

The Du Pont Magazine



Courtesy of Famous Players-Lasky Corporation

THE CHARGE UP SAN JUAN HILL

Recalling those stirring days when our troops made history in Cuba during the Spanish-American War.
Du Pont plant facilities were extended to produce military supplies during this period

May, 1927

FABRIKOID

MAKES COVERS SAY "ATTENTION!"



Direct advertising portfolio of the Cadillac Motor Car Co., designed and executed by the Burkhardt Company of Detroit.

Use Beauty to Sell Beauty!

IN presenting to dealers their direct mail material, Cadillac uses the appeal of beauty. ¶ Striking covers of Du Pont Fabrikoid win the dealer's instant attention. He is sold, quickly, effectively. ¶ And the good work keeps right on, for Fabrikoid is beauty enduring. It is water-proof, scuff-proof, always fresh and clean. ¶ Fabrikoid covers can increase sales for any proposition or product using a portfolio or catalogue presentation.

Give your catalogue staying power — through the use of Fabrikoid covers.

Let us send you the name of a bindery to give you samples, prices and the full story on covers of Fabrikoid. Write



E. I. DU PONT DE NEMOURS & CO., INC., *Fabrikoid Division*, NEWBURGH, N. Y.

The DU PONT MAGAZINE

Vol. XXI

MAY, 1927

No. 5

AN IMPORTANT DEVELOPMENT

The commercial solvent, methanol, is now being manufactured by Lazote, Inc., in a new plant and by a new process developed by American research chemists

TWO years ago American newspaper and magazine editors were greatly disturbed about the fate of the wood alcohol industry in this country, for large shipments of synthetic methanol from abroad were being unloaded and sold at prices so low that producers of the domestic product were unable to meet this competition. At that time a writer in *Nation's Business* analyzed the awkward situation as follows:

"The wood distillation industry, with more than \$100,000,000 invested, appears to have a choice between developing a synthetic process of its own or going out of business. Present information indicates that the synthetic product can be made for less than one-third the price quoted on the market for the natural product."

Wood alcohol and synthetic methanol are chemically one and the same solvent, although manufactured by dissimilar processes. Wood alcohol is obtained by destructive distillation; methanol, by constructive synthesis. The former has its genesis in a hardwood forest; the latter, in a bituminous coal mine. But out of this seeming diversity of raw materials and processes comes one of industry's most useful solvents.

Wood alcohol is a century-old product, but synthetic methanol is so new that it may be in order to write in a little of its background.

In 1921, General G. Patart, a French chemist, invented and patented a process for making methanol by high-pressure synthesis, using carbon monoxide and hydrogen gases, but he did not develop his process commercially until last year.

In 1924 the I. G. Farbenindustrie began producing synthetic methanol on a large scale, and in 1925 large quantities of it were shipped to this country. The imports of low-priced methanol from abroad disorganized the American market and created the situation first referred to. Meanwhile, chemical research and experimental work

had been started in this country and has been carried on intensively to find the most economical way to produce methanol in America. Success has rewarded the effort.

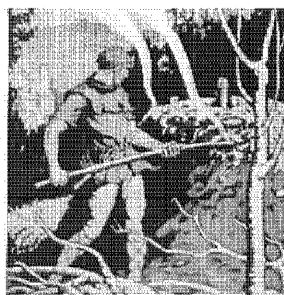
The first synthetic methanol to be produced on a commercial scale in America has been made at Belle, West Virginia, by Lazote, Inc., which is affiliated with the du Pont Company. It is chemically pure, and, as such, enjoys a preference among consumers who have heretofore used the wood-distilled product.

It was expected by many people that American producers would operate under the French or German patents, but they have not done so, for the process used at Belle is all American. It is different from those developed abroad and is an improvement over them. The commercial units now in production were built after an experimental plant had been operated for six months to determine what yield and quality of product might be expected from this process. The results were wholly satisfactory.

The new large-scale units, which are operated in conjunction with Lazote's synthetic ammonia plant, produce methanol by causing carbon monoxide and hydrogen to react in contact with a catalyst under enormous pressures and at high temperatures.

Last year the Eastern Alcohol Corporation, also affiliated with the du Pont Company, built a new plant at Deepwater Point, New Jersey, for the production of ethyl alcohol. Now with the development and operation of the new West Virginia plant the du Pont Company's requirements for methyl alcohol will likewise be met. This solvent

is used extensively in the manufacture of dyestuffs, lacquers, Pyralin and other products, while large quantities are also used in producing Bakelite and other synthetic resins. Still larger quantities are used for denaturing ethyl alcohol. The total American consumption of the different grades of methanol is about 10 or 12 million gallons a year.



The charcoal burner of
olden times

CONOWINGO—A NEW POWER GIANT

The bluffs overlooking a picturesque river now echo daily to the clamor of machines and the thunder of explosives as a great dam and hydroelectric power plant take shape

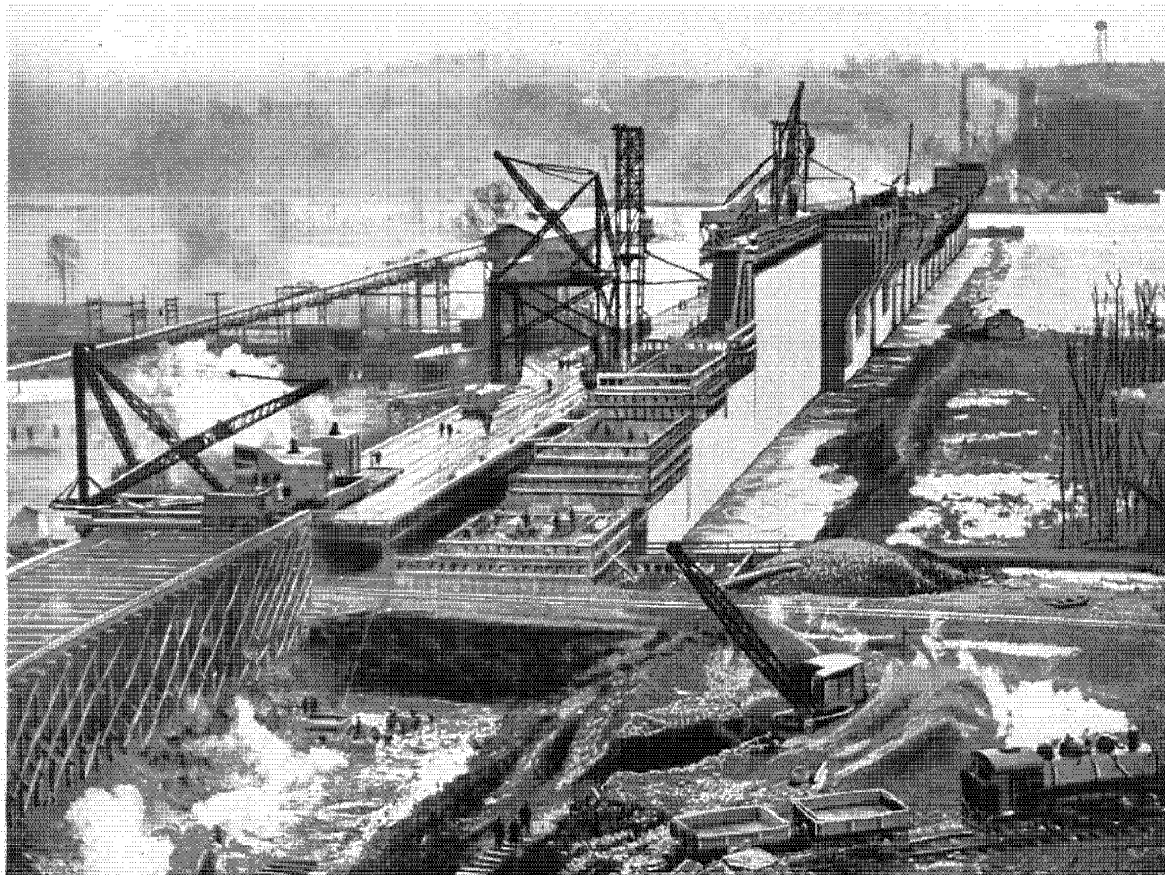
NEAR the village of Conowingo, Maryland, four miles above tide-water on the Susquehanna River, the second largest hydroelectric plant in the United States is under construction. The gigantic undertaking, involving the expenditure of \$51,000,000, was started in March, 1926, and will be completed in 1928.

When finished, this power station will have an initial installed capacity of 378,000 h. p. and an ultimate capacity of 594,000 h. p. Only one hydroelectric plant, that at Niagara Falls, is larger than Conowingo. By comparison, the government-owned Muscle Shoals plant with 260,000 h. p. and the Mississippi River Power Company's Keokuk Dam with 150,000 h. p. seem small. The initial current output of Conowingo is estimated to be about 1,360,000,000 kilowatt hours per year. The entire project is under the control of the Philadelphia Electric

By P. J. KIMBALL

Company, its subsidiary, the Philadelphia Electric Power Company, and the latter's Maryland subsidiary, the Susquehanna Power Company. Electric light and power from the plant will be utilized to serve the city of Philadelphia and vicinity. Approximately 750,000 tons of coal will be saved annually in producing this current.

The task at Conowingo falls into two major divisions: the building of the dam and power station, and the relocation of about sixteen miles of the Columbia and Port Deposit branch of the Pennsylvania Railroad. Not only will the present village of Conowingo be submerged in sixty feet of water, but the main Philadelphia-Baltimore highway bridge two miles above the dam will also be flooded when the water is impounded. By 1929, however, a new Conowingo will have taken root high up on the east bluff, which overlooks the river, while the highway



This remarkable panorama of the great dam was taken last January from the east bank of the river. In the foreground may be seen part of the railway that has been relocated. Along the Harford County shore, in the distance, is located the power station



The downstream face of the dam, showing the runway over which cranes and supplies are brought to the scene of operation. One of the traveling giants may be seen in action in this photograph

traffic will be diverted by means of new approaches directly to the dam, and will proceed across the river along a special driveway on top of the concrete structure.

BUILDING THE DAM

The dam proper, 4800 feet long, 105 feet high, 45 feet wide at the top and 200 feet wide at the bottom, is being constructed between two granite cliffs and on a river bed of granite, making construction conditions ideal.

