

DUPONT

April, 1949

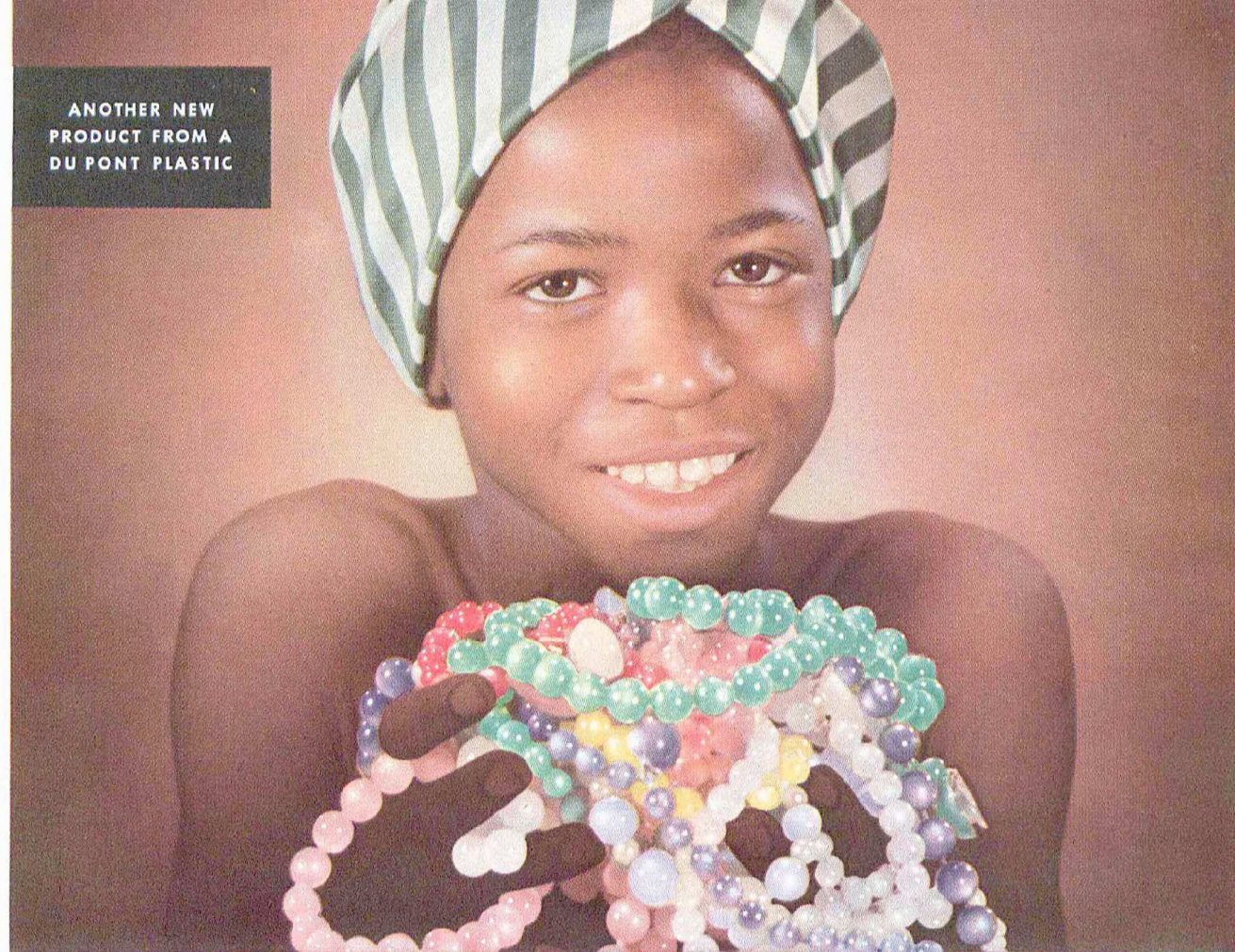


Pigments



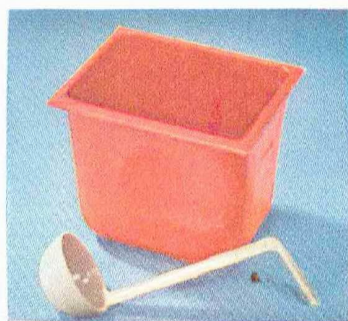
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

ANOTHER NEW
PRODUCT FROM A
DU PONT PLASTIC



SULTAN'S TREASURES...FOR MRS. THOMAS

They're lustrous—they're light—they're Du Pont "Lucite"



WHAT'S NEW... For color and cleanliness, the new Sealtest ice cream marts are equipped with syrup containers and ladles made of Du Pont "Lucite." Each bowl is economically molded in one compact, easy-to-clean unit... free of seams and cracks. And because they're made of "Lucite," the container and bowl are strong, tasteless, odorless, resistant to food acids. Another example of a product made better with Du Pont "Lucite"!

Bowl and ladle molded by Recto Molded Products, Inc., Cincinnati, for Brunhoff Manufacturing Co., Cincinnati.

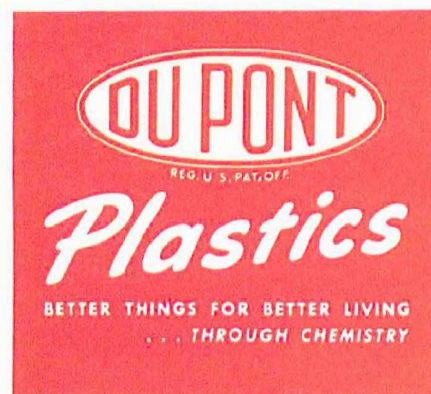
Radiant as a sultan's cherished pearls... this jewelry glows with unusual color and richness. Yet Mrs. Thomas—and all her friends—can buy it right on Main Street at a modest price. The reason? It's made of colorful, luxurious Du Pont "Lucite."

For many products, "Lucite" acrylic resin offers almost limitless design and color possibilities. It's available in many striking hues—transparent, translucent, or opaque—and now, for the first time, in beautiful new pearl effects. It's light and pleasant to the touch... readily molded or fabricated, too. In this case, the beads are machined from extruded rods of "Lucite." Other shapes are molded.

More and more products of time-proved salability are being made of "Lucite." It has unusual optical properties, resists breakage, has high tensile and flexural strength. And its weather resistance is outstanding among plastics.

Perhaps you can profit with "Lucite" or another Du Pont plastic... in developing a new product or improving an old one. Write for literature to: E. I. du Pont de Nemours & Co. (Inc.), Plastics Department, Room D-369, Arlington, N. J.

Jewelry by Coro, Inc., New York City.



DU PONT

MAGAZINE

Vol. 43 No. 2



BETTER THINGS FOR BETTER LIVING...
THROUGH CHEMISTRY

E. R. Manchester, Editor

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COVER: How would you illustrate pigments? "Let's show the color spectrum as the main theme," our artist suggested. "On one end we'll start with red and on the other with violet. Painters blend colors in this way when they want a certain shade. Then let's add a paint streak to show the importance of white pigments."

When sketches of the cover were finished, we found an eye staring us in the face. "What's that for?" we asked. After a lot of talk about artistic balance and judgment, the artist explained that the eye was reproduced from an enlarged section of a half-tone engraving. Since the graphic arts use pigments by the carload, he said, you couldn't very well get along without the eye.



Today's Pioneers

As long as you have America, you will have pioneers.

Today, the pioneers are chemists. The spirit that rode the covered wagons, lived in log cabins, helped make America great, still burns in research laboratories.

Here scientists are constantly crossing new chemical frontiers—finding new and better things for better living. It is true pioneering—for with new products come new industries, new jobs, new opportunities to make life easier and more comfortable for millions of men and women.

That kind of pioneering has been going on at Du Pont for over 100 years.

Du Pont pioneered "Duco" lacquer—a service to the automobile industry, a colorful contribution to the American home.

This Company created neoprene, the most successful man-made rubber.

Its chemists produced insecticides that save crops, increase yields and reduce farm costs.

They developed moistureproof Cellophane—and a new packaging era was born.

Du Pont chemical pioneering discovered nylon—which, in fiber form, was first introduced in a stocking and has found its way into so many fields.

During 1948, Du Pont announced many new products of pioneering. One of the most interesting and important of these products is "Orlon" acrylic fiber. This new textile material has a combination of properties which promise to give it a wide variety of uses, such as window curtains, rainwear, awnings and industrial belting. Resistance of "Orlon" to outdoor exposure is so good that it is considered to be the best fiber yet found for outdoor uses.

Is there an end to chemical pioneering?

Certainly not in sight at Du Pont. Today, near Wilmington, Delaware, a \$30,000,000 program of laboratory expansion is under way. It will provide facilities greater than ever before for the scientific development of new products and processes. It will continue and enlarge the Company's plan of fundamental long-range research for scientific facts without regard to immediate commercial use.

Has America come to the end of its frontiers? Not while so many of today's pioneers are engaged in a constant search for better things.

Pigments on parade

Pigments are not an atomic-age contribution. They have been used by the human race since prehistoric times to adorn their bodies and clothing and to decorate the walls of their cavern homes. Already old when Ancient Egypt flourished, they had not been improved much since the first crude pigments were scraped from the earth. Measured by today's standards, they were dull and faded quickly in sunlight. The brilliant, permanent colors we have now are the creation of chemical science and industry.

Du Pont manufactures about 300 different pigments, from the whitest white to the most vivid colors in every hue. Constantly these are undergoing change. Old, time-tried colors are being improved, and new ones created. To name all the old "stand-bys" would take too long; they include chrome and zinc yellows, iron blues, chrome greens and a whole array of reds. Among the newcomers are Green-Gold, Platinum-Violet and improved maroons for autos. In a year the Company adds and replaces as many as fifteen of them.

PIGMENT USES

You can hardly turn around without discovering a use for pigments. Paints for houses, furniture, refrigerators, cars and countless other objects; wall paper and linoleum; the rubber and plastic utensils in your home; the colorful illustrations in your favorite magazine; even your colored shoes—all these owe their brilliance and attractiveness to pigments.

Two decades or so ago, car manufacturers and

refinishers had to turn a deaf ear to the motorist asking for a maroon finish on his car. There simply weren't any maroon pigments durable or lightfast enough. Then Du Pont developed one that would stand up, and now maroon cars are familiar everywhere.

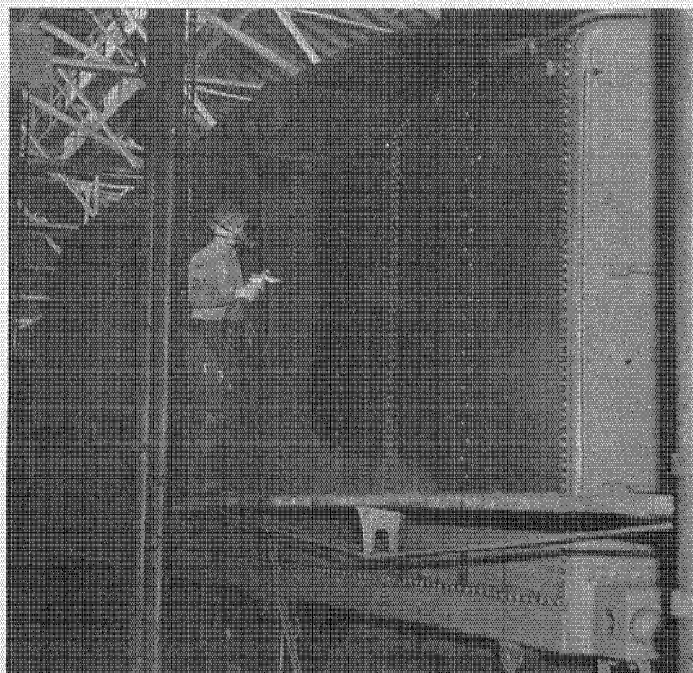
It wasn't long ago that light blue paints couldn't be used outdoors because they faded so quickly. That

Du Pont pigments are used to color rubber products in a wide range of shades, from brilliant hues to the pastels.

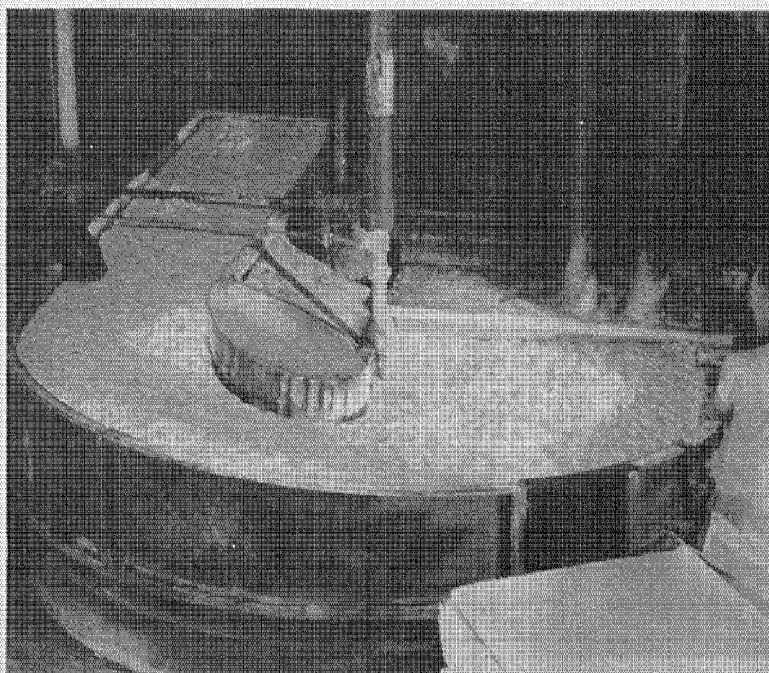


Huge rotary furnace roasts barytes ore, one step in making "Ponolith" lithopone, a white pigment used in many paints.

Painting with a primer containing zinc yellow pigment is one of the best ways to protect metals against corrosion.



In this beater, wood pulp is separated into millions of tiny fibers. Titanium dioxide is added to make the paper opaque.



In making linoleum and many other floor coverings, colorful pigments add beauty and also contribute to long wear.

changed when Du Pont, about 10 years ago, introduced into the United States the "Monastrol" pigments, the first new development in blues for years. Now you can have blue paint that won't fade . . . ideal for shutters, window frames and the like on your house . . . fine for lawn furniture, cars and a host of other items.

PAPER-MAKING IMPROVED

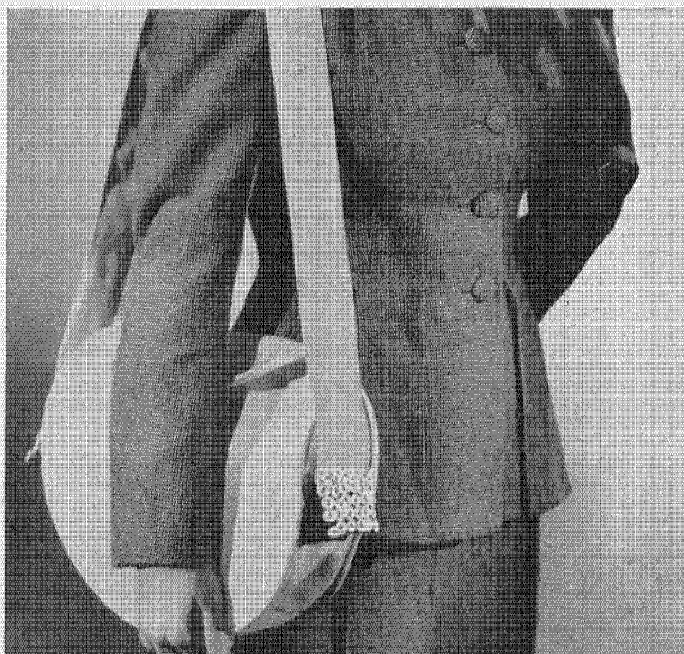
Pigments are doing an important job in paper making by improving quality and cutting costs. Publishers of books and magazines need thin paper to keep down mailing charges, yet the paper must be opaque enough so that print will not show through from one side of a sheet to the other. Books such as the Bible, for instance, would be bulky and hard to handle if the thinnest of papers were not used. Du Pont "Ti-Pure" titanium dioxide, gives paper this desired opacity and thus cuts down on the amount of paper stock needed. Often colored pigments are added to the pulp or coated on in a later manufacturing step for pleasing shades.

