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FROM: August, '35 issue of FORTUNE magazine.

18,500,000 Gallons Of Paint

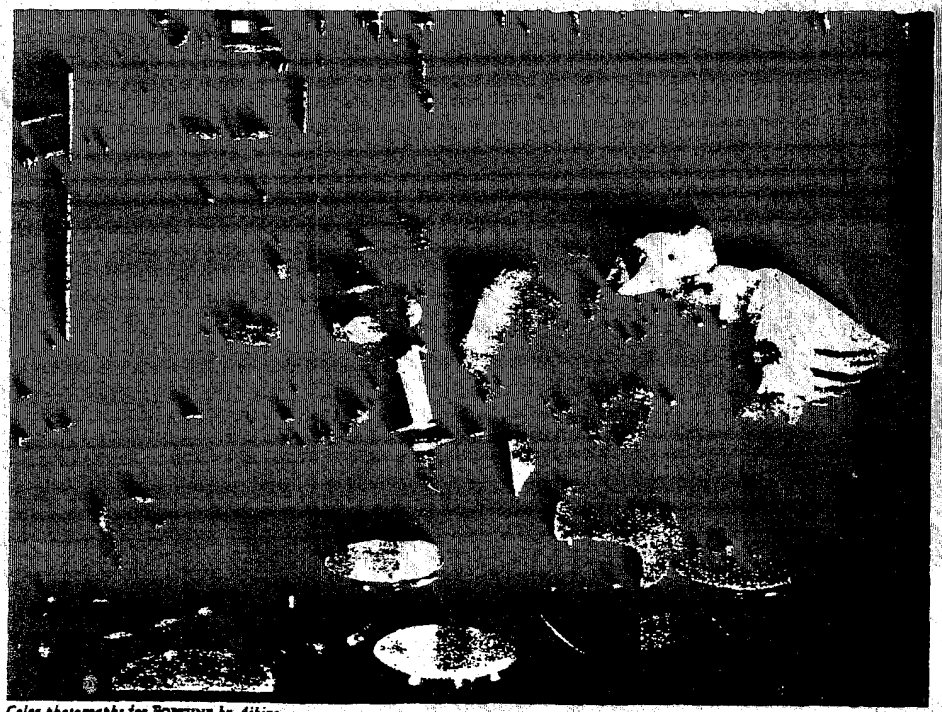
. . . last year came from the factories of the Sherwin-Williams Co., brought it a gross of $56,000,000. For in good times you paint; in depression, you repaint.

THERE was once a time when paint was just paint—pigments ground fine and suspended in linseed oil, with a little turpentine as a thinner, and a chemical drier. In those days the Sherwin-Williams Co. was the undisputed leader of the paint business. Then, in the early 1920's, a technological revolution burst upon the paint business. It caught the Sherwin-Williams Co. off guard and fast asleep. And where is Sherwin-Williams today? It is still the undisputed leader of the paint business. With just about 1,899 companies competing against it as hard as they know how, Sherwin-Williams sells 16 per cent of all the paint that is sold in the U.S. And no longer merely paint, but all the host of those new "industrial finishes" which the technological revolution started while Sherwin-Williams was dozing.

The red circle in the green field that distinguishes billions of packages of Lucky Strike cigarettes is executed in colors made by the Sherwin-Williams Co. You will find other Sherwin-Williams colors on thousands of signboards advertising Coca-Cola, Shell gasoline, Maxwell House coffee, Goodyear tires, and Sunkist oranges. Sherwin-Williams supplies the glossy yellow finish on the tubes of Ipana toothpaste, and it furnishes the paint for the Brooklyn Bridge and the streetcars of Cleveland. Sherwin-Williams finishes are on the Philco radio cabinets, and the New Haven Railroad's streamline Comet, and the Ivers & Pond pianos; Sherwin-Williams lacquer is the bright skin on Packard automobiles. This paint company, which was once concerned only with making paint, is now concerned with making every kind of protective and decorative finish that a supertechnical era has been able to devise. And with making every kind of color in an increasingly color-conscious civilization.

The biggest single customer of the paint industry is not the building trades, even in good times—it is the automobile industry. The second biggest is the railroads. The building trades come third. The Sherwin-Williams laboratories have formulas for use on 40,000 specific industrial products. On the inside of cans Sherwin-Williams finishes prevent fruit and vegetables from getting a metallic taste. Inside buildings, they increase heat radiation—a light-enameled radiator is about 15 to 20 per cent more efficient than one finished with bronze or dark shades. They prevent evaporation in oil and gasoline storage tanks—a light-painted tank loses about a third less in this way than a dark tank. They help surgeons who have discovered that tinted operating rooms are more restful to work in than dazzling white rooms, and they stop, by color and poisoning, the growth of sea life on the bottoms of ships moving in tropical waters. They mark sheep on the range. And Sherwin-Williams pigments are sold to manufacturers of all kinds of colored products from printing inks to rubber bathing suits. For convenience's sake, we shall have to use "paint industry" and "paint company" in talking about Sherwin-Williams. But, as we have hinted, they are really very inadequate terms to describe the business in which Sherwin-Williams and similar companies are engaged.

The Sherwin-Williams trademark is not notable for its modesty. It shows a can of bright crimson paint spilling generously over the terrestrial globe, and the slogan that accompanies it avers that "Sherwin-Williams Paints Cover the Earth." They don't. But at least they come closer to covering the U.S. than any other, for against the Sherwin-Williams output of 16 per cent of all U.S. paint, its nearest competitor—Pittsburgh Plate Glass—makes an estimated 10 per cent. As a matter of fact, a good case can be made to prove that Sherwin-Williams is just about the paint maker's idea of what a perfect paint company should be, and that the paint business, as Sherwin-Williams conducts it, is just about any businessman's idea of a big, sound, depressionproof enterprise. As for its size, considered as the annual U.S. paint bill is roughly [illegible] 000,000. Paint is one of those commodities that are so common as to be almost cosmic; it is not only the great embellisher but also a prime protector of civilization. Remember also that the paint market is theoretically unlimited. Any given day—and few paint salesmen are ever allowed to forget the fact—it is theoretically conceivable that every property holder in the



Color photographs for FORTUNE *by Aikins*

HOW PAINT AND ENAMEL ARE MADE

The crux of the process is the "mill" shown above. It consists of a heavy grindstone revolving beneath another fixed stone. The paint paste is finely ground between them and serves at the same time as a lubricant for the stones. The whole process, of which this is a part, is described on the opposite page.

PAINT BATCHES ARE TESTED FOR COLOR AGAINST STANDARD SAMPLES

In making paint, the dry pigments (coloring matter) and oils are combined to form a thick paste in vats on an upper floor of the paint factory. In these vats the paste is stirred by a mechanical arm. Then it oozes down a trough into mills on the floor below (you can see the trough at the top of the picture on the opposite page). As the paste is ground between the stones of the mill, it is urged by centrifugal force toward the edge of the revolving stone, where it is scraped off by a metal arm and oozes down into tanks on the floor below *that*. Here more oils are added and tinting colors as they are required, and the mixture is churned until it has the proper paint consistency. Then samples are drawn off and sent to the testing rooms, as shown above.

nation might be persuaded to repaint his property. As for the soundness of the business, consider the following history.

THIS neoperfect Sherwin-Williams company (an explanation of the *neo* will shortly appear) went into the depression after a record year, 1929, in which gross sales were $76,000,000 and net income was $6,000,000 and the company earned $39.13 on its preferred and $8.26 on its common. And here is what has happened since.