The first job last year was that of building camps for the housing of approximately 3000 workmen on both the east and west banks of the river. These camps are modern and complete in every way and include mess halls, stores, hospitals, water filtration plants and electric light.

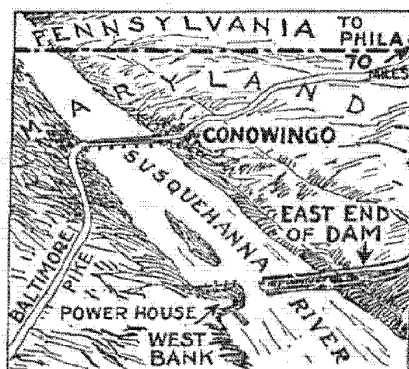
With the workmen provided for, the construction of cofferdams began, the first and largest of which enclosed the head works power house on the west bank and part of the tail race. To give an idea of the size of this job, 5,600,000 board feet of lumber, 69,000 cubic yards of rock fill and 32,000 cubic yards of clay

were used in building this cofferdam. It enclosed an area of 14.7 acres.

In the space thus protected, blasting operations began for the excavation on the site of the power house. Most of the granite rock blown out was crushed and is being used in the construction of the dam. The total excavation

at this point, approximately 350,000 cubic yards, was made difficult by the hardness and irregularity in the rock and the congestion within the blasting area. The upper part of the rock formation consisted mainly of large boulders, while deeper down, many seams were encountered, which hindered the blasting. It has been necessary to use large numbers of blasting holes, spaced close together, and for this work four 800-cubic foot air compressors have been employed.

The big dam will have an overflow section of about 1200 feet at the east end and about 275 feet at the west end. A power station 950 feet long will be located on the west bank in the excavation already referred to, while a gate control spillway section, 2385 feet long, will stretch across the bed of the river.



This sketch shows the location of Conowingo village and the new power plant

To prevent possible upward pressure under the dam foundations, grout holes thirty feet deep were provided, with ten-foot centers near the upstream face. A continuous drain located about ten feet from the same face is being installed under the foundation for the entire length of the dam in order to carry away seepage from the foundations. Contraction joints along the dam are sealed with copper sheets, bent "Z" shape.

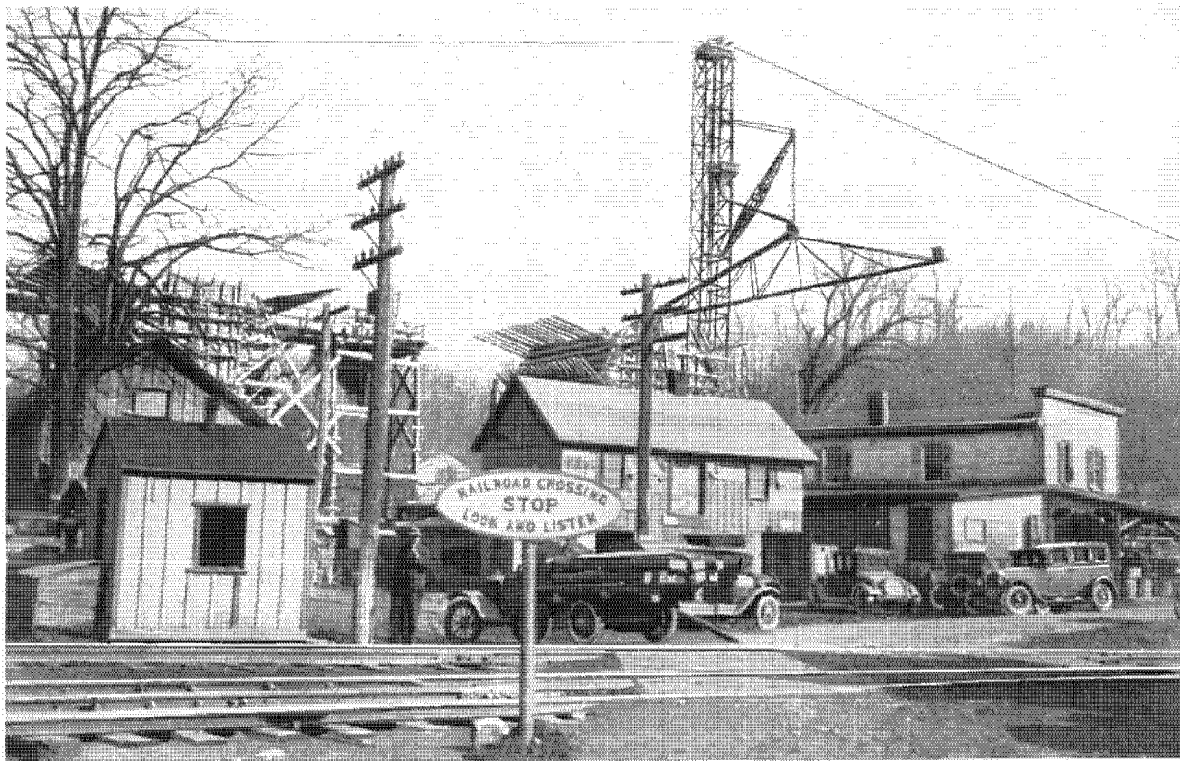
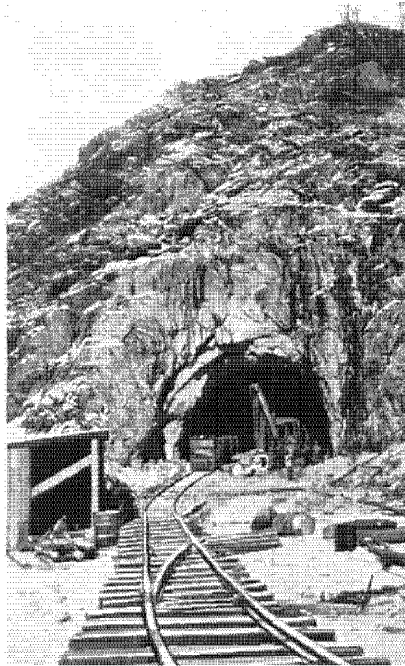
The spillway section of the dam is of the conventional ogee type, having a parabolic crest and a circular curved section as it approaches the apron. The spillway is designed to pass a flood of 880,000 cubic foot seconds, including the flood through the seven units, and will have a fixed crest at elevation eighty-six feet. The flow of water over the spillway will be controlled by fifty structural steel crest gates and three regulating gates. Three traveling gantry cranes, electrically operated and equipped with two 30-ton main hoists each, will be used to operate crest and regulating gates, trash racks and sectional head

gates at the intake. The cranes will use a runway along the top of the dam and over the intake section of the power house. In order to close the 1900-square foot intake

opening without having gates so heavy and under such pressure necessary for an adequate seal against leakage, it was decided to specify vertical shaft, circular-type butterfly valves, located at the entrance to the scroll case, rather than slow-operating and expensive gates.

These huge valves, measuring 27 feet in diameter, are the largest ever built. They will be operated by oil pressure from a central oil system. Each main generator in the power station will be 37 feet in diameter, which gives an idea of the size of the individual units in this enormous project. The water wheel units are also of record-breaking dimensions and will have a maximum efficiency of at least 93 per cent, it is reported.

Power from this great station will likely be generated before the end of the current year, although the work will not have been fully completed.



Above—South portal of the Williams' Point Tunnel along the relocated railway line near Conowingo. The lower view shows a part of the village which will eventually be submerged under sixty feet of water

The second great task at Conowingo is the moving of nearly sixteen miles of railroad track from its present location along the east bank of the river to a level about 100 feet higher, in anticipation of the submersion of the former level when water backs up from the dam. This relocation will require the removal of over a million cubic yards of material, the construction of several large bridges and some tunneling through masses of solid granite.

Blasting operations here met difficulties seldom encountered. Not only is the new location being excavated along the sides of bluffs and through rock, but the blasters must work for a large part of the distance directly above the existing road, still in operation. Since traffic must be maintained, the blasts must not tumble rock down upon the old right of way. In view of this situation, the blasting for the most part is accomplished by the use of hammer drills, small diameter holes, and rather small shots of dynamite.

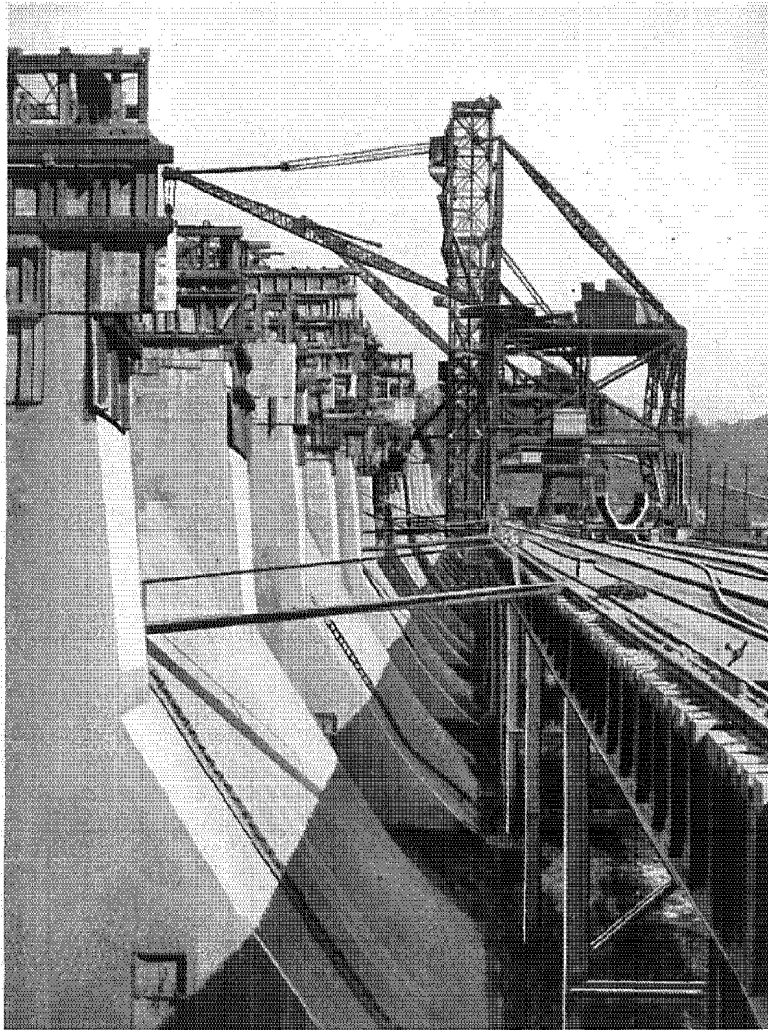
For this work, fifty per cent du Pont quarry gelatin, size $1\frac{1}{4}$ by 8 inches, has been universally used. In some places, where the relocated line is some distance from the old line, well drills have been put to work. One shot on Cromley Mountain, near the dam, contained 18,000 pounds of sixty per cent du Pont quarry gelatin, 4 by 8 inches, and 1000 kegs of du Pont blasting powder, loaded into forty-eight, 6-inch, well-drilled holes, averaging about 50 feet in depth. The result of this shot was most satisfactory and approximately 60,000 cubic yards of material was taken from the cut.