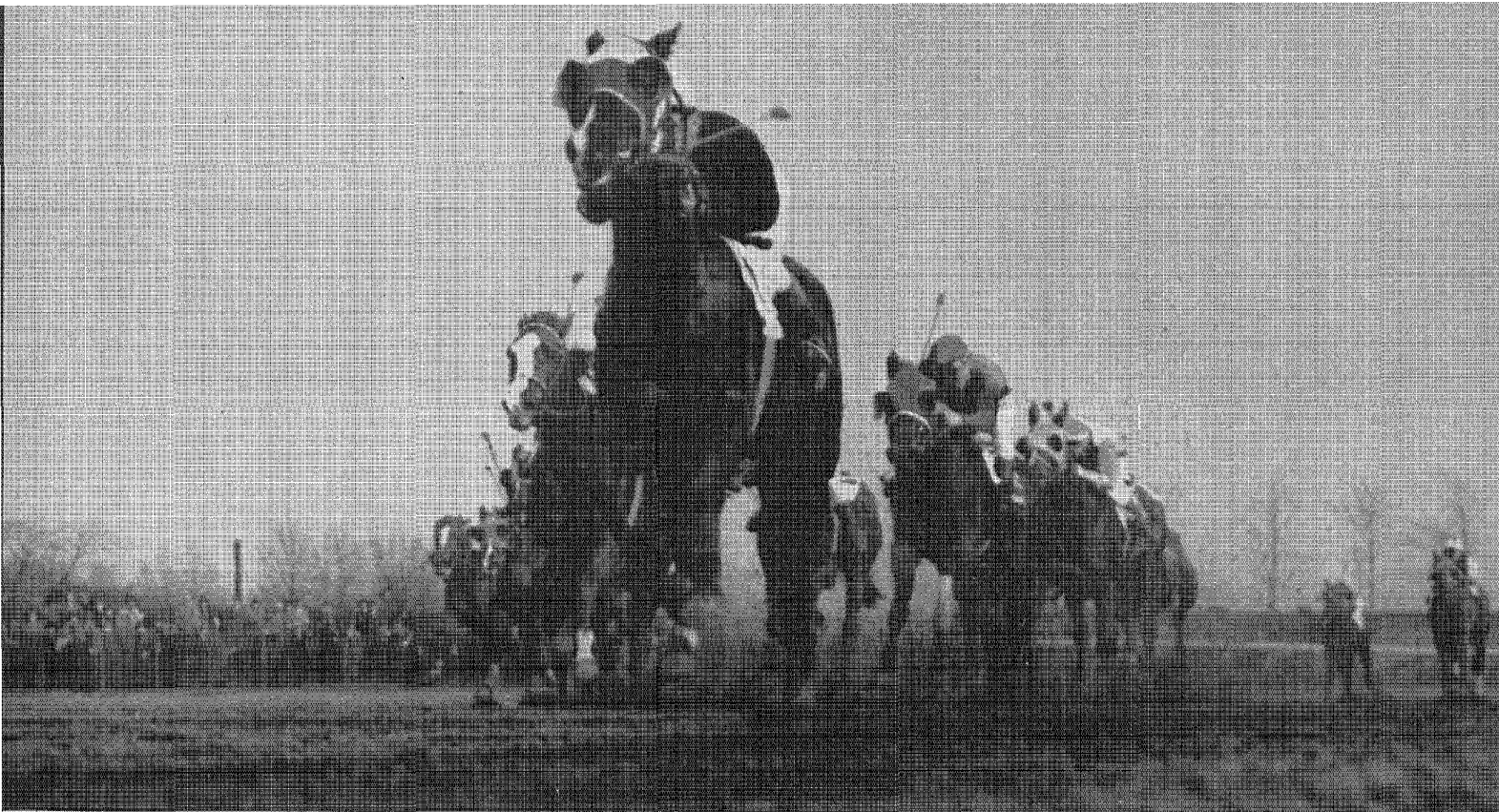
Though the day of the jester who brought merriment to the palace is past, pigments still help banish drabness from our lives. Who can ask more of something than that it brings cheer and brightness?

Because they add both beauty and protective power, more pigments are used in paints than for any other single purpose.

Bottom, right: The "ink fountain" of a printing press. Use of pigmented inks has made full color illustrations possible.

White handbags are favorites, thanks to titanium dioxide. This pigment is also used in white shoe polish, but did you know that it adds strength to glass and improves welding?





• Stirring action . . . wonderful detail. Yet the picture was made under a cloudy, mid-afternoon sky at $f/11$, $1/1000$ th of a second, on Type 428 film. This is an enlargement of a small section of a 4×5 negative.

Bad lighting...but good pictures

By JACOB DESCHIN, *Camera Editor,*
"New York Times"

Good photographic results under poor lighting conditions will now be easier to get with a new fast film recently announced by Du Pont. Called "High Speed Pan Type 428," it is the fastest of the Company's sheet films.

The film appears to have a speed rating of about 400, or nearly twice that of the fastest ones available until now. This approximation is based on a wide variety of practical field tests by both professional and amateur photographers. Its A.S.A. exposure index is 160 daylight and 125 tungsten. Incidentally, the A.S.A. ratings, because of the safety factor applied in their computation, may seem conservative, but they are designed to take full advantage of the latitude of the film and thus give good negatives under variable conditions.

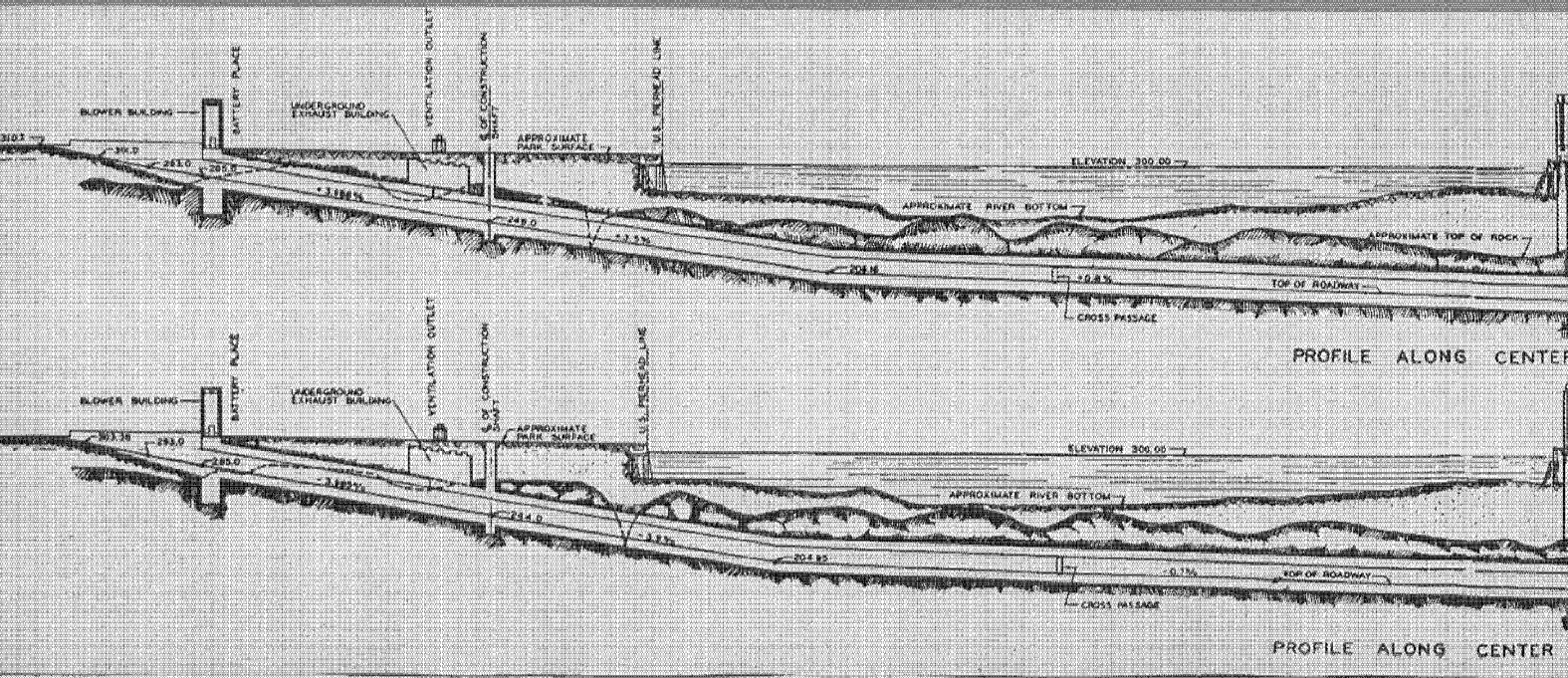
Photographers checking this new Du Pont product used shutter speeds and lens openings that gave satisfactory results with other high speed films. But the Du Pont film negatives were considerably over-exposed. Then these men went to the other extreme to test the light sensitivity of the new film to the limit. The results, they found, were good.

Just how "fast"—how sensitive—is this panchro-

matic film? The report of Captain H. Conrad Lueck, head of the New York Police Department's photographic section, is typical. He said, "This is the fastest film I have ever handled. One day I made a picture at $f/16$, $1/400$ th of a second, using a midget flash lamp. The subject was about 40 feet away. After developing the film in standard solution for the recommended time, I got a normal picture of very good grain. An average-contrast print paper was used."

Well suited for use with the increasingly popular electronic flash lighting technique, Type 428 film achieves this unusual speed without the over-sensitization to red light so often characteristic of fast pan films. It yields brilliant negatives of medium grain size from the extremely short exposures obtained with electronic flash lighting, and can be used for both portrait and commercial enlargements. These features led to its adoption by leading newspapers whose photographers must get the picture, regardless of light conditions.

High Speed Pan Type 428 film is not only rated fast, but its extreme latitude means printable negatives under bad lighting and at speeds far in excess of its rating. It is produced and supplied to dealers in cut sheets only in sizes $2\frac{1}{4} \times 3\frac{1}{4}$, $3\frac{1}{4} \times 4\frac{1}{4}$, 4×5 , 5×7 and 8×10 .



The low road to Brooklyn

Stretching from Manhattan to the land of baseball's "Dem Bums," a new underwater highway will soon be completed

Ask any visitor to Manhattan what impressed him first, and the answer is almost certainly, "the skyscrapers, of course." But since Brooklyn, Manhattan, Queens, Richmond and the Bronx joined forces 50 years ago to form one metropolis, New York has become more and more of an underground city. Thousands of drivers, rather than dodge about in traffic, have left their cars behind to go hurtling through the "subs" at some 40 miles an hour.

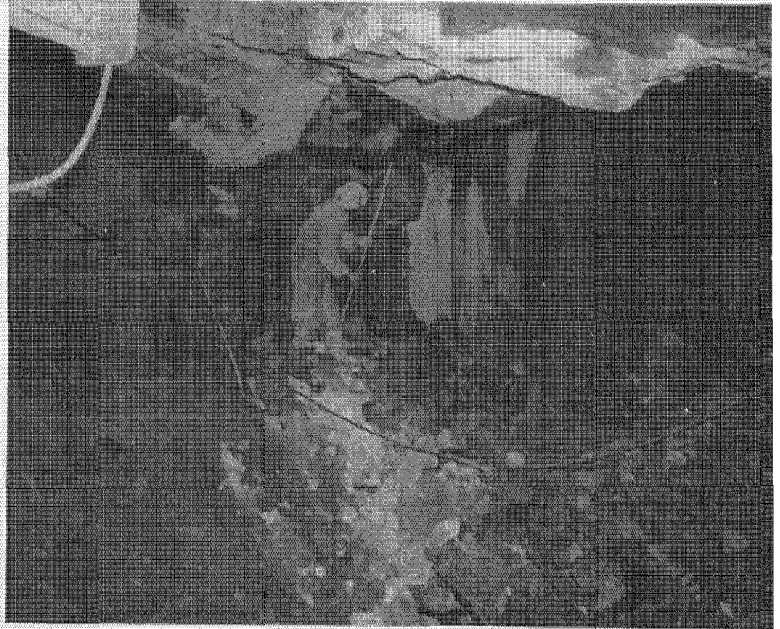
Three underwater tunnels—the Holland, Lincoln and Queens-Midtown tubes—have been built to ease the heavy stream of vehicles pouring across the bridges and ferries to the mainland and Long Island.

Today another link, the Brooklyn-Battery Tunnel, is nearing completion. It is an ultramodern, underwater highway that is eventually expected to carry about 16,000,000 vehicles a year from the southern tip of Manhattan to the Brooklyn shore of Long Island.

To appreciate the urgent need for this thoroughfare, all you have to do is look at the vital statistics of Brooklyn, with its nearly 3,000,000 inhabitants, and Manhattan with close to 2,000,000. The latter, with its dominant position in business and finance, employs hordes of Brooklyn dwellers. As a result, every working day sees an enormous flow of people heading for the Island, many of them using the rapid-transit lines, but many others going by car. Small wonder that the present traffic arteries have high blood pressure.

The City realized a number of years ago that the bridges joining Manhattan and Brooklyn weren't enough, and decided that the best answer would be a tunnel. Plans were drawn up and by October, 1940, operations were ready to start.

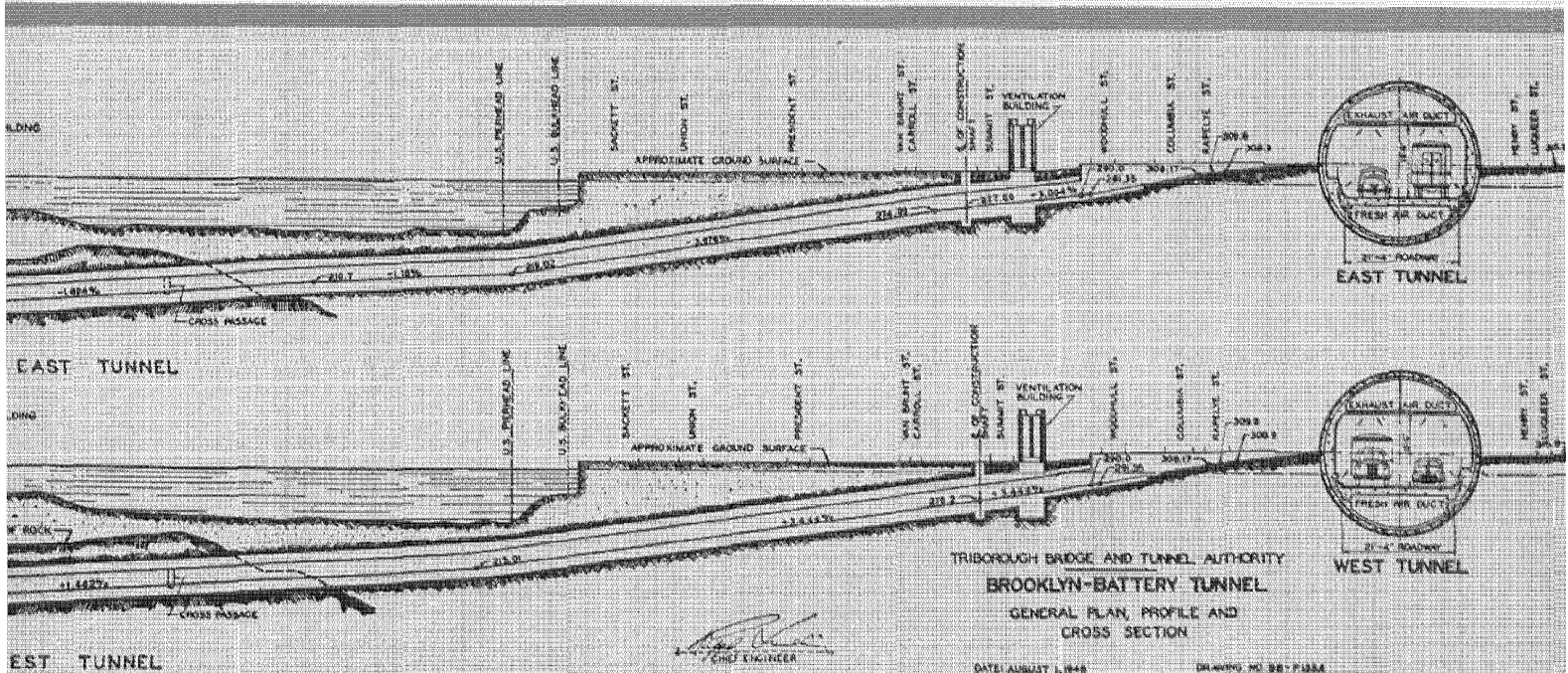
But the war intervened, and it's estimated now that the opening of the new artery will be in 1950. When it is finished, it will be one of the most impressive structures of its kind in the world. According to the Triborough Bridge and Tunnel Authority, builders of the project, the total cost, plaza to plaza, will be about \$80,000,000, excluding real estate.



