

were terms up to 18 months in some cities.

Men's Clothing—Little change. There was a slight decrease in the number of stores granting purchases with nothing down. There was some concentration on \$5 down, or 10% to 35% as the initial requirement. Two to three months' terms were in evidence—signs of tightening up; but generally 12 months were allowed, and in some cases payments could be stretched to 24 months.

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Titanium Makes Paint History

Sherwin-Williams will start manufacturing this pigment, competing with its former suppliers. Since '29 titanium imports have jumped over 500%.

ANNOUNCEMENT by Sherwin-Williams Paint Co. on Mar. 9 that it was going to manufacture white titanium pigments meant little to the man in the street but it meant lots to the men in the industry. This move by the largest unit in the business is acknowledgment of an important new development in paintmaking. Moreover, it signifies a shift for Sherwin-Williams from a buyer to a producer of titanium pigments. In the place of a large and steady customer, the producers of the pigment are to

have a large and important competitor.

Sherwin-Williams bought a 20-acre plot on the Delaware River at Gloucester, N. J. for its titanium plant. This being on tidewater, ore can be brought in by boat. Explaining the move, a company executive told *Business Week*:

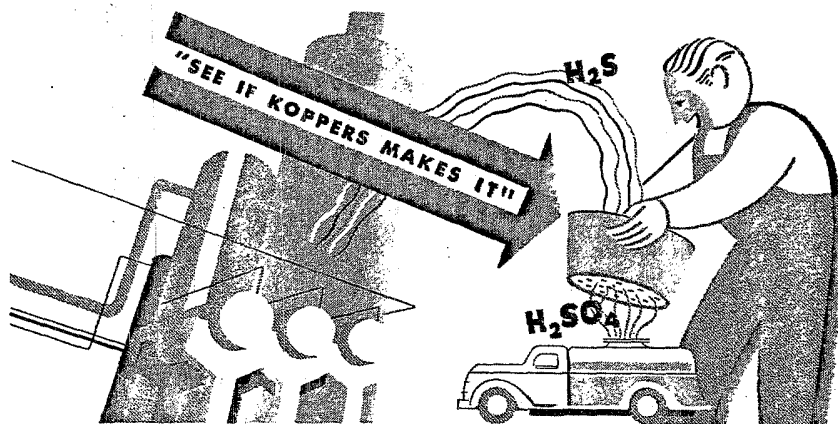
"This is in line with the Sherwin-Williams policy of controlling its own important raw materials. Titanium pigment was the only outside item. By making it we can save the selling costs put on the price by companies which have been supplying our needs."

Titanium is one of those metals which develop so fast that they become a part of the national life long before the general public gets acquainted with them. It is another triumph of the chemical industries. Titanium pigments are employed in all sorts of covering and coloring formulas. In paints, the new white runs smack into competition with white lead, zinc oxide, lithopone. A measure of its expansion is evident in the revised compositions for outside paints. For this type a typical pigment combination formerly consisted of 60% white lead, 30% zinc oxide, 10% "inerts" or filler material. Now the white lead and zinc oxide content has dropped considerably, and the proportion of titanium pigments substituted therefor has risen to about 30% of the total.

Qualities of Titanium Pigments

Titanium whites cost considerably more than competing pigments. The current price is 16¢ per lb., against 6¢ per lb. for white lead. But titanium's virtues are so manifold that they outweigh all other factors. Titanium pigment, being lighter, bulks more, pound-for-pound, than lead; the covering capacity of titanium dioxide is said to be 10 times that of lead. Its opacity (non-transparency) is far greater than competing pigments. Titanium pigments combine perfectly in almost any mixture, remaining completely unaffected. As chemists say, "They are inert." They are indifferent to intense heat or intense cold. Also they are non-poisonous, a quality that encourages their use in food packaging, cosmetics, etc.

Leader in titanium research in the country has been the National Lead Co., whose titanium division handles this end of its business. National Lead only makes the pigment which it sells to paint and other manufacturers. Other important producers are Krebs Pig-



A certain oil refinery uses a large amount of sulfuric acid in processing its major products. The cost of this acid is a considerable item in the operations. The still gases from this refinery contain a large amount of hydrogen sulfide, which is of course a raw material for manufacture of sulfuric acid.