At three points along the 16-mile stretch of new trackage, it has been necessary to construct three double-

track tunnels, 275 feet, 360 feet and 270 feet long, respectively. They are each 30 feet wide and 24 feet high, and are driven through solid granite, requiring no timbering.

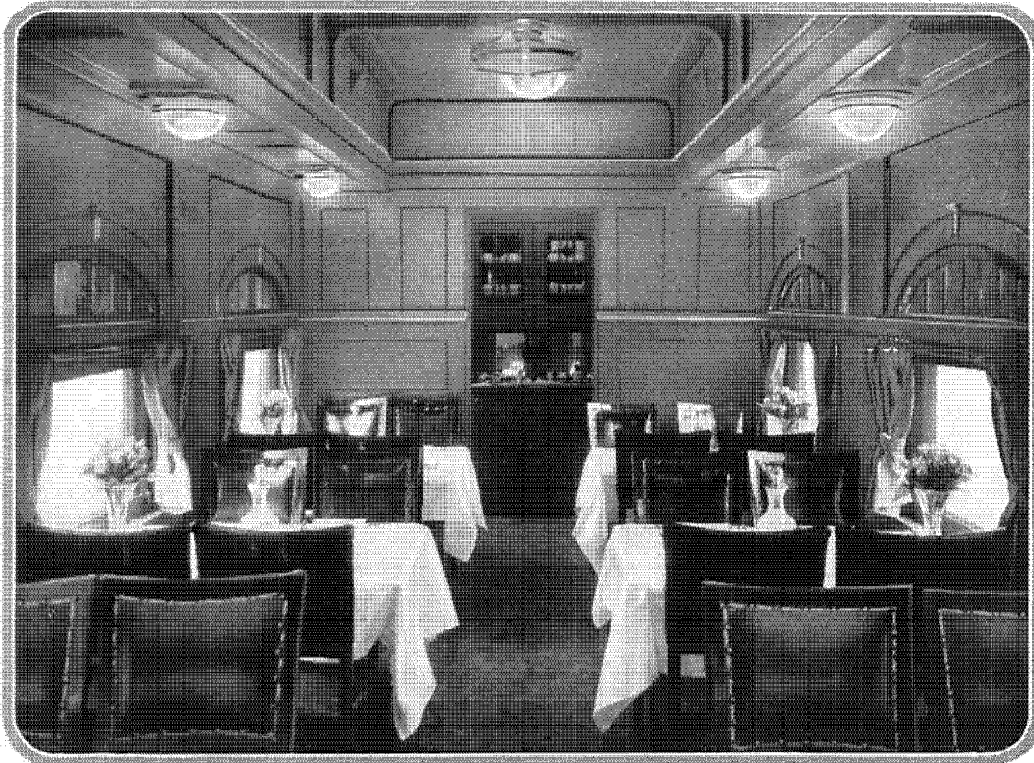
For the Philadelphia Electric Company, its subsidiary, the Philadelphia Electric Power Company, and the latter's Maryland subsidiary, the Susquehanna Power Company, Dr. William C. L. Eglin, vice-president and chief

engineer of Philadelphia Electric, is directing the Conowingo project. These firms engaged the services of Stone and Webster, Incorporated, of Boston, for the construction of the power house and dam. W. L. Locke, vice-president, and A. W. Clark, works manager, are in charge at Conowingo for the contracting firm. Stone and Webster, Inc., have associated with them the Arundel Corporation of Baltimore, J. J. Hock, president, and George Angell, general manager. The latter organization is working outward from the east bank of the river and is building practically the entire dam. The contract for relocating the Columbia and Port Deposit tracks was awarded by the Pennsylvania Railroad to the Arundel Corporation. H. O. Firor is in charge of this work.



A close-up of the spillways in the dam, showing some construction details and one of the huge concrete pourers operating from special tracks built along the downstream side

It is hard for anyone who has not visited Conowingo during the past year to visualize the size of the operation. Everything is on an enormous scale. The reservoir, for instance, will extend upstream for nearly thirteen miles and will contain twenty billion cubic feet of water. It has been estimated that the completed dam, if placed in Pennsylvania Avenue, Washington, would fill the street from curb to curb to a height above that of a ten-story building, and that the huge power house will equal in size the Equitable Building in New York City.



The attractive dining compartment in one of the new Boston and Maine combination cars

THE "MINUTE MAN"—NEW STYLE

Let it be known to all that a crack New England train no longer requires women to sit meekly in their chairs while men make merry in the smoking room

NEW ENGLAND, sitting on guard over her stern and rockbound coasts, is smiling slyly to herself—and well she may, for are not her conservative daughters stepping out these modern days?

There is a famous train on the Boston and Maine Railroad that leaves North Station every day for Troy, New York, where it connects with the New York Central for the North and West. It is called the "Minute Man"—and listen, folks, this train has a club-car in which there is a smoking room—for women!

We should say a women's lounge where smoking is permitted. But call it what you will, it is frankly designed for the enjoyment of a leisurely cigarette and marks the beginning, many think, of a period of hitherto undreamed of luxury for both sexes in modern train travel.

All French gray and old rose, this little haven is, with wicker chairs done in rich materials of the same colors. To the permanent credit of these railroaders of New England, the ugly ceiling lights have been taken away and in their stead are side brackets, delicately shaded, which peep conveniently over the lady's shoulder. It's a restful room. Moreover, it's a pleasant room—where she may

either "walk a mile" or "be satisfied" with a "lucky" in perfect peace and quiet as the lovely New England landscape flashes by.

To be perfectly accurate, this little nest is but a part of a combination observation-lounge-dining car, and so we must wander on.

At one end of the car is the observation-lounge. It is finished in Lexington brown and cream—good old Colonial colors, taken from uniforms of those historic days.

Here, before wide windows, are air-cushioned wicker chairs in which one may rest in utter comfort as the train clicks over the rail joints and the miles slip past. On beyond is the observation platform—deck chairs—a smart striped awning. Oh, there's nothing mid-Victorian about this "Minute Man!"

Readers with a flair for detail—do you miss anything in the lounge room picture? Correct! The old-time receptacle for burnt matches, cigar and cigarette ashes is not in place, but not through oversight. After an exhaustive study, it was found that ninety-five per cent of the smokers who flick ashes towards cuspidors never hit the mark. Moreover, they don't seem to improve.

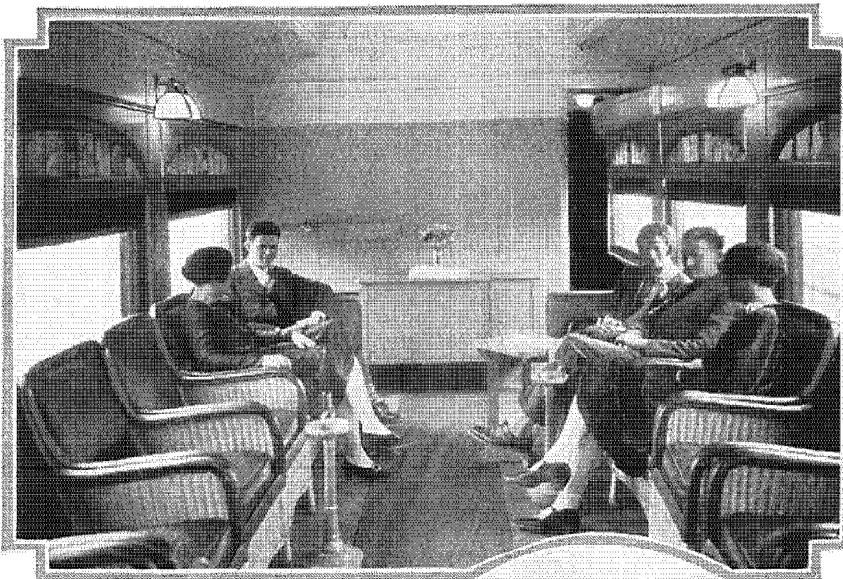
This handsome room is therefore equipped with pedestal-type ash receivers. They are much more convenient, and they carry matches, which saves a great deal of fumbling through the wrong pockets.

In addition to the comfortable chairs and soft carpet, the lounge has a 43-inch bookcase for those guests who need the solace of books, and a compact writing desk and chair.

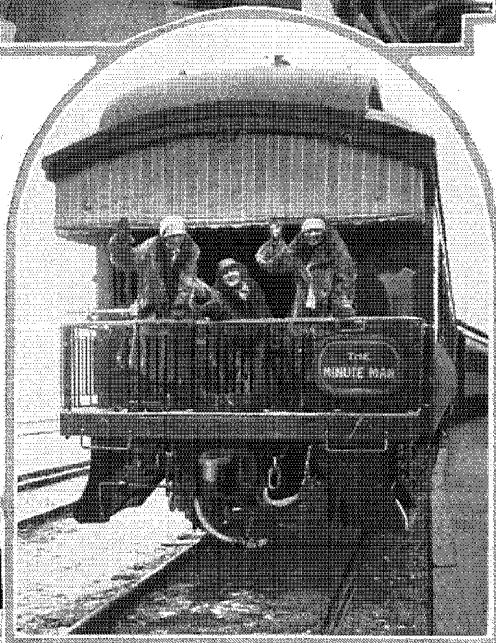
Going back through the car one enters a cheerful dining room done in buff and blue, the colors taken from the uniforms of the General Staff of the Continental Army. This room seats twenty-four persons and here one is served from a beautiful and individual china service, with the "Minute Man," from that famous statue by Daniel Chester French, at Concord, as its decorative theme.