Through such hard Manhattan schist as this, the parallel tubes were driven with the help of Du Pont explosives.

These profile drawings indicate some problems, including rock excavation, which were faced by tunnel crews.

Bird's-eye view shows where the new tunnel will stretch from lower Manhattan to Brooklyn, passing near Governors Island.



Heading northward through a two-lane tube to Manhattan, and southward through another to Brooklyn, motorists will travel the length of the tunnel (about 1.7 miles between portals) in $3\frac{1}{2}$ minutes. Tubular fluorescent lighting will cut down eyestrain. Ventilating stations in Manhattan, Brooklyn and near Governors Island will change the air completely every minute and a half. Underpasses and overpasses in Brooklyn and the Battery will help speed vehicles in and out of the tunnel.

While getting from one borough to the other in such high style, few New Yorkers will stop to think about the masterpiece of engineering this tunnel represents, or the problems it presented.

Digging a tunnel doesn't sound very hard. You just sink two vertical shafts on the opposite banks and drive two parallel tubes, lined with cast iron, at right angles between them. The giant pipes are bolted together, lined with concrete and tile. Air pumps are installed, lights connected and you're all set.

The only catch is that *men* have to do this work. And the pressure down under some 100 feet of water and muck must be countered by pressure from within. For this reason, air is pumped in. Weak spots in the river bed may show up and cause sudden "blows" great enough to whisk a man right up into the mud.

Tunneling through rock brings its own headaches. And Manhattan has plenty of rock—that dense Manhattan granite—which makes it possible to build a honeycomb of passages under a city without danger of cave-in.

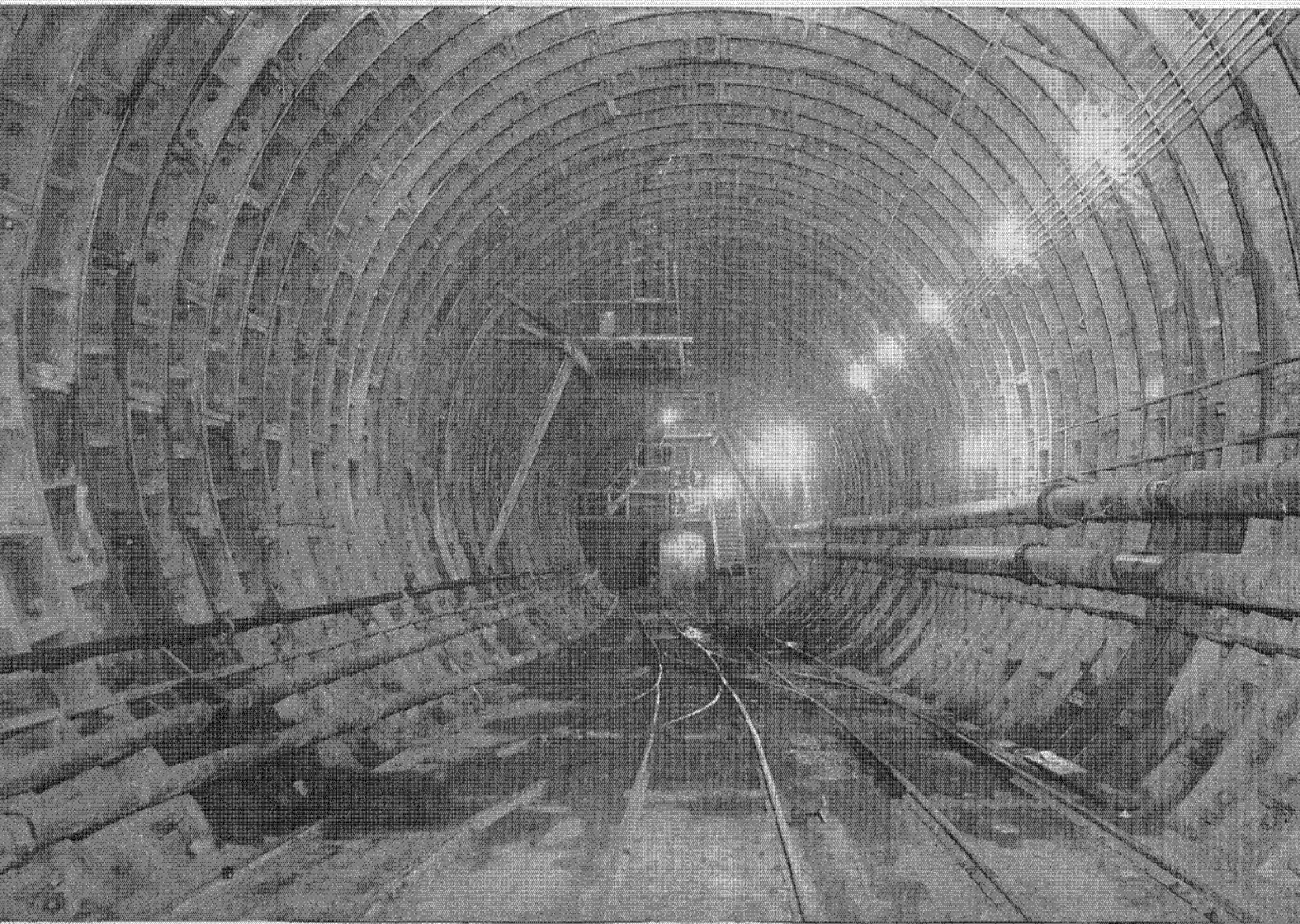
All of the work from Battery Park to the vicinity of Governors Island, with one brief exception, had to be blasted through rock. Starting from the Brooklyn end, the other crew worked first under muck and then in the ledge of rock reaching out from the upper end of Governors Island.

When the blasting stopped, the East River was resting on 295,000 cubic yards less of rock than before. Another 66,000 cubic yards had been removed to make room for the Manhattan approach to the plaza. More was blasted out to make the mid-river ventilation building.

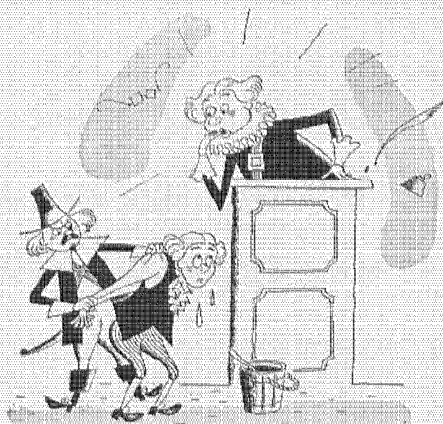
All in all, over a million pounds of Du Pont Ammonia Gelatin and "Gelex" No. 1 explosives were used, plus more than 325,000 Du Pont electric blasting caps.

The end result? In about a year, the young blades of Manhattan will be taking their girl friends to Coney Island a little faster. And the harried commuter will breathe a sigh of relief over the time he's saved away from the nerve-racking city traffic.

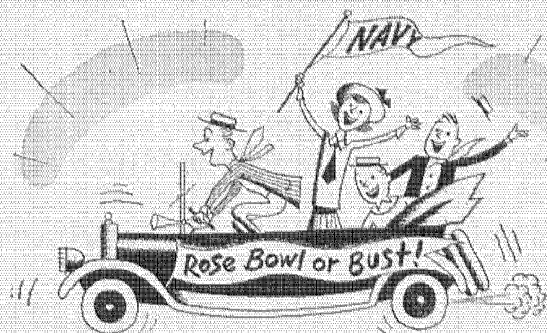
● This view of the east tube gives an idea of the size of the finished tunnel.



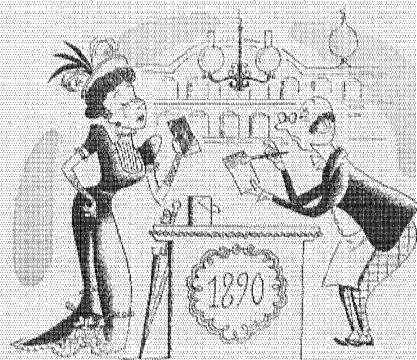
What do you know about paint?



In 1630, a Charlestown, Massachusetts clergyman was haled before the city council—charged with the serious crime of painting the interior of his house.

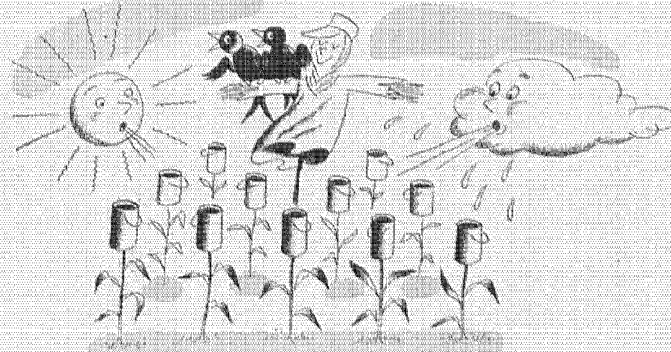


Twenty-five years ago, "Duco" lacquer was first announced to the public. Since then, this product has been continually improved.



Paint was mixed by druggists to customers' specifications as recently as 50 years ago.

Most paint failures on homes are caused by construction defects that permit water to get back of the paint film.

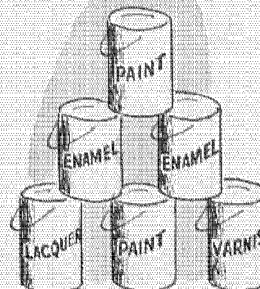


All Du Pont paints are pre-tested at "paint farms," but don't let your imagination run riot as our cartoonist's did. On these "farms," located throughout the country, painted panels are weathered in sun and rain to make sure that the finish will give satisfactory service.

For automobile refinishing alone, "Duco" is now made in more than 800 shades and hues to match the color of any car. From the time raw materials arrive until a batch of "Duco" is finished, more than 25 separate tests are made to insure uniformity and high quality.

The average film of paint protecting a surface is only around 3/1000th of an inch thick—about the same thickness as a human hair.

A properly prepared surface and correct painting procedure are as necessary as good paint itself.



Paint is an opaque mixture of pigments, vehicle and thinner; varnish a transparent solution of resins, oils and thinners; and enamel a mixture of pigments and a varnish vehicle. Lacquer is usually a solution of nitrocellulose, resins and plasticizer, and may be either clear or pigmented.



• A quarter-million service stations in city, town and country serve the American public today.

Putting the "Go" in gasoline

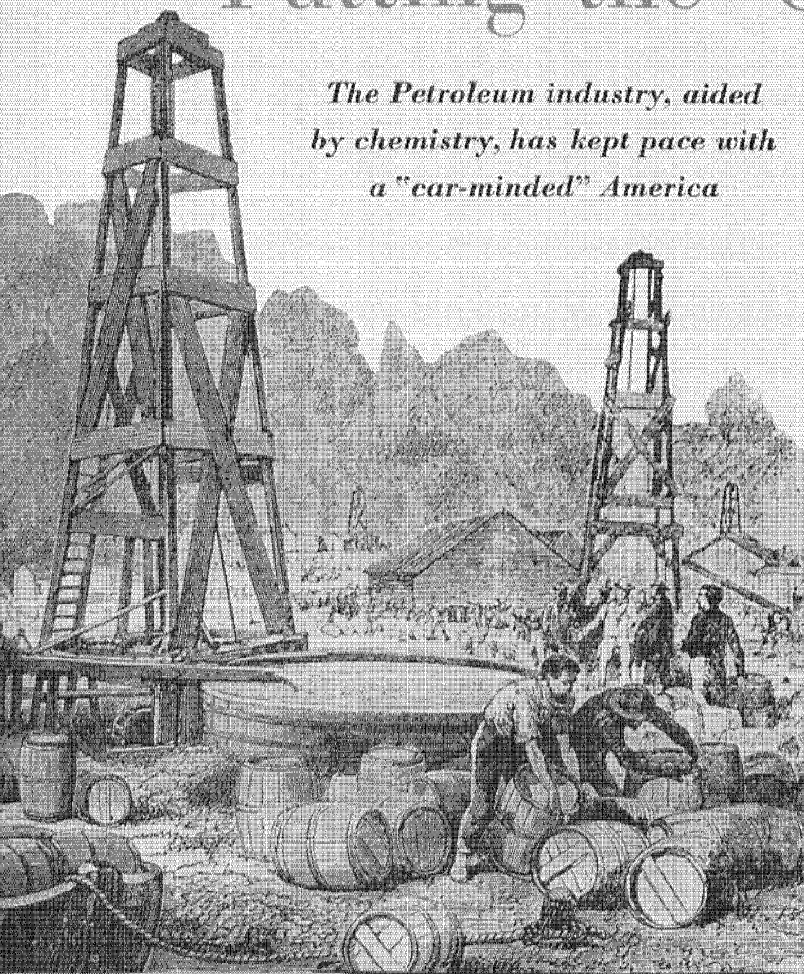
The Petroleum industry, aided by chemistry, has kept pace with a "car-minded" America

By DONALD C. McSORLEY

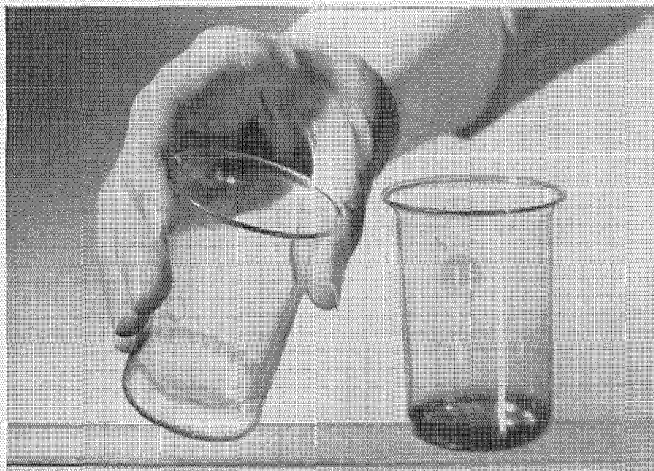
If an auto dealer calls you one day soon and offers to sell you the 101 millionth vehicle made in America, don't be startled. Only a few months ago the industry celebrated the production of its 100 millionth motor vehicle . . . a feat which has literally put this country on wheels.

Already it takes more than 30 billion gallons of gasoline a year to operate the 40-odd million vehicles now in service. That's enough to fill a train of tank cars that would almost circle the earth. In fact, this volume of gasoline is more than the amount of water needed to float the entire United States Navy. Every year, motorists drive the almost unbelievable total of some 350 billion miles.

The petroleum industry is today producing gasoline that gives better mileage and performance than ever before. The chemical industry also helps motor fuel progress by furnishing many products and services the oil men need to make better fuels.



Sketch made in the Pennsylvania oil fields of the early 1860's.



This shows amount of gum in two samples of aged gasoline. One on left was treated with Du Pont gasoline antioxidant; other was untreated. Gum in gasoline can cause poor engine operation.

Gasoline was unknown outside of the laboratory when Drake drilled his first oil well in Pennsylvania back in 1859. Even at the turn of the century, the petroleum business was relatively small; production was only 174,000 barrels of crude a day.

During this period, oil for kerosene lamps was the industry's biggest seller. The gasoline unavoidably produced during the refining process was actually thrown away as a useless by-product.

The development of the automobile about 50 years ago changed all that, of course. Now gasoline consumption amounts to 40 per cent of the country's total demand for petroleum products, currently about 6,000,000 barrels a day and still going up.

Early auto engines, low-powered and crude in design, were not demanding as far as fuel quality was concerned. More than one youngster poured kerosene in with the gas when the tank and pocketbook were both about empty. Gasoline was just gasoline, and was produced by simple distillation of the crude oil.