A Koppers Phenolate Purification System, recently installed at this plant, takes from the gas the hydrogen sulfide which had been a serious nuisance and recovers it in a form readily convertible into sulfuric acid which the company now gets at a fraction of its former cost.

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subsidiary), Virginia Chemical Corp. (a subsidiary of Interchemical Corp.).

Entry of Sherwin-Williams into the making of titanium pigment will be generally felt. Its purchases formerly were spread around among the big manufacturers. During the past few years all important makers of paint have gone over to titanium compositions.

Titanium is a metallic element like gold, silver, copper, lead or zinc. It was discovered by the Rev. William Gregor in black sands along the Cornish coast of England. The name derives from the Titans, who in mythology were the first sons of the earth. The discovery was made in 1791. As in the case of many other important metals, there was a long lapse before any practical use was found for titanium.

Dr. Rossi's Work

In the United States, Dr. A. J. Rossi contributed much to the development. As early as 1908 he separated an impure titanium oxide and proved its unusual opacity in a most unusual manner. He mixed it with ordinary salad oil and applied the combination as a paint. Dr. Rossi had already demonstrated the commercial possibility of titanium alloys. As a result of discoveries here and abroad, the Titanium Alloy Manufacturing Co. was established at Niagara Falls, N. Y. The Titanium Pigment Co. was organized in 1916 and a plant was built next door to the alloy unit.

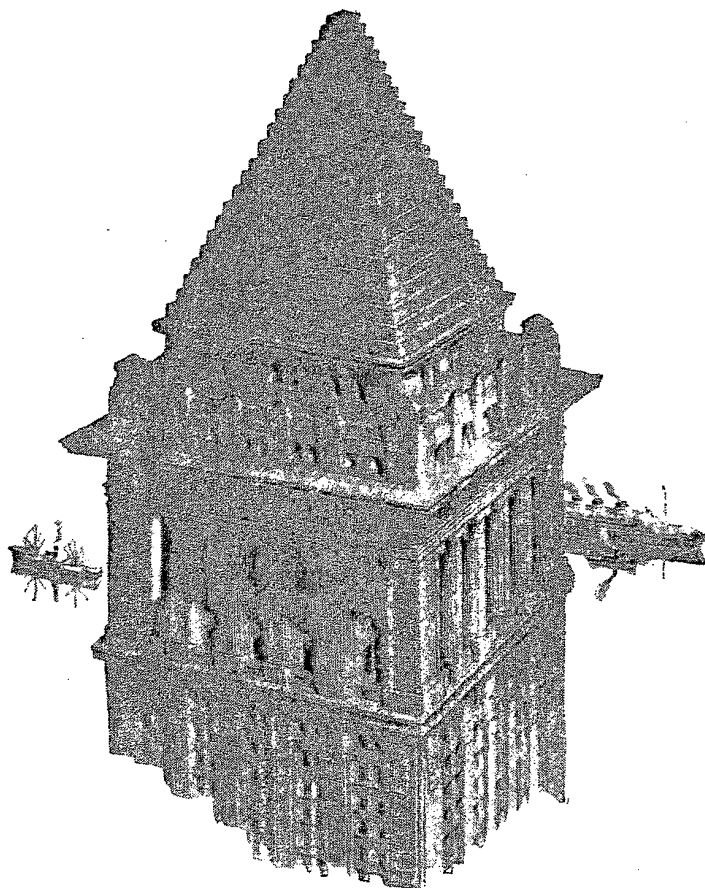
Four years afterward National Lead bought into Titanium Pigment. It later bought full control. By 1922 demand had increased beyond the capacity of the Niagara Falls plant and the pigment was imported from Europe. Spurred by this showing, National Lead improved its processes, multiplied its capacity, widened its markets. The duPonts entered the field some five years ago.

How Average Man Is Affected

National Lead's trade name for the pigment is Titanox. A recent booklet dramatizes the points at which Titanox touches the life of the average man. It is in the enamel of his bed, the rayon of his pajamas, bath-tub enamel, soap, shaving cream, face powder, rubber flooring, plastic toilet articles, breakfast food box, chinaware glaze, automobile enamel, white tile walls, business stationery, cigarette paper, etc., etc., etc. There is another important field in industrial paints, where the brilliance and durability of the titanium whites have outdistanced all competition.