These new club cars, the *Concord* and *Lexington*, represent the most advanced application of the interior decorator's art to the remodeling of railroad equipment along the lines of color and comfort appeal.

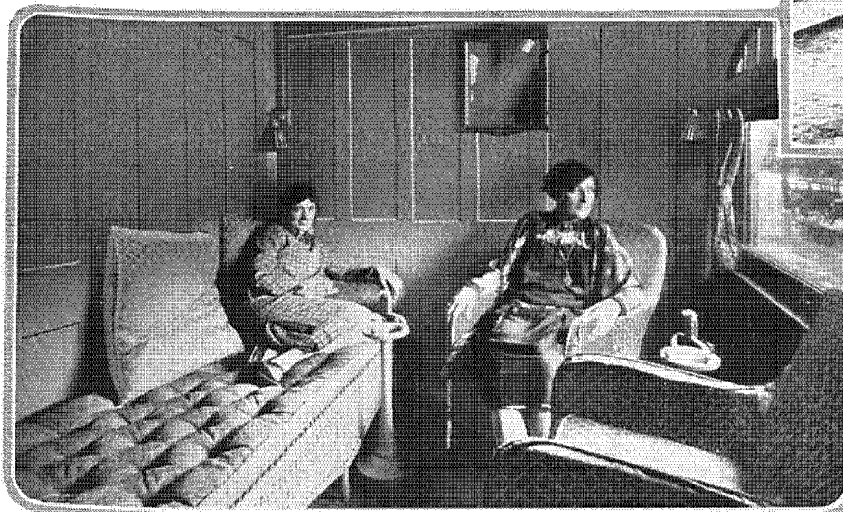
The idea for them originated with the passenger department in connection with its program to make travel by train more attractive. The design was developed by the railroad's mechanical engineers, who called on H. Ledyard Towle of New York, director of the Duco Color Advisory Service, for advice as to color scheme and interior decorations. The finished cars represent the product of the Boston and Maine's car shop forces at Billerica, Massa-



A glimpse through the Duco-finished lounge of the "Minute Man"



Deck chairs and a bright-colored awning are features of the roomy observation platform

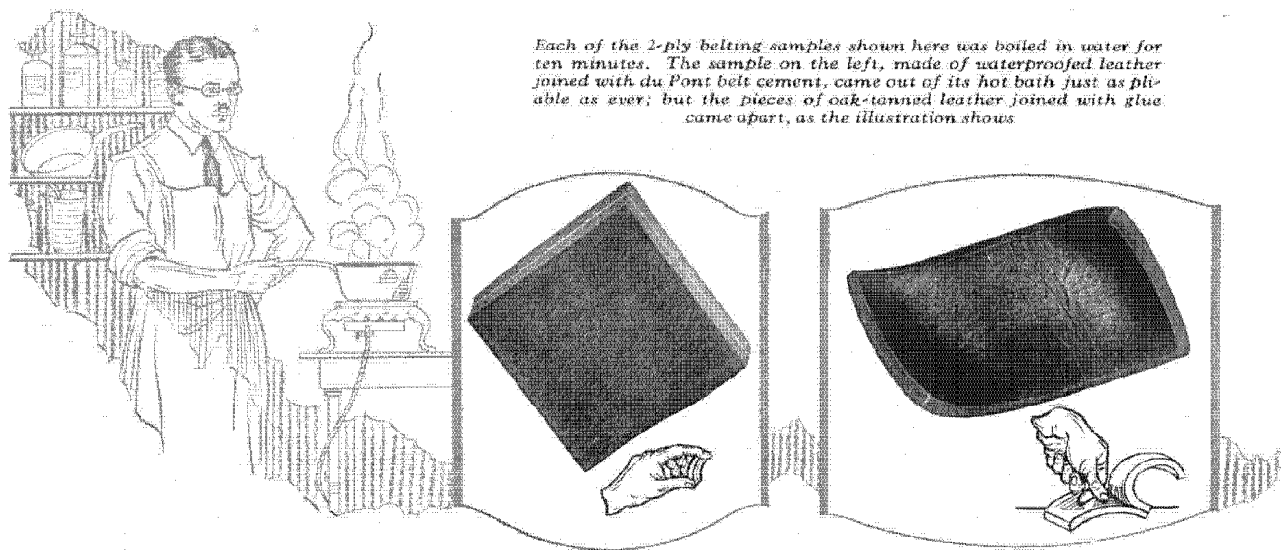


A corner of the ladies' lounge—a distinct innovation in railroad coach building

chusetts. Superintendent, foremen and workmen of the Billerica organization combined interest and labor in the work of producing the new-type

cars, and the product is one of which the Billerica shop organization and the railroad are justly proud.

Du Pont Duco was used throughout as the interior finish, and its lustrous and velvety color tones give assurance that these new cars will hold their beauty and freshness of appearance for many years to come and should gain many new friends for the Boston and Maine.



BELTING THAT LIVES LONGER

Here's a test that shows how waterproofed leather, joined with du Pont belt cement, will outlast, under the worst plant conditions, the older types of power belting

WATER, although an absolute necessity to industrial operations, is one of the causes of plant maintenance costs. This element, in the form of steam and atmospheric moisture, creates premature disintegration in many materials used in plant operations. Industry is constantly combating the ravages of moisture, and one of the basic requisites of many commodities used in industrial operations is that they be waterproof.

Of the many varied materials used in manufacturing industries, leather is one of the most important, chiefly because, when made into belting, it is, in general production work, the best medium for transmitting mechanical power. In large production plants, thousands of feet are used annually for this purpose. The consumption, however, is not entirely due to normal wear; on the contrary, it is caused to a great extent by avoidable abuse and by the deteriorating effects of water, dampness and steam.

Protecting materials from the action of water and dampness has been a slow development. It was not until 1900 that a waterproof cement was perfected which made possible the production of a waterproof-cemented leather, power-transmitting belt.

Leather itself is insoluble in water, and when put together with insoluble cement and treated with the proper oils, it can be used in or out of doors or can be continuously operated under water without the slightest injury to the belt or to its power-transmitting ability. However, many large users of belting are still adhering to the regular oak leather type, cemented with a non-waterproof glue, either

By WILLIAM STANIAR

through lack of knowledge that there is such a thing as a waterproof-cemented, leather belt or because of a reluctance to pay a slightly increased first cost. They might consider that the purchase of waterproof-cemented belting is positive insurance against production machine shutdown and premature belting failure, brought about by the action of moisture on the glue in an ordinary belt.

The chemical resources of the du Pont Company have enabled it to furnish the leather belting manufacturer with a waterproof belt cement—supplied at reasonable cost—which is a better adhesive agent for fabricating belting and which provides a more economical process for manufacturing.

Du Pont waterproof belt cement is responsible for the results obtained in the astonishing test shown here. A small sample of 2-ply regular oak-tanned leather joined with standard belt glue, and a similar sample of 2-ply waterproofed leather joined with du Pont belt cement, were placed together in a pan of boiling water for ten minutes.

It will be noted that the piece joined with du Pont cement suffered no injury—it is just as pliable as before its immersion—whereas the piece joined with standard belt glue entirely separated.

It is understood, of course, that the conditions described here are more extreme than those encountered in industrial belting operations, but the test clearly demonstrates the value of du Pont waterproof cement in the fabrication of leather belting.

HOSIERY—OLD AND NEW

The evolution of combination stockings and trousers for men forms one part of this interesting survey of an art both ancient and modern

STOCKINGS were first worn by the northern tribes of Europe because of the cold climate. Ancient people who dwelt in the south lands, however, had little use for special leg-coverings, because the warm temperature and their loose, flowing robes gave them all the protection they needed.

Nevertheless, the soldiers and slaves from the South, when in bleak northern climates, did use coverings to protect their legs. In the seventh century, these coverings were crudely made of cloth and leather.

The art of knitting came later, and was believed to have originated in Scotland for making head wear. From Scotland it was carried into England, where the knitting of stockings was first successfully accomplished. Since the day that William Lee presented the first pair to Queen Elizabeth, in 1589, there has been no change in the length of women's stockings. But why do men today wear short-length hose when the originals were as long as women's?

The first examples of men's hose were really combination stockings and trousers, extending from the foot to the waist, and were called "trunk hose." In the eighteenth century they became loose breeches to which separate stockings were attached with buckles. In those days, when there was much boyish sword-play, opponents tried to unfasten these buckles with their weapons, and when an unfortunate swordsman's stockings began to slide down, he generally lost the struggle in trying to hold them up with one hand while fighting with the other. Towards the close of the century, breeches were extended into pantaloons, and as the length of the latter increased from year to year, the length of stockings showed a corresponding decrease until now we have the long trousers and short hose.

The well-knitted, carefully shaped stocking of today

By P. A. DILLMAN

differs greatly from its early prototype.

Leather has been supplanted by silk, cotton and wool, and with the recent advent of the man-made fiber, rayon, the hosiery industry has been offered a means for the production of new effects and the achievement of new economies heretofore unobtainable.

Rayon mixed with silk produces a stocking of excellent wearing qualities at a decided saving; rayon combined with wool makes for unusual attractiveness; rayon added to cotton hose gives the latter a touch of distinction that has an immediate appeal. Today, in every retail store, you will find rayon or rayon-mixed hosiery for men, women and children in a great many styles, three of

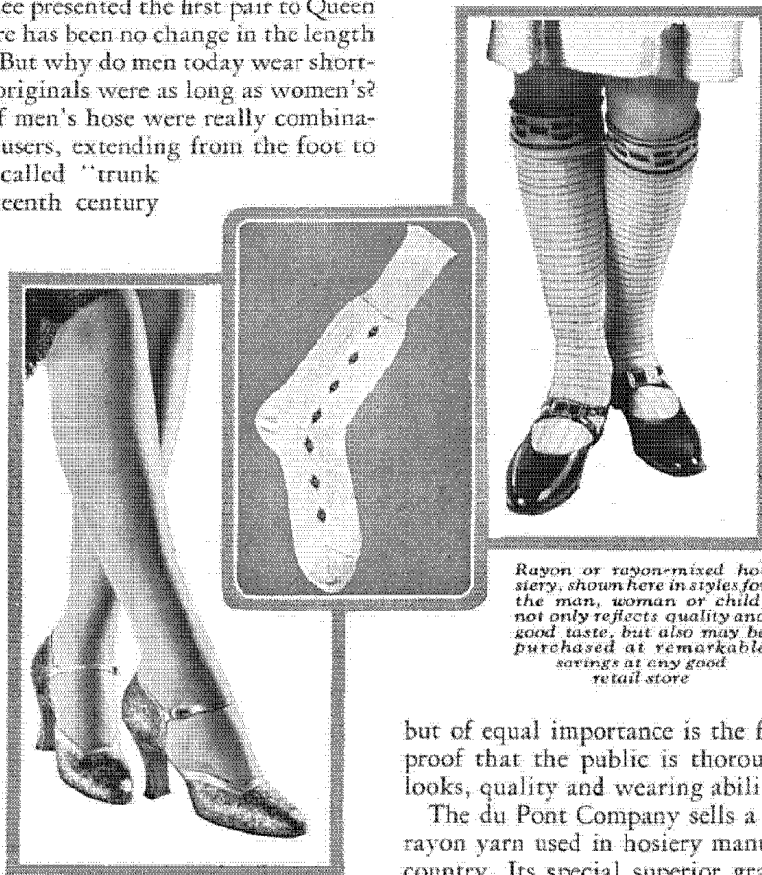
which are shown on this page.