Engineers knew, though, that they could build a more efficient engine. But when they tried to squeeze more power out of the gasoline, the engine would begin to knock and lose power.

FUEL IMPROVED

To overcome this difficulty, a long search was conducted by the General Motors Corporation, and eventually a chemical compound was discovered that cut down this knock. It was called tetraethyl lead, or just TEL. By simply adding a very small amount of this to gasoline—actually less than a teaspoon to a gallon—a fuel could be made that resisted knock and opened the way for more powerful and efficient engines. To the motorist this meant easier hill climbing, faster pick-up, higher speeds, and greater economy.

Today, TEL compounds are used almost universally to improve the anti-knock properties of gasoline. Du Pont began manufacturing such lead compounds back in 1923, and since then has produced more than two billion pounds.

The "Gasoline Age" really went into high gear after World War I. Gasoline had then become the petroleum industry's No. 1 item, and production was booming to keep pace with a country where a car had come to be considered almost as necessary as clothes or food. New refining methods were developed which doubled the amount of gasoline obtained from a barrel of crude oil. This "cracked gasoline," as it was called, also had better anti-knock properties than the earlier fuels. Adding TEL to the cracked gasoline made a still better fuel, permitting further increases in power and efficiency of automobile engines.

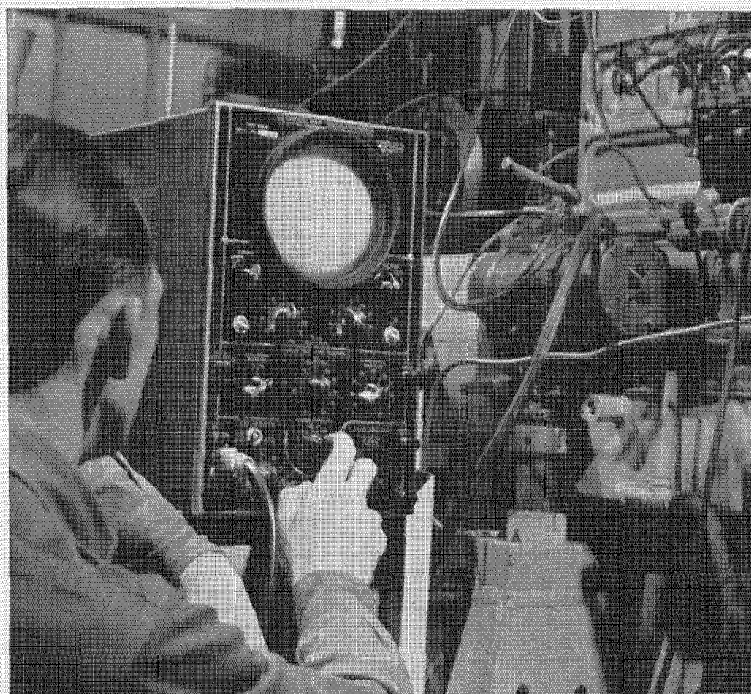
However, as is so often the case, a new development also brings in new problems. Cracked gasoline, while high in anti-knock rating, will oxidize rapidly. This can be likened to the rusting of steel, but in gasoline, varnish-like gums that hurt engine performance are produced.

To keep gums from forming, most refiners today add chemicals, known as antioxidants, to their gasoline. This Company has been one of the major suppliers of these products for years. Here's an interesting little note about them: one thimbleful of Du Pont Gasoline Antioxidant will effectively treat about 60 gallons of gasoline, enough to run the average car nearly a month.

Gum formation may also be accelerated if gasoline comes in contact with copper or copper-bearing metals during refining or storage. Among other additives supplied by Du Pont is a special chemical, called Metal Deactivator, that keeps copper out of mischief by nullifying its effect.

Yes, chemical additives help to make today's gasoline the best ever supplied the motoring public. As improved gasolines are made to power tomorrow's engines, chemistry will continue to work hand-in-hand with the oil industry.

Du Pont petroleum chemists and engineers are constantly at work on new additives to meet the requirements of tomorrow.





"All aboard"

The decks of the Wilson Line pleasure boats are now coated with a newly-developed neoprene composition

By ARTHUR M. VALZ

Annually millions of Americans seek pleasure, relaxation and escape from summer heat on the excursion steamers that ply the nation's inland and coastal waters. These big, Diesel-powered ships that carry between 2,500 and 4,000 passengers a trip have long been a part of our national scene.

There was a time when river boats were chiefly used for freight and passenger transportation, but today many of them are built to carry excursionists—picnickers, romantic couples and sightseers. They are strictly pleasure craft.

Through the years these excursion boats have undergone major changes in design and appearance. The old-time boats like those you see pictured in Currier and Ives prints are almost forgotten. Gone are the sidewheelers, with multiple smokestacks, glass-enclosed parlors, ornate dining pavilions and ball-rooms. In their place are streamlined vessels with open decks, attractive dancing areas and stainless steel snack bars that conform to modern ideas of functional design and decoration.

Unlike its wooden counterpart of Mark Twain's time, the entire vessel of today's construction is fabricated of steel and other materials that are non-

combustible, an essential requirement for the safety of passengers.

The pleasure craft pictured here was built by the Wilson Line of Wilmington, Delaware, which not only operates its ships, but designs and builds them as well.

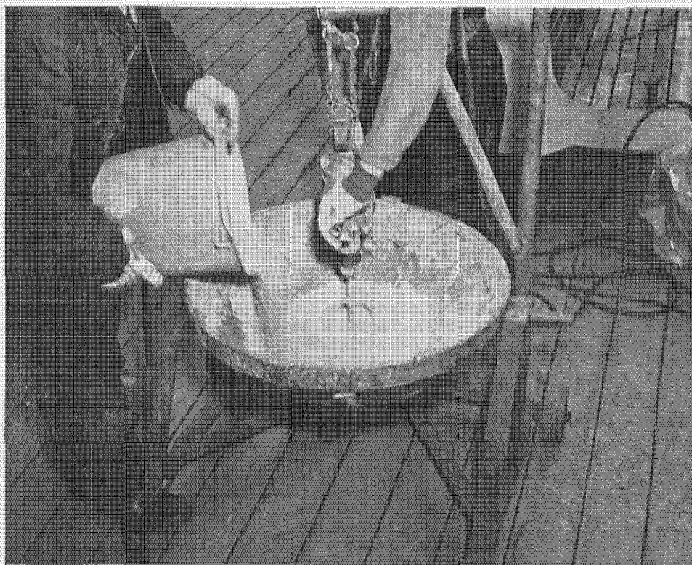
In the construction of its new all-steel boats, one problem confronting this company was to find a suitable deck-coating material to cover the wide expanse of decks that form the large areas occupied by the passengers on this particular type of craft.

Asphalt, magnesite, paints and plastics were tried, but for one reason or another none of these was entirely successful. Some were too heavy—exceeding the weight limitation of six pounds maximum allowed per square foot of deck. Others light enough to meet

and will resist cracking when exposed to the summer sun while the ship is in service, and the cold, snow and rain when the vessel is laid up during the winter.

Commenting on the advantages of this material, Lawrence C. Campbell, vice-president and general manager of the Line, recently said: "Our problems seem to be solved when we use this deck coating. It is easy to apply, deadens sound and resists penetration by moisture. Furthermore, the material is flexible enough to withstand the inherent working motion of the deck when the vessel is underway. On one of our ships, we have had sample decking of this type in service for four years and have been so satisfied that we are using it as the covering of all decks on our newest ship now under construction."

- The neoprene compound is poured into a kettle and mixed with a type of Portland cement prior to its use.



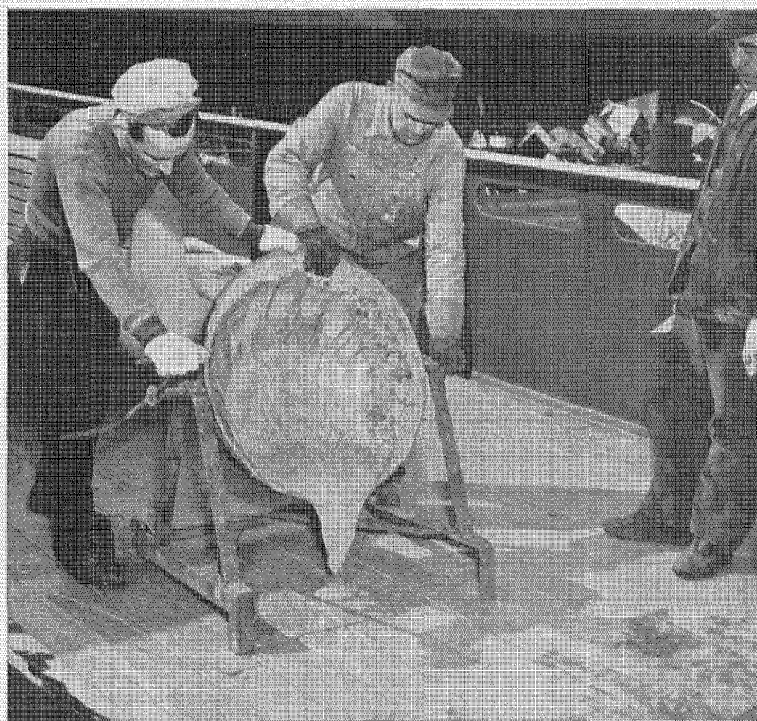
the weight requirement, were not durable enough to withstand abrasion from the scuffing of some half a million passengers in a season.

The need here was for a coating that would be easy to apply over the corrugated steel decking so as to form a smooth, durable, waterproof surface at a reasonable cost. In a search for such a material, a number of manufacturers were consulted, including the Du Pont Company's rubber service laboratory.

After testing many samples, a water dispersion of Du Pont neoprene chemical rubber, mixed with a type of Portland cement, was selected for the job. This coating, when applied over the steel deck in a thickness of about three-eighths of an inch, provides a smooth, non-skid surface. It is resilient under foot

Coating, which is about three-eighths-inch thick, is easily applied with a trowel. Exposure to all kinds of weather does not affect its smooth, durable non-skid surface.

- When thoroughly mixed, the neoprene-cement compound is spread over the surface of the steel deck.





•You can't blame the watchman for being puzzled by this "mannequin." He would be even more surprised, later on, to see her dressed in a beautiful nylon wedding gown.

Nylon is the star

... in a new color movie released by Du Pont

By SHIRLEY M. JOHNSON

"No one has ventured to predict the number of applications that will be found for nylon." That statement was made ten years ago when we introduced this new fiber to the public. Now a color movie released by the

Company brings you up to date on many of the uses for this unusual material.

The film story gives a brief explanation of how nylon is produced. The main part of the movie, however, centers around the everyday life of a nylon chemist and his family. The young scientist is so interested in



• Nylon sport fashions. Girl, center, wears a velvet skating dress that is washable and crush-resistant.

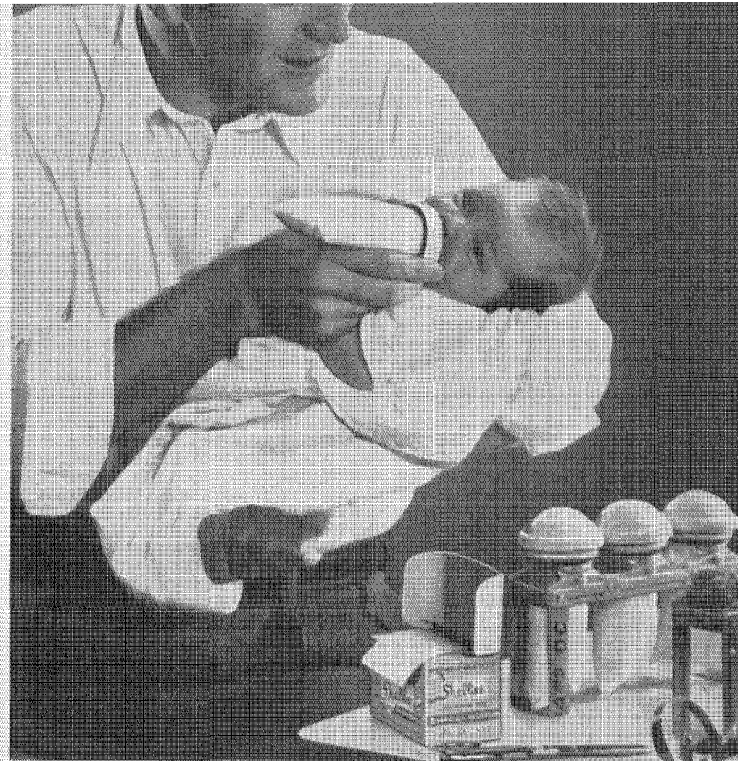
the material that he buys many of the end products, which he tests in his home. His enthusiasm mounts as he sees how nylon's qualities are applied to various articles, for example: nylon's light weight in a garden hose; its weather-resistance in lawn chairs; its quick-drying properties in clothing.

In the course of the movie, his wife attends a fashion show. The first part of this show features nylon clothing appropriate to the four seasons of the year. In the second part, beautiful mannequins "come to life" after store hours and have fun dressing up in nylon lingerie and beautiful formal gowns. A nearsighted night watchman doing his rounds and the antics of an impish model add comedy to the proceedings.

A great many nylon articles are spotlighted in the movie sequences. Sports goods, industrial products, personal items and articles for the home are all represented.

Groups interested in showing the movie, "This Is Nylon," should address the Du Pont Motion Picture Division, DM-34, Delaware Trust Building, Wilmington, Del.

• Accidents like this are not so tragic when children wear nylon that washes easily, needs little ironing.



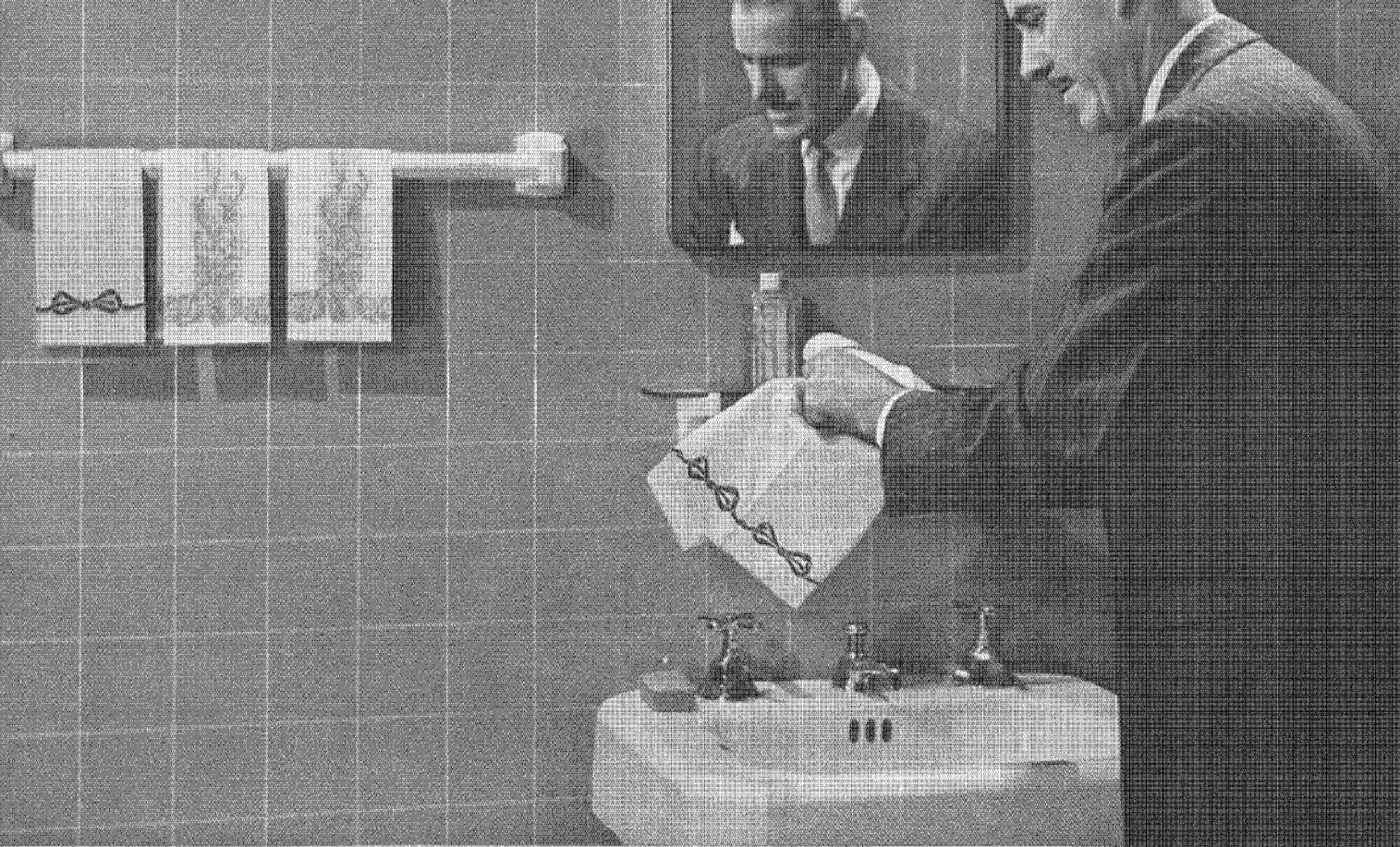
Disposable baby bottles

Chalk up another mark for polythene. This soft, pliable Du Pont plastic is now used to make pre-sterilized baby bottles, called "Shellies," that can be thrown away after using.