The cost of titanium pigments is due to difficulties of separating the oxide from the ores. This is accomplished through solution in sulphuric acid, followed by many other complicated steps. Improvements are constantly being made to reduce costs. The present 16¢ price per pound for titanium

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dioxide looks high until compared with prices of \$1.50 per pound in 1921, and 50¢ in 1925.

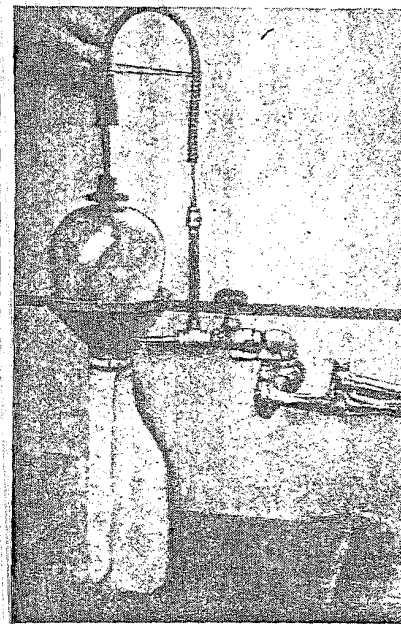
There is no danger of exhausting titanium deposits. This element is the ninth most abundant in the world. The only questions are accessibility, purity of titanium in the ores, difficulties of extraction. Much of the ore is imported, for the reason that the most satisfactory grades are found abroad. India is the principal supplier. Norway also is a heavy exporter.

Import figures are a yardstick to gauge the growth of titanium's markets. In 1929 some 22,386 long tons were brought into the United States. By 1933 the tonnage had jumped to 115,871, an increase of 517%. The 1936 imports were 127,491 long tons, valued at \$687,800. Producers of the pigment aren't saying how much they are selling currently. A government statistician figures that between 1929 and 1934, titanium sales rose from 5% of all white pigments, to more than 13%.

New Products—New processes, new designs; new applications of old materials and ideas.

NEWEST device to expedite record keeping with punched cards is the "International Collator" of International Business Machines Corp., New York. As a filing machine, it will compare two groups of cards and merge them in correct numerical sequence at the rate of 14,000 to 28,000 per hour. As a pulling machine, the collator makes it possible for one group of cards to pull corresponding cards from a second group. Cards not pulled are segregated for return to the master file.

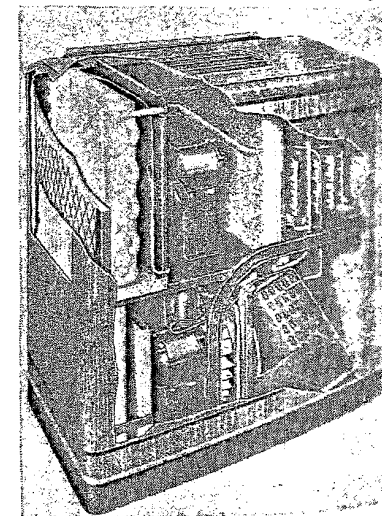
WHATEVER the exact make of the glass bowls used in vacuum coffee makers, the job of washing them thoroughly is a time consumer and a breakage inviter. Cascade Sprayer Co., 2709 First Ave. S., Seattle, Wash., is marketing "Kimex,"



a washing device for attachment to the hot water line in any restaurant kitchen. Invert the bowl into a rubber-lined receptacle; attach a hose to the stem end—hot water will descend through the stem

and spray upward into the bowl, removing all coffee grounds and depositing them either into a cloth bag or through suitable pipe connections into the drain.

IN April, Delco-Frigidaire Conditioning Division, General Motors Sales Corp., Dayton, O., will begin to market its new unit conditioner for cooling, dehumidifying, filtering, and circulating the air in any private office or home. Thermo-



stat prevents cooling below any temperature pre-selected on its control panel. Air direction selector obviates drafts. Hermetically sealed "Meter Miser" cooling mechanism operates without belts, pulleys, connecting rods, and oil pump. In May, Delco-Frigidaire will begin to market three new automatic home heaters designed to burn bituminous coal.

New adhesive compounds developed and patented by Bauer & Black, Chicago, make it possible for them to seal their new line of "Double Sealed" W. Pruf Adhesive Tape in live steam at a temperature of 240 deg. F. Spacing opening devices on the seal packages make them tamper-proof.