers, and among these ourselves, produce ten to twenty or even more shades and tints, and naturally, according to the composition of the base employed, more or less different qualities or grades.

Suggestions to be Discussed at Convention.

We want this convention to be the "rounding up" point at which the best thoughts of our salesmen in the way of ideas for increasing business, or strengthening our position with the trade, will be submitted for the general consideration of all our representatives and the officers of the company. Very few men can go through a season's work on the road without forming ideas along the line of improvement, such as suggested. These thoughts should be written promptly and submitted to the house, so that they may be brought up at the convention for discussion in the order that they are received.

"A Suggestion" by No. 1 in Thoughts

DAVENPORT, IA., October 29, 1900.

No. 1 is nearly one year behind the times. I notified you nearly that long ago that we had a sign in the window of Ludolph & Hill, Clinton, Iowa, placed above a pyramid of New Era High-Grade Prepared Paint, which read as follows: "The paint that made Detroit famous." In Centerville, Ia., where we have twelve houses painted with New Era since June, I suggested the same lines for a local ad. in Mr. Johnson's local paper.

Respectfully, No. 13.

THOUGHTS



Which of Our Representatives Will Wear This Hat.

We are particularly desirous of pushing sales of Michigan Seal White Lead, and wish our representatives to make an especially active effort in this direction. It should not be difficult to place a line of the quality of our Michigan Seal at the difference in price in favor of the goods as compared with figure demanded for standard brands upon the market. Michigan Seal as now presented is an article that is certain to give perfect satisfaction in every particular—working properties, covering capacity and durability. In order to secure an interesting contest among our representatives we offer a silk hat to the salesman who places the largest quantity of the goods before March 1st, 1901, and shall publish the record of sales for each man in every issue of THOUGHTS. Contest to commence Wednesday, October 31st. The numbers of our representatives who do not call upon a class of trade to whom the goods can be sold are omitted for obvious reasons:

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J. R. Goldsborough.....	
J. R. Newell.....	700 lbs.
C. F. Puffer.....	
S. H. Hart.....	
A. D. Hoagg.....	500 lbs.
A. R. Kelly.....	
C. F. McCauley.....	
Geo. R. Smith.....	
E. R. Dougall.....	
M. J. Reynolds.....	
H. P. Torrance.....	
M. Taylor.....	
C. Mehlig.....	
H. P. Whitaker.....	
H. C. Cater.....	100 lbs.
W. P. Wiggins.....	
R. M. Billings.....	
R. A. Irvine.....	
M. G. Smith.....	
C. H. Elliot.....	
Herman Scratch.....	

Detroit, Mich., Nov. 5th, 1900.

Editor THOUGHTS:

The present high and prospective higher price of linseed oil makes it very apparent to me that the change made to-day, advancing to \$1.35 per gallon, with a chance of a still higher price, is what we must expect upon New Era High-Grade Prepared Paint for the season of 1901. Such being the case, we cannot do other than to advise and even insist upon our customers getting from the consumer \$1.75 per gallon. We shall meet with the statement from merchants that they are not able to sell at so high a price and that their customers will buy lead and oil instead of New Era paint. I think all of our salesmen should be prepared to show them in a way that they may be able to convince their customers that the cost of material to paint their buildings will be less by using New Era paint at \$1.75 per gallon than to use lead and oil at the present prices, to say nothing of the prospect of higher prices than now prevail. For instance, take a 100 lb. keg of lead and use 4½ gallons of linseed oil, 1 quart of japan dryer and 1 quart of turpentine and adding to that 50 cents for the painters time in breaking up the lead ready to apply and you have 7¼ gallons of white paint, costing the consumer at least \$1.58 per gallon. This paint will not cover to exceed 200 square feet to the gallon, two coats. Take a house containing 3000 square feet of surface, it will require 15 gallons of paint mixed as suggested above to cover, costing the consumer \$23.70. With our New Era paint, a very conservative estimate of the surface we can cover is 250 square feet to the gallon for two-coat work. Twelve gallons of New Era paint at \$1.75 per gallon will cover such a building nicely. This estimate is for white paint and should a consumer wish to use shades, the cost of his material where he buys white lead and oil will be increased, whereas the shades in our New Era are furnished at the same price that we furnish white, with the exception of the bright colors, with which all are familiar. You will see that 3000 square feet of surface with paint at \$1.75 per gallon will cost the consumer \$20.00, effecting a saving of from 20 to 25 per cent.

Yours very truly,

No. 26.

