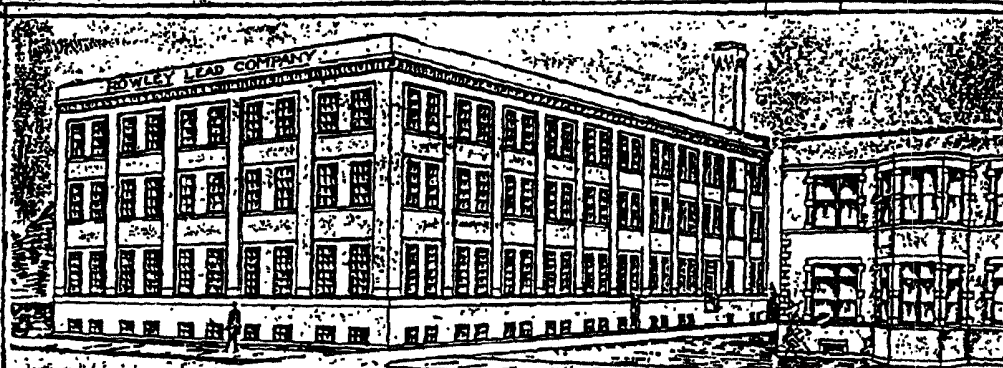


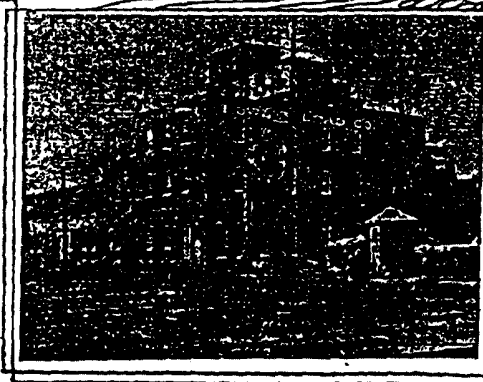
Detroit Free Press from 19th, 1906

DETROIT LANDS ANOTHER INDUSTRY THROUGH THE BOARD OF COMMERCE



A MANUFACTURING BUILDING FOR
THE ROWLEY LEAD COMPANY
DETROIT, MICH.

Picture above shows the new plant to be built for the Rowley Lead Co. on St. Aubin avenue near Sibley, close to the Acme White Lead & Color Works. The picture below is the present plant of the company, and that to the right is William H. Rowley, president of the Rowley Lead Co.



Another new industry for Detroit, announced by the Board of Commerce, which was carried through several months, the committee on new industries, with Alvin Macaulay at its head, succeeded in convincing the Rowley Lead Co. of St. Louis that Detroit is the natural and economic point for the manufacture of white lead and allied products. Mr. Macaulay can give pointers to a St. Louis concern because his own investigation—the Burroughs Adding Machine Co.—came here from that city two years ago.

The Rowley Lead Co. has decided to build its main plant and move its executive offices to Detroit. Donaldson & Miller have been working on the plans for some time, and building will commence as soon as the working drawings are ready. The picture herewith shows the structure, which will be of fireproof construction. The main building is 100,000 feet in size, and will be located on St. Aubin avenue, near Sibley, close to the Acme White Lead & Color Works.

The new plant will be a model of the best up-to-date machinery and equipment. The Rowley Lead Co. has been in the lead business for over 40 years, and its products are used in the manufacture of white lead, white lead paint, and other allied products. The new plant will be a model of the best up-to-date machinery and equipment. The Rowley Lead Co. has been in the lead business for over 40 years, and its products are used in the manufacture of white lead, white lead paint, and other allied products.

of the plant will be about 10,000 tons yearly, equal to about 11,330,000.

To Compete With Trust.

With this new plant in operation, the company will produce nearly 10 per cent of the entire American output and, therefore, will become a formidable competitor of the gigantic lead trust, now said to be dominated by the Guggenheims, who also control the gold, silver, zinc and lead smelting and refining business of the country. It has been common gossip in the trade that the Guggenheims used a prominent lead manufacturing concern to force the consolidation of the lead making interests, and that, having gained the desired end, there is now in control of the situation one of the greatest industrial trusts in existence. It is this trust, Mr. Rowley has set out to compete with. The Rowley plant will enter the field with its equipment of manufacturing white lead from the old Dutch method, and also from the electric system, yet retain all the excellence of the former. The St. Louis plant has been used for all of the experimental and evolutionary work, its output is about 2,000 tons

yearly. The product of the Detroit plant will be largely absorbed by the paint manufacturers of Detroit; the company will have an intimate relationship with the Acme works, its largest single customer.

The chief executive of the concern is William H. Rowley, whose ancestors have been white lead makers for several generations. Mr. Rowley himself is an expert lead manufacturer, and has had practical experience with three processes now in use. He has matured and patented a simple method of making white lead of the highest quality.

Will be Welcomed to Detroit.

The consumption of white and red lead, litharge and lead oxide is steadily increasing. These products are used in making paints, rubber, glass and dry colors. In various forms they are secreted in the electrical, chemical and other mechanical arts.

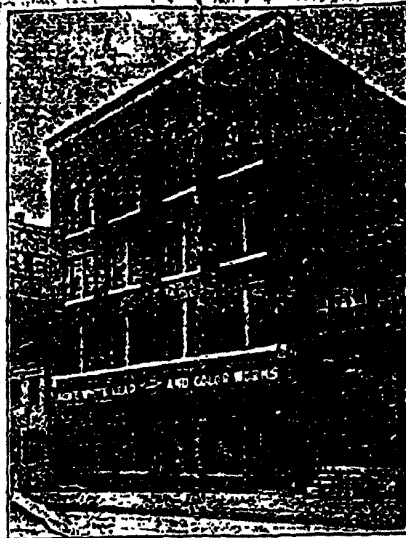
Mr. Rowley has been prominently identified with the commercial and civic life of St. Louis and will be given a warm welcome in Detroit. One of his first acts after deciding the question of location is in favor of

Detroit, was to indicate his desire to become an active member of the Board of Commerce.

When the new plant is ready in April he promises that he will turn it over for a day to the Board of Commerce for inspection, and that he will give the members of that influential body a hospitable reception.

Detroit is the largest producer of paint, varnish and kindred lines in the world, and now it will have the added advantage of a plant for the manufacture of corrod white lead. Just as the growth of the automobile business has naturally led to the choice of Detroit for the Morgan & Wright rubber plant, so has the growth of paint making attracted Mr. Rowley's company. Chairman Macaulay, of the Board of Commerce, committed on his own initiative, says that Mr. Rowley frankly admits that Detroit's high reputation for automobile production and other things makes it a natural choice for the location of his plant. The Board of Commerce has been very helpful in the arrangement.

The St. Louis Daily Times, Nov. 26, 1907



ACME WHITE LEAD AND COLOR WORKS.

At Nos. 1418-1420 and 1422 Chestnut Street.

Grassie Paint and Varnish Company
in the World Owns and Operates
Branch in St. Louis.

Acme White Lead and Color Works.

One year ago the Acme White Lead & Color Works of Detroit, Mich., which owns and operates the largest paint and varnish plant in the world, opened a branch in St. Louis to take care of their fast growing south and west trade.

Mr. Dan Davies, general manager of the St. Louis branch, is one of the best known paint men in business today in the West and has been connected with the Acme White Lead & Color Works for the past twenty years.

Mr. M. L. McKenna, assistant general manager of the St. Louis branch, has been associated with the Acme White Lead & Color Works for a number of years and is known amongst the trade as an able and thoroughly conversant paint man.

Mr. C. L. Reinhardt, who for a number of years was very closely allied with the Rowley Lead Co. and, ment, the business of the St. Louis who, in his line, enjoys a reputation

second to none, is in charge of the credit department.

The products manufactured by the Acme White Lead & Color Works consist of paints, enamels, stains and varnishes. They are also large consumers of strictly pure white lead; in fact, they manufacture everything that goes on with a brush. Their products are easily distinguished by the famous Acme Quality mark, which is conspicuous in every magazine and periodical in the country.

The company is one of the oldest in business and enjoys a world-wide reputation, its goods being sold in every State in the Union and a number of foreign countries. The company's executive officers are sound and conservative, but still wide-awake and not afraid to take the initiative, having manufactured the first can of ready-mixed carriage paint ever put on the market (Neal's Carriage Paint, the old original), more of these goods being sold today than the combined output of all other manufacturers.

Under Mr. Davies' careful management, the business of the St. Louis branch has grown to such an extent

that he is today traveling seventy-four salesmen. The growth of the St. Louis branch can best be appreciated by the wonderful increase in the State of Missouri, which already shows a decided gain for the year of 1907 over 1906 and the fiscal year has not ended. In the city of St. Louis, the growth is even more startling, the business having tripled itself in the past year.

It will be remembered that the St. Louis branch was originally established at 711 South Theresa avenue, but, owing to the steady increase in business, they soon had to seek more spacious quarters and are now located at 1418-1420 and 1422 Chestnut street in a building erected specially for them.

The territory taken care of by the St. Louis branch consists of the entire South and West and also includes Old Mexico, Guatemala, British Honduras, Cuba, Haiti, Jamaica, Puerto Rico, Chile, Peru, Venezuela, Argentine, Brazil and Columbia. Mr. Davies anticipates a greater increase for 1908 and expects to bring the selling force up to one hundred men.

0007-SWP-037427

American Exporter
April 1905

GROWTH OF PAINT AND VARNISH PLANT.

More than twenty years ago two boys with tremendous ambition, but no money, decided to start in business for themselves. They talked over first one scheme and then another. Finally came the idea of making ready mixed paint. They knew nothing about paint, but they could learn. They worked like beavers, sold all they possessed and pooled their money. There was just about \$2,000. That wouldn't last any time, so one concluded to keep his position a little longer and turn over all his earnings, while the other hunted a location and a paint maker. Thus, in a building 40x70 feet, was started in 1884 the Acme White Lead and Color Works, of Detroit, Mich., the home of Acme Quality Paints, Enamels, Stains and Varnishes. The two boys were the president, William L. Davies, and the secretary and general manager, Thomas Neal.

There were anxious days at the start. People were accustomed to mix their own paint, and were a little afraid of the new "ready-mixed stuff." But finally, along came the first order. It was for a barrel of paint. Imagine the rejoicing! Then came another and still others.

The paint-maker made the paint, but young Neal did all the rest. Many a time it was two o'clock in the morning before he went home. Davies, after his day's work, would join him, and together they laid the plans that developed the largest paint and varnish works in the world.

The company soon outgrew its one little room. In the second year its capital was increased to \$25,000, a salesman put on the road and a second building secured. Young Davies gave up his position and devoted his entire time to paint.

In 1886 a three story building was added, and each year others until in 1905 the plant was moved to its present site, where entirely new buildings were erected. Every year since has been marked by great changes. The buildings now cover many acres, and are the most modern and completely equipped of their kind in the world. There is, beside the enormous paint factory, enamel, stain and putty departments, a dry color works, an immense varnish plant, a large building devoted entirely to kalsomine, and a big lead corroding works, a thoroughly up-to-date printing department and bindery. The general offices are models of up-to-date completeness. Each kind of trade is handled separately to insure promptness and care. Special attention is given to all export orders. These are handled by experienced commercial translators and correspondents, who make the peculiar trade conditions of foreign countries and the requirements of foreign customers a special study. For the benefit of the employees there is a well-stocked library, a rest room and reading room with a piano, an attractive café, where hot lunches are served, and out doors, tennis courts. A general air of good fellowship and interest pervades.

The one thing that perhaps more than any other has made possible such a plant was the trademark for their labels, a distinctive design that appears upon every can of paint, enamel, stain, varnish and kalsomine they manufacture, a seal of the highest quality it is possible to produce. This "Acme Quality" design in all paints and finishes carries the same weight as the Government seal on a bond, and people soon learned that no matter what article or surface they wanted to finish or refinish, all they need do was ask for The Acme Quality Kind for that purpose.