Particular attention is called to the clocking in the men's half hose shown here. Machine clocking was developed after years of experimenting and has brought this mark of quality within reach of every pocketbook, while heretofore it distinguished only high-priced hosiery.

It is estimated that during 1925, fifteen million pairs of rayon or rayon-mixed hosiery were made. This tremendous production showed a marked increase over that of the previous year;

but of equal importance is the fact that it gives ample proof that the public is thoroughly satisfied with the looks, quality and wearing ability of rayon hosiery.

The du Pont Company sells a substantial share of the rayon yarn used in hosiery manufacture throughout the country. Its special superior grade, known as Du Pont Super-Extra, has been particularly popular because of its added softness, beautiful luster and unusual wearing qualities. The use of this yarn permits the making of a stocking that is a tribute to what we may call the modern phase of the art of hosiery manufacture.



Rayon or rayon-mixed hosiery, shown here in styles for the man, woman or child, not only reflects quality and good taste, but also may be purchased at remarkable savings at any good retail store



Clubhouse of the American Trapshooting Association at Vandalia, Ohio. Trapshooting is the only sport in America that has its own home

THE SPORT'S THE THING

Banging away at the clay "birds" affords all the thrills of the hunt to the man behind the trap—whether a seasoned veteran or a novice

PULL! BANG! PUFF! DEAD! This is the death knell of the clay pigeon sung by the trapshooter, whose alert, tense figure firmly grasps his shotgun as he bites off the word that sends an involuntary thrill of expectancy through the crowd in front of the clubhouse.

The trap is tripped—a small saucer-shaped clay pigeon streaks through the air at a pace that makes a teal duck's flight resemble the lazy flapping of a crow. Like part of an automatic machine, the shooter's gun jumps into action. It stiffens against his shoulder for a second like the index finger of an accusing hand; a flash and a report follow one another faster than the human mind can transmit the message; but in that brief interval, the pride of some clay pigeon factory has been shattered to atoms. The judge's call and the scorer's entry are made before the smoking shell hits the ground, the next gunner of this human battery of the times of peace calls for the second bird, and the shoot is on.

Sounds kind of natural, doesn't it? We have all seen them start that way.

Where there is game still to be had, trapshooting will keep hunters in trim for field work. To many young men, the sport affords the only means of becoming skilled with the gun, for the lack of game in thickly-populated districts removes the opportunity for the necessary practice. Moreover, with the increasing stringency of game laws, shooting with shotguns would in many sections become virtually a "lost art," were it not for trapshooting.

True, the sport does not appeal to the "game hog"—who is responsible for the almost complete depopulation of our fields and forests. But trapshooting does make a strong and lasting appeal to the real sportsman, to whose ears the crack of a gun is something akin to music.

By LLOYD R. LEWIS

Someone has aptly said: "A sufficient number of trapshooting clubs in a state is better than the best game law." The truth of this is proved by the fact that many trapshooting clubs constitute themselves game protective organizations, and at the same time offer an acceptable substitute for hunting.

As a feature of country-club life, trapshooting is steadily growing in popularity. This is only natural, as the sport irresistibly attracts the outdoor enthusiast.

At many of the most exclusive clubs, trapshooting has as many followers as any of the other games. Visit one of the big annual shoots, and behind the traps may be found enough wealth represented to make Cræsus poor by comparison. These shoots are national in character, including among the contestants men from all sections of the United States and from every walk of life.

No other sport offers so many and valuable rewards for skill as does trapshooting. And in no other sport can the novice so quickly rise to fame. Trophies, medals and prizes are within easy reach of the shooter who applies himself to mastering the principles of trapshooting.

Ample opportunities are given by local, county and state shoots for the contestant to become known. As he acquires proficiency and gains in confidence, the amateur trapshooter may look forward to the time when he may bring to himself and his club the honor of winning the state championship, or sweeping the field in the Eastern, the Western, the Southern, the Pacific Coast, the Southwestern, or the Grand American Handicap. In all these tournaments the privilege of contesting for trophies and prizes is restricted to the amateur shooter. Here he meets men who are on his own plane with regard to shooting skill, since in all the major trapshooting events in this country the competitors are carefully classified.

NOW DUCO CLEAR FOR HOME USES

*A new addition to the Duco line, useful wherever you
desire to apply a quick-drying, transparent
and durable finish*

By S. L. JOHNSTON

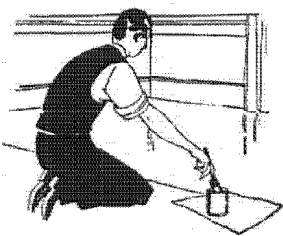


THIS announcement of Duco Clear for brush application in the home will interest all home lovers and home owners, particularly those who have already used Duco in colors and stains during the past year; for ever since the announcement of Duco for handy home uses, early in 1926, there has been an insistent, persistent demand for a "clear" possessing the same inherent qualities.

When Duco for brush application was first announced, it was expected that a clear finish would be immediately available as a companion to the colors which are so popular. But the development and research work of du Pont chemists had not progressed far enough to make that possible. Duco in colors was introduced a little more than a year ago; then a few months later Duco stains were perfected. And now Duco Clear completes the line, and is in every respect worthy of its predecessors.

The importance of this latest development is readily apparent when one considers the various surfaces in the home, where new brightness, luster and beauty are desired on natural and stained wood, and where a quick-drying, durable finish is needed. Duco Clear, like the colors and stains, possesses the same qualities that have made Duco well known as "the finish of enduring beauty."

Duco Clear is intended for all types of interior surfaces, such as floors, woodwork, furniture, doors—wherever the color and grain of wood are to be preserved and beautified. It is of course applied with a brush, and is obtainable in various size packages to fit any need, large or small. It may be recognized by the now familiar dark green can, and the du Pont Duco Oval. It is obtainable at paint and hardware stores everywhere—at the same stores now carrying Duco colors and stains.



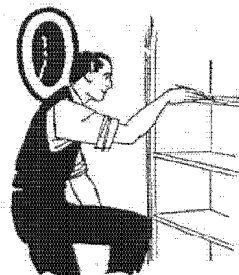
The development of this new product is particularly interesting and important in connection with the problem of keeping floors in presentable condition. The quick-drying feature is of course outstanding, for while it is quite possible to forego the use of pieces of furniture for a few days while they are being refinished, the floor is quite another matter. Just imagine finishing the living room floor in the evening, and then putting the rugs and furniture back in place before bed-time! That is only one example of what can be accomplished with Duco Clear—without sacrificing durability or permanency of finish.

Or picture finishing the dining room furniture after breakfast with Duco Clear, and triumphantly using it at lunch time!

While this quick-drying feature is outstanding, in comparison with other painting materials, yet in other respects Duco and Duco Clear have a distinct appeal to consumers and master painters. Ease of application is important. Duco Clear is exceedingly simple to apply. It flows out smoothly under the brush and levels out quickly without showing brush marks. And it dries with a hard, durable finish that will not scratch white, nor turn white in contact with water.

Aside from the use of Duco Clear in the home, either as applied by a painter or home owner on small surfaces, there is a distinct advantage in its quick drying that makes it adaptable for use in schools, hotels and office buildings where floors, woodwork and furniture must be quickly refinished and put back in use. Heretofore, this has not been possible except in colored effects—but now with Duco Clear the home owner, the painter, the hotel manager, the building or school superintendent can keep up appearances on those surfaces where transparent brightness and luster are essential.

Not only is Duco Clear adapted for refinishing work, but it may also be used on new surfaces—directly over the bare



(Continued on page 16)

KEEPING

Buildings



LL
A
B
sw
lize
roof,
d wa
crag
eve
Beca
ject
shad
shad
ently
g exe
On t
ildin
ntin
e bui
cent
n Poi
ned
ny, I
The
1901
Belle
Brea
Kahl
Ligg
Hote
Fifth
Schw
Hote
Host
Char
Higt
Wasl
Geor
Mah
Higt
Lake
Hote

OWN SHADE COSTS IS NO PROBLEM NOW

With Tontine at the windows escape the expense of frequent replacements, for the material is washable, crack-proof and long-wearing. To show the representative appeal of these shades, here are some American buildings so equipped

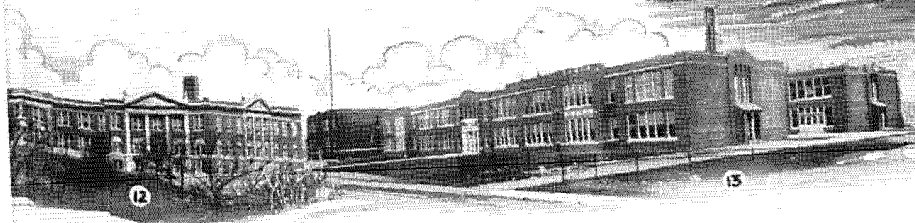
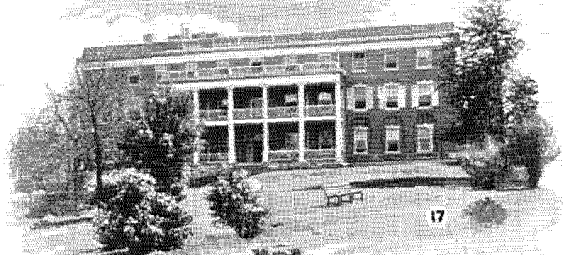
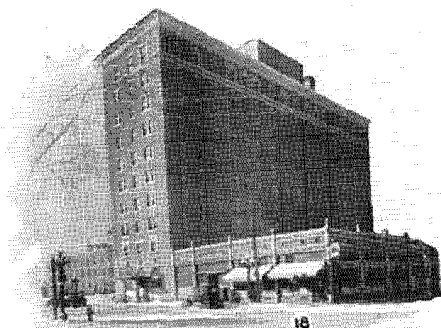
ALL over the country, executives of large and small buildings are turning to Du Pont Tontine as a logical answer to their window shade requirements. When it is realized that Tontine shades are waterproof and weather-proof, that they can be washed clean repeatedly with soap and water, that they are infinitely more durable than the average shade, it is not surprising that they are selected for every class of building requiring the best.