	Gross sales	*Net income*	Earned per share Preferred	Common
1930	$75,000,000	$3,600,000	$23.86	$4.14
1931	64,000,000	3,200,000	19.62	3.62
1932	47,000,000	703,000	4.52	0.44*
1933	47,700,000	3,200,000	20.78	3.54
1934	55,800,000	4,300,000	28.44	5.31

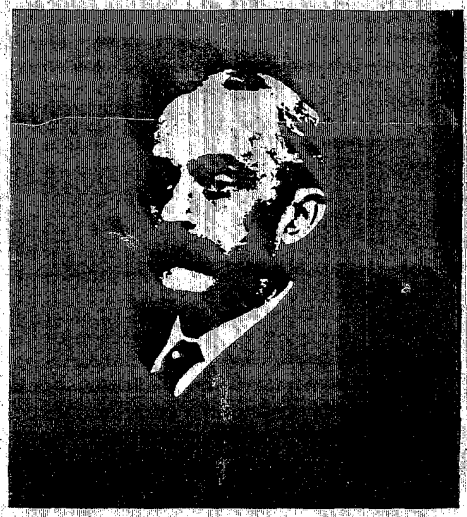
**Deficit.*

Through the depression the company has paid its regular $6 preferred dividend and common dividends varying between $4.50 and $1. The 1932 slump in net earnings was due to the fact that prices and volume fell very rapidly before the company could cut expenses. In 1933 expenses were cut and, as you can see, the new prices of the New Deal helped to bring the net income up again. Sherwin-Williams shows an extremely strong position with current assets of $28,000,000 (of which $8,700,000 are in cash and U.S. Government securities) as against current liabilities of only $4,000,000.

The first reason for Sherwin-Williams's neoperfection is its size. Its annual gross is around $60,000,000. Yet here is no monopoly. Sherwin-Williams achieves this gross in the face of competition from Du Pont (*Duco*, etc.), the Pittsburgh Plate Glass Co. (*Sun-Proof*, etc.), Devoe & Raynolds, the Glidden Co., and other high-grade paint companies in every section of the country. The selling of paint is, and always has been, a competitive scramble.

The more significant aspect of Sherwin-Williams's size is its diversification. This is geographical as well as technical, and it is unique. No other company sells so many different kinds of paints and finishes in so many different places. Sherwin-Williams is ready for any kind of business, anywhere in the U.S.—despite its temporary doze in the early 1920's. It has a complete line of products not only in the old established trade-paint field but also in the new and fast burgeoning field of industrial finishes. By trade paint we mean the vast familiar field of outdoor and indoor house paints, varnishes, and enamels. By industrial finishes we mean the new quick-drying lacquers such as those used on automobiles, the varnishes and enamels applied to radio cabinets and refrigerators and a host of other industrial products, the dyes and pigments used in industrial coloring. The next biggest companies after Sherwin-Williams, Pittsburgh Plate and Du Pont, do the large

THE LATE HENRY ALDEN SHERWIN



THE LATE EDWIN PORTER WILLIAMS

majority of their business in the industrial field. The depression record of Sherwin-Williams is partly due to its diversity. Although painting falls off in a depression, repainting increases. It is estimated that since 1929 about 90 per cent of the paint sold has been for repainting, whereas during the boom not more than 75 per cent was so used. This would mean that the *amount* of repainting has been greater than the *amount* during boom years. The haggard country can at least rouge itself—which is why paint executives often congratulate themselves on being in a good business.

During fiscal 1934 Sherwin-Williams and its five main subsidiaries produced a total of 125,000 tons—18,500,000 gallons—of paints and varnishes and lacquers, 80,000 tons of pigments and dry colors and linseed oil and other chemicals, 20,000 tons of insecticides, and 5,500 tons of tin cans—which is 22,000,000 tin cans. Broadly speaking, about a third of this production goes into industrial uses and two-thirds into trade uses. Sherwin-Williams's central plant is smack in the middle of the industrial soot of Cleveland, on the snaking Cuyahoga River and under the Van Sweringens' new Union Terminal Tower. In the adjoining Midland Building, Sherwin-Williams President George A. Martin and his executives have their offices and they often gaze down sentimentally from "the big house on the hill" (company term) at the grimy paint factories on the riverbank. There is an even bigger plant in Chicago—the biggest paint plant in the world—and Sherwin-Williams and subsidiaries have a dozen smaller plants from Newark to Oakland, California, plus foreign plants in Montreal, Winnipeg, Havana, and Cowley, England. There is a Sherwin-Williams warehouse in almost every U.S. city of more than 100,000 people.

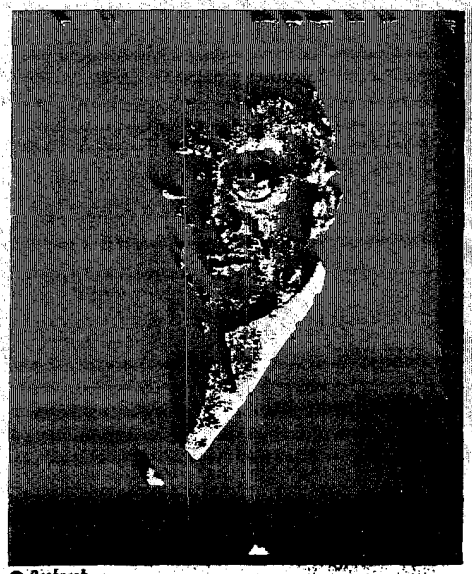
SHERWIN-WILLIAMS has been able to follow out its policy of diversity because it is rich, and its wealth is largely a tribute to its reputation in the industry—which is another reason for Sherwin-Williams's neoperfection. Sherwin-Williams has the best of reputations today and, as you will constantly hear if you hang around the company, it has never had to live down any other kind of fame. Which brings us to the late Mr. Sherwin and the late Mr. Williams.

Henry Alden Sherwin was born in Baltimore, Vermont, in 1842. When he was eighteen he went out to Cleveland and began clerking in a drygoods store. In 1866 he got in on a retail paint store, and in 1870 he took over the store with a partner named Edward Porter Williams. Mr. Williams was a Clevelander who had gone to Ohio's Western Reserve College (now University), had fought in the Civil War, and had had some luck with a small glass business. Messrs. Sherwin and Williams intended to become paint makers as well as sellers. Mr. Williams was willing to put in most of the $2,000 with which they set up in business. He was a hearty, jovial man who felt sure that he could sell paint, particularly the good quality paint that he was positive the scrupulous Vermonter Mr. Sherwin could and would make. And there was plenty of use for good quality paint—very few people had bothered to make it. They took in a bookkeeper named Sereno Peck Fenn from Ohio and three years later, in 1873, they set up a small paint factory in a two-story, brick, cooperage shop on the Cuyahoga River, exactly where the Sherwin-Williams plant is today. Their first year's output was 225 tons of paint mixings.

When Henry Alden Sherwin said that "nothing but the best paint that can be made is good enough for this company" he was not making a conventional sales talk. He was not the kind of man to deal in guff, even the ritual guff of the business world. He was a quiet, meticulous gentleman who liked to collect books and go fishing with Mr. Williams, and his New England conscience was evident in everything about him including his paint. The success of Sherwin-Williams has been the gradual expansion of affable, plugging salesmanship à la Edward Porter Williams and of supercautious financial practice à la Sereno Peck Fenn—all this being based on conscientious paint à la Henry Alden Sherwin.

Honesty was a good policy when Mr. Sherwin began to make paint and shortly afterward it became an even better policy. If you know your paint primer, you know that, whereas a few painters still mix some of their own paint, most of the paint that is sold today is prepared paint—heavy, ready-mixed liquid in a can, ready for the paintbrush. But when Mr. Sherwin began in the late sixties there was no such thing as good prepared paint—that is, no one had developed a satisfactory *suspension* of pigments in liquids that would stay *suspended* in a can. Painters bought the mixings and made their own suspension by mixing them (or having the store mix them) and did their painting before the mixture had time to settle. The paint business of Reconstruction days was not only piddling by present standards (perhaps a gross of $20,000,000 as against 1934's gross of $350,000,000) but it was also rudimentary, with no general standards of raw materials and all the hazards and chicanery of mixing in the hands of innumerable jerkwater paint stores and individual painters. So what Mr. Sherwin did first was to sell honest mixings. His lead pigments weren't weighted with crushed stone. His oils were good oils, not diluted.