Editor THOUGHTS:

The plug hat offer is noticed. I am going to do my best to win it. Hope the rest of the boys will do the same. I think also it will pay you to get out some good ad. signs for it, as when you get it going it will help sell other goods.

Yours truly,

No. 8.

Editor THOUGHTS:

Was in Warrensburgh, N. Y., yesterday and although it is very near election, the people of that town were spending most of their time talking about New Era High-Grade, so much so that if one was a stranger in this country they would have taken New Era to be the name of one of the candidates.

Mr. B. F. Hammond of that place gave me an order when last there, and has since painted his store. It was only finished this week and the painters have caused New Era to be very popular. In the first place the man next to Hammond started painting his store with Sherwin-Williams' paint on the same day that the men began Hammond's, and as the stores are about the same size the result was watched very closely, and it only took half as much of New Era to paint B. F. H's store as of S.-W. to paint the next one, and every one agrees that our paint looks the best. The painters say it is the best they have ever used and can not say enough for it. Hammond is the same way.

They were waiting anxiously for an order of New Era that Hammond sent in for the catholic church.

Hammond told me that he had never tried to do any business in the paint line before because he had no faith in the goods, but says now he is going out after the business, as he believes New Era to be just what we claim. As for him going after the business, guess that he told the truth for he has something like a half dozen houses to paint in the spring, and is still on the "war path" looking for more.

Yours truly,

No. 75.

Editor THOUGHTS:

Atchison, Kas., Nov. 4th, 1900.

I can endorse what No. 19 says regarding new coach and car color sample book. I have sold nearly every carriage concern I have called on since I received same. A customer of mine in Southern Missouri bought some gear finishing varnish of a certain Detroit firm, under the positive guarantee that mud would not spot same. Now everyone who has ever traveled in Southern Missouri knows that the mud in that country will spot anything. I sold him a gallon of our Elastic Gear, and he told me recently that it was the only varnish he had used which did not spot. In justice to the mud, however, let it be said that the job on which he used our goods, stood about 60 days before it was used. However, I thought it a very good testimonial for Elastic Gear.

Yours truly,

O. F. RICHMOND.

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

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VOL. II.

DETROIT, MICHIGAN, NOVEMBER 17, 1900.

NO. 7

Making Suggestions for Discussion at the Convention.



The above illustration shows how our people at the factory make suggestions for improvements, or submit complaints regarding existing conditions for consideration of the Executive Committee. Our representatives should not overlook the fact that they owe it to themselves and the house to offer anything they may believe will be for our mutual benefit, and while they have no suggestion boxes at hand, communications of this character will receive just as careful attention as if they came through that medium. We want you to bring up everything you may believe needs attention. Write your suggestions fully and plainly. We will number them in the order received, and as there will be two hours each day during the convention for open discussion of such subjects, you will have an opportunity of emphasizing your suggestions personally as well as expressing yourself on any others that are made.

JACKSON, Tenn., Nov. 11, 1900.

Editor Thoughts:

Bulletin No. 117 just received, and I shall look forward to the assembling of our traveling fraternity and feel sure that great good will result. It will be a great pleasure to personally know each of my fellow travelers, and I shall certainly be on hand.

Very respectfully,

R. M. BILLINGS.

Notes.

When sending in names of prospective "New Era" High-Grade Prepared Paint purchasers, we note some of our salesmen are in the habit of appending to the printed form furnished them, a communication requesting that a strong letter be written, and giving general information as to the desirability of prospective purchasers whose names they hand us. This is unnecessary, inasmuch as we are following up your initiatory work in a special manner, and if you will simply fill the form out properly, we will endeavor to do the rest.

Proper care and discrimination should at all times be exercised in submitting figures to different classes of trade. Your advices are definite, and if our reminder is carefully borne in mind, the order, as well as the correspondence department will be saved time and worry. We very much dislike to advise our customers that figures must be considered as applying to a particular purchase, and that on subsequent orders we must get an advance, and the necessity of pursuing such a course would be entirely removed if proper figures were secured in the first place.

Note This Carefully.

Salesmen when sending in orders from towns that are not on their lists often overlook the matter of sending in a memo. with each order asking us to add such towns to their lists, and as a result of their failure to do so we credit the order to mail. Recently Mr. Barron sent in seven orders, each from a different town, not one of them being on his list, and as we were not ordered to add same, the orders were charged and credited to mail. It would be to each one's interest to be careful on this point.

SIOUX CITY, IA., Nov. 8, 1900.