Because of Tontine's unusual qualities it is much less subject to injury than the old style painted or filled type shade cloth. Tontine overcomes the three main causes of shade replacement, rain, cracking and dirt. Consequently, replacements—always a "bugbear" to the building executive—are reduced to a minimum.

On these pages are shown a few of the country's finest buildings, the windows of which have been shaded with Tontine. Some have had shades installed for years and building managers have reported an unbelievably low percentage of replacements. Further data pertaining to Du Pont Tontine washable window shades can be obtained by writing to E. I. du Pont de Nemours & Company, Inc., Newburgh, New York.

The Tontine-shaded buildings pictured here are—

- 290 Park Avenue, New York
- Bellevue-Stratford Hotel, Philadelphia
- Breakers Hotel, Atlantic City
- Kahl Building, Davenport, Iowa
- Liggett Building, New York
- Hotel Windemere, Chicago
- Fifth Avenue Hospital, New York
- Schweitzer Building, Wichita, Kansas
- Hotel Van Curler, Schenectady, New York
- Hospital for Joint Diseases, New York
- Charles E. Groton High School, Yonkers, New York
- High School, Mamaroneck, New York
- Washington Irving Junior High School, Des Moines, Iowa
- George Gray School, Wilmington, Delaware
- Mahoning County Tuberculosis Sanatorium, Youngstown, Ohio
- High School, Trenton, New Jersey
- Lakeside Hospital, Kansas City, Missouri
- Hotel Sheridan, Minneapolis, Minnesota





The line of holes for the Moultrie ditch blast often led through pools of muck and water as shown above. Right—a dynamite storage house near the scene of the blasting



MOULTRIE VERSUS MOSQUITOES

Menaced for years by a constantly increasing malarial danger, a Georgia city escaped what might have been serious consequences. This is a report by a man "on the job"

FEW indeed are the cities which at some time or another have not been confronted by sanitation problems. Proper surface drainage, efficient disposal of waste, and strict supervision of the water supply will generally preclude the possibilities of unhealthful living conditions. Nevertheless, when the sanitation problem becomes acute, as sometimes is the case, action must be taken quickly.

In one such instance down in Georgia, dynamite was chosen by health authorities to help get rid of a serious mosquito menace, attributed to uncommonly bad waste disposal. That dynamite proved an able crusader can be gathered from this article by Mr. Clarkson, chief sanitary engineer of the Georgia State Board of Health.

Moultrie, Georgia, a city of 7000 population, is the county seat of Colquitt County in the southwestern part of the state, and in common with other municipalities in the region, the city had its mosquito problem.

One of Moultrie's chief commercial assets is a packing plant, the waste material from which is piped to a point about a mile from the city and there disposed of in the Okapilco Creek. This stream had an ill-defined channel which caused flood waters to spread over and remain in an adjacent swamp. The added contamination from the slaughter house caused the city's mosquito problem to reach alarming proportions during 1925. Moreover, two

By L. M. CLARKSON

12-inch pipes carrying raw sewage from the city empty into the same swamp, opposite the southern boundary of the city. The mosquito nuisance with its attendant malarial dangers started when the packing plant was first put into operation, some years prior to 1925.

The volume of waste from the plant was estimated at about 300,000 gallons a day and that from the city sewer lines at about 500,000 gallons a day, dry weather flow. One can thus appreciate the unsanitary conditions of the swamp with nearly a million gallons of packing house waste and domestic sewage emptying into it each day and with an extremely small creek flow to afford dilution.

Meanwhile the people of Moultrie were beset by hordes of mosquitoes. The city was in danger of losing out as a commercial and tourist center. Visitors actually avoided it at night.

Such was the situation when the Georgia State Board of Health was called upon for help during the summer of 1925. The writer visited Moultrie at that time and spent several days studying the problem. A map of the city and nearby swamp was made, showing the run of the creek, the extent of the swamp and the points of waste disposal.

Shortly afterwards, a recommendation was made that a treatment plant for packing house waste be installed; another that the city of Moultrie install septic tanks for sewage disposal. A third suggested that the city of

Moultrie and the packing company, at joint expense, rechannel the creek through the swamp for a distance of about four miles, using dynamite for the work. Of these recommendations, only one was accepted—the drainage project.

An estimate was then made of the cost of blasting out the four-mile channel, a carload of dynamite was ordered from the du Pont Company, and one of its ditching experts came to Moultrie to supervise the work. Beforehand, the writer made a survey of the swamp and staked off a straight course for the new channel, which was to be approximately eleven feet wide across the top, five and one-half feet wide across the bottom and five and one-half feet deep. A channel of this size was computed to be large enough to carry off an average amount of water from the drainage area. It was estimated that one row of holes spaced fifteen to eighteen inches apart, four feet in depth, and with three to four cartridges to the hole, would give the necessary cross-section, which was computed on the basis of two and three-quarter cubic yards per lineal foot. It was also considered necessary to load extra for stumps.

The writer cannot but commend the skill of the du Pont demonstrator on this job. After making several test shots to determine the amount of dynamite needed per lineal foot, he obtained a ditch with a cross section slightly larger than the one designed.

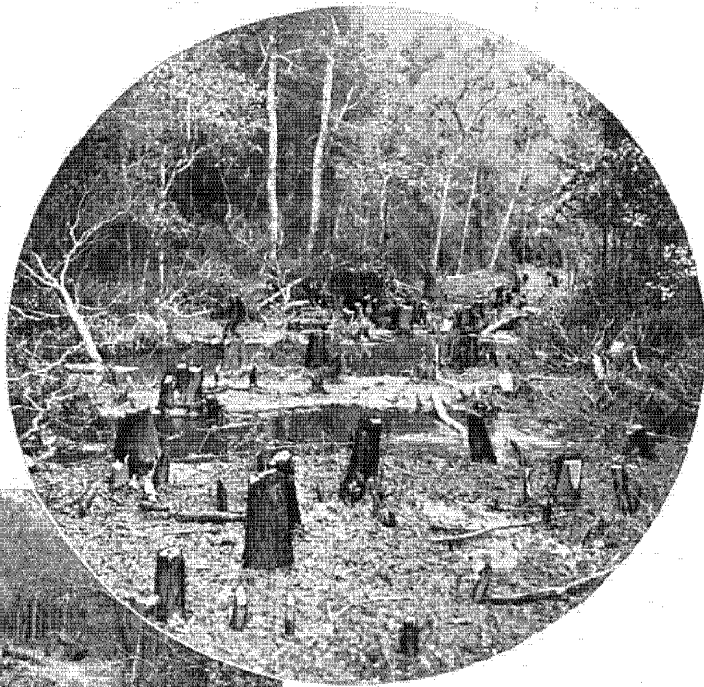
This work was accomplished in the fall of 1925, but before final measurements could be taken, a rainy season set in which made further work impossible. It may be stated, however, that the first flood in the new ditch increased it both in width and depth.

Preparations for the blasting were carried on under some ridicule. Many expressed the opinion that the taxpayers' money was being squandered and that conditions in the swamp would only be made worse by blasting. But when they saw the spectacular demonstration on the first day, at the end of which a clean ditch several hundred feet

in length was exhibited, they departed satisfied. Each subsequent dynamite blast sounded a death knell to the insect pests which had for years tormented and tried the patience of the good people of Moultrie.

Inspections have been made of this ditch several times since it was completed. It has passed through the winter flood stages, and is not only giving entire satisfaction, but it is meeting in every way the requirements for which it was designed. A recent editorial in the *Moultrie Observer* pointed to the fact that the stream and swamp which was once a seething mass of corruption has now been changed into a sparkling brook, straight and swift in its course—too swift to allow Mrs. Mosquito to rest upon the surface and deposit her eggs. The time required for this work by the use of dynamite was about ten days. It would have taken many months either by hand labor or machinery and the cost would have been greatly increased.

This project so influenced other work near Moultrie that when there is now a drainage job to be done in that locality, the slogan is "Do it with Dynamite."



Above—This is how the swamp jungle looked after preliminary clearing had been completed. All underbrush and branches were moved away and the stumps shown here were loaded with extra charges of dynamite.



Left—Georgia Health Department officials and du Pont technical men viewing a section of the Moultrie ditch shortly after explosives had been put to work. Note that drainage is already in progress. Later, freshets deepened and widened the new channel.

The DU PONT MAGAZINE

Published and copyrighted by

E. I. DU PONT DE NEMOURS & COMPANY, Inc.
WILMINGTON, DELAWARE

Subscription, \$1.00 the year

E. R. MANCHESTER.....Editor
T. R. DANZ.....Associate Editor

Publishers may reprint, with credit, all articles and illustrations except those carrying special copyright. Electrotypes will, when possible, be furnished on request.

Vol. XXI

MAY, 1927

No. 5

THE WAR WITH SPAIN

THE cover illustration this month portrays one of the famous incidents of the Spanish-American War. The charge up San Juan Hill is perhaps the best-known military exploit, and is typical of the dash and determination with which our soldiers and sailors fought in Cuba, Porto Rico and the Philippines. These men contributed a chapter to American history.

Du Pont history records this period as a time of great stress and pressure of work. When President McKinley declared war in April, 1898, Government reserve supplies of powder were unusually low, and the du Pont Company was asked to increase its capacity for manufacturing brown prismatic powder for the Navy from 3,000 to 25,000 pounds a day. Sixty days later that production scale was reached, and at no time was the Government crippled for want of this material. When hostilities ceased in August, the du Pont Company permitted the cancellation of a Government order for 1,000,000 pounds of this powder, without compensation. After the war prismatic powder became obsolete and was replaced by a new type, du Pont smokeless.