But prepared paint was the grail that was gleaming before the paint business in those years, and it was in this chase that Mr. Sherwin's honesty became an even better policy. Back in 1867 his friend D. R. Averill had patented the first poor approximation of a good prepared paint. He showed Mr. Sherwin his paint and his formula and Mr. Sherwin saw that both were bad. The quick-profit boys began cashing in on Averill type paints, and in so doing they gave prepared



© *Bachrach*

PRESIDENT GEORGE A. MARTIN

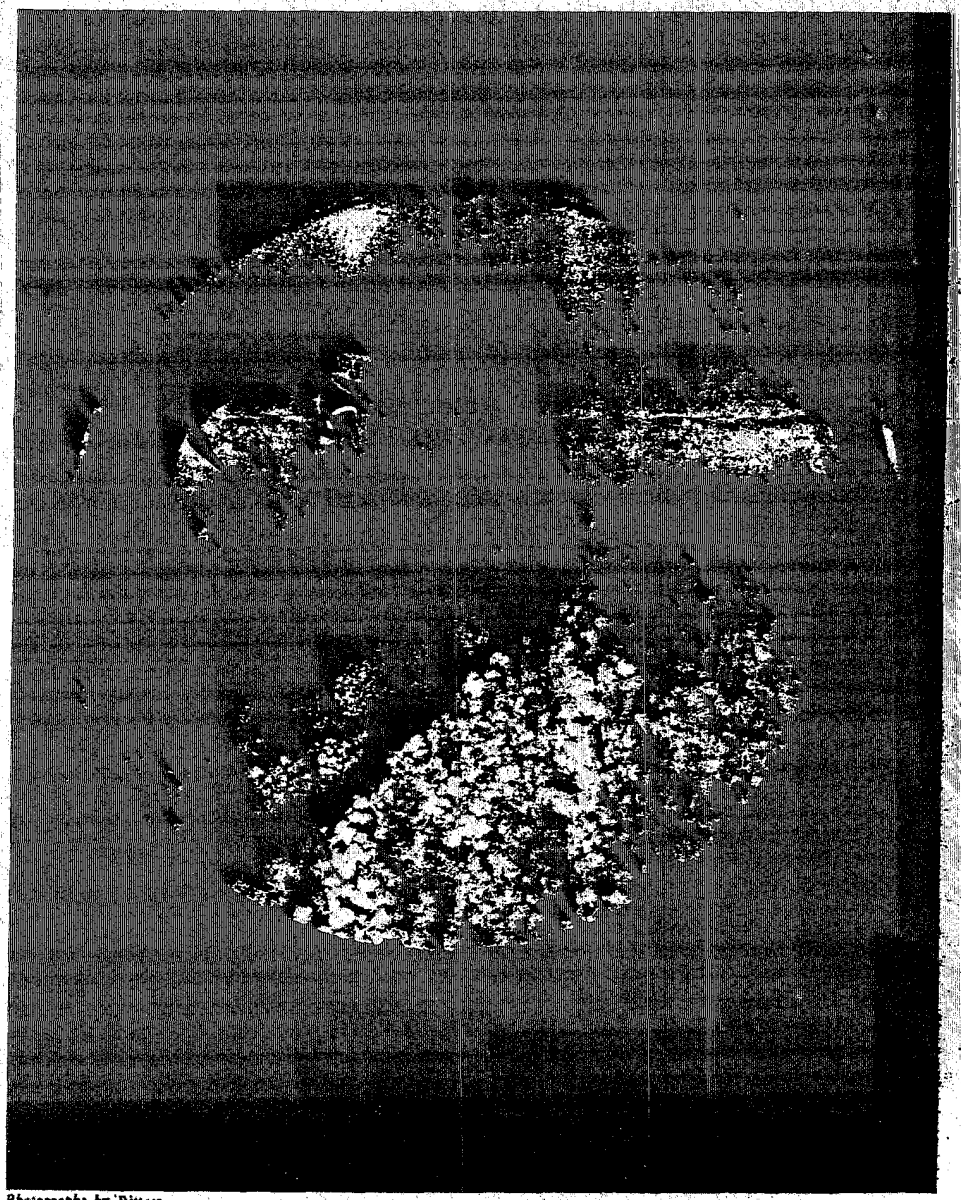
paint, or "patent paint" as it was called at that time, a nationwide black eye. Meanwhile Mr. Sherwin researched. One of the problems was to grind good-bodied pigments finely enough and evenly enough so that they would suspend. In 1876 Mr. Sherwin developed a new grinding machine, substantially the same as those still in use which are described in the captions on pages 70 and 71. And in 1880, with the help of this grinding mill, the ten-year-old company produced a prepared paint, which was perhaps the first high-grade prepared paint in existence.

In 1881 Sherwin-Williams held its first convention. This original caucus consisted of Messrs. Sherwin, Williams, Fenn, three other executives, and the company's total traveling sales force of eight men. The company decided to wind up its retail business and turn its whole effort to the wholesale marketing of its paint mixings and its canned, prepared paint. In 1884 Sherwin-Williams hired one of the first chemists in an industry that made its paint by rule of thumb and to hell with quality. Also in 1884 the company was incorporated with 3,000 shares of $100 par common stock closely held by the executives. In its first year of incorporation the company sold about $539,000 worth of paint and distributed a net profit of about $36,000. And then the process of expansion really got under way.

THIS was fifty years ago. During the next thirty years, up until the World War, the company's development was largely physical. The company soon added a line of conventional varnishes and enamels. Varnish is a cooked mixture of resins (the body of the varnish film) and oils without pigment. When you add pigment to varnish you get enamel. But during these years there were no major changes in chemistry or manufacture. In 1888 Sherwin-Williams moved into Chicago with the purchase of the Calumet Paint Co., which made most of the paint for Pullman. This Calumet plant was the forerunner of Sherwin-Williams's largest unit which today turns out about a third of all Sherwin-Williams products. To manage the Calumet plant, Mr. Sherwin picked the young Chicago paint maker, George A. Martin, who is today President of Sherwin-Williams. In 1890 the company hired its first publicity manager, George Ford, and began general advertising. One day Mr. Ford picked up a pencil and drew a picture of the world being inundated by a can of paint on the cosmic scale. He wrote the slogan "Sherwin-Williams Paints Cover the Earth" and then he put the scheme in his desk drawer as being an extravagant conceit. But in 1895 he took it out again and it was adopted as the official trademark, although at that time Sherwin-Williams was just beginning to think about foreign business.