The Modern Painter
March 1905

THE PAINT MANUFACTURERS' ASSOCIATION of the United States was represented with a booth depicting a German garden scene, with brick floor and an oil painting 10x18 feet, showing six samples of the paint fashion suggestions. Booklets on house painting and composite base paints were given out. The representatives of the association present were: N. B. Gregg, of St. Louis; Thomas Neal, of Detroit; R. S. Perry, of Philadelphia; F. A. Lane, of Philadelphia, and L. J. Fasquelle, of Detroit.

Paint, Oil & Drug Review
6-13-05

THE ROWLEY WHITE LEAD PROCESS.

The Acme White Lead and Color Works, of Detroit, has added a new building for the manufacture of white lead by the "mild" process invented by Wilson H. Rowley. This method is as follows:

The pig lead is hoisted to the third story of the plant and melted in a great caldron. In this initial carrying to the caldron is the only need of human labor until the finished product appears. The stream of molten lead runs through a pipe in the bottom of the caldron to an atomizer, where it encounters a blow of superheated steam that disintegrates it into its smallest particles—so small are they that assembled they resemble a stove polish, somewhat dried—and this fine, powder-like substance is collected in large tanks of water, from whence it is carried on to broad, troughlike tables, where powerful agitators search it for any small particles of lead that remain unconverted. Air at low pressure is forced through the liquid lead and water, the combined action of air and water converting the lead into what is called a basic hydroxide of lead.

Observe that, in all the processes, no handling has been necessary. From the top story of the building the lead finds its way from floor to floor, through gravitation, and in its liquid form is then pumped back to complete its transformation. There remains to be done the carbonating process, which is completed by placing the lead in carbonators, where it is constantly agitated while it is being subjected to the action of gas pumped in under low pressure. This gas is a product of the plant itself. In 36 hours of this treatment the proper fineness and density is obtained and the finished lead—white as snow—is pumped to the drying beds, which are long strips of duck canvas laid over screens, and here it dries, the finished product. The proof that the lead has been thoroughly converted and deprived of its soluble lead salts is that these duck sheets last a long time. Heat, air, water and gas have changed the pig lead to the white lead of the trade.

0007-SWP-037428

NEW PROCESS OF MAKING WHITE LEAD WORKS GREAT CHANGE IN PAINT INDUSTRY



The new building of the Acme White Lead & Color Works, in which the new "mild" process of making white lead is made, is the most important in the paint line. The "mild process" a process which is of recent discovery and which has been acquired by the Acme White Lead & Color Works, and housed in a newly completed brick, steel and concrete building costing \$100,000. The building itself is a notable addition to Detroit's factory equipment, but the "mild process" of manufacturing white lead is fascinating even to the layman.

For hundreds of years white lead has been made by the old Dutch process, which required 120 days and a large amount of labor. The product, however, was all that could be desired, but the process was slow and very expensive. It required 40 men to operate a very small plant, and only 75 per cent of the lead laid away carbonated. It required a great deal of scrubbing, separating and another 120 days to get the lead, 25 per cent that remained. Under that system the pig lead was melted into "buckles," resulting in large protuberances and a great deal of waste. A great deal of bark a foot deep was laid, and these jars, hundreds in number, were filled with horse manure, and these jars were placed in a furnace, which another layer of tan bark and manure was distributed to the jars. In this way a great deal of waste was left to remain in the jars. All of these "buckles" were cast by hand, the jars were filled by hand and the process was most expensive.

But down in St. Louis was a man named Wilson H. Rowley, who worked out an improvement, and his experimentation went forward for seven years until success was earned. The "mild process" is so absurdly simple that it is wonderful how the world blundered along without it so long. Here the pig lead is melted in the bottom of the plant and melted in a special ladle. In this initial carrying to the caldron is the only need of human labor until the finished product appears. The stream of molten lead runs through a pipe in the bottom of the caldron to an atomizer, where it encounters a "blow" of superheated steam that disintegrates it into its smallest particles—so small are they that assembled they resemble a stove polish, somewhat dried—and this fine powderlike substance is collected in large tanks of water, from whence it is carried on to broad, troughlike tables, where powerful agitators catch it for any small particles of lead that remain unconverted. At a low pressure is forced through the liquid lead and water, the combined action of air and water converting the lead into what is called a basic hydrate of lead. Observe that in all the processes, no handling has been necessary. From the top story of the building the lead finds its way from floor to floor, through gravitation, and in its liquid form is then pumped back to complete its transformation. There remains to be done the carbonating process, which is completed by placing the lead in carbonators, where it is subjected to the action of gas pumped in under low pressure. This gas is a product of the plant itself. In 24 hours of this treatment the proper fineness and density is obtained, and the finished lead—white as snow—is pumped to the drying beds, which are long strips of duck canvas laid over screens, and here it dries the finished product. The proof that the lead has been thoroughly converted and deprived of its soluble lead salts is that these duck sheets last a long time. Heat, air, water and gas have changed the pig lead to the white lead of the trade.

Eight men are all that are required to operate the big plant with its enormous capacity of 1,000 tons a year. The "mild process" accomplishes in 120 days what the old Dutch process required 120 days to accomplish. The possibility of lead poisoning, so prevalent in the old process, is banished. Not a particle escapes and not a particle is lost. Instead of losing 25 per cent, as in the old system, the new system makes a chemical gain of 25 per cent, so that for every 100 pounds of lead put in 125 cents out. It is one of the most interesting processes in the city, the only one of its kind in the world, and places Detroit in the front rank as a paint market.

NEW PROCESS CUTS EXPENSE

ACME WHITE LEAD AND
COLOR WORKS HAS AN
INNOVATION.

LENGTHY AND EXPENSIVE
PROCESS OF THE OLD LEAD
PROCESS IS OBLIVIOUS.

A great improvement in the process of manufacturing white lead has been made by the Acme White Lead & Color Works, which is the largest paint factory in the world. By means of this new process, a recent discovery, the manufacturing can turn out a much finer quality of white lead at a much cheaper cost than the old process. At the present time, the old process is being used. A factory completely equipped and modern, building cost \$100,000 is now used solely for the manufacture of white lead by the new process.

The process is very simple. For hundreds of years white lead has been made by the old Dutch process, which required 120 days and a large amount of labor. It required about 40 men to operate a small plant. The new process is a big jump through the long process of the old Dutch process. The pig lead was necessary for the old process. The pig lead was melted in a pot containing acetic acid. These pots were buried from 10 to 120 days in the bark, while chemical action caused by the heat of the fermenting bark and the acid slowly converted the pig lead into white lead. It was impossible to obtain a complete conversion under these conditions, and the residue had to be ground, rolled, screened and then the partially corroded lead was back and metal. No lead after being ground the white lead was pumped and dried in pans. All these operations were necessarily expensive.

New Method Much Cheaper
By the use of the new process, which was discovered and developed by Wilson H. Rowley, at the head of the Acme white lead department, strong acids, alkalis or other chemicals are not required in the manufacture of this useful product and a force of 25 men can operate the new plant. The process derives its name from the fact that it is the mildest and simplest

method possible for the manufacture of white lead—metallic lead, air, water and carbon dioxide gas being the only substances used. The pig lead, which may be of any grade—hard or soft—is melted in the third story of the building and dumped into a large iron kettle. The molten lead runs from the bottom of the kettle through a heated pipe to the "atomizer" in which it is disintegrated into very fine powder by superheated steam. The powder is so fine that the individual particles cannot be distinguished from each other by the naked eye.

0007-SWP-037429

"The dusty, reduced lead is then collected into a large tank containing water and from there pumped into large horizontal drums known as oxidizers. These drums are provided with powerful agitators and the combined action of forced air under low pressure and water rapidly converts the lead into a basic hydroxide of lead. The converted lead is separated automatically from the slight amount of unoxidized residue, the latter being returned for further conversion to the oxidizing drums. Thus in 24 hours the basic lead hydroxide is converted into a white basic carbonate of lead or white lead, and during the entire process, no handling has been necessary. From the top of the building to the bottom the lead finds its way from the floor to floor through gravitation and in the liquid form it is pumped back again. Two complete revolutions from top to bottom are necessary before the liquid is converted into white lead. The finished lead is then pumped into existing tanks or drying beds which are long strips of white duck laid on screens and here it dries. The process has changed the slush liquid to the pure white lead of the trade.

44% Instead of Lead.
Instead of losing 25 per cent. as in the old process, the mild system makes a gain of 25 per cent. so that every 100 pounds of lead makes 125 pounds of white lead. The lead is always under water in the new process and the workmen are not in danger of lead poisoning.
The new plant has an annual capacity of 12,000 tons, or 2,400,000 pounds. The machinery used is very simple in construction and the chemical services reduce the amount of labor to a minimum in handling and conveying the lead at the different stages of the process. The new plant is the only one of its kind in the world—the different steps of the process being all covered by patents—and is a valuable addition to Detroit's growing list of fine factories.



Gebäude welches kürzlich von der Acme White Lead Works zur Fabrikation von Bleiweiß nach ihrem neuen, sogenannten „Mild“-Prozess, errichtet wurde.

Eine Anzahl Vertreter der Presse besuchten gestern die Anlagen der Acme White Lead & Color Works, welche fordern einen neuen Prozess zur Fabrikation von Bleiweiß einführen. Wie bekannt wurde, bisher das im Handel so vielfach gebrauchte Bleiweiß durch den sogenannten „Dutch“-Prozess gewonnen. Das Blei wurde zu diesem Zweck in runde durchlöchernte Scheiben (Disks) von etwa 5 Zoll Durchmesser und 3 Zoll Dicke geschnitten, welche, 16 bis 18 an der Zahl, in irdene mit Essigsäure gefüllte Gefäße gelegt werden. Diese Gefäße werden neben und übereinander gestellt und jede Lage ist durch Bretter getrennt. Um die Gefäße herum werden mehrere Zoll gemahlene Eichensrinde gelegt und in diesem Zustande bleiben sie etwa 3 bis 4 Monate lang unberührt liegen. Während dieser Zeit findet ein Gärungsprozess statt und das Bleiweiß setzt sich um die blickernen Wände fest, von welchen es nach Verlauf von 3-4 Monaten abgelöst werden muß, um für Handwerkszwecke verarbeitet zu werden. Dieser Prozess, welcher als der einzige bisher bekannte Prozess zur Gewinnung von Bleiweiß galt und schon Hunderte von Jahren im Gebrauch war, wird bei weitem übertrifft von dem neuen sogenannten „Mild“-Prozess, welcher nach jahrelangem Studium gegenüberig von den hiesigen Acme White Lead & Color Works mit Erfolg gekrönt wurde.

Die Behandlung des Bleies zur Gewinnung von Bleiweiß unter diesem neuen Prozess ist eine gänzlich verschiedene. Die etwa 1½ Fuß langen und 4 Zoll dicken Bleistücke werden erst in den Schmelzöfen befeuchtet und nachdem es geschmolzen ist, wird es durch eine starke Dampfströmung in ein hoch feines Pulver verwandelt, worauf es durch Pumpen und vermittelt der eigenen Schwerkraft nach den gewünschten Behältern befördert wird. Diese Behälter haben die Form von Zylindern, in welchen die Masse unter leichtem Luftdruck mit Wasser vermischt und durch große Schrauben, die in Bewegung gehalten werden, nach vollständigster Oxydation in kleinen Zylindern wird, die Bleiweiß, welche als ein Blei-Hydroxidum, bezeichnet ist, dann wird, wenn immer noch erforderlich, eine weitere Behandlung durch einen

sauren Substanzen ausgeschieden werden. Nach diesem Prozesse gelangt die Masse durch Pumpen in sogenannte „carbonating“-Zylinder, woselbst die eigentlichen Bleisubstanzen durch Gussensäure von Wasser und löslichen sauren Gasen in weniger als 8 Stunden in Bleiweiß verwandelt werden. Das auf diese Weise erzielte Produkt ist gänzlich rein von irgend welchen Unreinheiten und wird sofort, ohne irgend einen „Wash“-Prozess, auf die Trockenspannen befördert und innerhalb weniger Tagen ist es fertig zur Verarbeitung für den Handel.