Editor Thoughts:

I congratulate Mr. and Mrs. Billings. May the boy grow as strong and good looking as the father. Yours respectfully,

S. J. OLSON.



Which of Our Representatives Will Wear This Hat.

We are particularly desirous of pushing sales of Michigan Seal White Lead, and wish our representatives to make an especially active effort in this direction. It should not be difficult to place a line of the quality of our Michigan Seal at the difference in price in favor of the goods as compared with figure demanded for standard brands upon the market. Michigan Seal as now presented is an article that is certain to give perfect satisfaction in every particular—working properties, covering capacity and durability. In order to secure an interesting contest among our representatives we offer a silk hat to the salesman who places the largest quantity of the goods before March 1st, 1901, and shall publish the record of sales for each man in every issue of THOUGHTS. Contest to commence Wednesday, October 31st. The numbers of our representatives who do not call upon a class of trade to whom the goods can be sold are omitted for obvious reasons:

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W. C. Neal.....	
J. R. Goldsborough.....	
I. R. Newell.....	700 lbs.
C. F. Pulfer.....	
S. H. Hart.....	
A. D. Hoagg.....	500 lbs.
A. R. Kelly.....	
C. F. McCauley.....	
Geo. R. Smith.....	
F. R. Dougall.....	2000 lbs.
M. J. Reynolds.....	
H. P. Torrance.....	2500 lbs.
M. Taylor.....	
C. Mehlig.....	
H. F. Whitaker.....	
H. C. Cater.....	100 lbs.
W. P. Wiggins.....	
R. M. Billings.....	1000 lbs.
R. A. Irvin.....	
M. G. Smith.....	
C. F. Elliot.....	
Heruan Scratch.....	

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. II.

DETROIT, MICHIGAN, NOVEMBER 24, 1900.

NO. 8

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week.)

LAKES, AND RED LAKES IN PARTICULAR.

The pigments owe their bright color to eosine—the commercial name for the coal tar preparation or dye, "tetro bromo or iodo-eosine," or rather the potassium salt of this organic acid.

The lake is usually obtained by precipitating the coloring matter with acetate or nitrate of lead upon a base of orange or red lead, extended according to the quality of vermilion to be produced with more or less barytes or another inert pigment. As pigments these eosine vermilions are very brilliant in color, of good body, if the extension with inerts does not exceed sixty per cent. They work well with oil, applied as paint, but have like red lead and orange mineral, owing to these two lead compounds in their composition, the tendency to harden or to liver when ground in linseed oil or varnish containing resin.

They are not very permanent against light, although they will stand a considerable amount of exposure to light and atmosphere, especially if varnished over.

TO BE CONTINUED.

Decline in Price of Linseed Oil.

The decline in price of linseed oil, which we presume our representatives have noticed during the past two weeks, is undoubtedly due to manipulations on the stock market. The fact that only an average crop of flax seed can be offered, stands out prominently as well as the fact that this market will be called upon to make up deficiencies on account of failures of crops in Russia and India. Argentine seed will not be on the market before late in the spring. The foreign demand in the meantime will maintain a high price for seed in this market, and we shall be greatly surprised if the present flurry in prices does not result in the near future in a settled price for seed and oil that will be as high or higher than any figures that have been quoted this fall. Even if oil should not advance beyond the market of to-day, manufacturers of paints could not afford to recede from recent advances that have been announced and maintain quality.

Suggestions for discussions at the Convention are coming in from our various representatives. If YOU have anything to bring up, send it in promptly. They will be numbered and discussed in the order received.

Notes.

Some of our men book orders for Neal's Enamels—Gold, Silver and Aluminum—half-pints. Discontinue doing so. We offer only in quarter-pints, and are obliged to omit the larger size on all such orders placed with us, and a letter of explanation is in each case necessary.

Neal's Carriage Paint contracts cover as well Neal's Carriage Top Dressing. In a number of instances we do not feel that we are securing the volume of business we should in the latter. Why? It would be well to direct this matter to our different distributors' attention, and see if you cannot prevail upon them to place before their salesmen in such a way that a more lively interest will be manifested.

Representatives will please remember that if they call at any local agency of R. G. Dun & Co. or the Bradstreet Co., and ask to see reports on any person, that copies of such reports are always sent to us and charged for. Therefore, when it is necessary to look so closely into the credit standing of a person or firm, always send us a duplicate of the ticket you are required to sign before the agency shows you their files. We then may understand why such reports are sent us. Your letter of introduction only permits you to examine book ratings free of charge.