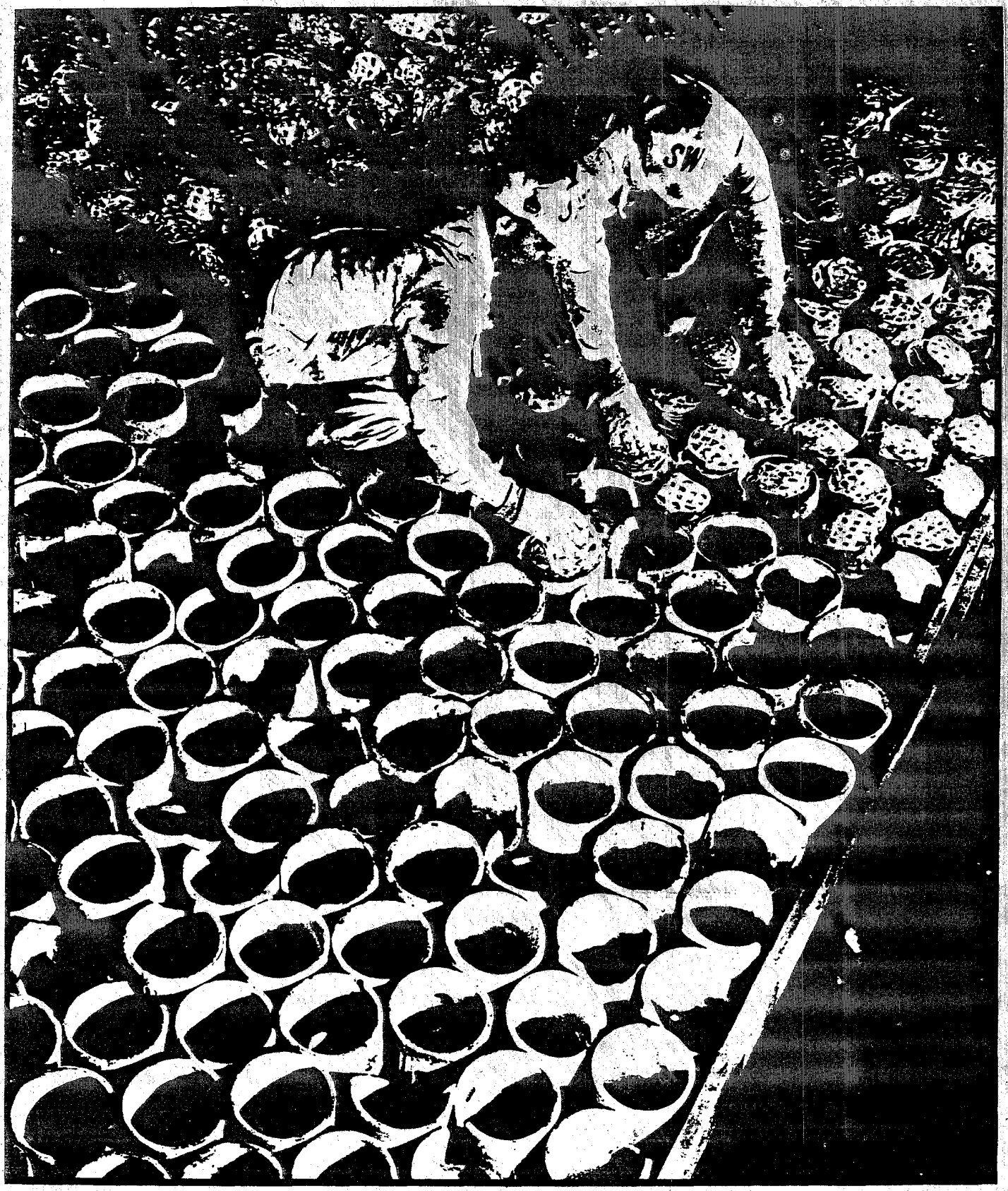
But the phrase "Cover the Earth" has never been more than a piece of Sherwin-Williams bravura. It is true that Sherwin-Williams conducts a steady export business mainly from Newark in the East and Oakland, California, in the West, and that Sherwin-Williams products dribble all around the earth reaching such remote parts as Aruba, Cyprus, Java, Macassar, and Sumatra. But Sherwin-Williams's foreign business has run up against such obstacles as: "buy at home" movements, the insurance problem in shipping inflammable articles (and many docks forbid paint unloadings), the reputation of English varnishes in the West and the prices of all Japanese paint products in the East, the problem of national import quotas (Germany and Denmark admit paint only on a barter basis, for instance, and Italy can import only 25 per cent of the paint she uses). Faced with these difficulties, Sherwin-Williams has made no very vigorous, driving attempt to build up its foreign business. Out of last year's gross of $56,000,000 only about $1,000,000 came from export sales.

BACK in the nineties the addition of a line of varnishes and enamels contributed toward a distinctive Sherwin-Williams policy. As Mr. Sherwin's line increased in this way he naturally had to buy a wider variety of raw materials. In making his products he had learned what every paint maker rapidly learns—that the quality of a paint product depends very much less on its formula than it does on the care with which the formula is mixed and the quality of the raw materials used. (Sherwin-Williams has 135 patents valued at a dollar



Photographs by Ritzau

WHITE LEAD BY THE QUICK PROCESS: THE ROLLING TUB (SEE PAGE 75)



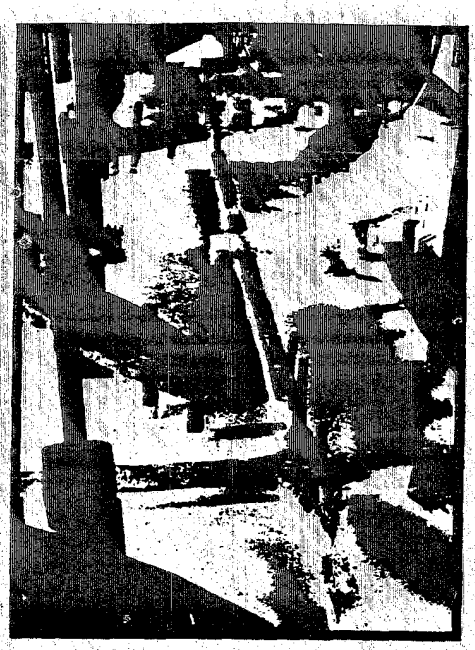
WHITE LEAD BY THE DUTCH PROCESS: THE BUCKLES AND POTS (SEE OPPOSITE PAGE)

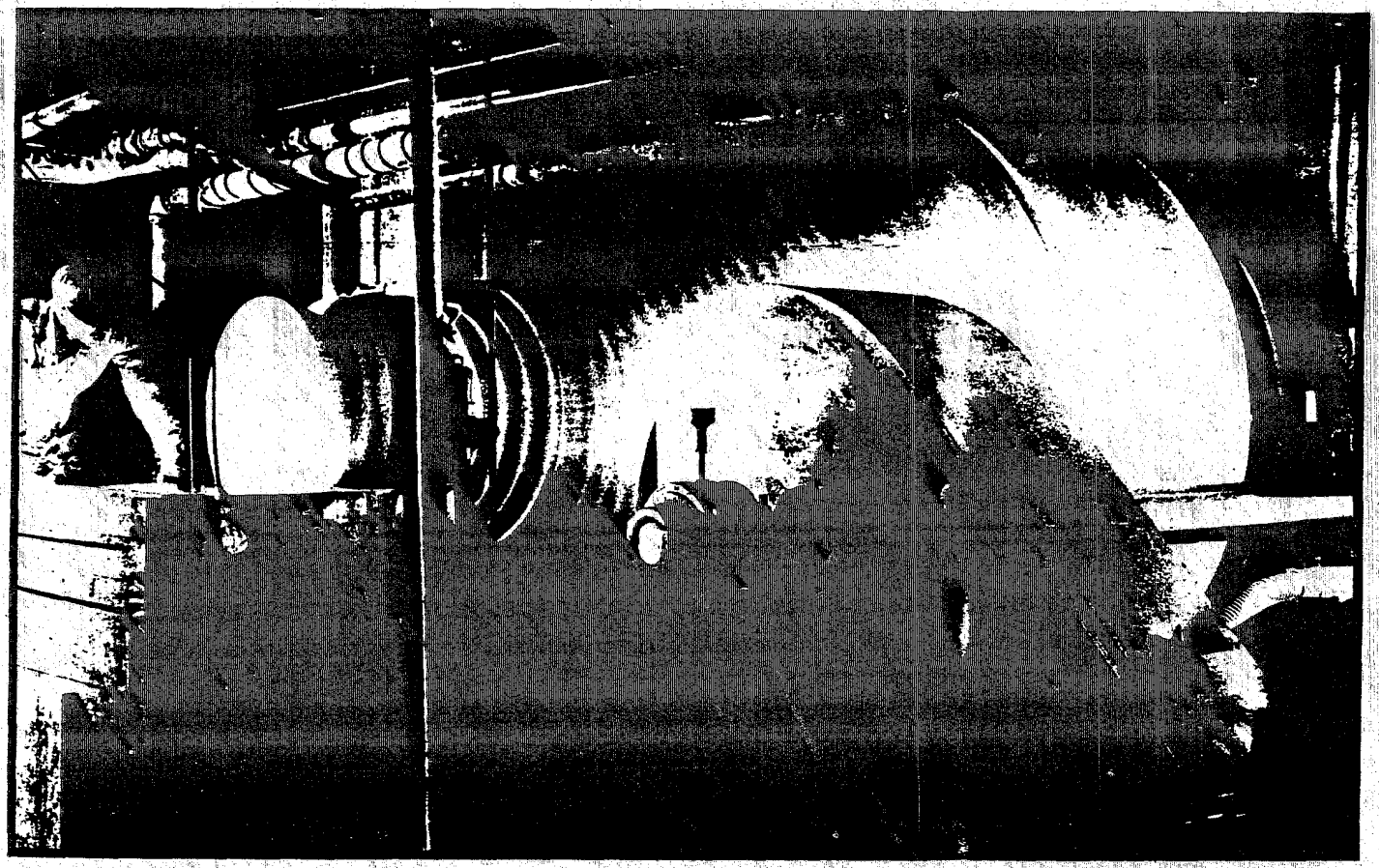
apiece, and most of its formulas are printed on its cans.) Mr. Sherwin could see to it that his own mixers were virtuosos, but he could not be certain of getting the grade of raw materials he wanted—besides which, raw materials cost plenty. In 1898 he decided that it would be a smart step, both financially and technically, for Sherwin-Williams to make as many of its own raw materials as was feasible. The company would save money and it could rigidly control the grade of materials. A start was made toward this policy with the building of a new linseed-oil factory in Cleveland in 1902.