NOW DUCO CLEAR FOR HOME USES

(Continued from page 11)

wood, over filler and stains, depending on the effect desired.

Duco Clear is a distinctive finish, differing in character from the usual painting materials. Accordingly, particular attention should be given to the directions on the package, so that the desired results may be obtained. First, the surface to be finished with Duco should be perfectly smooth, clean and dry. All traces of wax, oil, grease or furniture polish should be removed by washing down with turpentine. And because most paint and varnish removers contain some such substance, it is necessary that this treatment be followed wherever a remover is used to take off an old finish. Not always is it necessary to remove the old finish. If the present finish is in good condition, the Duco can be applied direct after sanding and cleaning work has provided a smooth, clean surface.

Apply Duco with a clean or new brush having long, soft bristles. This does not mean that a camel's hair brush should be used. Almost all paint dealers sell brushes that will meet the requirements, and you should have no difficulty in selecting one. But this matter of a clean brush is important, for you cannot expect to obtain a satisfactory job with one filled with old paint or dust.

Keep the brush well filled. Dip it into the Duco almost up to the metal ferrule and wipe the bristles lightly on the edge of the can, so that the material will not drip off. Apply the Duco smoothly, quickly and evenly with as few brush strokes as possible. The final stroke should be made toward the section you have finished.

Two or more coats of Duco should be applied, allowing about one hour between coats. You may find that the Duco will become dry to the touch in a shorter time, but an hour's time should be allowed for proper hardening.

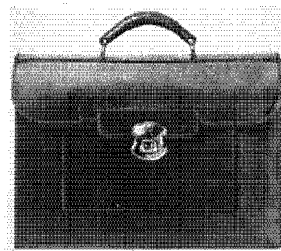
Duco should not be applied over freshly painted, varnished or enameled surfaces; that is to say, surfaces painted or finished within sixty or ninety days.

Duco Clear may of course be applied over Duco colors or stains where a higher luster is desired, and in such cases the usual drying time of one hour should be allowed before applying the clear finish.

NO STRAPS—NO BUCKLES

TICK!—Open!—Snap!—closed—and locked. No straps—no buckles—no unnecessary outside trimmings on the new Flaplock Brief Case!

Neat in appearance, quick to open and close, the Flaplock case also has one most important and distinct advantage—when it's closed it's locked. The only thing that holds the cover to the case proper is the flap which must be snapped to the lock in order to close the case for carrying.



This flap is sewed to the front of the case proper, just above the lock. In the cover there is a strongly reinforced slit, slightly wider than the flap. When the cover is dropped, the flap slips through the slit cut for it and is snapped into the lock. Simple—easy to operate—neat in appearance!

This case is a great convenience and time-saver, particularly for lawyers, salesmen and business men. Flaplock school bags are also made for children's use. Some are made of rubberized material, others of Du Pont Fabrikoid and still others of cowhide leather. Many of them are equipped with outside document pockets and with from one to five separate compartments within the case itself.

Additional information about the new Flaplock Brief Case may be obtained by writing direct to the Mardo Leather Goods Co., 105-113 Wooster St., New York City.

LET'S GO SHOPPING

Suppose we see some of those pretty things, once so quickly soiled by handling, but now invitingly fresh and clean in their transparent Cellophane wraps

AN ideal shopping day! Stores thronged with crowds of women and men, searching—examining—comparing—buying!

Let us follow a woman shopper for a few minutes. Into a store we go. It's a dry goods store, and there she is looking at handkerchiefs. Hundreds of them on display; thousands more in boxes, but who can guess their characteristics?

She picks up one handkerchief that strikes her fancy. Too bad, it's soiled by finger-prints! Another one she admires—but it's just a trifle smudged with dust. Disappointed, she puts it back on the counter.

There's one, exquisite in color and decoration—and spotlessly clean. Its wrapping of transparent Cellophane gives it protected visibility—freedom from the dust of handling. Straightway she buys it.

To make possible the display of handkerchiefs on the counter for more and quicker sales, and at the same time to insure that handkerchiefs shall reach customers in a clean, hygienic condition, a transparent wrapping material has long been needed. And Cellophane meets that need. To the dealer the problem of shopwear losses and lessened profits on handkerchiefs is solved.

Now our shopper pauses at the hosiery counter.

"May I help you?" inquires the sales girl. "What color—and size?"

"Size nine—in a gray, I think," replies the shopper. Out from the shelves come the "grays" in boxes, each one to be opened for inspection. At least a dozen samples are examined, and then

By F. J. FARLEY

the lady suggests, "I'd like a little darker shade, please. I think this one will do, perhaps." The element of doubt follows her discovery that these stockings, like the handkerchiefs, also show that many other shoppers have handled them.

Suddenly she notices at the other end of the counter an assortment of hosiery neatly displayed, each pair wrapped in sparkling, transparent Cellophane. She approaches, feels one sample to assure herself of its quality, quickly selects the shade desired—and the sale is made.

Less time for the transaction—more freedom of choice—no chance of getting a soiled stocking—that's why customers and dealers alike are pleased with this new way of wrapping hosiery. It sells on sight.

On the way out of the store our shopper is attracted to an appealing display of wash cloths; each cloth in a wrap that shows the color and texture and also keeps it perfectly clean. She can't resist the impulse to buy "two of the blue and two of the red." And so with her package of purchases, all wrapped with Cellophane, she leaves the building and is soon lost in the throng.

Hosiery, powder puffs, wash cloths, handkerchiefs, bathrobes and many other articles are now being marketed in Cellophane. Let one shopper or a hundred examine the product, there is no fear of dust or of a possible smudge from handling. Cellophane delivers the merchandise as clean and unsoiled as when it left the factory.



The handkerchiefs shown above are bound to attract attention in their Cellophane wraps. Courtesy of the Acheson Harden Company, New York City

These wash cloths, shown through the courtesy of the Electric Knitting Company, Cohoes, New York, come to you clean and sanitary by the Cellophane route.

Left—Hosiery mussed by many hands at the counter can hardly be as fresh and smooth as that encased in Cellophane. Courtesy of the Holyoke Silk Hosiery Company, Holyoke, Massachusetts





Courtesy Commercial Museum, Philadelphia

Model of a Chilean nitrate bed, showing the principal operations in mining the ore. In the right background it is being loosened by explosives, while in the foreground workmen may be seen breaking up the ore and loading it for the crusher

DIGGING OUT NITROGEN

Down in Chile thousands of tons of nitrate ore containing this valuable element are mined and prepared for shipment each year

MOST of us have a nodding acquaintance with the element nitrogen. We are aware that it is essential to life in all its forms; that something terrible would happen if it suddenly ceased to be present; and that some of it comes from nitrate beds in far-off Chile. But ample room remains for further inquiry.

The actual source of nitrogen and its compounds is the atmosphere. The element itself is never destroyed. It may be taken out of the air or from the ground in combination with other elements, made to serve a variety of useful purposes and, in some cases, to practically lose its identity. But it ultimately returns again to the air—and an endless cycle is thus maintained. Without nitrogen, either free or in combination, there would be no plant life, and consequently no animal life. The world would be desolate.

Although an increasing amount of nitrogen is being extracted each year direct from the air, the main natural supply remains in Chile in the form of sodium nitrate deposits, commonly called "Chile saltpetre."

Large amounts of this nitrate are used in American chemical and manufacturing industries. The du Pont Company, for instance, maintains subsidiary connections in South America and imports thousands of tons each year. It is used largely in making nitric acid, highly important in the manufacture of explosives, sporting powders and other products. For years it has been a basic ingredient of black blasting powder. Another outlet for consumption is the rapidly growing dyestuffs industry.

The principal Chilean nitrate beds lie along the arid slopes of a mountain range, from thirty to seventy miles inland from the Pacific. Deposits occur irregularly in the form of ore which contains other salts. The ore lies

beneath an overburden from three to four feet thick.

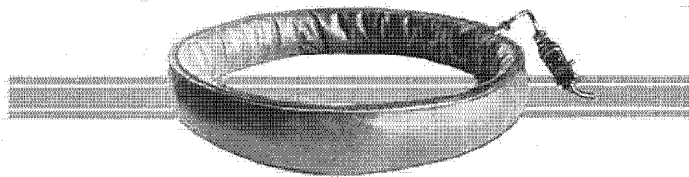
In mining the ore—"caliche"—workmen sink "tiros" or prospecting holes as the first step. Finding a productive deposit, the prospecting hole is blasted and the ore, broken up by the charges of black blasting powder loaded into the bottom of the tiros, is sorted out by the workmen and piled up ready to load on cars.

By means of dinky trains running over precarious tracks, the ore is then taken to the main plant, sometimes several miles away from the beds, crushed, and then allowed to descend by gravity into a battery of tanks where boiling water dissolves the nitrate from the ore. The strong liquor, with the nitrate in suspension, runs off into settling tanks and later into shallow crystallizing pans where, upon cooling, the nitrate deposits. The remaining liquor is drained off and used again, while the pure salt is shoveled into cars, transported to centrifugal wringers and freed of excess water. Later it is allowed to dry in the sun.

The next step in supplying American industries with nitrate includes bagging and transporting it by train to the coast, where it is loaded from lighters into waiting vessels. This procedure is necessary because deep water and a heavy swell preclude the building of piers.

In conclusion, it might be interesting to know that in the mining of nitrate, another kind of "cycle" is evolved. It is altogether probable that a percentage of the product, small though it may be, after having been shipped to the United States, goes into the manufacture of dynamite—and later returns in its new garb to aid in breaking up material of which it was once a part.

"...OVER A MILE OF FINE WIRE"



IT must be with difficulty that General Ache-and-Pain retains his dominance over the human body, judging from the great number and variety of devices which are being set up to combat him. Time was when people simply grinned and bore his attacks. But all is different now. Methods for strengthening nerve, bone, and muscle tissue, unheard of a few generations ago, are in widespread use today.

Of late, numerous experimenters have been turning aside from the old and long-cultivated field of internal medicine, and today are seeking the aid of more recently studied forces of light and electricity and radio-activity. Not all such methods, of course, have the endorsement of high medical authorities; but they are none the less indicative of the increasing war now being waged against disease and suffering, which for centuries were accepted as unavoidable incidents of one's journey through life.