Representatives will please bear in mind our invitation for written suggestions. I am particularly anxious to hear from all the men in regard to any way of improving our credit or collecting system. I am pleased to acknowledge many valuable "pointers" received from the men in the past, and assure you of my earnest desire to co-operate in every way consistent with good business policy, in avoiding bad debts and maintaining harmonious relations between customers, salesmen and the company.

G. B. PULFER.



Which of Our Representatives Will Wear This Hat.

We are particularly desirous of pushing sales of Michigan Seal White Lead, and wish our representatives to make an especially active effort in this direction. It should not be difficult to place a line of the quality of our Michigan Seal at the difference in price in favor of the goods as compared with figure demanded for standard brands upon the market. Michigan Seal as now presented is an article that is certain to give perfect satisfaction in every particular—working properties, covering capacity and durability. In order to secure an interesting contest among our representatives we offer a silk hat to the salesman who places the largest quantity of the goods before March 1st, 1901, and shall publish the record of sales for each man in every issue of THOUGHTS. Contest to commence Wednesday, October 31st. The numbers of our representatives who do not call upon a class of trade to whom the goods can be sold are omitted for obvious reasons:

QUANTITY
SOLD TO DATE

A. E. Barron.....	
S. J. Olson.....	
Dan Davies.....	
O. F. Richmond.....	
A. S. Dougall.....	
W. C. Neal.....	
J. R. Goldsborough.....	
J. R. Newell.....	1200 lbs.
C. F. Pulfer.....	
S. H. Hart.....	
A. D. Hoagg.....	500 lbs.
A. R. Kelly.....	
C. F. McCauley.....	500 lbs.
Geo. R. Smith.....	2000 lbs.
P. R. Dougall.....	2000 lbs.
M. J. Reynolds.....	
H. P. Torrance.....	2900 lbs.
M. Taylor.....	
C. Mehlitz.....	
H. F. Whitaker.....	
H. C. Cater.....	100 lbs.
W. P. Wiggins.....	
R. M. Billings.....	100 lbs.
R. A. Irvn.....	
M. G. Smith.....	
C. F. Elliott.....	
Herman Scratch.....	

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. II.

DETROIT, MICHIGAN, DECEMBER 1, 1900.

NO. 9

Paint and Its Solid Constituents—The Pigment.

BY JOHN COLLET.

(Continued from last week.)

LAKES, AND RED LAKES IN PARTICULAR.

The second group of red lakes, the so-called azo-reds, forming chiefly in their deeper shades, substitutes for the more expensive pigments, the carmines, made from the natural coloring matter, "cochineal," are obtained from the various shades and tones of scarlets, ponceaux and bordeaux, all aniline colors of a more complicated form and chemical constitution than the former eosines. These aniline colors are acid coloring matters or dyes, and are precipitated from their solutions by metallic salts, as lead acetate, aluminum sulphate, magnesium sulphate, and as a rule, most completely by chloride of barium.

The number of these coloring matters with their derivatives is enormous and is still growing, as in the last ten years and still at the present time the best and most scientific workers and chemists are employed by the aniline color works, especially in Germany, to experiment in this line, and we may say that in an average a new color, shade or tone, or a new process to obtain same is discovered or invented every day of the year. These coloring matters and their lakes range from a very light citron yellow to a very deep red with a blue or purple tone.

The lakes are obtained by two different processes, either the coloring matter is precipitated on a natural inert base, such as barytes, china clay and others, or the base is an artificially one, that is, it is formed along with the color lake proper. Such bases would be blane-fix, which is, as you know, nothing else than precipitated baryta sulphate, or it would be carbonate of baryta, or according to the chemicals used, alumina hydroxide—baryta sulphate, the so-called satin white of the paper stainer. The base forming chemicals are mixed in solution with that of the coloring matter and the precipitating mordant, and are thus precipitated simultaneously with the color lake proper. In this way a much more homogeneous mixture of lake and base—we may call it almost a chemical combination—is ob-

tained than in using a natural inert base, and furthermore, the lake color pigment will be of a finer and softer texture, and last but not least, of a more brilliant and clearer color and tone.

The principal pigment among a series of shades made by us in our dry color department, and belonging to this class of color lakes, is represented by our handsome and brilliant color "carmencita."

As a rule, all lakes without any exception, such made from natural coloring matter as well as those made from aniline colors, are fugitive, some more, some less, and it was generally believed that the former are more durable than the latter. But that is by far not the case, we may concede that the so-called eosine vermilions are not quite as durable as the reds, although of different color and shade, made from the natural coloring principle, but as a matter of fact, these latter reds or lakes—as rose pink, rose lake, carmine red—in all its variations are far excelled by the azo reds of the present time in regard to durability against light and atmospheric exposure.