Bleiweißung, wie dies öfters bei dem alten Prozess vorkam, ist in diesem neuen Verfahren ganz und gar ausgeschlossen und Gewinnung des Reinproduktes ist um mehr als 25 Prozent erhöht. Da die ganzen Maschinen auf automatischem Wege vorgerichtet werden und das Produkt von dem rohen Zustande bis zur vollkommenen Verarbeitung von keinem Gehülfen berührt zu werden braucht, wird die notwendige Arbeitskraft auf das größte Minimum reduziert. Herr Wilson H. Kowich, der Erfinder dieses neuen Verfahrens, ist der Superintendent der neuen Anlage und seitens der Acme White Lead Works in den Handel gebracht wird.

Der Name „Mild“-Prozess oder natürlicher Prozess kommt daher, weil in seiner Fabrikation von Bleiweiß absolut keine starken Säuren, Alkalien oder sonstigen Chemikalien verwendet werden.

Das von den Acme White Lead Works zum Zwecke dieses neuen Prozesses errichtete Gebäude, ist ein geräumiger, 4stöckiger feuerfester Bau und lag in demselben installierten Maschinen sind imstande, 60 Tonnen Blei innerhalb 10 Stunden in Bleiweiß zu verarbeiten.

Die Veranschaulichung, kann sich als ein Beispiel, wenn man sich in der Beschreibung von Bleiweiß bemüht, so hat es nicht lange gedauert, bis der Name der Acme White Lead & Color Works genannt wird, wenn immer noch erforderlich, eine weitere Behandlung durch einen

0007-SWP-037430

Reproduced from The Saginaw Courier-Herald of June 18th

The Saginaw Courier-Herald

THE MICHIGAN PAINT CENTER

MEET OF THE AGES
LEAD & COLOR WORKS
STREET HAS ANTI-
DUST PROGRAM

AD MANUFACTURE
REVOLUTIONIZED

Owned Exclusively By
The Plant Makes It
Corrosion Lead in
4 of 100 Days.

ter-Herald:
June 17.—While it
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A MODEL PAINT AND VARNISH PLANT.

A VISIT to the large paint and varnish plant of the Acme White Lead & Color Works at Detroit, Mich., U. S. A., impresses one with its magnitude and completeness. It seems incredible that an industry of this nature, which a few years ago was in a very crude state, could grow in such a short time to such proportions. This plant has many unusual features of interest.

A post office is carried on in connection with the plant, where mail is received from almost every country on the globe and quickly forwarded to the proper department. All outgoing mail is also sent here for sorting, enclosing in en-



General View of Plant of Acme White Lead and Color Works, Detroit, Mich.

velopes and stamping. Foreign mail is handled separately so as to insure its receiving the proper amount of postage. For the quick handling of telegrams this plant "city" has its own station, with an expert operator in charge, connecting with the telegraph companies' wires. In one of the buildings is a room set aside for conventions of salesmen, who come from every section of the United States and from foreign countries for mutual aid and suggestion. There is a large cafe where hot lunches are served, and still further on there is a boys' laundry. An extensive printing establishment and bindery are of considerable interest.

But the really important buildings—those where the paint and varnish are made—are the most interesting of all. In these are scores of departments, each in charge of experts. There is a laboratory where every product manufactured is thoroughly tested by competent chemists. There are great rooms as long as a city square where hundreds of paint mills are constantly at work, grinding and mixing paint of every shade and for every purpose; others where enamels are made in immense quantities, each different kind being given especial care. Then there are the dry colors in the making, the vats of thick colored paste, the immense machines pressing out the moisture from cakes of this paste, the dry room and at last more great mills grinding it for use.

Big departments are devoted entirely to the manufacture of stains, fillers, dryers, varnish stains and putty. In the varnish plant may be seen the varnish gum being melted in great kettles and in another place it is being cooled. It is later put in great filtering tanks and in another large room it is placed in long rows of storage tanks where it has to age before it can be used. An extensive kalsomine plant four stories high and a very large, thoroughly equipped lead corroding department are included in the works.

Throughout the plant may be noticed an air of good fellowship, interest and business push among the employees, and a spirit of hearty co-operation which means an improved product, larger output and increased sales. Full particulars regarding the products of this concern can be obtained by addressing the Acme White Lead & Color Works, Detroit, Mich., U. S. A.

THE BEATS THE DUTCH

Old Method of White Lead Making Revolutionized by Detroit Concern.

So old that it is now "grown" is the saying. "It beats the Dutch," and yet the Acme White Lead & Color Works has actually done this by the perfection of a process invented by W. H. Rowley by which white lead is made a finished product in from seven to eight days including the drying as against 120 to 135 days by the old Dutch process in vogue for hundreds of years.

This meant the erection of a 1100,000 reinforced concrete building as an addition to the plant of the Acme, a separate establishment devoted entirely to this new industry with especially designed machinery and apparatus. The plant is finished and so is the experiment. At the rate of 10,000 tons of the product of white lead a year is now being turned out, and it is not touched by a human hand from the time the pig of lead is dropped into the furnace on the top floor until the product has in its various stages of development, dropped to the basement and been pumped again to the second floor, finished.

The Old Way.

In the old process in vogue until this was accomplished, the metallic lead was cast into perforated slabs. These slabs were packed into earthen pots or retorts, flooded with acetic acid. About 15 pounds of lead was put into each pot. These pots were arranged in layers piled one upon the other with boards between each layer, and each layer resting on several inches of ground tan bark, which was also placed around the edges of the pots, which were allowed to remain buried in this bark for about 20 to 120 days while chemical action caused by the heat of the fermenting tan bark and the acid slowly converted the metallic lead into the white lead used for paint. The corrosion was never complete and anywhere from 25 to 45 per cent of the metallic lead only was converted into the finished product. Being hard and brittle it was ground and then heated and pumped to the drying pans of copper. It necessitated the employment of 40 men for every stack of pots.

It is by force of contrast the full significance of the new or "mild process" is brought home, and it is then realized that the Detroit plant will revolutionize the manufacture of white lead the world over. To Detroit, and to the Acme interests is due the credit of making one of the greatest scientific discoveries of the age practicable.

Steam, Water and Gas. In the new process as operated at the new Acme plant nothing but steam, water and carbon dioxide gas are used, resulting in bringing to the drying pans, in finished product, 125 pounds of white lead for every 100 pounds of metallic lead placed in the starting furnace. During every ten hours the plant is in operation 100,000 pounds of metallic lead is melted, passing from the bottom of the furnace into a very hot, steam filled tank, where it becomes a soft blue substance as thin as thin mud, and in this state very susceptible to chemical change. From there it goes to large metallic duplex cylinders where it is kept continuously agitated with water while the presence of air which is forced through the cylinders at low pressure. The product is then an orange or ochre color. This part of the operation is completed in less than two days. The product is then passed through a separating system which removes any slight metallic residue and is then pumped into the carbonating cylinders, somewhat similar to the cylinders already described.

0007-SWP-037432

Detroit Times
5/15/18

PAINT MAKING IS REVOLUTIONIZED BY NEW PROCESS

"MILD PROCESS" FOR MANUFACTURE OF WHITE LEAD IS INSTITUTED BY ACME COMPANY—

PLANT COSTS \$250,000.

A new industry that bids fair to make Detroit the most important paint center in the United States is the "Mild Process" for the manufacture of white lead, which has just begun operations at the Acme White Lead and Color works at St. Antoine and the Michigan Central railway tracks. The new four-story building, of brick, steel and concrete has been completed and the machinery set in motion which will completely revolutionize the manufacture of white lead.

The building alone cost some \$100,000 and when the plant is fully equipped it will cost \$250,000, an investment of a quarter of a million of dollars. The capacity of the plant is 10,000 tons per annum and the money value of that would represent in the neighborhood of a million and half dollars, so it will be seen that this industry is one of the most important acquisitions that Detroit has had for some time. While there is an immense amount of money involved, the machinery is simple. The plant is automatic and the process is continuous, the machinery to be operated 365 days in the year, day and night.

The state of perfection to which this has been reduced will be noted when it is seen that only 12 men are employed in operating the machinery, two shifts, six men nights and an equal number during the day. All of these men are practically inspectors, the only labor being performed when the pig lead is put into the kettle at the beginning of the process.

Invention of Wilson H. Rowley. The "Mild Process" as it is known, was invented by Wilson H. Rowley, formerly of St. Louis, but now of Detroit, but the idea was taken up by the Acme White lead people and they put behind it the mechanical engineering and chemical skill that a corporation of such immensity could command and assisted Mr. Rowley to develop it.

White lead is the most important of all the paint pigments and the industry has always been considered as among the most important in the country, but heretofore the Acme company has been obliged to import what is used from St. Louis concerns. It is said, however, that until the last few years progress and improvement in the methods of manufacture of white lead have not kept pace with other important industries of modern times.

The new process, which stands out prominently are the "Old Dutch" process and the "Mild Process." The former has been in use for hundreds of years, while the latter has been out for only about five years. The first patents were granted in 1902 and 1903, and a plant with 1,000 tons annual capacity was equipped and placed in operation. The process found immediate consumption and by 1907 the sales having outgrown the producing capacity of the plant, it was found necessary to build the new factory.

Product is Superior. By comparison of the "Old Dutch" process, formerly used, and the "Mild Process," it has been scientifically demonstrated that the product of the latter is superior in quality, more expensive, more sanitary, uniform, without impurities, of any kind, requires only five days to produce, while the Dutch process takes four months, and the full chemical treatment, which is about 25 per cent, is obtained as every particle of metallic lead is converted and none lost. It appears strange to the average person, but has been demonstrated that when 100 pounds of pig lead has been put into the process, 125 pounds of carbonate of lead is taken out. This is explained by the chemical operation of taking up the air, water and carbonic acid gas.

It is said that under the "Dutch process" it would take a plant covering 10 acres of ground to be as efficient as the one just completed by the Acme company for the "Mild process."

There is no participation in the lead industry. Everything inside the cylinders in the basement and as the same water is used, over and over again, the slight metallic residue that may go to the bottom is run through the process again and fully utilized. "All of this is under water," said Dr. C. D. Folley, the chemist of the establishment, "and a trip through the plant will convince you that there is absolutely no danger of lead poisoning. Each stage of the process is under full control. The chemical increase is obtained and the process produces a uniform article without impurities of any kind. This process requires no acids, no heat, no noise and takes but two or three days before it goes to the rollers where it remains for 10 to 12 days by the old Dutch process, exclusive of the drying which of course is one day. In the Dutch process only double refined lead can be used. In this process any good grade of lead is used. After melting the lead is atomized into an impalpable powder, and this atomized lead, as you see, distributed by pumps and gravity."

A Fireproof Building.

The building is of reinforced concrete and steel, three stories in height, light, airy and sanitary, and no men engaged in the manufacture has any hard labor or heavy lifting. Thus the Acme saves immense sums in equipment, in maintenance, and in labor and gets 125 pounds of white lead for every 100 pounds of metallic lead put in the furnace.

The carbon dioxide gas is made from coke. The heat furnishes the steam for the atomizing and for the running of the engine. The gas passes through a tower of coke saturated with chemical preparations so that all sulphur and impurities are removed and the gas passed to the carbonating cylinders is absolutely pure.

In all its appointments the plant is modern and yet simple and easily managed. Mr. Rowley, the inventor, Dr. Folley, the chemist, and the Acme officials are naturally proud of the achievement and feel that in addition to opening an unlimited field of enterprise, they have also given Detroit something worth having.

The two processes which stand out prominently are the "Old Dutch" process and the "Mild Process." The former has been in use for hundreds of years, while the latter has been out for only about five years. The first patents were granted in 1902 and 1903, and a plant with 1,000 tons annual capacity was equipped and placed in operation. The process found immediate consumption and by 1907 the sales having outgrown the producing capacity of the plant, it was found necessary to build the new factory.