This policy is in operation today. Sherwin-Williams makes all but a minor fraction of its raw materials and is the only U.S. paint company to do so. It usually buys in the outside market only when the prices are favorable, or when a new process suddenly calls for new raw materials. You can get an idea of the importance of this policy by considering the role of lead in the paint industry. Lead and zinc are, generally speaking, the basis of all white pigments, and the paint industry uses about 55 per cent of all the lead and 45 per cent of all the zinc

WHITE LEAD

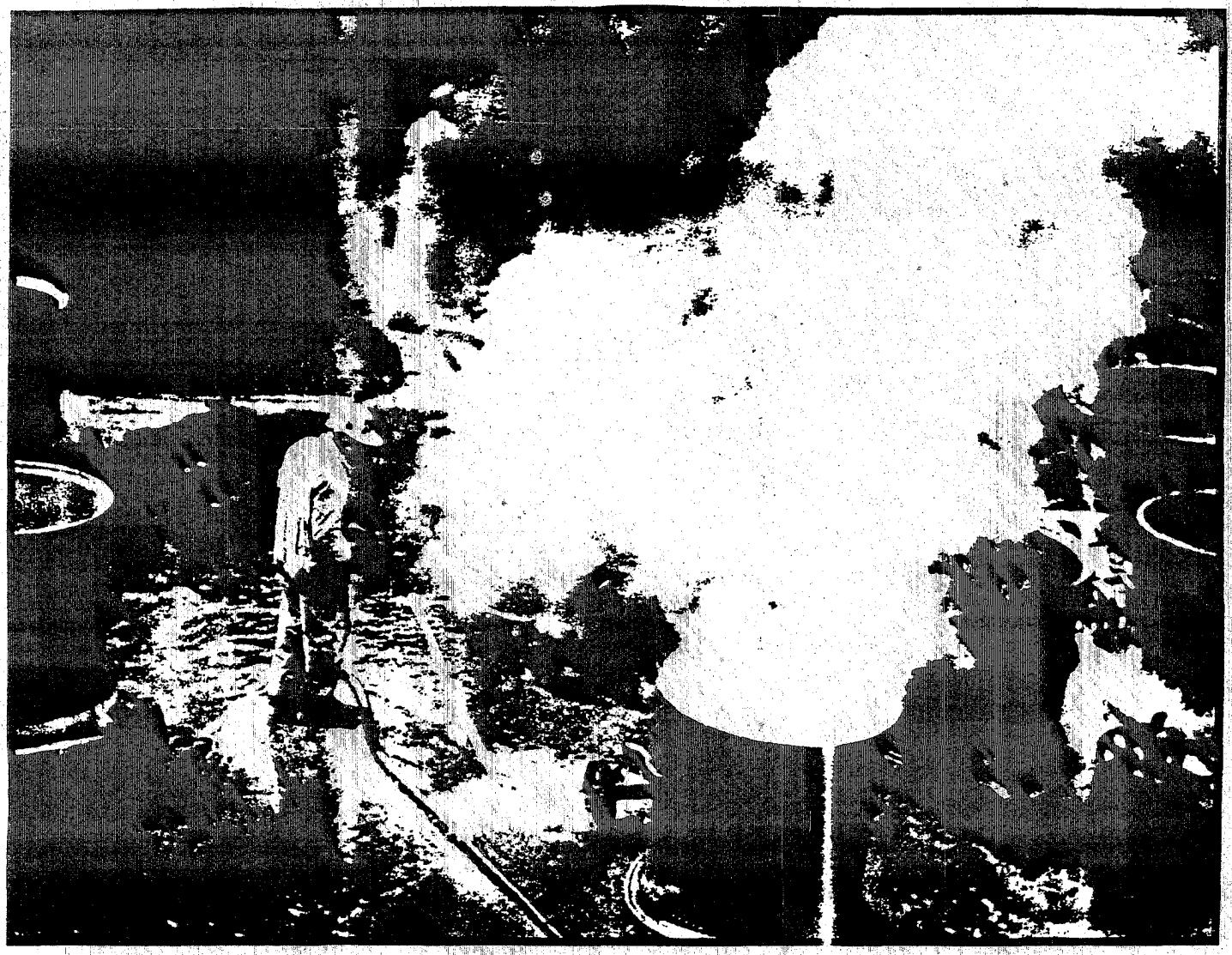
Lead and zinc are great *sine qua nons* of the paint industry, which buys 55 per cent of the lead mined in the U.S. Lead is the source of white lead, a white pigment used extensively in outdoor white paint and mixed with other pigments in outdoor paint of many light tints. Sherwin-Williams makes a good deal of its white lead by the famous Dutch process. Bars of lead are melted down and poured into molds which produce the waffle-shaped buckles shown on the opposite page. These are then stacked in pots which contain acetic acid. The pots are covered with tanbark and boards. The acetic acid corrodes the lead buckles, forming basic lead acetate. The acid also ferments the tanbark, giving off carbonic acid gas. The interaction of the lead acetate and this gas results in a precipitation of fine white powder which is white lead—or, to the chemist, basic lead carbonate. This powder is ground, mixed with oils in tubs that are churned by revolving rakes (right), and the resulting mixture is the white pigment. There is also a thirty-day quick—and less satisfactory—process of making white lead, in which the lead is blown into a powder and mixed with corroding chemicals in a revolving drum, as shown on page 73. Sherwin-Williams makes many provisions against lead poisoning and other occupational diseases of the industry. Workers in dangerous processes are examined regularly, must bathe every night, and are given a fresh suit of working clothes each morning.





LITHOPONE, AN INDOOR WHITE PIGMENT: THE CRUSHER

Lithopone is the most widely used white pigment for indoor paints. It is chemically derived by precipitating zinc sulphide on barium sulphate. Lithopone making starts with barytes ore, which is crushed in a revolving drum filled with metal balls. The crushed ore is roasted, put into an acid solution, and goes through a series of filtering operations, which results in a liquor containing barium sulphate. This liquor is mixed in wooden vats with a zinc liquor containing zinc sulphide. The resulting white, powdery precipitate is roasted, crushed again in another drum (as shown above), and then ground into the final pigment. Lithopone is not to be confused with litharge—lead which has been roasted at such high temperatures that it has combined with oxygen from the air and turned yellow. Roasted litharge is "red lead"—a pigment in most of the red paints which are used to protect metalwork.