Still chemistry was bound to go a step further in the manufacturing of a red pigment lake—a pigment unfadeable and indestructible by such elements as it would be exposed to when applied as paint, and in fact recent researches in this line have indeed procured red pigments which combine in their nature and constitution all these qualities in the fullest extent. They are the coal tar products para or meta nitraniline in combination with another coal tar product beta and alpha naphthol sulphate of soda.

They are the so-called para reds and are the most handsome, finest and brilliant reds ever artificially produced, have an enormous body or covering capacity and a tinting strength unexcelled by any other red pigment. They may be called the red pigments of the future as they will doubtless succeed all other bright reds used in the past and at the present time. Well aware of this and the excellent qualities of these pigments we adopted not long ago, as one of the first concerns in this country, their manufacturing in our own dry color plant, adding thus to our extensive list of dry colors a complete series of shades of these new pigments also. END

[Will be continued under Paint Vehicles, after New Year.]

Some of our salesmen are dilatory in reporting on matters placed in their hands for attention, and quite frequently we are obliged to direct their attention to the oversight. The time to dispose of such matters is when you are on the ground, and if you will make it a point when you visit each town, to consult your "tally file" and secure for us the desired information, you will save unnecessary correspondence.

Suggestions for discussions at the Convention are coming in from our various representatives. If YOU have anything to bring up, send it in promptly. They will be numbered and discussed in the order received.



Which of Our Representatives Will Wear This Hat.

We are particularly desirous of pushing sales of Michigan Seal White Lead, and wish our representatives to make an especially active effort in this direction. It should not be difficult to place a line of the quality of our Michigan Seal at the difference in price in favor of the goods as compared with figure demanded for standard brands upon the market. Michigan Seal as now presented is an article that is certain to give perfect satisfaction in every particular—working properties, covering capacity and durability. In order to secure an interesting contest among our representatives we offer a silk hat to the salesman who places the largest quantity of the goods before March 1st, 1901, and shall publish the record of sales for each man in every issue of THOUGHTS. Contest to commence Wednesday, October 31st. The numbers of our representatives who do not call upon a class of trade to whom the goods can be sold are omitted for obvious reasons:

	QUANTITY SOLD TO DATE
A. E. Barron.....	
S. J. Olson.....	
Dan Davies.....	
O. F. Richmond.....	500 lbs.
A. S. Dougall.....	
W. C. Neal.....	
J. R. Goldsborough.....	
J. R. Newell.....	1200 lbs.
C. F. Puffer.....	500 lbs.
S. H. Hart.....	
A. D. Hoagg.....	500 lbs.
A. R. Kelly.....	
C. F. McCauley.....	500 lbs.
Geo. R. Smith.....	2000 lbs.
F. R. Dougall.....	2000 lbs.
M. J. Reynolds.....	
H. P. Torrance.....	2000 lbs.
M. Taylor.....	
C. Mehlig.....	1000 lbs.
H. F. Whitaker.....	
H. C. Cater.....	100 lbs.
W. P. Wiggins.....	1600 lbs.
R. M. Billings.....	
R. A. Irvin.....	
M. G. Smith.....	
C. F. Elliot.....	
Herman Scratch.....	

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

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VOL. II.

DETROIT, MICHIGAN, DECEMBER 8, 1900.

NO. 10

Last Call.

Come to the representatives convention. December, 18, 19 and 20, prepared to do your share to make it a success. Come prepared to be benefited and to benefit others. Don't hold back from suggesting subjects for discussion because you *suppose* they will be brought up anyway. Make sure of it by sending them in *now*. Waiting until the last minute is bad policy. This convention is as much for *you* as anybody else, and *you* must do your share to make the expense involved a profitable investment.

The business of the convention will be transacted in a business like way. We want you to be on time at every session, to pay close attention to the proceedings and to do your share towards the general benefit we expect to derive. Don't forget to keep a careful record of all expense incurred from the time you leave your home until you return.

Be at the Russel House, Monday night, of the 17th, so that you can reach our offices by 8:15, central standard time, on the morning of the 18th. Mr. Hart will meet you at the hotel on that morning and will be held responsible for your safe delivery at the office at the time designated above. You will easily recognize him as the best looking man in the hotel, but to make sure here is his picture:



S. H. HART.

Notes.