Product is Superior. By comparison of the "Old Dutch" process, formerly used, and the "Mild Process," it has been scientifically demonstrated that the product of the latter is superior in quality, more expensive, more sanitary, uniform, without impurities, of any kind, requires only five days to produce, while the Dutch process takes four months, and the full chemical treatment, which is about 25 per cent, is obtained as every particle of metallic lead is converted and none lost. It appears strange to the average person, but has been demonstrated that when 100 pounds of pig lead has been put into the process, 125 pounds of carbonate of lead is taken out. This is explained by the chemical operation of taking up the air, water and carbonic acid gas.

It is said that under the "Dutch process" it would take a plant covering 10 acres of ground to be as efficient as the one just completed by the Acme company for the "Mild process."

0007-SWP-037433

The Mich Daily
5-10-1908

CHEMICAL STUDENTS VISIT PAINT WORKS

(To the tune of Harrigan.)

Who are the men who spend or even
lead?

Mich-i-gan, that's them.

Who'll be your friend when you find
that you need a friend?

Mich-i-gan, that's them.

For we're just as proud of the name
you see

As an Em-per-or, Czar or a King
can be.

Who are the men help a man ev-ery
time they can?

Mich-i-gan, U. I. M.

Chorus—

M-I-C-H-I-G-A-N, spells Mich-i-gan.

Proud of every single son that's
with you,

Div-i! a man can say a word a-gin you

M-I-C-H-I-G-A-N, that's them.

It's a name that a shame never has been
con-nect-ed with.

Mich-i-gan, U. I. M.

Who are the men Mich-ter Yost taught
to play, football?

Mich-i-gan, that's them.

Who are the men who will push Penn-sy
to the wall?

Mich-i-gan, U. I. M.

The ladies and gents are all proud of ye
We're proud of ye, too, in our turn,
you see.

You are the men make us all think we're
young a-gin.

Mich-i-gan, U. I. M.

Thus was Prof. White and his class
in chemical technology welcomed at the
Acme White Lead and Color works in
Detroit yesterday. When the visitors en-
tered the works they were asked to
leave their names. The object of this,
they learned upon leaving, when they
were each handed a dainty souvenir
booklet bound in yellow and blue. This
contained a cut of the party which vis-
ited the plant in April, the names of the
visiting party, the menu which the com-
pany served them at their banquet, and
a short sketch of the Mild Process of
white lead manufacture.

From here the students went to visit
other plants in which business of a
chemical nature is done.

Could not offend. Perhaps it is
not so, of course, but natural fact
as to whose finger's brain there were
that rhetorical phantasmagoria, "My
Detroit," etc., should be anxious to do
something glittering, conspicuous and
perpetual with it. But this is too
much. If we must have electrically
illuminated platitudes, let them be
hypocritical hospitality rather than
palpable braggadochio. We should be
delighted to assist this beautification of
Detroit. Tom Neal and the Acme White
Lead & Color Works. Indeed we are
proud of him for the sidewalk, the rock-
cuddled nightmare that once was a
lawyer and the tattered bulletin, but
the phobias, "In Detroit," etc., must
be left (the exclusive and unconverted
property of the Board of Commerce.
We need it not. Besides, we can't
walk up and down Griswold street all
the time.

Modern Painter
May 1908

The Rowley White Lead Process.

The Acme White Lead and Color Works, of
Detroit, has added a new building for the manu-
facture of white lead by the "mild" process in-
vented by Wilson H. Rowley. This method is as
follows:

The pig lead is hoisted to the third story of
the plant and melted in a great caldron. In this
initial carrying to the caldron is the only need
of human labor until the finished product ap-
pears. The stream of molten lead runs through
a pipe in the bottom of the caldron to an atom-
izer, where it encounters a blow of superheated
steam that disintegrates it into its smallest par-
ticles—so small are they that assembled they re-
semble a stove polish, somewhat dried—and this
fine, powderlike substance is collected in large
tanks of water, from whence it is carried on to
broad, troughlike tables, where powerful agita-
tors search it for any small particles of lead that
remain unconverted. Air at low pressure is
forced through the liquid lead and water, the
combined action of air and water converting the
lead into what is called a basic hydroxide of
lead.

Observe that, in all the processes, no handling
has been necessary. From the top story of the
building the lead finds its way from floor to floor,
through gravitation, and in its liquid form is
then pumped back to complete its transformation.
There remains to be done the carbonating pro-
cess, which is completed by placing the lead in
carbonators, where it is constantly agitated while
it is being subjected to the action of gas pumped
in under low pressure. This gas is a product of
the plant itself. In 36 hours of this treatment
the proper fineness and density is obtained and
the finished lead—white as snow—is pumped to
the drying beds, which are long strips of duck
canvas laid over screens, and here it dries, the
finished product. The proof that the lead has
been thoroughly converted and deprived of its
soluble lead salts is that these duck sheets last
a long time. Heat, air, water and gas have
changed the pig lead to the white lead of the
trade.

0007-SWP-037434

THIS BEATS THE DUTCH

Old Method of White Lead Making Revolutionized by Detroit Concern.

Detroit Free Press, May 16, 1908.

So old that it is moss grown, is the saying. "It beats the Dutch," and yet the Acme White Lead & Color Works has actually done this by the perfection of a process, invented by W. H. Rowley by which white lead is made a finished product in from seven or eight days including the drying as against 120 to 125 days by the old Dutch process in vogue for hundreds of years.

This meant the erection of a \$100,000 reinforced concrete building as an addition to the plant of the Acme, a separate establishment devoted entirely to this new industry with especially designed machinery and apparatus. The plant is finished and so is the experiment. At the rate of 10,000 tons of the purest of white lead a year is now being turned out, and it is not touched by a human hand from the time the pig of lead is dropped into the furnace on the top floor until the product has, in its various stages of development, dropped to the basement and been pumped again to the second floor, finished.

In the old process in vogue until this was completed, the metallic lead was cast into perforated discs. These discs were packed into earthen pots or retorts, flooded with acetic acid. About eighteen pounds of lead was put into each pot. These pots were arranged in layers piled

one upon the other with boards between each layer, and each layer resting on several inches of ground tan bark, which was also placed around the edges of the pots, which were allowed to remain buried in tan bark for from 90 to 120 days, while chemical action caused by the heat of the fermenting tan bark and the acid slowly converted the metallic lead into the white lead used for paint. The corrosion was never complete and anywhere from 65 to 85 per cent of the metallic lead only was converted into the finished product. Being hard and brittle it was ground and then floated and pumped to the drying pans of copper. It necessitated the employment of forty men for every stack of pots.

It is by force of contrast the full significance of the new or "mild process" is brought home, and it is then realized that the Detroit plant will revolutionize the manufacture of white lead the world over. To Detroit, and to the Acme interests is due the credit of making one of the greatest scientific discoveries of the age practicable.

In the new process as operated at the new Acme plant, nothing but steam, water and carbon dioxide gas are used, resulting in bringing to the drying pans, in finished product, 125 pounds of white lead for every 100 pounds of metallic lead placed in the starting furnace. During every ten hours, the plant is in operation 100,000 pounds of metallic lead is melted, passing from the bottom of the furnace into a very hot, steam filled tank, where it becomes a soft blue substance, as thin as thin mud, and in this state very susceptible to chemical change. From there it goes to large metallic duplex cylinders where it is kept continually agitated with water in the presence of air which is forced through the cylinders at low pressure. The product is then an orange or ochre color. This part of the operation is complete in less than two days. The product is then passed through a separating system which removes any slight metallic residue and is then pumped into the carbonating cylinders, somewhat similar to the cylinders already described.

In the last cylinder the basic hydroxides of lead, as they are called, in the presence of a considerable amount of water are subjected to a current of carbon dioxide gas, which in less than two hours converts the hydroxides into white lead, which containing no impurities, is ready to pump into the drying pans without any washing or separating whatever. The finished product of purest white lead was seen laying in the drying beds of canvas stretched upon cots of wires with shallow pans beneath to catch the moisture that filters through. The fact of the lead being free from impurities renders the expensive copper drying pans unnecessary. The finished product never grows hard and that part destined for commercial use is passed on to the grinding mill, where it is mixed with oil into the paste form seen in the cans when bought from the hardware stores.

In the new process no alkalis or tan bark are required. Twelve men lead the entire plant for twenty-four hour runs and everything is done by gravity and machinery. In its soft condition the product is pumped everywhere, and thus a minimum amount of labor is required. Mr. Rowley not only invented the process, which is covered by broad patents, but also the machinery by which the white lead is made. No pots are required, no lumber is necessary.

There is not a particle of the lead lost. Everything drains into cisterns in the basement and as the same water is used over and over again, the slight metallic residue that may go to the bottom is run through the process again and fully utilized.

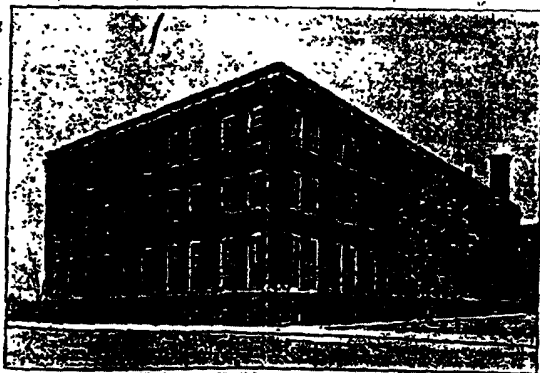
"All of this being under water," said Dr. C. D. Holley, the chemist of the establishment during a trip through the plant yesterday, "there is absolutely no danger of lead poisoning. Each stage of the process is under full control, the full chemical increase is obtained and the process produces a uniform article without impurities of any kind. This process requires no acids, tan bark, or parts and takes but two or three days before it goes to the driers where it remains five days, as against from 90 to 120 days by the old Dutch process, exclusive of the drying which of course is five days. In the Dutch process only double refined lead can be used. In this process any good grade of lead is used. After melting, the lead is atomized into an impalpable powder, and this atomized lead, as you see, distributed by pumps and gravity."

The building is of reinforced concrete and steel, three stories in height, light, airy and sanitary, and no man engaged in the manufacture has any hard labor or heavy lifting. Thus the Acme saves immense sums in equipments, in maintenance, and in labor and gets 125 pounds of white lead for every 100 pounds of metallic lead put in the furnace.

The carbon dioxide gas is made from coke. The heat furnishes the steam for the atomizing and for the running of the engine. The gas passes through a tower of coke saturated with chemical preparations so that all sulphur and impurities are removed and the gas passes to the carbonating cylinders absolutely pure.

In all its appointments the plant is modern and yet simple and easily managed. Mr. Rowley, the inventor, Dr. Holley, the chemist, and the Acme officials are naturally proud of the achievement and feel that in addition to opening an unlimited field of enterprise they have also given Detroit something worth being proud of.

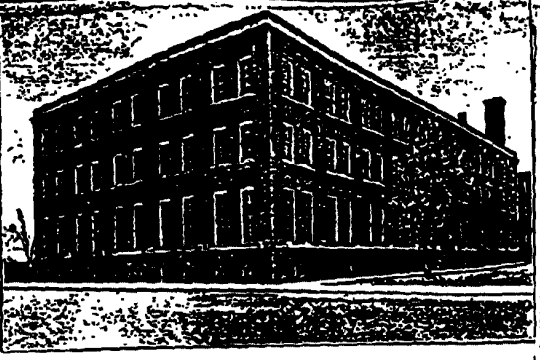
New Process of making White Lead works great change in paint industry.



The new building of the Acme White Lead & Color Works in which the new mild process is made.

0007-SWP-037435

Oct 1905



The New Building of the Acme White Lead and Color Works in which White Lead is Made by the New "Mild" Process.

IN DETROIT, where Life is worth Living, the employees of the Acme White Lead & Color Works have organized what they call "The Acme Quality Rooters' Club." The object of the Club is, according to the Acme Quality Rooters, a "paperoid" published at frequent intervals, to

root, root, root. Any one that has been near a baseball game knows what it means to "root"; he also knows what continual rooting will do. The editor of the live little sheet publishes the following Ten Commandments which if followed will be productive of good results:

Thou shalt not wait for something to turn up, but shalt pull off thy coat and go to work; that thou mayest prosper in thy affairs and make the word "failure" spell "success."

Thou shalt not be content to go about thy business looking like a bum, for thou shouldst know that thy personal appearance is better than a letter of recommendation.