They have many advantages. As the baby feeds, the bottle collapses. No air is drawn back into the bottle for the infant to swallow and consequently there will be less frequent need to (pardon the expression) burp the baby.

Because the bottles are made of thin, but tough, plastic film, they can be brought to body temperatures simply by holding under a hot water tap. Soft and warm to the touch, "Shellies" have been called "the nearest approach to natural feeding."

"Shellies" were invented by a registered nurse, Mrs. Adda May Allen, of The Plains, Virginia. They will be sold by the Shellmar Products Corporation in a kit containing bottle racks, nipples, caps and other parts, along with a roll of flat, sterile polythene tubing. The tubing is heat-sealed at bottle-length intervals. With scissors, you can snip off a leakproof bottle as needed, place it in a rack, fit with a plastic top, and fill with the baby's formula. After you put a nipple on it, the milk is ready to heat and use.



A smart hostess' answer to the guest towel problem: gay, disposable non woven fabrics.

"Fabrics" without weaving

A new type of cloth is made rapidly and inexpensively when chemical adhesives take the place of the weaver's shuttle

By S. R. SHEERAN

You wouldn't think it would take much courage to use a guest towel. But it's a rare person who hasn't occasionally stood with dripping hands and debated for a moment whether or not to wipe them on daintily embroidered Irish linen.

Today, many smart hostesses are putting their guests at ease with a new type of towel. It's made of cloth fibers rather than paper, but it is a nonwoven fabric such as those trade-marked "Masslinn" by Chicopee Mills, Inc.

On the bathroom rack, nonwoven fabrics give a luxurious guest-towel note. They are as soft and flexible as fine cloth. But, like paper, they are inexpensive and disposable. Youngsters are easy converts to them, and women guests can forget about lipstick and nail polish stains. After serving their purpose, these towels can be rinsed out, used for dusting or polishing and then they can be discarded. The same is true of

those attractive non woven napkins and tablecloths.

It's only natural to ask, "How can you get so many of the advantages of woven textiles and still have a fabric so inexpensive you can throw it away?" Well, the answer lies in the economies of its manufacture.

There is no spinning and weaving. Webs of cotton and rayon fibers simply come off the carding machines and are laid one upon the other to form a "lap." This goes to a binding machine that deposits an adhesive on the face of the material. It's a special adhesive that contains Du Pont "Elvacet" polyvinyl acetate emulsion, and its job is to bind each fiber securely in place.

This practical process has some esthetic side-lights. In many nonwoven fabrics, the adhesive is laid down in a diamond design, or a series of wavy parallel lines that give a distinctive ripply surface. Sometimes, to kill two birds with one stone, a little dye is added to the adhesive. The result is a lovely colored pattern at very low cost.

Nonwoven fabrics can be either water-absorbent or water-repellent, depending on the use. Sometimes they are treated to resist flame, an especially impor-

tant property for draperies and display materials. For the sake of variety, the manufacturer may use all-cotton for a brilliant white surface, all-rayon for a silky finish with a high sheen, or a mixture of the two for in-between properties. Dyeing and printing techniques give rich colors and gay designs.

To go backstage for a moment, let's take a closer look at the milky-white "Elvacet" water emulsions used in making nonwoven fabrics. Before World War II, Du Pont introduced "Elvacet" as a substitute for rubber latex and other materials used in adhesives. But it proved so satisfactory that manufacturers kept right on using it after the war, not only in the preparation of adhesives and binders, but for many other purposes.

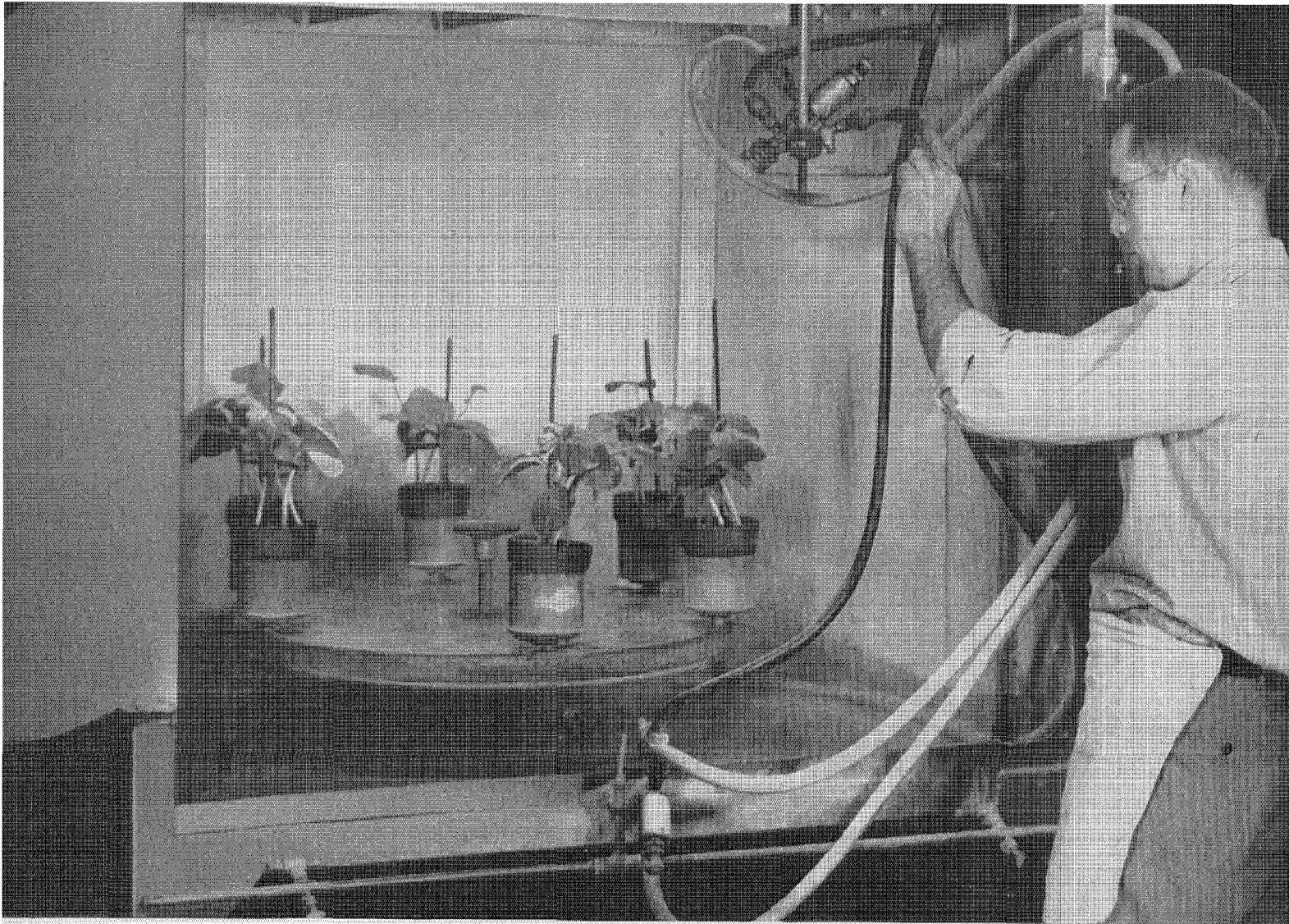
Today, "Elvacet" is more than ever a major raw

material used in the manufacture of adhesives for paper, fabric, leather, glass fibers and many other products. Textile manufacturers use it as a sizing agent and for finishing broadcloth, sheeting and piece goods. Paper makers find it helps make their products grease-proof. Leather finishers have found a niche for it in their operations. Manufacturers of orange and onion bags, papier-mache manikins, even safety matches, make better products with the help of "Elvacet."

It's easy to explain this product's success. Here is an adhesive material that is not only strong, uniform and greaseproof, but resistant to light and aging as well. Those in the know predict a bright future for "Elvacet"—as bright as the gaily decorated nonwoven fabrics it is helping to bring into your homes.

Colorful draperies, napkins and tablecloth made from non woven fabrics take over this breakfast nook.





• Squash plants on the turntable are sprayed with new insecticide. To be satisfactory, it must not injure them.

Here's a Better Insecticide

Sample of untreated wool, left, is chewed up by moths, but the undamaged piece on the right was protected by methoxychlor.



Why better? Because methoxychlor combines high effectiveness with low toxicity

The chemical compound now known as DDT was headline news when our armed forces in Africa, Italy, and the South Pacific islands used it so effectively to exterminate malarial mosquitoes and other insects carrying dread diseases. DDT first served military needs. However, since this veteran of World War II returned home, it has been employed chiefly to fight down agricultural pests on the American farm front. No insecticide has ever before received so much widespread publicity.

So with your permission, let's discuss another one equally deserving high praise. This story also begins during the war. Even before 1942 other organic com-

pounds produced in Du Pont laboratories were being evaluated. This was a part of a broad research program to develop insecticides, fungicides and pesticides that would be effective for agricultural use, but not so injurious to plants, animals and human beings as others then on the market.

Early in 1942, one of these new compounds, called methoxychlor, was found to be equally effective as DDT in the control of many insects and more effective against certain insects. There were strong indications that it would be much more safe to handle and use. Research workers were still working on that phase of the problem when DDT got the nod for war service. Any further development of methoxychlor then had to be postponed. Du Pont methoxychlor was put back on the shelf for the duration of the war.

Peacetime opened the way to resume work on the new compound, and many state agricultural experimental stations have since aided in the evaluation studies. Last year insecticides containing methoxychlor were tested by farmers, truck growers, dairymen, cattlemen, and fruit and flower growers from coast to coast.

As a result, methoxychlor has been found to combine these excellent properties: high insecticidal efficiency, low toxicity to warm-blooded animals, and safety to plants. It kills insects quickly. Under many conditions one application remains effective for several weeks or more.

Beef and dairy cattle can be sprayed repeatedly with this insecticide for the control of flies which reduce weight and milk development. There is little risk that the chemical will be cumulatively stored up in their body fat or released into the milk. There is no impair-

ment of the health of the animals, or of people who eat the meat or drink the milk.

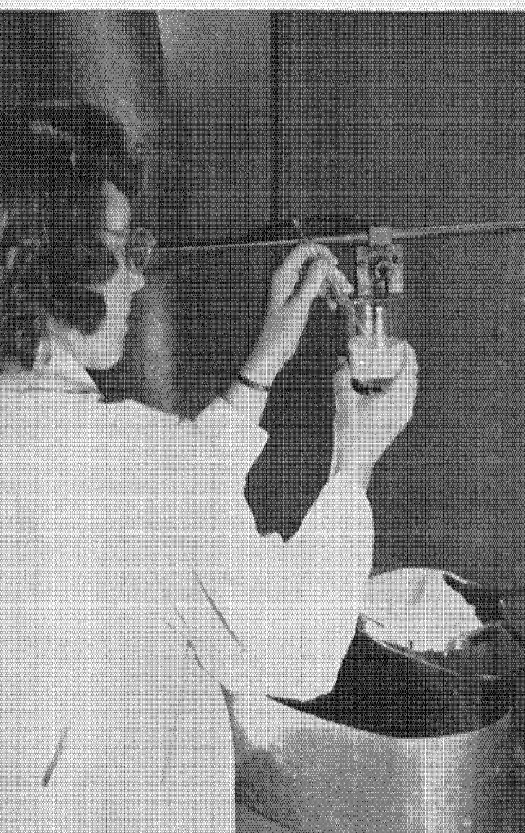
Of all the new synthetic insecticides for use on vegetable and forage crop plants, methoxychlor is one of the least toxic. It controls beetles, leaf hoppers and borers that infest beans, cucumbers, melons or squash without harming these plants, which are sensitive to many other insecticides. What's more, control measures can be continued safely close to harvest time without making the crops unsafe for either human or animal consumption.

Methoxychlor can also be used to control household insects, such as moths and flies. Currently, tests are being made to determine how best to impregnate fabrics with this insecticide, and if these tests are successful, garment manufacturers and dry cleaners may make their products mothproof with no hazards to workers or wearers of the clothing. Many other applications are likely to be uncovered as investigations by market research workers continue.

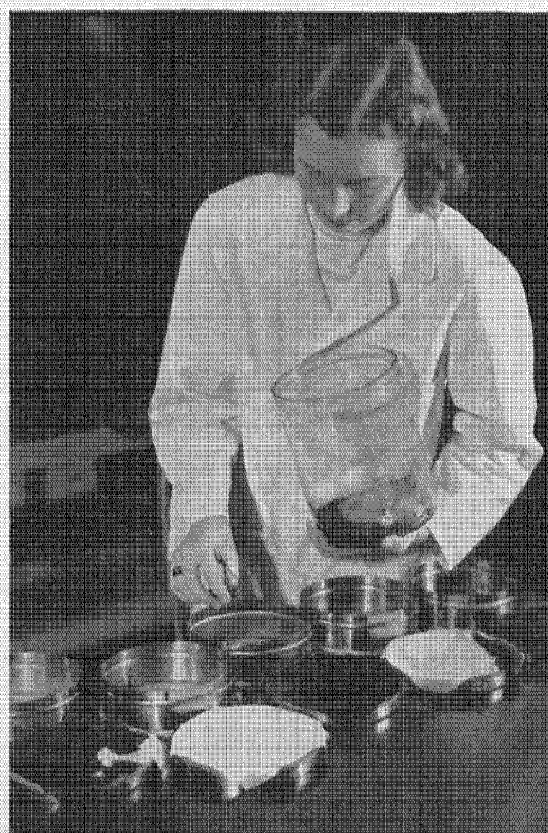
Meanwhile, since the major use for methoxychlor is in the farm field, Du Pont is now offering "Marlate" 50 insecticide. This is a wettable powder for dust or spray application on plants and animals. Dairy Cattle Spray, also in a wettable powder form, is prepared in packages of convenient size for use by dairymen. Du Pont Floral Dust, a combined insecticide and fungicide, contains methoxychlor as one of its active ingredients, and is well recommended for use by flower and fruit growers.

That, briefly, is the story to date of this new insecticide. You'll be reading more about it in these columns, for research workers will find still more applications for this truly better product.

Methoxychlor's power to protect cattle from flies is tested by spraying cowhide in lab.



Next, lab-grown flies are chloroformed. Placed in cans, they all soon revive.



Insecticide is evaluated by rate at which flies die on contact with treated cowhide.





• Hang on, Brother! You don't need to worry about a nylon monofilament line breaking.

Let's go fishing

*... and let nylon leader material help you
land the big ones*

The strength and transparency of a fisherman's leader can make the difference between a beautifully-colored rainbow trout and a bare spot above the fireplace.

Nylon monofilament leader material is used today for nearly every kind of fresh and salt water fishing. It was introduced a decade ago but was not available to fishermen during the war. Last year, however, the output of this leader material was enough to encircle the earth several times, and a lot of it found its way into tackle boxes.

Anglers' response to the single-filament leaders has been surprising, considering the fact that fishermen

are traditionally as slow to accept new fishing materials as a bass is to strike on a hot, midsummer day.