Some of our men are in the habit of requesting us to name prices on regular lines to prospective purchasers. We consider that it is your duty to attend to such matters, furnishing us with quotation sheets in the usual way. If you wish us to send literature, confirm your figures, and follow up your work, we will be pleased to do so. When on the ground you are naturally in better position than we are to decide what figures different classes of trade are entitled to.

Regarding Linseed Oil.

It is difficult to determine at this time what the market conditions for the product will be in the near future. Evidently some interests are suffering and there is absolutely no seeming reason why the market for oil for spot delivery should be as weak as it is. Flax seed has ruled high ever since the crop matured. All the seed it was possible for the farmer to thresh has undoubtedly been so disposed of and marketed at high prices. The present market on flax seed ranges from \$1.65 to \$1.70 for spot, and about \$1.60 to \$1.65 for May delivery, which will not admit of crushers buying seed and selling oil at present prices. All sorts of rumors are afloat about the American Linseed Co. In the meantime they seem to be taking things quite comfortably; they are not urging the sale of oil; their prices are materially above outside crushing interests, and there you are.

There is one factor in this business that may be important, and that is this: Some outside crushers are said to have bought some seed at about \$1.50 per bushel. The trust may be simply working the same old game during the off season, letting the market sag, making the outsiders make the price on oil, keeping just above it themselves, thus stimulating the demand for the other fellows goods. Their output is limited and as soon as they, the outsiders, are sold up, again taking control of the market and pushing the price of oil up to a figure consistent with the present price of seed, gradually advancing seed, and at the same time oil as well. That is practically what was done last year and its likely to be repeated. The trade is very likely to receive a few more violent jolts in the near future on oil. The situation will undoubtedly fully adjust itself before our men start out on their spring campaign. In the meantime we deem it advisable to patiently await the outcome. The trade are not usually buying at this season of the year very large bills of paint, and as our men are practically through for the season it is probably desirable not to disturb existing conditions until the market settles down to a definite basis. Our present prices are none too high, and even though prices on oil remain as now, there would be no justification for reducing them, but we hope not to be compelled to make any further advance, even though linseed oil again advances to abnormal figures.

Suggestions for discussions at the Convention are coming in from our various representatives. If YOU have anything to bring up, send it in promptly. They will be numbered and discussed in the order received.



Which of Our Representatives Will Wear This Hat.

We are particularly desirous of pushing sales of Michigan Seal White Lead, and wish our representatives to make an especially active effort in this direction. It should not be difficult to place a line of the quality of our Michigan Seal at the difference in price in favor of the goods as compared with figure demanded for standard brands upon the market. Michigan Seal as now presented is an article that is certain to give perfect satisfaction in every particular—working properties, covering capacity and durability. In order to secure an interesting contest among our representatives we offer a silk hat to the salesman who places the largest quantity of the goods before March 1st, 1901, and shall publish the record of sales for each man in every issue of THOUGHTS. Contest to commence Wednesday, October 31st. The numbers of our representatives who do not call upon a class of trade to whom the goods can be sold are omitted for obvious reasons:

QUANTITY
SOLD TO DATE:

A. E. Berron.....	
S. J. Olson.....	
Dan Davies.....	
O. P. Richmond.....	500 lbs.
A. S. Dougall.....	
W. C. Neal.....	
J. R. Goodborough.....	1200 lbs.
C. F. Puffer.....	500 lbs.
S. H. Hart.....	
A. D. Hoagg.....	500 lbs.
A. R. Kelly.....	
C. F. McCauley.....	500 lbs.
Geo. R. Smith.....	2000 lbs.
P. R. Dougall.....	3050 lbs.
M. J. Reynolds.....	
H. P. Torrance.....	2900 lbs.
M. Taylor.....	
C. Mehtig.....	1500 lbs.
B. F. Whitaker.....	
H. C. Cater.....	100 lbs.
W. F. Wiggins.....	
R. M. Billings.....	1600 lbs.
R. A. Irvin.....	
M. G. Smith.....	
C. F. Elliot.....	
Herman Scratch.....	

Thoughts

PUBLISHED WEEKLY BY THE ACME WHITE LEAD AND COLOR WORKS, DETROIT, MICH.

Devoted to Matters of Interest to Our Representatives.

VOL. II,

DETROIT, MICHIGAN, DECEMBER 29, 1900.