Thou shalt not try to make excuses, nor shalt thou say to those who chide thee "I didn't think."

Thou shalt not wait to be told what thou shalt do, nor in what manner thou shalt do it, for thus may thy days be long in the job which fortune hath given thee.

Thou shalt not fail to maintain thine own integrity, nor shalt thou be guilty of anything that will lessen thy good respect for thyself.

Thou shalt not covet the other fellow's job, nor his salary, nor the position which he hath gained by his own hard labor.

Thou shalt not fail to live within thy income, nor shalt thou contract any debts when thou canst not see thy way clear to pay them.

Thou shalt not fail to blow thine own horn, for he who is afraid to blow his own horn at the proper occasion findeth nobody standing ready to blow it for him.

Thou shalt not hesitate to say "NO" when thou meanest "NO," nor shalt thou fail to remember that there are occasions when it is unsafe to bind thyself by hasty judgment.

Thou shalt give every man a Square Deal. This is the last and great commandment, and there is no other like unto it. Upon this commandment dependeth all the law and the profits of the business world.

LIABILITY FOR POOR PAINT—Mrs. Luther Hinckle, of Peoria, Ill., has brought suit against W. N. Hanford, a painter, of the same town claiming that the paint put on her house did not wear well.

Last fall Hanford contracted to paint a house belonging to Mrs. Hinckle. Mrs. Hinckle had a sample of a particular shade of yellow paint with which she wanted her house painted, and she alleges that Hanford told her he could mix that color and that it would stand the ravages of the weather. She alleges that with that understanding she told him to proceed with the painting.

Hanford claims that he had warned her that the color would be very uncertain to stand the weather, owing to the fact that the paint did not contain sufficient quantities of white lead to give it a good body.

The testimony which was produced shows that the composite parts of the paint necessary to produce that color were only 10 per cent white lead, 75 per cent yellow ochre and 15 per cent raw sienna. It was also shown that as a matter of fact this mixture would not have sufficient body to withstand the weather.

The Acme Company Starts Its New White Lead Plant.

Detroit's latest industry, and by far the most important in the paint line, is the manufacture of white lead by the "mild" process, a process which is of recent discovery and which has been acquired by the Acme White Lead and Color Works, and housed in a newly completed brick, steel and concrete building costing \$300,000. The building itself is a notable addition to Detroit's factory equipment, but the "mild process" of manufacturing white lead is fascinating even to the layman.

For hundreds of years white lead has been made by the old Dutch process, which required 120 days and a large amount of labor. The product itself was all that could be desired, but the process was slow and very expensive. It required 40 men to operate a very small plant, and only 75 per cent of the lead laid away carbonated, necessitating a great deal of scrubbing and separating and another 120 days to carbonate the 25 per cent that remained. Under that system the pig lead was melted into buckles, resembling large pretzels and laid a dozen each in earthen jars in the bottom of which was acetic acid. A great bed of tan bark a foot deep was laid, and these jars, hundreds in number, were buried in the tan bark, which was mixed with horse manure, and over these jars was placed pine lumber over which another layer of tan bark and manure was distributed to receive more jars. In this way a great stack was built which was to remain four months. All of these "buckles" were cast by hand, the jars were filled and handled by hand, the stacks were built by hand and the process was most expensive.

But down in St. Louis was a man named Wilson H. Rowley, who worked out an improvement, and his experimentation went forward for seven years, until success was earned. The "mild process" is so absurdly simple that one wonders how the world blundered along without it so long. Here it is: The pig lead is hoisted to the third story of the plant and melted in a great caldron. In this initial carrying to the caldron is the only need of human labor until the finished product appears. The stream of molten lead runs through a pipe in the bottom of the caldron to an atomizer, where it encounters a blow of superheated steam that disintegrates it into its smallest particles—so small are they that assembled they resemble a stove polish, somewhat dried—and this fine, powder-like substance is collected in large tanks of water, from whence it is carried on to broad, troughlike tables, where powerful agitators search it for any small particles of lead that remain unconverted. Air at low pressure is forced through the liquid lead and water, the combined action of air and water converting the lead into what is called a basic hydroxide of lead. Observe that, in all the processes, no handling has been necessary. From the top story of the building the lead finds its way from floor to floor, through gravitation, and in its liquid form is then pumped back to complete its transformation. There remains to be done the

carbonating process, which is complete placing the lead in carbonators, where constantly agitated while it is being subjected to the action of gas pumped in under low pressure. This gas is a product of the plant. In 26 hours of this treatment the proper fineness and density is obtained and the finished white as snow—is pumped to the drying, which are long strips of duck canvas laid on screens, and here it dries, the finished product. The proof that the lead has been thoroughly converted and deprived of its soluble lead is that these duck sheets last a long time. Air, water and gas have changed the pig to the white lead of the trade.

Eight men are all that are required to operate the big plant with its enormous capacity of 25,000 tons a year. The "mild process" accomplishes in 10 days what the old process required 120 days to accomplish. Possibility of lead poisoning, so ever-present in the old process, is banished. Not a particle escapes and not a particle is lost. Instead of losing 25 per cent as in the old system, the system makes a chemical gain of 25 per cent so that for every 100 pounds of lead put in come out. It is one of the most interesting processes in the city, the only one of its kind in the world, and places Detroit in the rank as a paint market—*Detroit News*.

Detroit News
July 6, 1905
"Things couldn't be better than they are with us," said A. M. Woodward, of the Acme White Lead & Color Works. "We are working almost full time, and full time, and for the time of year, business is better than it was last year."

0007-SWP-037436

OUR STORY FOR BOYS

How Thomas Neal, the Errand Boy, Helped to Build one of the Greatest Manufacturing Institutions in Detroit

I was Lincoln himself who said that there was nothing so wonderful in a rail-splitter becoming a president today there are thousands of successful men who could say the same thing in a different way. They might express it as Roosevelt did in a speech about a year ago—that "it's the man in a man that counts, his pluck, his ambition, his perseverance and honesty."



THOMAS NEAL

There is every opportunity in the world for the success of that boy today who starts out in life handicapped by things which he may believe will forever insure his mediocrity. This is the age of "men that are men" and while education and capital are great aids in the fight for success, it is the "pluck and honor in a boy" that counts.

There is not a better example in Detroit today of what pluck and perseverance will do than in the story of Thomas Neal, one of the directors of the Michigan Savings Bank, one of the founders and present secretary and general manager of the greatest institution of its kind in the world—the Acme White Lead and Color Works. Mr. Neal is recognized as one of the best business men in Michigan and one of the sanest financiers associated with a banking institution in the country.

Tom's climb, as we might call it, is an object lesson for every bright, hustling youngster in Detroit. He was born in Corunna, Ontario, September 27th, 1893, his parents moving to Detroit when he was eight years old. Tom had all kinds of ambition, he wanted to get out into the world and make something of himself. In spite of his family's wishes he went to work when only sixteen years of age as an errand boy at \$4 a week with the National Tea Company. Out of it he took a job at \$3 in the bank every Saturday and after a few months he began going to a night school. This savings account was the beginning of his success. At the end of the year when he had advanced to bank messenger, one concern, the combination of his own initiative and another compelled him to seek a position, and he went into an office. Still he worked in his bank, and at the age of 27 he was able to resign with the ambition of his life—go into business for himself.

That was the beginning of the greatest paint and varnish works in the world. In a little one-story building on Grand River avenue he and William L. Davies began making paint. While Neal worked in their tiny factory, "Billy" Davies, the president of the great institution of today, held down an outside job in order to add to their working funds. Their first order was for A SINGLE BARREL OF PAINT, and no order that was ever given to any firm in the world created more joy than that. How pluck and perseverance will win may be seen in the fact that recently there were on the company's books for one month's "immediate" delivery orders for 122 CARLOADS OF PAINT, besides innumerable smaller orders, and that from the little room on Grand River avenue has grown one of the most magnificent manufacturing plants in the United States, with a capitalization today of \$1,250,000.

Boys, what do you think of this? Doesn't it stir your ambition a little? Doesn't it show what the business world holds for you—if you've just got the "ginger," the perseverance, the honesty, and, above all, a saving ability?

Paint, Oil & Drug Review

THE ROWLEY WHITE LEAD PROCESS.

The Acme White Lead and Color Works, of Detroit, has added a new building for the manufacture of white lead by the "mild" process invented by Wilson H. Rowley. This method is as follows:

The pig lead is hoisted to the third story of the plant and melted in a great caldron. In this initial carrying to the caldron is the only need of human labor until the finished product appears. The stream of molten lead runs through a pipe in the bottom of the caldron to an atomizer, where it encounters a blow of superheated steam that disintegrates it into its smallest particles—so small are they that assembled they resemble a stove polish, somewhat dried—and this fine, powder-like substance is collected in large tanks of water, from whence it is carried on to broad, troughlike tables, where powerful agitators search it for any small particles of lead that remain unconverted. Air at low pressure is forced through the liquid lead and water, the combined action of air and water converting the lead into what is called a basic hydroxide of lead.

Observe that, in all the processes, no handling has been necessary. From the top story of the building the lead finds its way from floor to floor, through gravitation, and in its liquid form is then pumped back to complete its transformation. There remains to be done the carbonating process, which is completed by placing the lead in carbonators, where it is constantly agitated while it is being subjected to the action of gas pumped in under low pressure. This gas is a product of the plant itself. In 36 hours of this treatment the proper fineness and density is obtained and the finished lead—white as snow—is pumped to the drying beds, which are long strips of duck canvas laid over screens, and here it dries, the finished product. The proof that the lead has been thoroughly converted and deprived of its soluble lead salts is that these duck sheets last a long time. Heat, air, water and gas have changed the pig lead to the white lead of the trade.

0007-SWP-037437

ST. JOSEPH EVENING HERALD

SATURDAY, MAY 2, 1908.

Entertaining Citizenship.

of public spiritedness and good citizenship is shown by one of Detroit's leading manufacturing concerns which might be well commended to some of the local institutions of this city in connection with the efforts to boost St. Joseph.

The instance referred to is that of Acme White Lead and Color Works Detroit who last year spent \$1,000 for advertising and expect to approximate the same amount this year.

In every piece of advertising that they carried in magazines or mail circulars is contained the Slogan "In Detroit—Life is Worth Living." The originators of this idea of extending the name of their city have encouraged others to adopt the same phrase, with the result that Detroit in this way is being advertised all round the world.

This is an interesting evidence of real public spiritedness on the part of a large manufacturing concern and it can be said something of the value of the slogan.

THIS BEATS THE DUTCH

Old Method of White Lead Making Revolutionized by Detroit Concern.

So old that it is more grown in the saying, "It beats the Dutch," and yet the Acme White Lead & Color Works has actually done this by the perfection of a process invented by W. H. Rowley by which white lead is made a finished product in from seven to eight days including the drying as against 110 to 125 days by the old Dutch process in vogue for hundreds of years.

This meant the erection of a \$100,000 reinforced concrete building as an addition to the plant, the Acme a separate establishment devoted entirely to this new industry with specially designed machinery and apparatus. The plant is finished and so is the experiment. At the rate of 10,000 tons of the product of white lead a year is now being turned out, and it is not touched by a human hand from the time the pig of lead is dropped into the furnace on the top floor until the product has in its various stages of development, dropped to the basement and been pumped again to the second floor finished.

The Old Way.

In the old process in vogue until this was completed, the metallic lead was cast into perforated discs. These discs were packed into earthen pots or retorts, flooded with acetic acid. About 15 pounds of pots were arranged in layers piled one upon the other with boards between each layer, and each layer resting on several inches of ground tan bark, which was also placed around the edges of the pots, which were allowed to remain buried in tan bark for from 25 to 125 days while chemical action caused by the heat of the fermenting tan bark and the acid slowly converted the metallic lead into the white lead used for paint. The conversion was never complete and anywhere from 51 to 55 per cent of the metallic lead only was converted into the finished product. Being hard and brittle it was ground and then heated and pumped to the drying pans of copper. It necessitated the employment of 40 men for every stack of pots.