The same qualities that made nylon leaders favorites have accounted for the increased use of monofilament material. Because it retains its flexibility when wet or dry, it does not have to be soaked before being tied. It doesn't fray, split or rot, thus making it especially popular with salt water fishermen. And its great strength is important to those angling for big gamefish.

Since the last fishing season, nylon leader material has been available in test strengths of 1¼ to 60 pounds. Monofilaments of this material have come into use not only for leaders, but also for spinning, trolling and ice fishing lines, and for tails for bucktail-type lures.

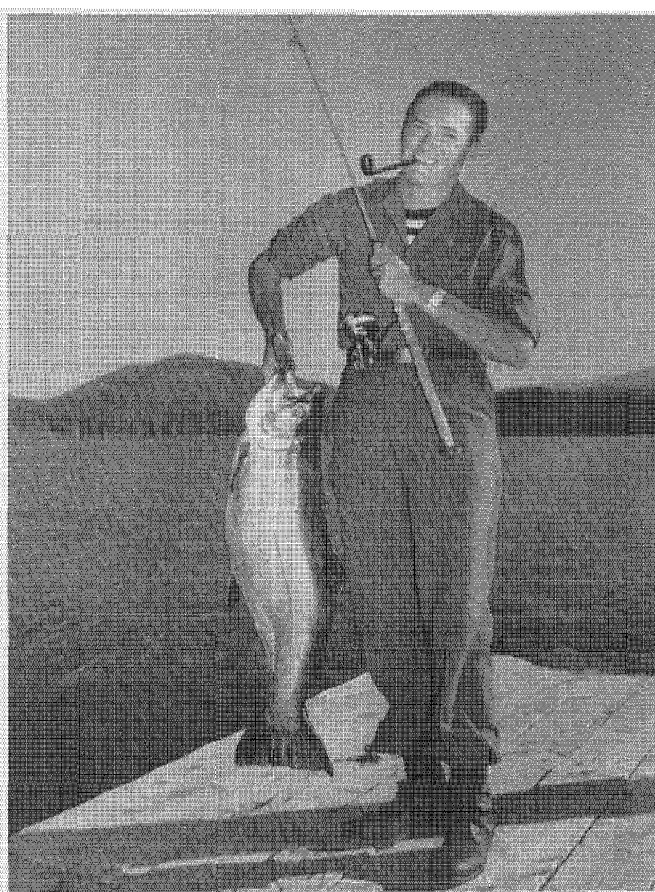
Record catches on single-filament leaders have been set for years by fresh water fishermen. In the past year, since the Du Pont Company introduced heavier test leader material, record fish ranging from an 11-pound, 9-ounce bonefish to a 76-pound marlin have been caught on it by salt water enthusiasts.

Excellent results have also been reported by spin-fishermen who have used complete lines of single-filament nylon. These lines are available in connected 100-yard coils in two to 10-pound test weights.

Low visibility and strength contribute to nylon's popularity for trolling lines. They will not kink. Many giant Kamloops trout weighing 30 pounds or more have been caught on these monofilament lines at Lake Pend Oreille, Idaho, during recent years.

The new bucktail lures with skirts of nylon wear longer and stay cleaner than similar lures with other types of dressing. Also, these bucktails give life-like action in the water because nylon can be finely divided without fraying or breaking.

Du Pont supplies the monofilament to tackle companies which cut it to proper lengths, dye and process it into finished tippets, tapered and level leaders, snelled hooks, spinning and trolling lines, and many other fishing tackle products. Sportsmen have proved the advantages of nylon monofilament to land many a fresh and salt water fish.

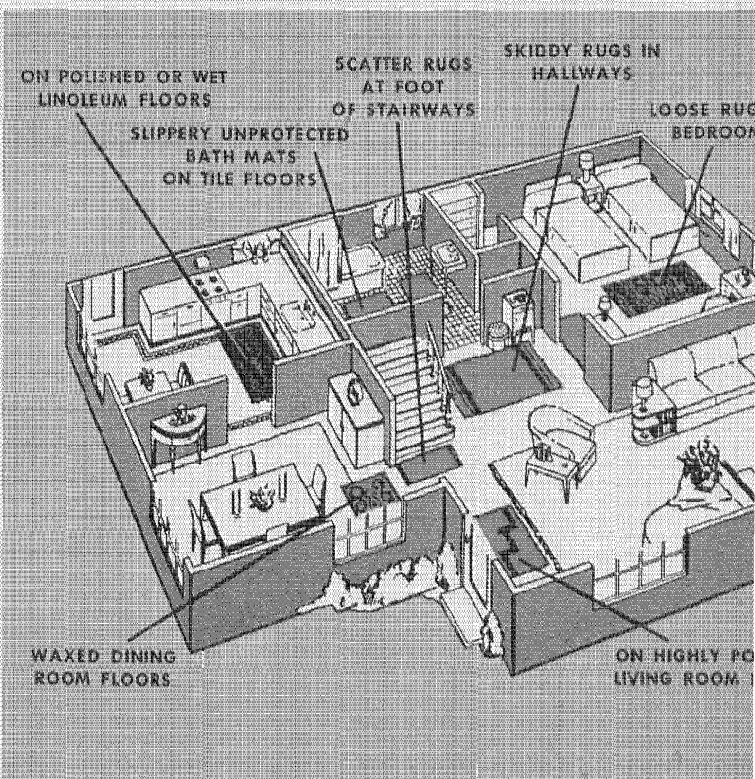


Joe Bates caught this 31 lb., 12 oz. Kamloops rainbow trout on spinning tackle using 8-pound test nylon monofilament line.

Accidents happen here

What's the Achilles' heel in your home? A scatter rug at the foot of a stairway? A slippery mat in the bathroom? Or perhaps another of the potentially dangerous situations pictured here.

To help cut down the accident toll in the American home, Du Pont makes "Rug Anchor" rug underlay, a sponge rubber composition that can be trimmed to fit any small rug. It grips both rug and floor firmly, keeping throw rugs from slipping out from under the unwary. "Rug Anchor" is inexpensive insurance against accidents that can be very costly.



"Duco" Lacquer

...25TH ANNIVERSARY

*This Du Pont product was the first
pyroxylin-type industrial finish
to gain world-wide acceptance*

Suppose you could turn the clock back 30 years and walk down Main Street on a Sunday afternoon in autumn when the Smiths and Joneses were out for their weekly pleasure drive. Looking closely, you would notice that the colored varnish on many of the cars had started to blister and peel from the summer sun. This was taken for granted by the people of that day. Many of them were more concerned about getting new cars, now that the Armistice had been signed.

Automobile makers did their best to meet the public demand, but it took a week or more to put colored varnish on a car and let it dry. Also, a great deal of valuable space, which could have been put into production, was needed for storing the automobile bodies while they dried.

Looking for a solution to the finishing problem, chemists thought of nitrocellulose lacquers. They had been used on aircraft during World War I and, industrially, in finishing small objects such as soap dishes and brass hardware.

THE COST PROBLEM

But lacquers then required an excessive amount of expensive solvents to reduce them to spraying consistency. It cost too much to apply lacquers on large surfaces like car bodies. For example, as early as 1916, lacquer enamels had been tried for refinishing autos on the West Coast, but so much thinner was required that it took as many as 16 coats to get a satisfactory finish. More economical lacquers that would provide thicker films with fewer coats were obviously needed. In 1919, chemists in the Du Pont lacquer plant at Parlin, New Jersey, undertook experimental work to develop such lacquers.

At that time another group at Parlin was attempting to prevent static electricity from accumulating on motion picture film and causing light streaks as it passed through the camera. They tried adding various salts to the nitrocellulose film base to dissipate static. Among these, sodium acetate seemed promising, and they decided to try it on a plant scale.

Meanwhile, they had observed that sodium acetate caused the nitrocellulose film dope, after standing

for a few days at summer temperatures, to change from a heavy, syrupy liquid to a much more fluid one. This was undesirable as far as the manufacture of motion picture film was concerned, but when chemists in the lacquer laboratory learned about it, they immediately recognized its possible application to their own problem.

By January, 1921, they had developed clear "low viscosity" lacquers that required much less thinner to apply. Some were sold under the name "Viscolac" for finishing brush handles.

The next problem was to color the new lacquers and find out if they would be satisfactory for finishing cars. By fall, the work had reached the point where Parlin chemists finished several of their own cars with the pigmented lacquer that later was called "Duco."

OAKLAND WAS FIRST

Results seemed so promising that samples and test data were sent to General Motors. After two more years, the new finish was ready for its first commercial use—on the Oakland open-car model in the autumn of 1923.

Shortly, buyers of such cars as Cadillac, Franklin, Marmon, Moon, Cleveland, and Lexington could have "Duco" applied to their cars upon request. When the lacquers were announced in the *Saturday Evening Post* in March, 1924, they were hailed enthusiastically by the press and the public. Buick sent a touring-car around the world featuring the new finish, and at the 1925 Automobile Show, "Duco" was introduced as "standard or optional."

Longer-lasting than old-type varnishes, "Duco" also gave car-owners a much greater variety of colors to choose from than formerly. Three-color combinations were common, and people asked for individual color schemes on their cars in order to have "something different" from the neighbors.

To the automobile manufacturer, the quick-drying properties of "Duco" were a great boon. The finishing process which had formerly taken 7 to 14 days could now be done in two. As a result, one plant reported that its production nearly doubled overnight.

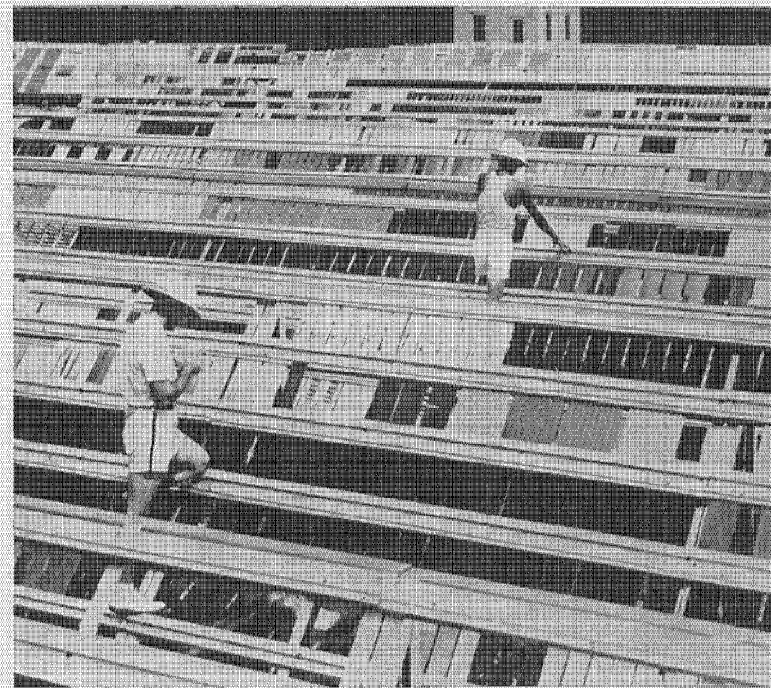
It was not long before clear "Duco" lacquers crashed another large industry. For the first time, a

clear furniture finish was available that did not readily mar or crack, and it was much more waterproof than varnish. A cedar-chest manufacturer went so far as to use the top of one of his chests finished with "Duco" as the bottom of a miniature fish pond, thus demonstrating its water-resisting properties.

"Duco" has since been used on everything from bird cages to locomotives. Artists have even employed it on murals and paintings.

There were other developments, too. Refinishing used cars soon became an important nation-wide business. Recently, "Duco" Metall-Chrome lacquers, offering a new range of colors, have been introduced.

People nowadays take for granted the durability of a "Duco" finish on their cars or furniture. They have lived with it for a quarter of a century. And when the 50th Anniversary rolls around, it is reasonable to expect that this Du Pont finish, or perhaps even a better one, will be serving the needs of industry and the public.

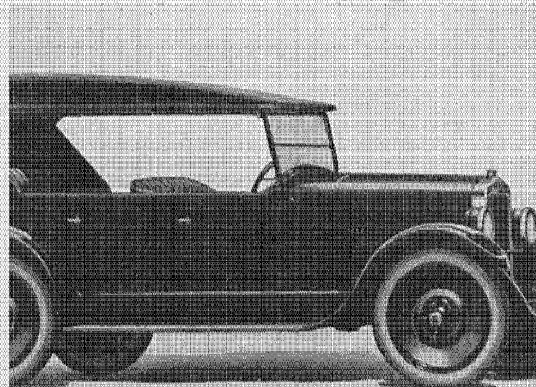


Du Pont finishes are pretested on "paint farms" before they are released by the laboratory.

Woodcut below shows the manufacture of paint in an American shop, 1840.

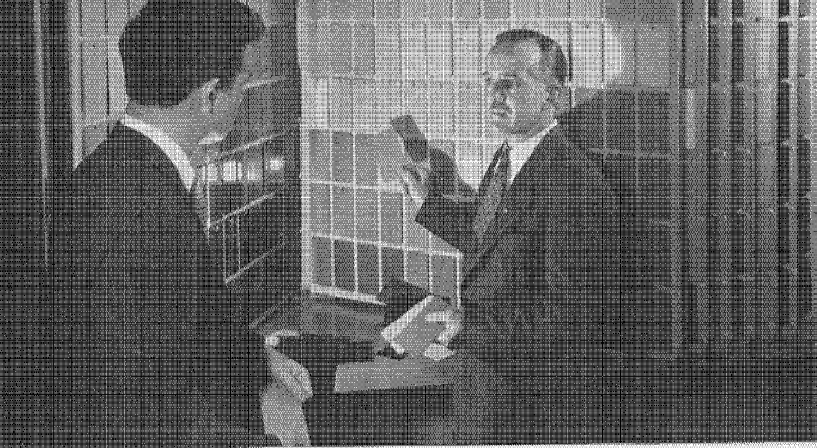


Eighty-three years later, "Duco" lacquer was first used commercially on Oakland.



The advertisement that announced the new lacquer appeared March 29, 1924.

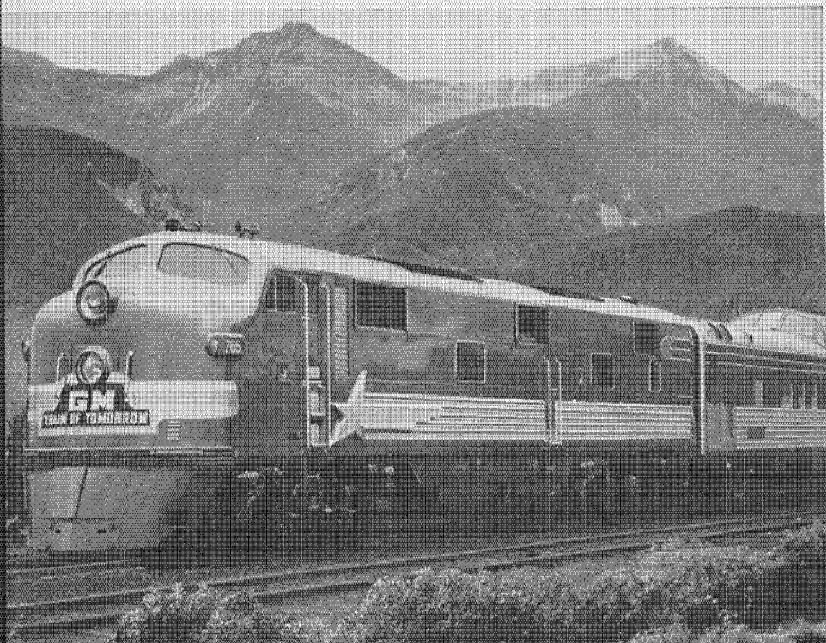




Automobile manufacturers in our day can choose from hundreds of "Duco" lacquer colors, all of which have been thoroughly tested.



"Duco" is also used in the interiors of planes. In 1930, Lindbergh's Lockheed Sirius was finished entirely with this lacquer.