NO. 12

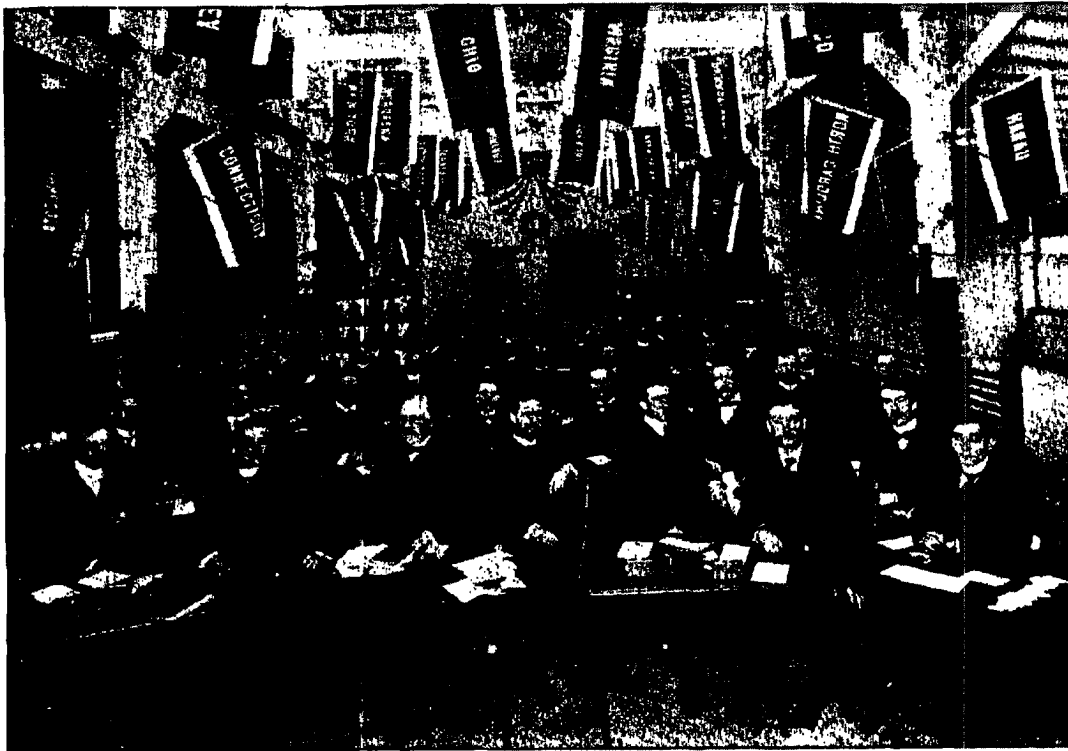
Convention Echoes.

Who are?
Who are!!
Who are we!!!
We represent the great Acme!
P-A-I-N-T
PAINT!!!

The sound still rings in our ears, and with it comes memories of that which we shall all cherish as a most delightful event among

those from the east, west, north and south who responded to our President's greeting to realize the cordial good will and feeling of fellowship that existed for the home members of our organization and between themselves. No one could live in the atmosphere that permeated their deliberations and intercourse

announcement that "the Acme House of Representatives is now open for the transaction of business" until the last echo of "Auld Lang Syne," that marked the closing event, had died away. It is no wonder that under such conditions our representatives have expressed themselves as gratified



THE ACME HOUSE OF REPRESENTATIVES IN SESSION
December 18, 19 and 20, 1900.

the commonplace affairs of everyday business life. The boys have come and gone; we have taken them by the hand and looking them in the face have caught the infection which ruled their gathering and that preaches the Christmaside spirit of "good will to all men." It scarcely needed the apt words of

in the convention hall without *feeling* what was so aptly said.

Irritation, annoyance and differences melt away under such conditions as snow beneath a summer sun. Enthusiasm, tempered with good sense, ruled supreme during every minute of the proceedings, from the

and benefited, and that we at home have shared this feeling fully, and look forward just as hopefully as they to the time when we may all meet again.

No one asks "what has been accomplished" or even entertains the slightest doubt of the success of the meeting. It

THOUGHTS

would be more difficult to answer the query "what has been left undone and wherein have we failed?" Individually and collectively we have learned and taught. The least experienced have presented ideas, based upon first impressions, that are worthy of careful attention and development, and those who have been longest "in the harness" have compared notes with a fullness and frankness that will result in improved methods of securing business and the prevention of a settled and unvaried method, which in this age of progress is termed "getting into a rut," and which ultimately leads to stagnation, the one thing, next to complete failure, that is most dreaded by the modern progressive representative.