VARNISH: THE COOKING KETTLES

The bases of varnish are resins (which form the varnish film). These may be natural resins obtained from the fossilized gum from tree barks of Africa, New Zealand, and other parts of the earth. Or they may be synthetic resins, chemically manufactured. The lumps of resin are put into large kettles of copper or stainless steel, as shown above, together with an oil such as linseed or tung, and a drier. The mixture is cooked over a gas or coke fire at temperatures between 400° and 600° Fahrenheit. Then it is cooled, and thinners are added as necessary. The mixture may be cooked again. The final product is filtered and pumped into large storage tanks, where it ages indefinitely. Like whiskey, the longer a natural gum varnish ages, the better it is.

mined in the U.S. Except when the market favors outside buying (as it did last year) Sherwin-Williams gets all its lead and zinc from its own mines in Magdalena, New Mexico. Started in 1904, the Magdalena property now includes 245 acres of mineral ground with four miles of underground passages, and 320 acres of non-mineral ground with a plant capable of processing 4,000 tons of ores per month. Sherwin-Williams has its own patented white pigment called Ozlo, a combination of zinc oxide and lead sulphate. These chemicals, together with other pigmentary elements, are made in a twenty-nine-acre Sherwin-Williams smelter plant at Coffeyville, Kansas. Pigments of colors other than those already mentioned are made from various combinations: umbers and siennas and ochers from various low-grade ores, yellows from a mixture of bichromate of sulphur and lead, blues from iron and potash mixtures, greens by mixing blues and yellows, blacks from carbon (bought outside), and reds from iron oxides and toluol compounds. The finished dry colors are made mostly in the Chicago and Philadelphia plants, and Sherwin-Williams makes 90 per cent of all the pigments it uses (in Chicago it makes white lead by the famous Dutch process—see caption on page 75). The oils and driers are largely made in Cleveland and Chicago. The Sherwin-Williams idea has always been to confine its raw-material production to just those products that were necessary to support the company's paint business, but certain byproducts have been both inevitable and profitable. Out of the use of Paris green (now obsolete as a paint pigment) Sherwin-Williams developed its insecticide business, which last year grossed $1,500,000.

While this raw-material policy was being developed, Sherwin-Williams got to be the biggest U.S. paint company. Having started largely as a midwestern and northeastern concern, its warehouses and sales offices reached into the West at San Francisco (1900), Los Angeles (1901), Portland (1905), Seattle and Spokane (1908), and into the South at Savannah (1905), Houston and New Orleans (1909). The company could not have grown much more respectable than it already was, but its reputation for that quality grew. It was one of a few big companies whose respectability forced up the standards of the entire industry. Also

[*Continued on page 78*]

[*Continued from page 76*]
during those pre-War years, the founders grew to be old men. The jovial Mr. Williams, who had built up the Sherwin-Williams sales organization, died in 1903 at the age of sixty, emptying directors' chairs in several Cleveland banks. In 1909 when he was sixty-seven, Mr. Sherwin retired from the presidency to become the company's first Board Chairman. He was succeeded by Walter Horace Cottingham, whose Canadian paint company was merged with Sherwin-Williams. Mr. Cottingham was a driving President, a plump, hard-working Ontarian who had started his career as a hardware clerk and who covered a stiff determination with a chilly British politeness. He was the company's chief expansionist. He had a lakeside estate outside of Cleveland where he was met each night by a butler and where he worked on the lawn on summer evenings, with a small lamp, and a fan in one hand to shoo away the bugs. During all these years Sereno Peck Fenn remained as Treasurer. During his long term Sherwin-Williams never did any public financing, was entirely owned by its executives, directors, and their families (in 1920 there were only about 400 common stockholders), and never issued an earnings statement. Certainly the large part of the earnings went back into the company. Most of the increases in capitalization represented stock dividends: the original 3,000 common shares of 1884 were gradually increased to 25,000 by 1902, and in 1903 Sherwin-Williams created 10,000 shares of $100 par preferred. In 1913, with gross sales of $11,000,000, Sherwin-Williams earned $930,000.

WHEN the War began, painting history entered a new era. The industry, which for thirty years had been occupied with physical expansion, began to feel the pressures and opportunities of technological revolution. Right away the products of the great German dye monopoly were cut off from most of the rest of the world. The U.S. had to develop its own dyes. Naturally, the paint industry jumped at the chance, and Sherwin-Williams was one of the first jumpers. Sherwin-Williams got into the dye business as soon as the War started. The company had already done some experimenting with aniline and coal-tar dyes. This was extended, and for a short while Sherwin-Williams enjoyed a virtual monopoly of the U.S. dye business.

The making of coal-tar dyes also gave Sherwin-Williams an entry in the vast field of coal-tar byproducts. But both dyes and coal-tar products are of course so ramified as to be industries in themselves. And Sherwin-Williams was not so ambitious as to wish to be three industries in one. The Sherwin-Williams management is more elastic and chancy today than it was then (we shall shortly see why), but it would probably never be willing to depart far enough from a fundamental conservatism to undertake any such multiple, Hydra-headed industrial activity as, say, the Du Ponts are engaged in. So as soon as the dye and coal-tar industries began to get well-established in their own specialized hands, Sherwin-Williams began to make retrenchments in these lines. Today Sherwin-Williams specializes in the bright dyes, particularly the reds, which are the hardest to make. It deals in only those coal-tar products that are the more or less direct result of its dyemaking. Last year Sherwin-Williams's dye business, and the byproducts, accounted for about $2,500,000 of the $56,000,000 gross. Sherwin-Williams is sharply dye-conscious, and ready to jump at any special opportunity.

But the technological revolution, which got up speed at the beginning of the War, reached a fearful acceleration in the years right after the Armistice. It got going much too fast for Sherwin-Williams. In the early twenties occurred the biggest single development that has ever happened in the paint industry—and it is the everlasting shame of Sherwin-Williams, acknowledged leader of the paint industry, that its leadership dismally failed at this crucial instant. When we say that Sherwin-Williams is only a neo-perfect paint company, the *neo* refers largely to nitrocellulose lacquers. The story has been told in FORTUNE (Du Pont II, December, 1934), but it needs recapitulation from the Sherwin-Williams angle. It involves the biggest money with which the paint industry has ever been acquainted.

The biggest single customer of the paint industry, as has been noted, is the automobile industry. Last year the U.S. automobile industry bought about 10 per cent of the paint industry's gross sales. Now in the last ten years the finishing of automobiles has been entirely revolutionized. They used to be painted—and in that antique process no less than twenty-one days were consumed in the painting (several coats) and drying of an automobile.

There was one man who kept insisting, with special vigor, that there must be some way of avoiding this outrageous waste of time. That man was Charles Franklin Kettering, the engineering brains of General Motors. Every time he thought of those twenty-one days, he winced. He wanted a coat of automobile finish that could be applied and dried in a couple of hours. And finally he had an idea. It was nitrocellulose lacquer. This lacquer had been developed from the knowledge that chemists gained about nitrocellulose, an important element in many high explosives, during the War. The lacquer was made from nitrocellulose and pigment in a bath of butyl alcohol, amyl acetate, and other solvents. It dried by the evaporation of the solvents, leaving a glossy nitrocellulose film. And it dried in about two hours, as against eighteen to twenty-four hours for one coat of the old automobile paint. It was estimated that the several coats of lacquer required would take up less than two days of total drying time.

Two big obstacles had hitherto balked the use of this lacquer as automobile finish. First, it could not be used without a successful paint spray gun (the lacquer had to be sprayed on, because it dried so fast that the slower process of brushing left a streaky job). This obstacle had been overcome by the time Mr. Kettering got busy; spray guns had been built that would spray the object and not waste their substance on the surrounding air (FORTUNE, March, 1933). But the second obstacle remained to plague Mr. Kettering. The tantalizing fact was that this lacquer was not hardy enough to stand rough, outdoor automobile wear.

Mr. Kettering kept tinkering in his laboratory and running up against this dilemma. But he felt that he was on the right track and, finally, he took his ideas to General Motors' intimates, the Du Ponts. Their laboratories got to work. And in 1923 General Motors put out its Oaklands with a Du Pont lacquer finish. It was a thick robust coating; it was not only more robust than previous lacquer, it was even more durable than paint and varnish. This was a *low-viscosity* lacquer. It utilized forty ounces of cotton per gallon of solvent, despite which it was just as fluid as the previous lacquers, which used only six ounces. It saved 15 per cent in labor and seven cents in material on each automobile to which it was applied. It became the standard automobile finish (except for Henry Ford, who uses a synthetic resin enamel of a type shortly to be discussed) and an important furniture finish. It was this lacquer that made it possible for the automobile industry to step up production to the 5,000,000-cars-per-year level of 1929.