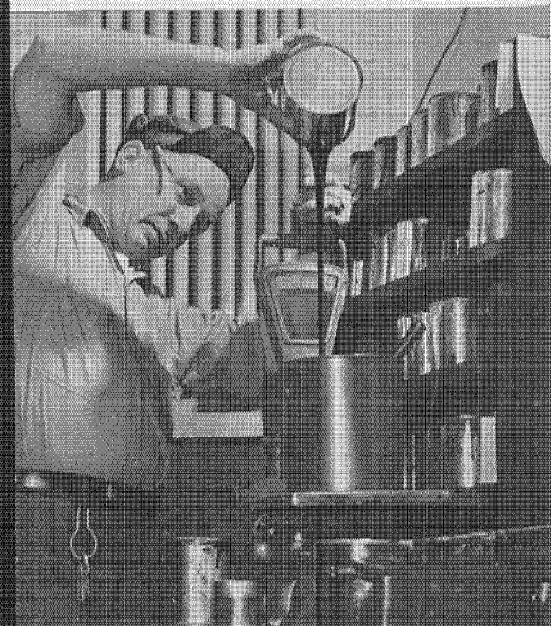


"Duco" protects and enhances the beauty of trains, including this one, which was inspected by millions of American people.

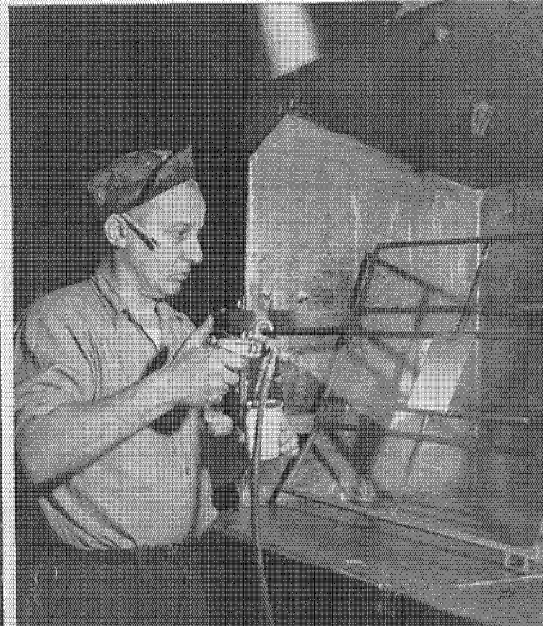


The furniture industry also uses "Duco." Clear lacquers preserve and beautify the fine woods used in pieces like the chest, above.

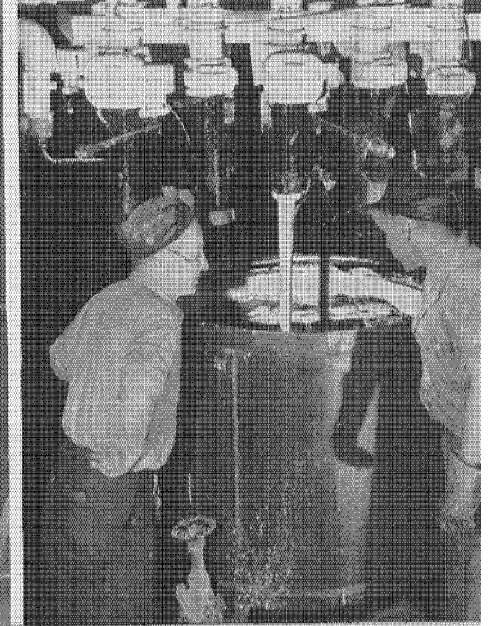
Blending the color of a large batch of "Duco" is based on sample blend below.

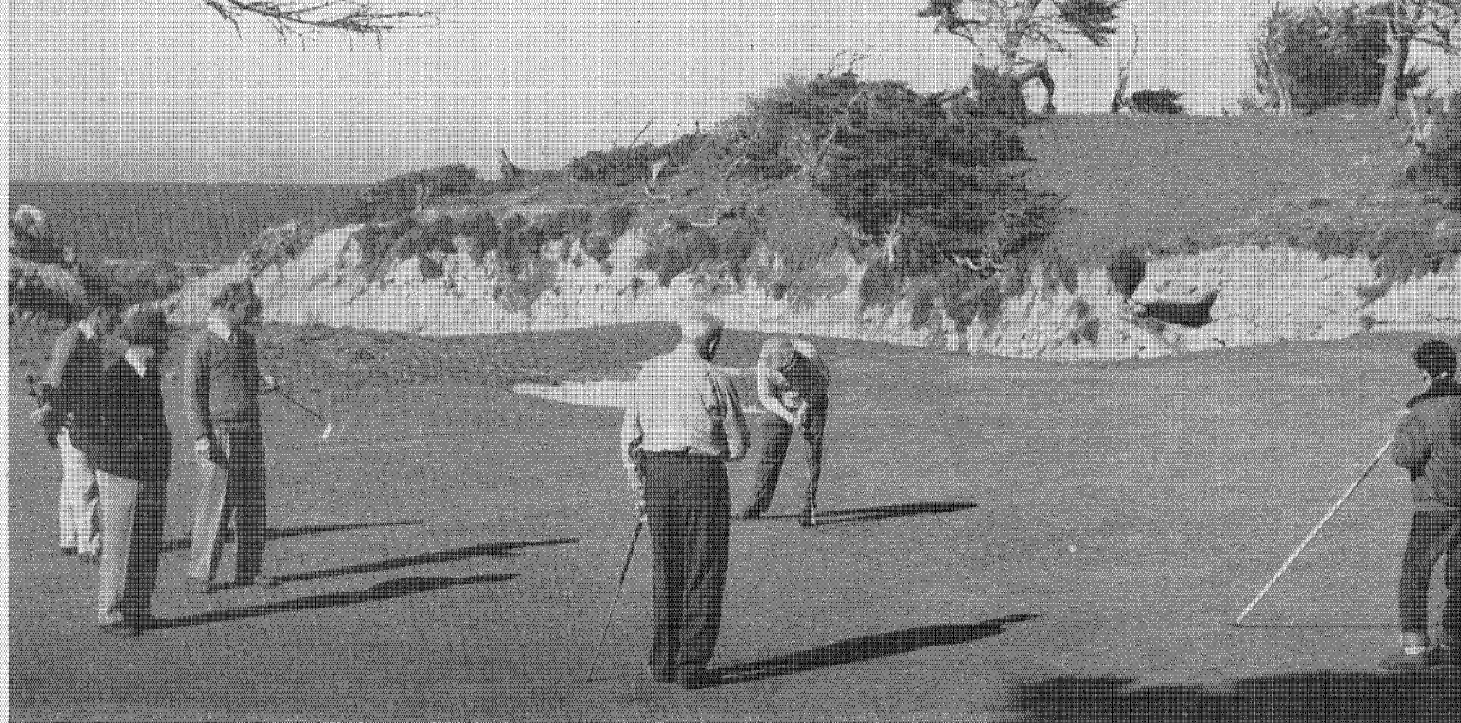


The sample is sprayed on a small panel to be checked by the control laboratory.



White "Duco," used in mixing light colors, is unloaded from tinting solution header.





Treasured turf

Greens are kept in a healthy condition by fighting off turf diseases with fungicides

Next time you fail to sink a long putt deflected from the cup by a dead spot on the green, hold your temper until you have counted ten. Then, if you must swear, put all the venom you please in these words, "Rhizoctonia solani!" That's the technical name of the fungus responsible for one of the turf diseases that attack fine grasses and cause these dead spots.

Your golf companions are presumably familiar with Brown Patch, Dollar Spot, and Snow Mold—three fungus diseases that attack fine turf and are best known by these common names.

Brown Patch appears suddenly as discolored areas ranging from small spots to patches several feet in diameter with a dark ring or "smoke screen" around the border where the disease is still active.

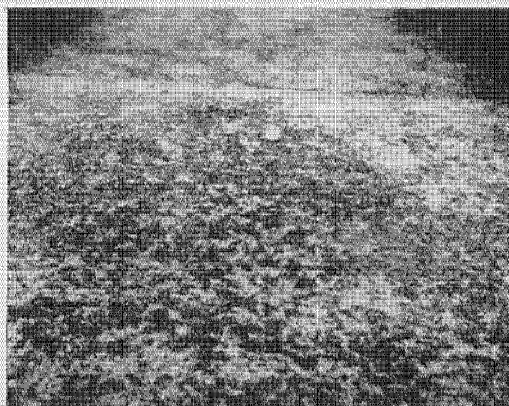
Dollar Spot shows up as bleached brown spots of dead grass, and they are seldom larger than a silver dollar, although they be numerous enough to destroy large areas of turf.

Snow Mold develops in circular patches of dirty white—sometimes with a pinkish cast—and they often run together, covering large areas. This mold thrives at temperatures just above freezing, in the saturated atmosphere near melting snow or where snow covers unfrozen ground.

The once-difficult job of keeping greens has been made easier through the use of these Du Pont chemical compounds: "Tersan" organic nonmercurial fungicide, and Special "Semesan" mercurial fungicide, are effective against all three diseases as preventives or curatives. Greenkeepers whose major problems are Brown Patch or Snow Mold usually prefer "Tersan," although Special "Semesan" is their choice for a one-shot treatment. When the main problem is to control Dollar Spot, they usually select Du Pont F-531.

Use of these fungicides has reduced the prevalence of turf diseases, just as the use of Du Pont 2,4-D and "Ammate" weed killers has controlled noxious weeds, brush, and poison ivy. Greenkeepers now have the chemical tools to make your leisure hours on the golf grounds and other recreational areas more enjoyable.

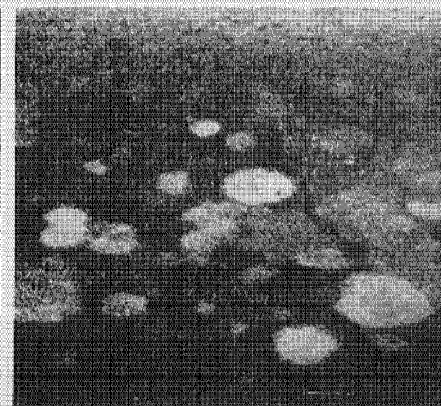
Dollar Spot can ruin large areas of turf.



Brown Patch thrives in hot, humid weather.



Snow Mold is a wintertime turf ki





Maine's new turnpike

*Add this one to the list of America's great
highways built with the aid of
Du Pont explosives*

By M. E. WILLIAMS

Speed . . . safety . . . streamlined beauty! These words suggest today's modern trains, planes, ships and autos. And they apply as well to other transport facilities, such as Maine's new \$20,000,000 express highway. This extends from Kittery, at the southern tip of the State

on the New Hampshire border, to Portland, a distance of about 47 miles.

Within its 300-foot, fenced-in right of way are two 24-foot traffic lanes with a 26-foot dividing strip of grass between them. This dual highway was opened to through traffic a little more than a year ago after contractors had finished laying 1,360,000 square yards of asphaltic pavement. Since then this new route has helped to relieve the traffic congestion on U. S. 1 between Boston and Portland, besides giving Maine's

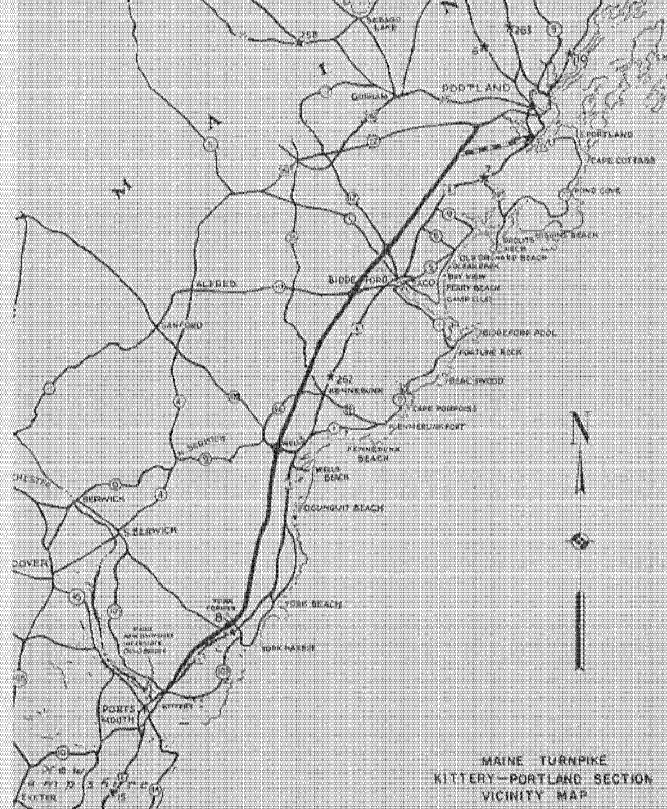
large tourist population new motoring pleasure.

You'll understand why when we tell you that there are no steep grades, no road curves exceeding one degree, no stop-lights, and no billboards. There are no grade crossings or road intersections; 41 bridges and overpasses have eliminated those hazards. Although this express highway has been designed for safe motoring at 65 miles an hour, the speed limit has been set at 60 miles. To travel over the smooth pavement through long stretches of woodlands with now and then a glimpse of the ocean has been a rewarding experience for thousands.

This State-authorized superhighway, financed by private capital, is being operated by the Maine Turnpike Authority, which collects toll charges—currently 50 cents for a passenger car and \$1.25 for a truck—to provide funds for maintenance and amortization. If and when the Kittery-Portland section pays off, MTA may extend its toll road from Portland eventually to Fort Kent, Maine, on the Canadian border. But that's in the future.

Shown here are a few typical views of the 47-mile section to illustrate some progressive phases of the work. Plans for this turnpike were prepared by MTA engineers in collaboration with Howard, Needles, Tamen & Bergendoff, consultant engineers. Four New England contractors shared the road-building chore.

Completion of this project, which involved the excavation of more than 4,400,000 cubic yards, can be reported as a good job well done. A substantial part of the blasting work was done with Du Pont dynamite.



The heavy black line shows the route of this toll road. It may eventually be extended to the Canadian border.

A typical construction view at an early stage of work. Rock ledges in northern sections kept blasters busy.



Did you know

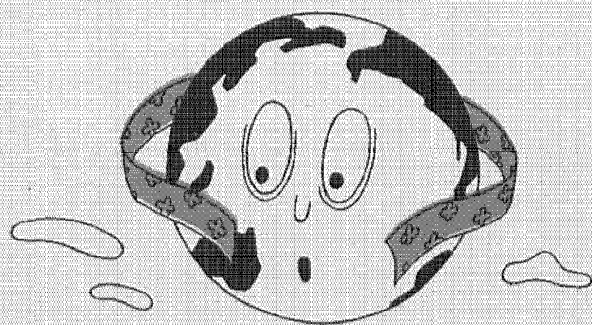
... THERE ARE 101 ways to use DuPont "Cel-O-Seal" cellulose bands for closures on bottles and other packaging containers?

... DU PONT HAS SPENT more than \$30,000,000 on rayon research since it began making this chemical fiber in 1921? At least 15 other companies are also manufacturing rayon in this country today.

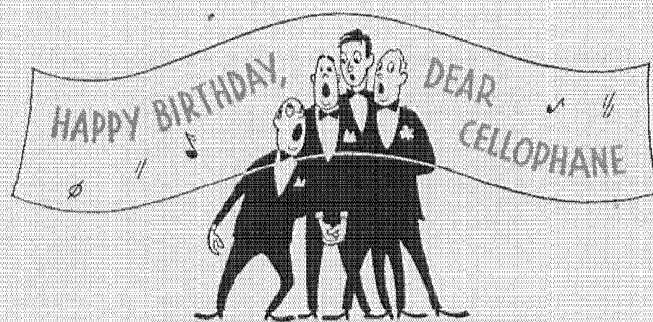


... NYLON MONOFILAMENT is now being used for harp strings?

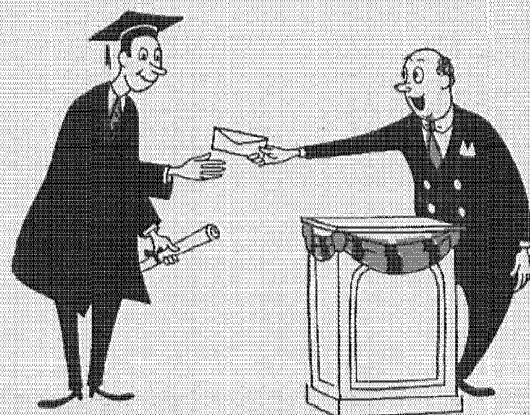
... OF THE 96 known chemical elements, 44 are used in manufacturing automobiles?