It is by force of contrast the full significance of the new or "mild" process is brought home, and it is then realized that the Detroit plant will revolutionize the manufacture of white lead the world over. To the credit of making use of the greatest scientific discovery of the age practicable.

Steam, Water and Gas.

In the new process as operated at the new Acme plant nothing but steam water and carbon dioxide gas are used resulting in bringing to the drying pans, in finished product 125 pounds of white lead for every 100 pounds of metallic lead placed in the starting furnace. During every ten hours the plant is in operation 100,000 pounds of metallic lead is melted passing from the bottom of the furnace into a very hot steam filled tank where it becomes a soft blue substance, as thin as air mud and in this state very susceptible to chemical change. From there it goes to large metal, double cylinders where it is kept continuously stirred with water. It

Made into White Lead. To the last cylinder the metallic hydride of lead, as they are called, in the presence of a considerable amount of water are subjected, to a current of carbon dioxide gas, which in less than two hours converts the hydride into white lead, which, containing no impurities, is ready to pump into the drying pans without any washing or separating whatever. The finished product of pure white lead was once having in the drying beds of canvas stretched upon cots of wire with shallow pans beneath to catch the moisture that filters through. The fact of the lead being free from impurities renders the expensive copper drying pans unnecessary. The finished product never grows hard and that part destined for commercial use is passed on to the grinding mill where it is mixed with oil into the paste form used in the can which is bought from the hardware stores.

No Alkali Nor Tan Bark.

In the new process to alkalis nor tan bark are required. Twelve men tend the entire plant for 24 hours run, and everything is done by gravity and machinery. In its soft condition the product is pumped everywhere, and thus a minimum amount of labor is required. Mr. Rowley not only invented the process, which is covered by broad patents, but also the machinery by which the white lead is made. No pots are required, no lumber is necessary.

There is not a particle of the lead lost. Everything drains into cisterns in the basement and as the same water is used over and over again, the slight metallic residue that may go to the bottom is run through the process again and fully utilized.

All of this being under water, said Dr. C. D. Folley, the chemist of the establishment during a trip through the plant yesterday, there is absolutely no danger of lead poisoning. Each stage of the process is under full control, the full chemical increase is obtained and the process produces a uniform article without impurities of any kind. This process requires no acids, tan bark, or pots and takes but two or three days before it goes to the drying where it remains five days, as against from 25 to 125 days by the old Dutch process. Outcomes of the drying which of course is two days, in the Dutch process only double finished lead can be used. In this process any good grade of lead is used. After melting the lead is steam-heated into an impalpable powder, and this atomized lead, as it is now distributed by pumps and gravity.

A Fireproof Building.

The building is of reinforced concrete and steel, three stories in height, light, airy and sanitary and no man engaged in the manufacture has any hard labor or heavy lifting. Thus the Acme saves insurance costs in equipment, in maintenance and in labor and gets 125 pounds of white lead for every 100 pounds of metallic lead put in the furnace from coke. The heat furnishes steam for the atomizing and for the running of the engine. The gas passes through a tower of coke and is treated with chemical preparations so that all sulphur and impurities are removed and the gas passed to the carbonating cylinders absolutely pure.

In all its appointments the plant is modern and up to date and is managed by Rowley, the inventor. Dr. Folley, the chemist of the Acme office, is naturally proud of the achievement and feels that in addition to opening an unlimited field of business they have also given Detroit something worth having.

0007-SWP-037438

0007-SWP-000118345

THIS BEATS THE DUTCH

Old Method of White Lead Making Revolutionized by Detroit Chemist.

Cotl
 Detroit Free Press, May 16, 1908.

So old that it is moss grown, is the saying. "It beats the Dutch," and yet the Acme White Lead & Color Works has actually done this by the perfection of a process invented by W. H. Rowley by which white lead is made a finished product in from seven to eight days including the drying as against 120 to 125 days by the old Dutch process in vogue for hundreds of years.

This meant the erection of a \$100,000 reinforced concrete building as an addition to the plant of the Acme, a separate establishment devoted entirely to this new industry with especially designed machinery and apparatus. The plant is finished and so is the experiment. At the rate of 10,000 tons of the purest of white lead a year is now being turned out, and it is not touched by a human hand from the time the pig of lead is dropped into the furnace on the top floor until the product has, in its various stages of development, dropped to the basement and been pumped again to the second floor, finished.

In the old process in vogue until this was completed, the metallic lead was cast into perforated discs. These discs were packed into earthen pots or retorts, flooded with acetic acid. About eighteen pounds of lead was put into each pot. These pots were arranged in layers piled

Everything drained into channels in the basement and as the same water is used over and over again, the slight metallic residue that may go to the bottom is run through the process again and fully utilized.

"All of this being under water," said Dr. C. D. Holley, the chemist of the establishment during a trip through the plant yesterday, "there is absolutely no danger of lead poisoning. Each stage of the process is under full control, the full chemical increase is obtained and the process produces a uniform article without impurities of any kind. This process requires no acids, tan bark, or parts and takes but two or three days before it goes to the driers where it remains five days, as against from 75 to 120 days by the old Dutch process, exclusive of the drying which of course is five days. In the Dutch process only double refined lead can be used. In this process any good grade of lead is used. After melting, the lead is atomized into an impalpable powder, and this atomized lead, is, as you see, distributed by pumps and gravity."

The building is of reinforced concrete and steel, three stories in height, light, airy and sanitary, and no man engaged in the manufacture has any hard labor or heavy lifting. Thus the Acme saves immense sums in equipments, in maintenance, and in labor and gets 125 pounds of white lead for every 100 pounds of metallic lead put in the furnace.

The carbon dioxide gas is made from coke. The heat furnishes the steam for the atomizing and for the running of the engine. The gas passes through a tower of coke saturated with chemical preparations so that all sulphur and impurities are removed and the gas passes to the carbonating cylinders absolutely pure.

In all its appointments the plant is modern and yet simple and easily managed. Mr. Rowley, the inventor, Dr. Holley, the chemist, and the Acme officials are naturally proud of the achievement and feel that in addition to opening

was also placed around the edge of the pan, which were allowed to remain buried in tan bark for from 75 to 120 days, while chemical action caused by the heat of the fermenting tan bark and the acid slowly converted the metallic lead into the white lead used for paint. The corrosion was never complete and anywhere from 45 to 75 per cent of the metallic lead only was converted into the finished product. Being hard and brittle it was ground and then heated and pumped to the drying pans of copper. It necessitated the employment of forty men for every stack of pots.

It is by force of contrast the full significance of the new or "solid process" is brought home, and it is then realized that the Detroit plant will revolutionize the manufacture of white lead the world over. To Detroit, and to the Acme interests is due the credit of making one of the greatest scientific discoveries of the age practicable.

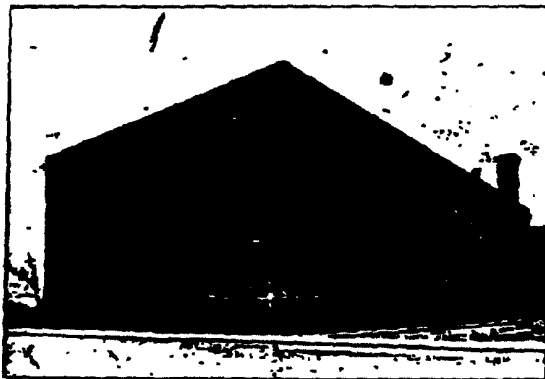
In the new process as operated at the new Acme plant, nothing but steam, water and carbon dioxide gas are used, resulting in bringing to the drying pans, in finished product, 125 pounds of white lead for every 100 pounds of metallic lead placed in the starling furnace. During every ten hours, the plant is in operation 100,000 pounds of metallic lead is melted, passing from the bottom of the furnace into a very hot, steam filled tank, where it becomes a soft blue substance, as thin as thin mud, and in this state very susceptible to chemical change. From there it goes to large metallic duplex cylinders where it is kept continually agitated with water in the presence of air which is forced through the cylinders at low pressure. The product is then an orange or ochre color. This part of the operation is complete in less than two days. The product is then passed through a separating system which removes any slight metallic residue and is then pumped into the carbonating cylinders, somewhat similar to the cylinders already described.

In the last cylinder the basic hydroxides of lead, as they are called, in the presence of a considerable amount of water are subjected to a current of carbon dioxide gas, which in less than two hours converts the hydroxides into white lead, which containing no impurities, is ready to pump into the drying pans without any washing or separating whatever. The finished product of pure white lead was seen laying in the drying beds of canvas stretched upon sets of wires with shallow pans beneath to catch the moisture that filters through. The fact of the lead being free from impurities renders the expensive copper drying pans unnecessary. The finished product never grows hard and that part destined for commercial use is passed on to the grinding mill where it is mixed with oil into the paste form seen in the can when bought from the hardware stores.

In the new process no alkalis nor tan bark are required. Twelve men tend the entire plant for twenty-four hours and everything is done by gravity and machinery. In its soft condition the product is pumped everywhere, and thus a minimum amount of labor is required. Mr. Rowley not only invented the process, which is covered by broad patents but also the machinery by which the white lead is made. No pots are required, no lumber is necessary.

There is not a particle of the lead lost.

New Process of making White Lead works great change in paint industry.



The new building of the Acme White Lead & Color Works in which white lead is made by the "New Solid Process."

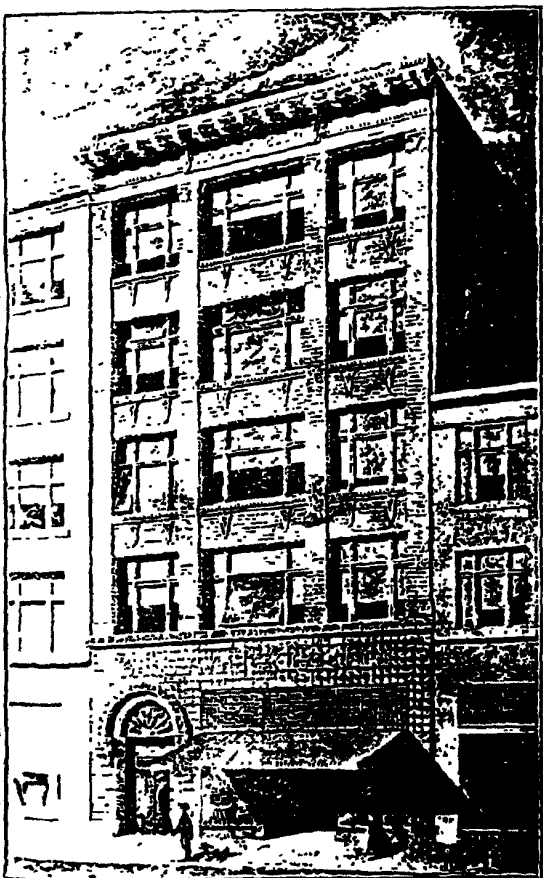
one upon the other with boards between each layer, and as the melting of the metal mines of ground tan bark which an unlimited field of enterprise they have also given Detroit something more than

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0007-SWP-000118346

Pacific Paint, Wall Paper & Picture Frame Trade

Mr. Roy, who has just returned from a fine trip to the West Coast for the New Era Paint & Varnish Co., reports:



Main Store and Office New Era Paint Co., 815 Mission Street
San Francisco, Cal.

H. I. Whittier, who has just returned from a business trip to San Francisco, thinks the Gate City had better wake up if she desires to keep up to the pace of her Southern sister, Los Angeles.

The Los Angeles Varnish Company has moved all its offices up town, to the corner of Fifteenth and Alameda Streets. The Green, Marshall Paint Company, which is part of the same concern has also changed its location to a new place.

The Sunset Paint Company now has a store in the heart of Los Angeles, at 627 S. Main Street. The firm was formerly three miles out of town. This firm has the agency for John Lucas & Company's goods, but will still keep their old factory to supply the trade with their own specialties.