The expressions of confidence in the house, its products and method of doing business, as conveyed to the officers of the company individually by our representatives, and in joint resolution, are not only appreciated, but place us all "upon our metal" not only to continue to merit your perfect confidence, but by constant progress in the right direction, to implant this feeling with you more strongly, if possible, than ever. This feeling of implicit faith in the house by our corps of representatives, we can assure you, is reciprocated most heartily, and are sure that the standard that has been set of a "first-class representative of a first-class house" will be maintained by all concerned, and that at the next convention the knowledge that we have all done our duty well will give each voice strength in proclaiming:

Who are?
Who are?
Who are we?
We represent the great Acme!
PAINT
PAINT!!

A. M. W.

Echoes.

It makes us feel good natured to hear F. R. Dougall proclaim that he deems it wise to cultivate good nature. In his case the seed certainly fell on fertile soil judging by the harvest.

Did you ever hear "America" sung with more earnestness and patriotic fervor than when the boys and girls made the strains of our country's song ring out beneath the folds of old glory that graced our Convention Hall? That scene will live with us.

"I have long noted a desire on the part of the officers of this Company to so conduct its affairs as to make their employes their co-workers, not only holding them in highest respect, but anxious to put forth every effort to further their interests."—From S. H. Hart's response to our President's greeting.

That's right, Mr. Hart.

"Coming, as I do, from the sun kissed shores and golden sands of the Pacific, from the land of sunshine, fruit and flowers, and meeting representatives from the storm tossed coast of the Atlantic, from the balmy silver waters of the Gulf, to the snow capped mountains of our northern neighbor, I can not but be impressed by the marvellous, wonderful work and spirit of commerce annihilating, as it does, all sections, all areas, all climes, all distances, illustrating so truly the motto of our dearly beloved country, "E pluribus unum."—From Alf. R. Kelly's response to our President's greeting.

A Happy New Year.

As the last year of the nineteenth century draws to a close, and we look back over the years that have passed since our business was first established, and consider the trials and triumphs, the failures and achievements that have marked the way like milestones on the road to success, we cannot refrain from expressing our appreciation of the manner in which our employes on the road and in the house have stood by us, a large percentage almost from the beginning. We wish you all a happy new year, and may each succeeding year in the new century be brighter and better than the last. Our thoughts are best expressed, perhaps, in the beautiful sentiment that closes Dickens' story of "The Chimes": "So may the new year be a happy one to you, happy to many more whose happiness depends on you! So may each year be happier than the last, and not the meanest of our brethren or sisterhood debarred their rightful share in what our Great Creator formed them to enjoy."

WM. L. DAVIES,
H. KIRKE WHITE,
A. E. F. WHITE,
THOMAS NEAL.

"NEW ERA."

(Tune—The Old Oaken Bucket.)

By S. H. HART.

How dear to my heart are the shades of New Era
When well painted houses present them to view;
The Olives, the Yellows, the Drabs, Terra Cottas,
And a great many other fine shades that are new,
They wear well, they cover, look better than all others,
They please when our neighbor's paint fade from the view.

Don't fail to impress upon all, the world over,
That New Era shades will be found ever true.

CHORUS.

New Era has merit,
New Era has beauty,
Its covering strength makes White Lead men feel blue.
This talk of White Lead paints being best for consumers,
When mixed by the painter, with oil, is not true.
Zinc Oxide improves it, and none will deny it,
Whose knowledge of paint is not questioned by you:

As for the cheap mixture, with one price a fixture,
Regardless of cost of material in use,
My advice is, refuse it, it don't pay to use it,
If you've best results and economy in view.

CHORUS.

The cost by the gallon should not be the question
When purchasing paint your fine house to renew.
Yards, years and protection should first be considered
In measuring cost with economy in view:
Lead, Zinc, Oil and Dryer, you need look no higher
To the art of paint making, no better is known,
And such is *New Era*, say to all who inquire,
By chemical tests above facts will be shown.

CHORUS.



Which of Our Representatives Will Wear This Hat?

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QUANTITY SOLD TO DATE

A. E. Barton	3600 lbs.
R. M. Billings	100 lbs.
H. C. Cater	
Dan Davies	
A. S. Dougall	2030 lbs.
F. R. Dougall	
C. W. Elliot	
S. H. Hart	500 lbs.
A. D. Hoagg	
R. A. Irvin	
A. R. Kelly	500 lbs.
C. P. McCauley	1500 lbs.
C. Mehl	
W. C. Neal	1200 lbs.
J. R. Newell	
S. J. Olson	500 lbs.
C. P. Puffer	
M. J. Reynolds	2000 lbs.
O. F. Richmond	
Herman Scratch	2000 lbs.
Geo. R. Smith	
M. C. Smith	
M. Taylor	2500 lbs.
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