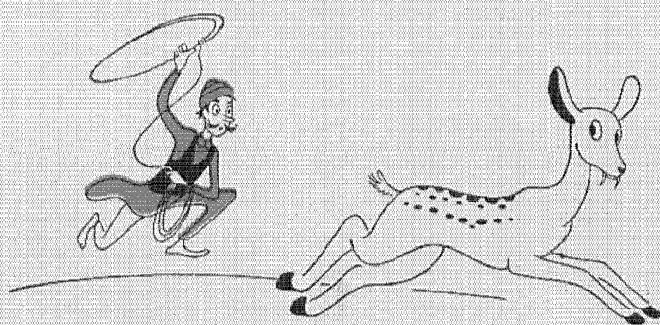
... TEN YEARS AGO, some 500,000 yards of cloth were bleached weekly by the use of the then new Du Pont continuous peroxide systems? Textile finishing plants are now processing more than 36,000,000 yards each week—enough if made into a single strip to reach about four-fifths of the distance around the earth at the equator.



... IN APRIL, DU PONT will observe the 25th anniversary of the manufacture of Cellophane in this country at the Buffalo plant where it was first made?

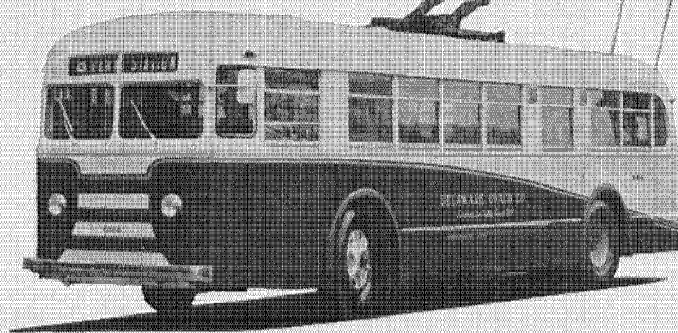


... DU PONT IS AWARDING 77 postgraduate and postdoctorate fellowships to 47 universities throughout the country for the 1949-50 academic year? In addition, the Company has recently instituted a program of grants-in-aid in the amount of \$10,000 to each of 10 universities for unrestricted use in the field of fundamental chemical research.



... MUSK, A FIXATIVE for perfumes, was once obtained only from a male Tibetan deer? Even the crude material was expensive—once reaching \$560 a pound. If purified, this quantity would be worth \$40,000. Today, Du Pont makes "Astrotone" BR synthetic musk, a pure product. Currently, its market price is about \$125 a pound.

For better service



"Duco" Metalli-Chrome lacquer and nylon are being tested for commercial use on trolley coaches

One morning not so long ago, regular patrons of the Delaware Coach Company were standing at Nineteenth Street and Brinkle Avenue waiting for the 7:40 bus. As it approached, one of the group exclaimed, "Look at that fancy new paint job!"

They were soon to learn more about it. As they got on, an employee of the transit company handed each passenger a small card with the following message printed on it:

"The coach in which you are riding is a test coach.

It is the first trolley coach in the world ever to be upholstered in nylon. This fabric—a combination Bedford Cord and pile stripe—is the newest type of upholstery fabric now available for transportation vehicles.

"Also for the first time . . . the outside green of the coach is painted with Du Pont "Duco" Metalli-Chrome lacquer, which provides a finish of scintillating beauty with a depth and gleaming richness not obtainable with ordinary paints."

And the message concluded:

"This is our latest effort to bring you the finest in transportation in carrying out our program of serving the public since 1864." It was signed by the Delaware Coach Company of Wilmington.

Test trolley coach can be easily seen at a distance because it is finished with sparkling "Duco" Metalli-Chrome lacquer.

Seats are upholstered in two shades of a green nylon fabric. It is attractive, durable, soil-resistant and easy to clean.



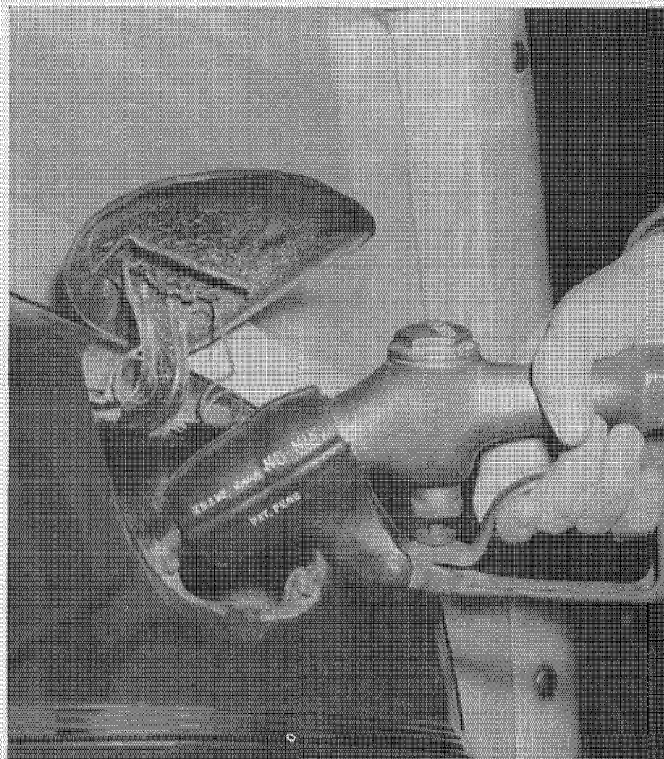
What's New



• **IT'S SEAWORTHY.** Here's news in swim suit fabrics—a lightweight velvet by Crompton Richmond. It is treated with Du Pont "Zelan" durable water repellent to dry quickly and to resist ordinary spots or stains. This garment of the new material is styled by Frances Sider, of 1384 Broadway, New York City.

• **PLANT EXPANDED.** The Du Pont Company has authorized a project of about \$3,000,000 to expand facilities for manufacturing polyvinyl alcohols at the Niagara Falls, New York, plant of the Electrochemicals Department. Construction work will be started as soon as possible, and if all goes well, the new continuous-process plant will be ready for operation sometime next year.

• **AT CUPERTINO, CALIFORNIA,** Du Pont recently acquired a farm property which will be operated by the Grasselli Chemicals Department as its "San Jose Experimental Station." Here field tests will be made with chemicals to find out how best to control insects, parasitic diseases, and weeds affecting plants and crops in central California's fruit and vegetable crop lands.



• **NOZZLE GUARD.** Here's a new device to help gas station operators give better service to their patrons. It's a conductive neoprene jacket that fits over the nozzle of the hose to keep fenders from being scratched. The manufacturer, Hood Rubber Company, of Watertown, Massachusetts, selected this chemical rubber because it resists the harmful effects of exposure to gasoline, sunlight and weathering.

● **DRY CLEANING AID.** After four years of research, development and field-testing work, Du Pont recently announced its new "Ovalclene" dry cleaning detergent. It can be used with either synthetic or petroleum solvents in all types of dry cleaning equipment. "Ovalclene," pretested under actual service conditions, has been found to remove soil thoroughly, quickly, and at low cost. Dry cleaners can obtain full details about this new product by writing to the Electrochemicals Department, DM-33, Wilmington, Delaware.



● **APRIL SHOWERS.** Umbrellas covered with nylon fabrics now give better service than was possible before. Like nylon stockings, they dry fast. A few quick shakes get rid of clinging drops. The lightweight fabric can be treated with "Zelan" durable water repellent to shed rain and resist nongreasy spots and stains.

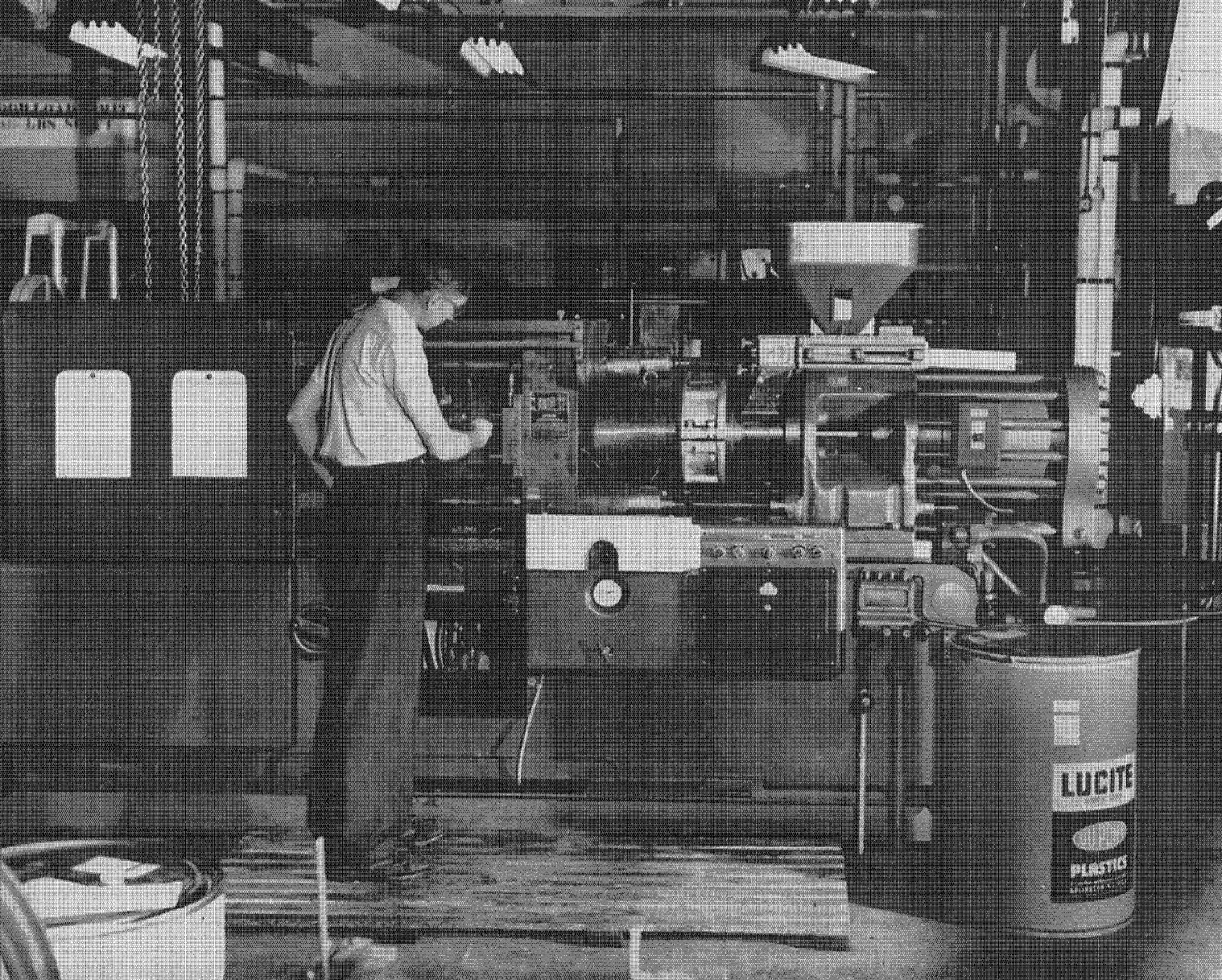
● **KEEP 'EM SHINY.** For sportsmen who require the best tools to keep their rifles, shotguns and pistols clean, the Mill-Rose Company, of 1985 East 59th Street, Cleveland, Ohio, now offers brushes with long-lasting, durable Du Pont nylon bristles as a perfect compromise between wire and animal-bristled brushes, also made by that company. The new brushes, made in sizes to fit all standard guns, are unaffected by cleaning oils. The smooth, single filament bristles do not retain dirt, rust or carbon particles, and can be cleaned with soap and water.



● **FOR SIMPLE, EASY** administration of dry powdered penicillin to treat infections of the upper respiratory tract and lungs, Abbott Laboratories, North Chicago, Illinois, has designed this "Aerohalor" of transparent "Lucite" acrylic resin. The device is equipped with interchangeable parts for either oral or nasal use.



● **FOR COLOR, STYLE AND SERVICE.** In apartments, restaurants and home game rooms, space is usually limited. So Kohler and Campbell, Incorporated, 401-425 East 163rd Street, New York City, designed this Peter Pan piano for such needs. The instrument is finished attractively in red or white Du Pont "Fabrikoid" pyroxylin coated fabric which resists cracking and soiling, and is easy to clean with soap and water.



• This machine makes articles of "Lucite" from the plastic molding powder.

Plastics step ahead

A record of top performance always pays off. It's true of an entertainer . . . or of a plastic.

Look at Bing Crosby. In 1948, for the fifth consecutive year, he was the top box office attraction at American movies. No wonder he's already a living legend . . . no wonder he has such a large and faithful following.

"Lucite" acrylic resin has an imposing record, too. First introduced 12 years ago, this brilliant crystal has kept its leadership. Consumers have come to look for beautiful "Lucite" objects ranging from automobile horn buttons to costume jewelry. Manufacturers in scores of industries have learned that it could improve their products.

Now molders of plastics have a new and improved type of "Lucite" to work with. It's called HM-140 and has superior molding properties. The molding range is wider, and the plastic is stable at higher injection-molding cylinder temperatures, thus making it suitable for a greater variety of uses.

The new molding composition is manufactured in a wide range of transparent, translucent and opaque colors and costs no more than ordinary acrylic powders. And articles molded of HM-140 have even more sparkle and clarity. For such reasons as these, you can look for "Lucite" to go right on setting new records.

Molders of plastic articles can get additional information by writing to Room M-35, Plastics Department, Du Pont Company, Wilmington, Delaware.

MAKE SHOPPING QUICKER, EASIER

SELF-SERVICE



**You help yourself to the cuts
you want—protected by
transparent Du Pont Cellophane**

Here's the new way to buy meats—self-service, just like other foods. Weighed, priced, and packaged in Cellophane . . . displayed in open, refrigerated cases. You select just the cuts you want—spend only the time you want.

Cellophane lets you see exactly what you buy . . . and keeps the meat fresh and clean.

A growing number of leading food stores now sell meats this new way. They report shoppers like it because it's so convenient and time-saving . . . particularly during rush hours.

Self-service meat shopping may not have come to your community yet, but when it does, we are sure you will like it.



BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

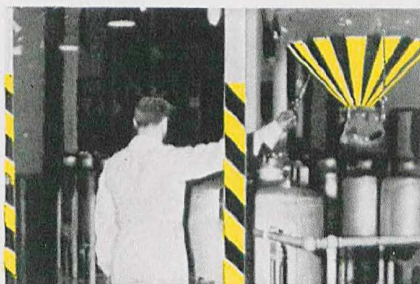
*Shows what it protects...
protects what it shows*

DU PONT
Cellophane

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VISIBILITY. Color Conditioning eliminates glare... reduces eyestrain and fatigue... provides the correct degree of "brightness" within the worker's field of vision.



SAFETY. Du Pont Safety Color Code "points up" hazardous areas... helps prevent personal injury. Colors and symbols quickly identify first-aid and fire-protection equipment.



COLOR CONDITIONING is making an important contribution to the textile industry... stimulating production... reducing operator fatigue... improving morale. The comments of one mill superintendent are typical: "Having once experienced the improvement and benefits of Color Conditioning, we would never consider going back to the old concepts of interior mill painting."

IMPROVE PRODUCTION—INCREASE PROFITS with Du Pont Color Conditioning



MORALE. Pleasant surroundings give workers a "lift"... pay off in better work. Color Conditioning in washrooms, cafeterias, etc. helps promote good employee-management relations.



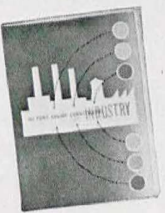
FOR EVERY INTERIOR. Color Conditioning benefits every part of your plant... stairways, offices, corridors, assembly rooms. This scientific painting plan imparts an agreeable, efficient atmosphere to every interior.

In the hundreds of industrial plants where Du Pont Color Conditioning is used today, supervisors can point to a definite increase in employee productivity, morale and safety. Color Conditioning helps workers see better, feel better, work better... boosts profits by improving both the rate and quality of production. Learn how this scientific painting plan can bring these benefits to *your* plant... and help cut maintenance costs, too! Send coupon to E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.



Color Conditioning

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BETTER THINGS FOR BETTER LIVING

... THROUGH CHEMISTRY

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