T. E. Stille, manager of the New Era Paint & Varnish Company's big establishment at Twentieth and Minnesota Streets is finishing up the year with a fine record in Acme quality paint and the varnishes of the same line. He is expecting a visit from three of the talented young men from the main office of the Acme White Lead and Color Works of Detroit who will spend some time on the Coast reviewing the work of the various branches and agencies. They are F. B. Whipple, C. W. Colloff and E. R. Hoag. They are enthusiastic over the prospects for trade here, and fully appreciate the situation. In an interview it was stated that their company, which recently increased its capital stock to \$2,000,000.00, is in a good position to manufacture its products in greater quantities. The present capacity is about 15,000 tons of white lead annually. An additional white lead plant was installed a few months ago, which is still being enlarged, although the product has not yet been put on the market. A different process is used and a more uniform quality is produced. By means of the "mild process" the factory can turn out great quantities of finer quality and in less time, it is said, than by the old "Dutch" process. In the new process, metallic lead, air, water and carbon-dioxide gas are the only substances used. Owing to its mildness the manufacturer says this is a very desirable lead for the mixing paints. This is said to be the only paint company in this country which corrodes its own lead for the manufacture of white lead. The Acme Company has also very great facilities for the manufacture of nearly all of the new materials pertaining to the paint and varnish trade.

Pacific Paint, Wall Paper & Picture Frame Trade

Frank B. Whipple, supervisor of branches of the Acme White Lead and Color Works, of Detroit, E. R. Hoag, assistant sales manager and C. W. Colloff, the traveling auditor of the company arrived this week via Puget Sound, on their first tour of the Coast. They will spend more than a month in California figuring up the year's profits of their company's business with its different agents, and planning a thorough advertising campaign for the coming year. They were much impressed with the new San Francisco which has been built up in less than three years.

0007-SWP-037440

1945

-8-

M. VAN LOO
Cont.

#77 - Cont.

Finish Coats

<u>Batch</u>	<u>Material Used</u>	<u>Fungicide</u>	<u>% Used</u>
OJ 235 J	M.R.T. Gloss White	Pyridyl Mercuric Stearate	.04% Hg based on total paint solids.
OJ 236 J	" " "	"	As above, but .02% Hg.
OJ 237 J	" " "	D.D.T.	2% based on weight of total vehicle.
OJ 238 J	" " "	"	2% based on vehicle solids.
OJ 239 J	" " "	Chlorinated bis-phenol.	3% based on weight of total paint.
OJ 240 J	" " "	Sodium copper phosphate.	7.7% CuO based on vehicle solids.
OJ 241 J	" " "	Di-Methyl Phthalate	1% Di-Methyl Phthalate based on veh. solids.
OJ 242 J	CH 5923 - C 455	2052 dry - Tetrachlorophenol	3% based on total paint.
OJ 243 J	CH 5918 - C 485	10% Phenyl Mercuric Naphthenate (Nuocide 321)	.02% Hg based on paint solids.
OJ 244 J	CH 5919 - C 475	"	.04% Hg based on paint solids.
OJ 245 J	M.R.T. Gloss White	"Milban" (zinc-dimethyl-dithiocarbamate)	0.5% based on vehicle solids.
OJ 254 J	" " "	Benzene Hexachloride	2% based on vehicle solids.

#149 - Examination of White Lead

A meeting was attended at the offices of the Lead Industries Association in New York to discuss the functions of white lead in paint. Technical representatives will continue the discussion in subsequent meetings.

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0007-SWP-000118348

N. VAN LOO
Cont.

#177 - Pigment Studies

A new sample of 414 Leaded Zinc was received from Coffeyville, identified as Sample LZ 212. This material had been passed through the Mikrontomizer mill, and texture was acceptable. While the color was not suitable for SWP Gloss White, it may be used in Undercoater and SWP tints.

#160 - Painting of Bricks

Stucco panels were prepared for exposure of variations of brick and stucco paints including a survey of such formulations before and after war-time restrictions, also a cross comparison of 02978 Brick and Stucco Reducer variations. The reformulation of the white and ivory include the introduction of pigmentations patterned after SWP mutations, and variations in p.v.c.'s by the introduction of one to two quarts of 02978 in the top coat. The 02978 formulations included five types:

- (1) 100% 2600 phenolic 33 gallon chinawood oil-linseed varnish-CVR 128.
- (2) Modified phenolic. As (1) but 1970 resin for 2600 resin, CVR 129.
- (3) As 02978 formula of 12-1-43 using standard Dehydrol type (3948)E, CVR 157..
- (4) Alkyd type (4103).
- (5) Styrene oil type; Dow Resin X-556.

#162 - Studies in Flat Wall Paint Formulation

Flat Wall Paints

A sample of Adco Multi-Base vehicle was obtained from the Adco Chemical Company for test in flat wall paint formulations. This vehicle was tested in formulas LV-917 and LV-918 submitted by the above company.

The Adco flats had good brushing and flow characteristics but were poor in washability when applied over glue size. Uniformity of tint and sheen was not as good as shown by One Coat Flat #10.

Several odor tests were conducted on samples of deodorized kerosene and mineral spirits obtained from the Shell Oil Company, in Flat-Tone White. Shell supplied a sample of their 8233 Dispersol and 8230 Regular Base No. 1, both in the kerosene range, and a sample of deodorized mineral spirits coded 8296.

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M. VAN LOO
Cont.

#162 - Cont.

Based on our laboratory tests, the deodorized thinners were considerably better than regular (3020) and (348). However, due to their lower Kauri Butanol values, rather high viscosities were obtained in the finished paint. Additional material will be supplied by Shell for further tests.

Semi-Lustre

Work has been under way during the month to determine the cause of the sub-standard sheen obtained on Semi-Lustre based on (3848)E, particularly when (3020) is used in the thinner portion. As a start, (3020) was distilled into four fractions and each introduced into the Semi-Lustre formula for the total volatile content. The fractions in the following ranges were found to be very constant in kauri-butanol values, as shown below:

<u>Distillation Range of Fractions</u>	<u>Kauri-Butanol Value</u>
190° - 205° C.	46.8
205 - 220	46.7
220 - 235	46.4
235 - 250	46.9
Unfractionated (3020)	46.9
" (348)	37.6

Brush-outs on the Semi-Lustres made from these fractions ranged in sheen depending upon the fraction used. The lower boiling fraction produced the highest sheen and the highest boiling fraction the lowest sheen. Thus it appears that there is no direct relationship between kauri-butanol value and sheen characteristics, of Semi-Lustre made with (3848)E, as indicated from the fractionation of (3020). However, further work will be done to determine whether the flattening in the presence of slow evaporating solvents is due to increasing insolubility of the vehicle solids as initial oxidation occurs in the drying of the film.

During the month the Varnish Research Division submitted two tall oil-linseed varnishes, CVR 311 and CVR 316 for evaluation in Semi-Lustre, Interior Gloss, Enameloid and Porch and Floor Enamels. CVR 311 is identical to CVR 316 except for solids. Most of our tests, therefore, were confined to CVR 316 based on 60% solids.

The characteristics on CVR 316 are as follows:

0007-SWP-037443

M. VAN LOO
Cont.

#162 - Cont.

CVR-316

Body - U
Color - 11-12
A. V. - 8.2 on base
N. V. - 60%
R. M. cost at 50% N. V. - \$57.30
Oil length - 20 gallons

Semi-Lustre made with CVR 316 was too low in sheen, but work will be continued on this formula.

Interior Gloss Enamels were made on the Rex 26451 formula dated 1-14-43 with CVR 316 as a replacement for (3848)E. The special Interior Gloss was slightly slower in set-to-touch than (3848)E, but was equal in hardness after 24 hours' drying. The slightly slower drying characteristics of CVR 316 were also evident in Enameloid and Porch and Floor Enamel where this varnish was used as a replacement for (3109) or AV 97. Draw-down films on glass are being checked for embrittlement and will be reported on after aging for a few weeks.

The Varnish Research Division prepared two tall oil alkyds similar in phthalic anhydride content and solids to (3119) and (4100). These were made up into a Rex 710 formula substituting the tall oil varnishes for the regular vehicles. Paint characteristics were as follows:

	RB 1228 (5109) - (4100)	RB 1229 CVR 292 - CVR 305
Viscosity, #3 orifice	72"	58"
Color	Std.	Very yellow
Drying:		
Initial	Std.	Very slow to tack-free*
Over-night	Hard and tough	Hard and tough
At 2 weeks	Hard and tough	Hard; no brittleness.

*After storage for 2 weeks there seems to be some loss of drier.
This will have to be rechecked.

Samples of Strosen-Reuter's Octoate driers were compared with regular naphthenate driers on an equal metal basis in Flat-Tone, Enameloid and SWP Gloss White. In general, the speed of drying was very close, both in set-to-touch and through dry, to that of the naphthenate driers. The Enameloid made with the regular naphthenate driers seemed a little harder on over night drying than that made with the Octoate driers.

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M. VAN LOO
Cont.

#162 - Cont.

The set-to-touch times on comparative samples were as follows:

				<u>Set-to-touch</u>	
				<u>Naphtenate</u>	<u>Octoate</u>
1.	Flat-Tone White,	formula 8-28-45		25 min.	-
2.	"	"	"	-	25 min.
3.	Enameloid White,	" 9-19-45		95 min.	-
4.	"	"	"	-	105 min.
5.	SWP Gloss White,	" 9-14-45		5 hr. 15 min. (using Mn. linoleate)	-
6.	"	"	"	-	5 hr. 5 min.

The house paints will be checked for granulation and all samples will be checked for drying at a later date.

Based on our tests to date, there seems to be no particular advantage in Octoate driers over regular naphtenates with respect to drying or odor. However, we should like to point out that our findings are still preliminary and need not necessarily apply to other types of formulations.

Special Studies

Gloss Measurement with the Hunter Multipurpose Reflectometer

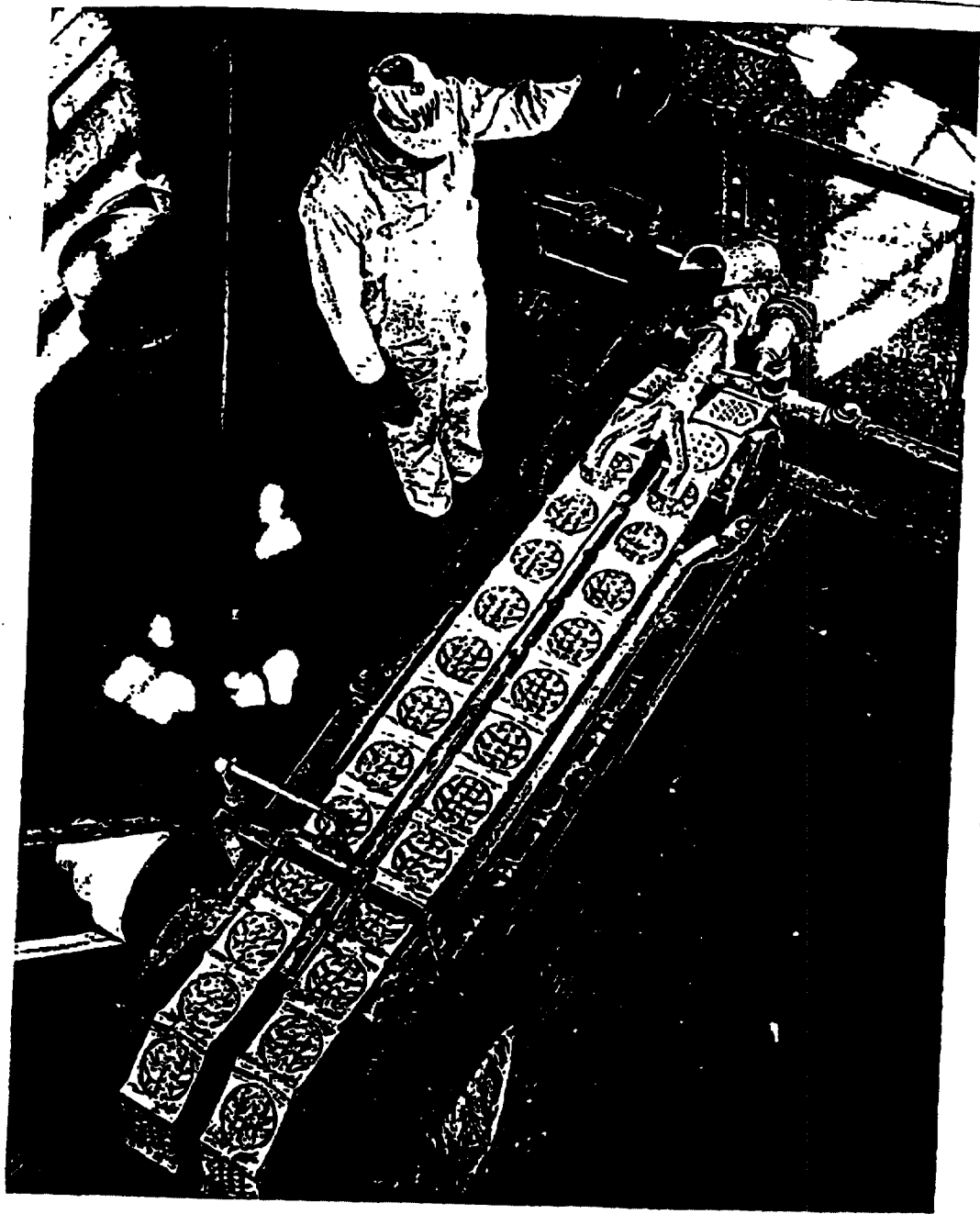
We reported a discrepancy between gloss readings obtained using our Hunter Reflectometer and other instruments, to the Henry A. Gardner Laboratory, as follows:

		<u>Naval Aircraft Experimental</u>			
<u>Panel</u>	<u>Station</u>	<u>Bur. of Stds.</u>	<u>Photo-volt</u>	<u>Hunter #822</u>	
A	74.5	71	86	73	
B	48.6	41	58	57	
C	54.2	53	48 +	70	

The following reply was received from Mr. Paul N. Gardner, Mgr.

"We have discussed your letter of September 15th with Mr. Hunter. He said that your results are what he would expect in view of the fact that the field angle of the multipurpose reflectometer is somewhat too large for 60° gloss measurements according to Proc. A of ASTM Tent. Method D523-41T. Because of other features of the instrument, this field angle cannot be made smaller.

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1946

-19-

#12 - Exterior Primers

Panels 11005-11018 C were prepared for exposure at Chicago testing various primers to be used on fabricated Dural aluminum beveled siding. This supplements exposures being made by Cleveland. The primers used in this series include:

Rex 70110 - ANTP656-A-1 Zinc Chromate Primer
H 7645 - 52-P-18 Bureau of Ships Zinc Chromate Primer
Rex 16174 - Kromik Primer
Rex 27507 - Red Lead Primer
Rex 49 - Red Metal Primer
Rex 450 - SWP Undercoater

Half of the aluminum panels were solvent spray cleaned and treated with phosphoric acid, the other half only solvent spray cleaned. The special primers were followed by a coat of SWP 450 Undercoater and a coat of Gloss White, making three coats in all. One panel has only a two coat system of Rex 450 and Rex 471.

#185 - Pretreatment of Metal Surfaces for Painting

See Project No. 12.

#148 - Examination of White Lead

Preparations were made for a meeting of the L.I.A. White Lead Research Committee in New York on November 18.

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No work was done on the following projects:

#180 - Painting of Bricks

#178 - Studies of Dark Colored House Paints

#112 - Fire Retardant Paints

0007-SWP-037449

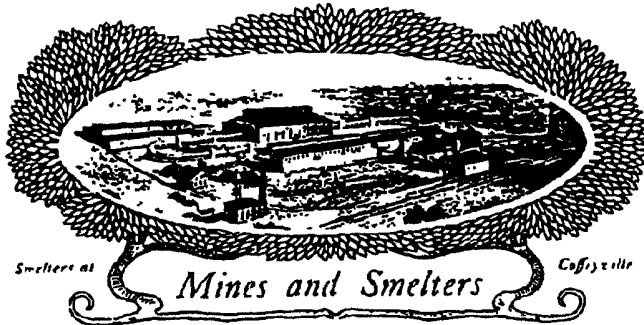
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Smelters at

Cottleville

Mines and Smelters

THE latest additions to our already immense paint making facilities are the new zinc oxide smelters at Cottleville, Kans., and at Ioplin Mo., with the famous Graphic and Ida Hill groups of mines in Magdalena, N. M. While the mines and smelter at Ioplin should not be included in the facilities of the past year, yet the improvements and progress made at Graphic and Ida Hill Groups of Mines, both plants, and especially at the mines, are of great importance. This year, entitle them to special mention in connection with the strides which have been made towards our almost complete control of the raw materials which enter into the paint



Graphic and Ida Hill Groups of Mines
 Magdalena, N. M.
 Where Our Lead and Zinc are Mined

products manufactured by The S. W. Co. Our policy to control all raw materials from their very source to the finished product we believe is thoroughly understood by those co-operating with us in the marketing of the goods and we will not take space in this article to comment on it.

As zinc oxide, or zinc white, is one of the essential ingredients now used in many of our paints, including S. W. P., the production of such is of great importance to our business and knowing this some time back, long and careful search warranted us in purchasing the Graphic and Ida Hill Groups of



Oxide Roasting Furnaces at Ioplin, Mo., Cottleville, During Construction, Now Completed

JULY 1906

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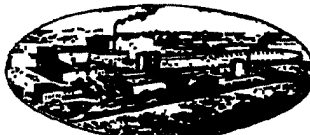
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"M" Building, Bag House, Coffeyville; Now Completed.

mines some two years ago. These groups of mines are situated on the west slope of the Magdalena range of mountains at Magdalena, N. M.

The entrance of the tunnels to the mines is over 8000 feet above the sea level. The group consists of about 21 claims, making a compact body of some 223 acres of ground. Adjoining the mines we have 640 acres of land on which is located a complete silver lead smelting plant of 100 tons daily capacity, all of which is on our own spur track of the Santa Fe R. R. Also on this ground is found very comfortable homes for manager



Smelter at Joplin, Mo.

and superintendent, with other houses for employees scattered about in the locality, and it is reported that there are few mining camps in this country where they are so conveniently situated for receiving supplies and shipping products, together with climatic conditions so favorable that it is possible to prosecute work to the best advantage all the year round. At the present time we employ about 75 miners, but with the improvements now practically completed we expect to double this force within a very short time.

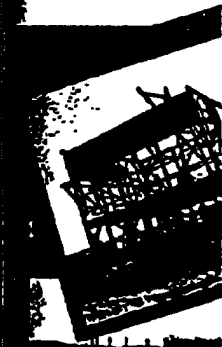
Eleven months ago we commenced



"N" Building, Store House, Coffeyville; Completed

new development work in the construction of a most up-to-date and scientific procurable, which is now completed and enables the mines to a very capacity than ever before. Strictly business policy while foreign to mine work has produced great their production of lead development for lead mines continued and our efforts the purpose of development which the mines at the

The metal contents of our purchase had been turned into zinc spelter, but



"E" Bldg., Sampling Plant. The Beginning of Build. Now Finished. Building the Beehive Flue. General View of "E" and

JULY 1906

0007-SWP-037453

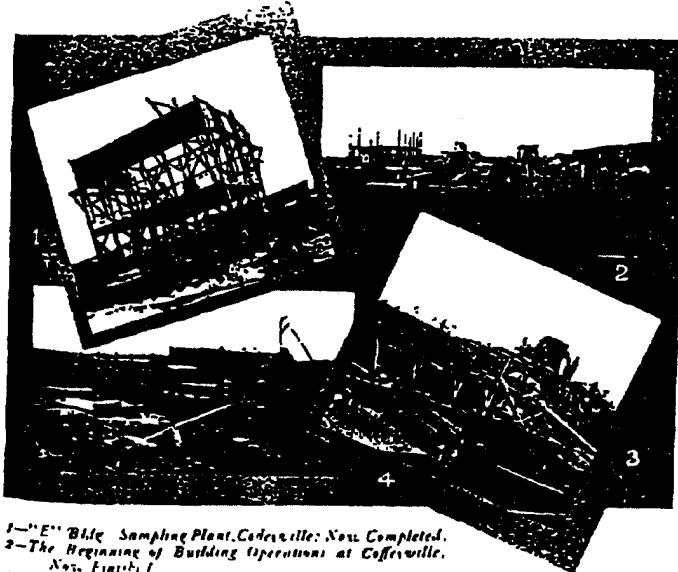
new developments in the industry by the most modern methods of production and distribution. It was an inducement for us to hurry through to completion such plants as would take care of our immense wants by the different factories throughout this and foreign countries, and to that end we have been bending every effort.

Our new smelter at Coffeyville is located on a 30 acre tract of land and by description the buildings cover 15 acres. This smelter just recently went into blast and is being operated with that care and system which is employed in all other plants of the Company and has enabled us to produce that uniform and high grade product of which we are so proud.

The metal contents of this ore prior to our purchase had been manufactured into zinc spelter but finding it

to carry with such properties to make it an exceptional ore for the production of zinc oxide. It was an inducement for us to hurry through to completion such plants as would take care of our immense wants by the different factories throughout this and foreign countries, and to that end we have been bending every effort.

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1—"E" Bldg. Sampling Plant, Coffeyville; Now Completed.
2—The Beginning of Building Operations at Coffeyville.
3—Building the Brick and Plaster Works, Coffeyville; Now Completed.
4—General View of "E" and "F" Bldgs. at Coffeyville; Now Completed.

JULY 1906

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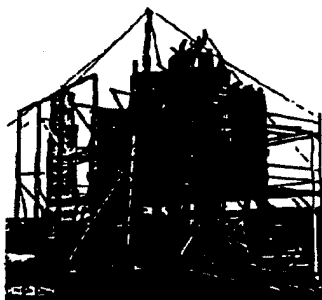
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THE S. W. P.

For the balance of the property—15 acres—we are preparing plans and hope to have the contracts let and buildings under way in a very short time, which will then enable us to add to our many great things the *greatest and largest zinc oxide smelter in the world*. The new Coffeyville smelter is located in the natural gas belt of Kansas, enabling us to operate at a very nominal cost when compared with other smelters that are forced to use coal. The plant consists of twelve buildings, including the following:

"A", office, 30x40 ft.; "B", laboratory, 40x50 ft.; "C", McDougall ore roasting furnaces, 40x64 ft.; "D", calcine shed, 52x85 ft.; "E", crushing and sampling plant, 34x35 ft.; "F", smelting furnaces, 50x200 ft.; "G", power house, 50x80 ft.; "G(b)", machine shop, 20x40 ft.; "H", coal crusher, 20x40 ft.; "L", cooperage, 30x40 ft.; "M", bag house, 95x145 ft.; "N", store house, 120x200 ft.; water tank, and beehive flue and stack. The flue, for carrying off fumes, is 150 ft. long, 12 ft. high and 8 ft. across; the stack is 8 ft. in



"C"—McDougall Furnace Bldg., Coffeyville; New Completed.



diameter inside and 200 ft. high. The pipe line into which the fumes from the Oxide furnaces pass, are cooled, and so form oxide—later to be drawn out by air suction—is 700 ft. long and 8 ft. in diameter.

The plant we believe to be the most perfect in all its details of anything in this or any other country from a scientific and engineering standpoint

and all of which has been arranged for and executed by the different specialists connected with the company and now under the management of Mr. Gordon, formerly manager of the plant at Joplin, Mo. We employ at this plant some 75 people which will increase to a large number as soon as further improvements are made.

The plant at Joplin we purchased about the same time as the mines, but many improvements and additions since buying have been made. At this smelter we employ from 50 to 60 people. This plant is under the supervision of Mr. H. E. Galloway, a young man who has been successful with this company and has grown up with it from a boy.

Growth of S-I

THIS account of our progress by no means complete, but we will make mention of

offices and warehouses our growth has made necessary parts of the coun- Trade management of business in- time the plant at Joplin, Mo. We employ at this plant some 75 people which will increase to a large number as soon as further improvements are made.

Office and Warehouse



Building

JULY 1906

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