SHERWIN-WILLIAMS can be squarely blamed for its failure to produce this sensational product from its own laboratories. You might suppose that the leaders of the paint industry would have seen the need for quick-drying automobile finish themselves, and would have done something about it. Sherwin-Williams had even had nitrocellulose advocates on its staff. But it did not listen to them. Sherwin-Williams was prosperous, self-satisfied, and dozing.

Sherwin-Williams has learned its hard lesson: that it must put emphasis on new research, that it cannot plume itself on its past achievements unless it is prepared to anticipate the markets of a chemically complex future. The Du Pont lacquer which supplied the need, and which has since become so famous that its name is wrongly used as a generic term for all low-viscosity lacquers, was *Duco*. Today Sherwin-Williams and many other companies make the same type lacquer. (Sherwin-Williams's is called *Opex* and it goes on all Packard cars.) And Sherwin-Williams leads the huge automobile refinishing field. But the company is not likely to forget its bitter lesson, because every day it continues to pay for that lesson in hard cash. Let alone the business it missed by not being the first manufacturer of low-viscosity lacquer, it also has to pay royalties to Du Pont on its Opex. In 1928 Du Pont got a patent on Duco and three years later sued its competitors in the field. Sherwin-Williams, among others, made a friendly royalty settlement. Du Pont won in 1933 and it

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gets six cents a gallon on all low-viscosity lacquers (which sell from $2 to $3 a gallon). Last year Du Pont got around $100,000 from Sherwin-Williams.

The newest phase of the technological revolution is in the synthetic resins, the basis of the enamel on Henry Ford's automobiles. Hitherto, the resins* used in varnish making have been natural resins, aged fossil gums such as Manila, Zanzibar and kauri copals. They have come mostly from the Malay Archipelago, Africa, and New Zealand and those sources have recently been approaching exhaustion. During the past decade, however, the paint industry has developed synthetics that are actually much better than natural resins. The two most common types are the glyceroplthalic (made from phthalic anhydride and glycerin) and the phenol (made from formaldehyde). They dry in a few hours—in lacquer time—instead of the few days required by previous varnishes. They have a higher gloss and greater durability than previous varnishes. They do the job with only one coat instead of the three or four formerly required. In fact the synthetics have not only made the old-type varnishes obsolete, but they also threaten the existence of the lacquer business (as Mr. Ford's choice would indicate). About 50 per cent of all Sherwin-Williams varnishes and enamels are now made on a synthetic base, and last year Sherwin-Williams synthetics grossed $2,000,000. Sherwin-Williams does not agree with some of its competitors that synthetics are likely to challenge ordinary outside house paint in the near future. But owing to synthetics, the day is past when enamel was regarded as primarily an indoor paint. It is used extensively now on the fanciest trucks and the newest streamline trains. Notwithstanding, Sherwin-Williams believes that for the immediate future, at least, the constant stress of weather on the outside of a house will still require conventional house paint of the best quality.

THE years of the technological revolution have also included Sherwin-Williams's greatest physical expansion. During these years Sherwin-Williams has become a public interest. In 1917 there were 15,000 shares of $100 par preferred and 70,000 shares of common outstanding. That year Sherwin-Williams ended fifty-one years of private ownership by the public sale of 20,000 shares of $100 par preferred stock through the Cleveland Trust Co. In 1918 the company raised $2,000,000 by extending rights to common stockholders to buy new stock up to 30 per cent of their holdings at par. These new funds were used to develop the company's dye manufacturing in Chicago. In 1920 the common stock was exchanged on the basis of four new $25 par shares for one old $100 par share, a stock dividend of 50 per cent was declared, and some 30,000 new common shares were issued for sale to Sherwin-Williams employees (the one and only employees' purchase plan the company has allowed).

In 1920 also, Sherwin-Williams did the biggest financing job in its history. This was the sale of 150,000 shares of $100 par 7 per cent preferred through Cleveland Trust for the purpose of retiring previous issues, expanding plant, and buying the Acme White Lead & Color Works, centered in Detroit (biggest subsidiary). The last shares were sold just as business suffered the price collapse of 1920, and the following year Sherwin-Williams reported its only deficit—$2,300,000. The next year earnings were back to $2,700,000, but this 1920 experience prevented Sherwin-Williams from making any vainglorious financial gestures during the Coolidge boom. In 1927 the 7 per cent preferred was called in, and a new issue of 150,000 shares of $100 par 6 per cent preferred was sold through the Cleveland Trust Co. In 1929 Sherwin-Williams sold 40,000 shares of common and 37,000 shares of $100 par preferred, using the proceeds to buy the Lowe Bros. Co., centering in Dayton, Ohio (second biggest subsidiary). In 1930 Sherwin-Williams bought for $500,000 control of John Lucas & Co., centering in Philadelphia, and the following year obtained, through exchange of stock, control of Sherwin-Williams Co. of Canada. Today it has about 145,000 shares of $100 par preferred and 636,000 shares of common outstanding among some 3,000 preferred and 3,500 common stockholders.

The stock, which was once concentrated in very large batches, is now widely scattered and it is doubtful whether there are many holdings that are larger than 2,500 shares. Sherwin-Williams is traded on the New York Curb and listed on the Cleveland Stock Exchange and during the last six months the $100 par preferred has varied between $106 and $113, while the common has varied between $84 and $100.

SINCE the War began the oldest Sherwin-Williams faces have all disappeared. Mr. Sherwin died in 1916 at seventy-four. Mr. Fenn retired as Treasurer that year and died in 1927 at eighty-two. Mr. Cottingham became Board Chairman in 1922 and retired to England, where he died in 1930 at sixty-four. The oldest faces have been succeeded by younger men whose faces, however, are old enough in the company's annals. Mr. Cottingham was succeeded as President in 1922 by George A. Martin, who is very much in office today.

Tall, gray-haired, pince-nezed Mr. Martin is the sixty-nine-year-old dean of the U.S. paint industry by virtue of his position, but he also happens to be a natural for the role. He is as warm, expansive, and paternal as his predecessor, Mr. Cottingham, was bleak and formal. Born in Montello, Wisconsin, in 1865, he went to public school there and to Chicago night schools, worked as a messenger boy at twelve in the Chicago stockyards. In 1886 he formed his own small paint company. Those were the days when back rooms were paint factories and paint makers knew almost as little about chemistry as their salesmen—who knew nothing at all. Mr. Martin did so well in this ramshackle trade that he attracted the attention of Sherwin-Williams when they bought Calumet in 1888. He rose through Sherwin-Williams as manager of the Calumet plant, then of the western district, then of all auxiliary departments. In 1916 he was made Vice President in Charge of Manufacturing, and in 1921 First Vice President and General Manager of the entire company.

His presidential manner is informal, with a constant hellоing of everybody around his big paneled office on the twelfth floor of the Van Sweringens' Midland Building (the clerks halloo him if he doesn't get it in first). He avoids making speeches because he doesn't like to hear other men sound off, won't go to business lunches because he wants to relax when he eats, and never writes a personal letter that is not absolutely necessary. He has a lake-front home east of Cleveland and he is the joint owner with his good friend Thomas Wilson (head of the Chicago packing house of Wilson & Co.) of a 6,000-acre New Mexican cattle ranch, 125 miles northwest of El Paso. Every spring he hunts and rides the range there, sleeps outdoors in a sleeping bag, and has no communication with Sherwin-Williams except in extreme emergencies. In Cleveland he likes to play golf and watch baseball. He is a director of the Cleveland Indians, as well as of Goodyear, Wilson & Co., Erie Railroad, Cleveland Trust Co., and others.

THERE are only three members of the Sherwin-Williams Board of Directors who are not company officers—Cyrus Eaton, Harris Creech, President of the Cleveland Trust Co., and George T. Bishop, retired utilities executive—and the board leaves Mr. Martin pretty much to his own executive decisions. After forty-seven years he knows his company and its men. He is a master at delegating authority and at checking the delegates. He himself spends a good two-thirds of his time on the road looking over Sherwin-Williams from coast to coast. He runs the company through a Board of Operators. This board consists of the leading operating, purchasing, sales, and research officers of the company and it meets once a week in Cleveland. It grew out of the late Mr. Cottingham's Board of Managers. But while Mr. Cottingham sat with the Board of Managers as Chairman, Mr. Martin does not sit with the Board of Operators. He says: "With all respect to those boys, there is a natural human tendency to lean toward the boss's side of the argument. If I leave them alone I get their real opinions when the report comes in." The mimeographed report comes in each week. If Mr. Martin is concerned about any of the items (for instance, he may think Sherwin-Williams has paid too much for raw materials or is getting too little for its research outlay), he will personally investigate the point. Otherwise he keeps his hands off. Mr. Martin also gets reports from weekly meetings of a Purchasing Pool, which buys on requisition

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*Not to be confused with rosin, which is a resin left after distilling off the volatile oil of turpentine.

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from the Board of Operators, and of a Sales and Advertising Committee (the Vice President in Charge of Sales does not sit with this committee for the same reason that Mr. Martin avoids the board meetings).

SHERWIN-WILLIAMS subsidiaries do not report through the Board of Operators. Their Presidents report direct to Mr. Martin. Purchasing is central for all the companies. Formulation and research are central; all the companies use a common research laboratory in Chicago, and a common testing station in Miami, where the hot southern sun gives a painted surface about six months of average "experience" in one month. For advertising purposes, Sherwin-Williams and its biggest subsidiaries (Acme, Lowe, Lucas, Martin-Senour) are known as the Allied Quality Paint Group. Also, the treasury activities of all the companies are more or less centralized; their financial reports are consolidated with Sherwin-Williams's. But, on the other hand, just as each of the subsidiaries keeps its own name, so does each keep its own most famous brand names. And these brand names compete with each other and with Sherwin-Williams's brand names all the time. This does not mean that a Sherwin-Williams subsidiary will knowingly try to steal the customer of another subsidiary or of Sherwin-Williams itself. But it does mean that the same city will have agents of Sherwin-Williams and agents of its subsidiaries in the same region. The point is that Sherwin-Williams estimates that the market will take all the production of Sherwin-Williams and subsidiaries, and that the competitive stimulus is valuable in selling, and, especially, that the old popular brand names are valuable. Mr. Martin feels that more paint is sold in this way than if Sherwin-Williams were to apply its own brand names (although Du Pont, for instance, follows the opposite policy).

Sherwin-Williams allots about 26 per cent of its total expenses to sales. It divides the country into thirteen districts, these being in turn divided into thirty divisions. There are about 500 salesmen all told (the subsidiaries have another 500). Sherwin-Williams's First Vice President in Charge of Sales is H. D. Whittlesey, a gray-haired veteran who stands six feet three and is noted in the company for his extreme politeness, his long and formal written sentences, and his paradoxically short and informal sales appeals: "Get your sights up! We're through handing out the bananas!" He is one of the best-known men in American sales circles; last year he was President of the American Society of Sales Executives. And inside the company, sales is only one of his concerns; he is Mr. Martin's closest associate in the management of Sherwin-Williams. The sales activity under him is divided into trade and industrial sections. In both, the old industrial game of reciprocity is played—Sherwin-Williams agrees to use the products of companies that will buy Sherwin-Williams paint, and vice versa. But less than 5 per cent of all Sherwin-Williams sales are made under reciprocity agreements. Trade sales are an endless plugging contact with some 50,000 hardware, paint, department, and lumber stores that have been picked as Sherwin-Williams agents, and with thousands of prospective agents, and with every possible business enterprise that is likely to have a demand for ordinary trade paints. Sherwin-Williams sets as its aim a trade sale of $1 a year per capita in every Sherwin-Williams district. This aim is rarely realized, but it exists as a spur to the salesmen. And so do a series of sales contests, such as last year's "Pot of Gold" sales derby, in which the company may pay as much as $60,000 in prizes during the year.

The more specialized industrial sales require a salesman who has some knowledge of paint chemistry. Here the problem is to convince industry of the number of new services that paints and finishes can perform. The industrial salesmen can route some 200 Sherwin-Williams technical consultants to places where large industrial orders seem likely. The current boom is for "plant conditioning"—that is, the bright repainting of industrial plants with Sherwin-Williams Savelite to give more agreeable, efficient, and esthetic working conditions. Sherwin-Williams has already modernized some hundred major plants and the company is especially proud of the gleaming white Beech-Nut packing factory in Canajoharie, New York. Finally, Sherwin-Williams has almost a hundred retail stores of its own. Some are newly established, others have been bought from bankrupt agents. The individual stores seldom pay for themselves, but as a company operation the group is successful. It assures Sherwin-Williams of good representation and volume in places where local agents have been unsatisfactory.

SHERWIN-WILLIAMS allots 4 per cent of total expenses to advertising, and is firmly convinced that more does not pay. The big thing in paint selling, according to Sherwin-Williams, is the constant contact with agents and advisory salesmanship in the industrial field. Even so, Sherwin-Williams does more advertising than most paint companies. In 1907 it ran one of the first colored advertisements that ever appeared in the *Saturday Evening Post* and it still uses full pages in national magazines. It also uses billboards, and it goes fifty-fifty with its agents in the annual distribution of some 2,500,000 painting pamphlets, mostly on home decoration. It gets out 15,000,000 seasonal broadsides each year. Three years ago the company realized that it had been neglecting its famous trademark and today, whenever sales fall off unaccountably in a division, a rash of trademark cards breaks out in the store windows. Sherwin-Williams has coöperated with the industry in general in various national advertising campaigns, such as that of 1919-23 under the famous slogan "Save the Surface and You Save All." Three years ago radio listeners were familiar with the Allied Quality Paint Group's program featuring Paul Whiteman and His Paint Men on the NBC blue network. Sherwin-Williams regarded this program as primarily a goodwill builder rather than a sales stimulant. But one year of it was expensive enough, and Sherwin-Williams no longer builds goodwill in this way. Today Sherwin-Williams itself does no radio advertising. But Acme has gone on the air plugging a single product—its Lin-x varnish. And Sherwin-Williams may do more of this in the future. The next few years will probably also see an increase in the advertising budget for intensive campaigns on industrial products.

ALL told, Sherwin-Williams and its subsidiaries employ 6,000 people. Employee relations are agreeable. There have been small strikes in Newark, Cleveland, and Chicago during the past five years, but nothing approaching a major upset. During the depression there have been two or three general pay cuts. But Sherwin-Williams employment and Sherwin-Williams pay have in general held up well. So, apparently, has employee satisfaction. The company follows the usual U.S. methods of maintaining this satisfaction. There is a benefit association and a long-service pension plan. Twenty-five-year men, of which there are 436, get gold watches from the company. Fifty-year men, of which there are three, get a diamond pin and a bonus. There are social clubs for the girls: the Brighten-Up Girls in Cleveland, Wil-Sher-Win Girls in Chicago, and Cover-The-Earth Girls in Newark. There is a Junior Club for the younger executives, which has been running a dummy paint concern on paper called the Coverwell Paint Co. And there are numerous other company sodalities. All in all, labor has been one of the least of the company's worries.

Today it is hard for Sherwin-Williams executives to take a short view of events. The depression has not brought them anywhere near a crisis. They have been thankful for the price raising of the New Deal, and for the as yet small but potential benefits of the Federal Housing Administration and the Home Owners' Loan Corp. They do not miss the Paint Code, which had very little effect on Sherwin-Williams or any other high-grade paint company (although, by forbidding sales below cost it *did* prompt some careless companies to learn cost accounting). But the fact is that today the Sherwin-Williams executives have their eyes on the long perspectives. Physical expansion has become something for a paint manufacturer's memories and hopes. But they are not depressed, because the paint business is exciting today. Excitement gets into the paint business when techniques begin to multiply. And the Sherwin-Williams men are busier than ever with technological revolution. You hear that we are passing out of a mechanical era and into a chemical era. The Sherwin-Williams men believe it. And they look beyond immediate possibilities to a glaring and comforting fact: that the world needs, and is beginning to want, a new coat of many colors.