From the Pacific Coast comes the news of an electrical appliance which appears to be gaining wide popularity. Its sales in the past few months have reached astonishing proportions. It is called the Wilshire I-On-A-Co Magnetic Belt — also the Wilshire Ring — and has been designed and developed by Gaylord Wilshire, of Los Angeles.

It is common knowledge that if an electric current be passed through a coil of wire, a special condition of magnetic forces, known as a magnetic field, will instantaneously be set up within the coil. This is shown by the simple experiment of bringing loosely scattered iron filings on a card into the "field" and seeing them swing at once into orderly and symmetrical arrangement when the current is passed through the surrounding coil; or by observing the sudden deflection of the magnetic needle when a mariner's compass is substituted for the card and filings in the first experiment. The strength of

this magnetic field varies directly with the number of turns of wire in the coil.

In the Wilshire Ring, over a mile of fine wire is wound in a circle about eighteen inches in diameter; and the whole, save for the necessary outlet cable, is compactly and neatly encased in a Fabrikoid jacket. The patient simply selects a suitable location in the home, plugs the cable into the nearest electric socket, sits or reclines comfortably within the ring, and switches on the current.

The insulation of the wire and the stout, non-metallic Fabrikoid protect the user fully from any immediate contact with, or shock from, the direct current of the lighting circuit; while the body or limbs of the patient will be seen, from the illustration, to lie directly within the magnetic field of the coil. In accordance with its fixed editorial policy, THE DU PONT MAGAZINE must ask its readers to understand that in presenting this description it does not mean to vouch for the curative powers claimed for the Wilshire Ring, nor to guarantee any results from its use. The intention is simply to describe an unusual appliance which has evoked a great deal of interest and which adds one more novel application to the almost innumerable uses that have been found for Du Pont Fabrikoid. It will be seen that the unique combination of properties of being impervious to moisture, readily washable, dust- and vermin-proof, wear-resisting and attractive in appearance, makes this material admirably suited for the use in question.

The I-On-A-Co Magnetic Belt is manufactured by the Iona Company, 416 West Eighth Street, Los Angeles, California. Branch offices are located in San Francisco, Oakland, Portland, Seattle, Denver and Kansas City; and plans are now under way for the establishment of a new factory at Fort Wayne, Indiana, for midwestern and eastern distribution.



The Fabrikoid-covered I-On-A-Co, also called the Wilshire Ring, is shown in position for treatment.

EXIT—ANOTHER COVERED BRIDGE

Razing the superstructure of an old Georgia bridge presented no difficulty, but throwing down the piers was a special problem which was solved with dynamite

ONE by one covered bridges are being replaced by steel and concrete structures. Picturesque and appealing as these old bridges are, they have in most instances outlived their usefulness. Before long they will be classed among such antiques as covered wagons, hitching posts and scores of other interesting relics of bygone days.

There's the old covered bridge across the Chattahoochie River at Fort Gaines, Georgia, for instance. It was built in 1860 and after sixty-five years of service, it was decided to dismantle the old landmark and build a new bridge in its stead. About three years ago a contract for this work was awarded to Mallory & Nash, of Atlanta. This contract called for dismantling the wooden superstructure and razing five brick piers in a manner that would be satisfactory to U. S. Army Engineers.

Taking down the woodwork was easily accomplished. But a troublesome problem arose when preparations were made to raze the massive brick piers, for the engineers directed that they be thrown in a certain direction—and in no case into the river channel. These piers measured fourteen by twenty-six feet at the base and were seventy-five feet high, each one estimated to contain 450,000 bricks. Could such huge structures be brought

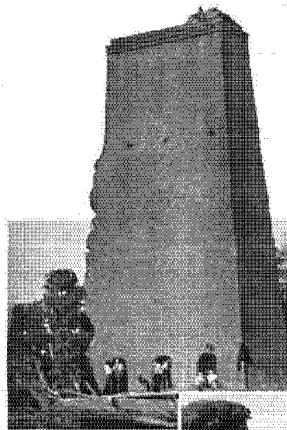
By F. J. MESSICK

down in the limited space prescribed? The contractors, realizing that this task would not be easy, called upon the writer for assistance. Following an inspection of the piers, and a study of the conditions to be met, it was decided to proceed with the work, using dynamite. Accordingly, three gopher holes were driven approximately half way through the base of each pier. This work was done by hand. Then a single hole was drilled in each corner and also into the two supporting centers, whereupon the explosive charges were placed and primed with electric blasting caps.

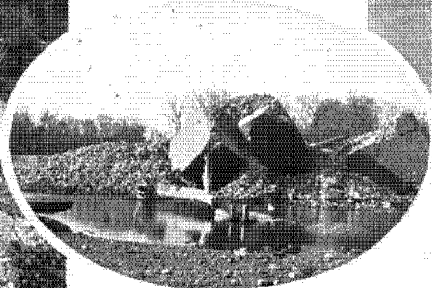
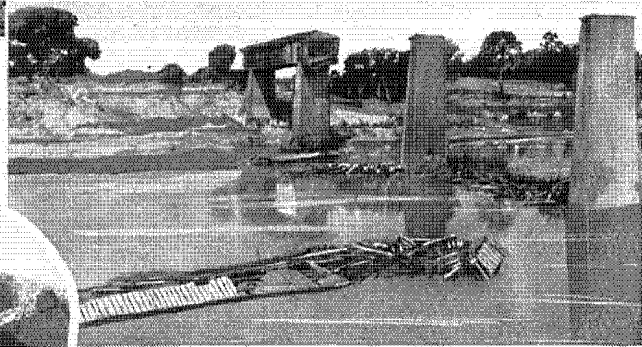
When everything was ready the shots were fired, one after another. In each instance the big structure collapsed upon its base in such a way that practically no debris was thrown into the river channel. The results were entirely satisfactory to the army engineers and to the contractors.

Only two hundred pounds of du Pont dynamite were required to raze the five piers. The work was done under the direct supervision of Mr. B. R. Waite, of Atlanta, Georgia.

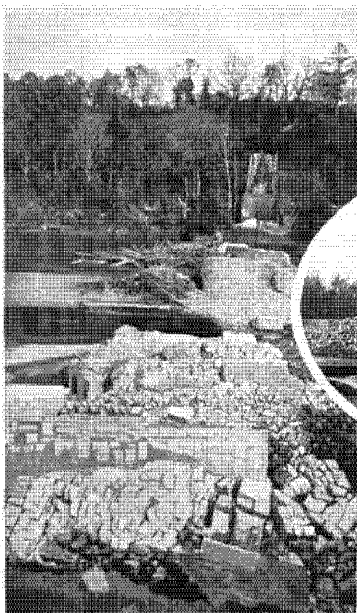
This successful undertaking again demonstrates how explosives can be of aid to contractors and builders in solving knotty problems. The dependability of du Pont dynamite and its consistent performance, when directed by those who are accustomed to handling it, combine to make difficult



Above—Preparing to bring down one of the big piers



Left—The fallen piers. Dynamite did its work well. Oval—Just after one blast. Above, right—In the earlier stages, when the superstructure was razed



work like this seem easy. Moreover, the difference in costs between the dynamite method and hand labor in razing bridges, buildings and other structures is so emphatically in favor of the former that leading engineers and contractors are using dynamite with increasing frequency. Mallory & Nash, in the instance reported here, razed the piers at Fort Gaines much more quickly and at a much lower cost than was anticipated.

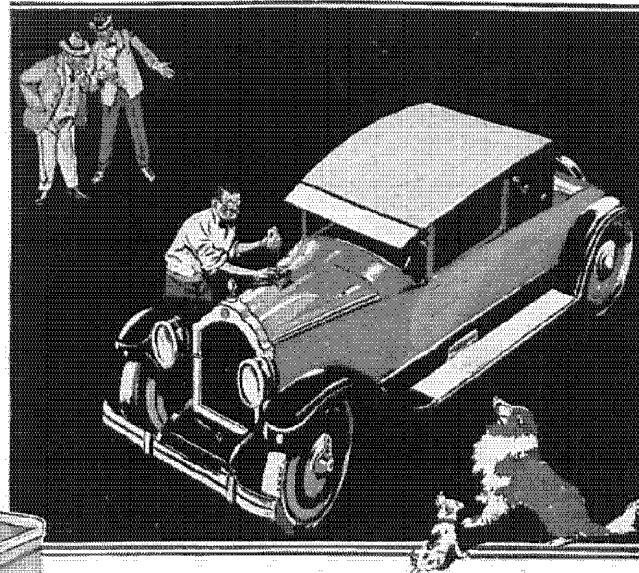
VANITY TOUCHES FOR YOUR CAR

*The new du Pont No. 7 Line merits the attention
of every motorist who takes pride in the
smartness of his automobile
and its equipment*

PRIDE in a "good-looking rig" has come down to us from the old horse-and-buggy days. Spotless leather, a well-groomed horse, and a carriage the body and running gear of which were always bright and clean, distinguished a prideful owner. It was not always a question of how much the equipment cost but how neat it was kept.

It's quite the same with modern motor cars. They are entirely too attractive to neglect. A man is still known by the neatness of his "rig."

Perhaps the greatest incentive to a car owner's pride has been Duco. You see it everywhere—on small cars and big cars. Duco is a



standard finish, favorably known the world over. And now comes the du Pont No. 7 Line—the motorist's vanity case. Just as du Pont Duco is the last word in body finishes, so are these three No. 7 products indispensable in keeping up appearances. In fact, they are as necessary to your motor

car as a dainty "vanity" is to a well-dressed woman. In one short season, No. 7 Duco Polish has become the most popular automobile polish on the market, not only for Duco-finished bodies but also for all automobile finishes—baked enamel, varnish or lacquer.

It cleans as it polishes and leaves no oily film to catch dust. It contains no acid or harmful ingredients. By simply

applying it with a soft cloth and rubbing, the original luster and beauty of the finish will be regained.

No. 7 Polish is entirely suited for furniture, too. When chairs, tables, radio sets, pianos and doors become dull and finger marked, a little rubbing with No. 7 Duco Polish will make them look like new.

No. 7 Auto Top Finish now takes its place beside No. 7 Polish. In developing this product the du Pont Company has provided the motorist with something he has been awaiting for a long time—a top finish that will not check, crack or lose its luster quickly.

While primarily intended for auto tops, it is also recommended for use on trunk covers, side curtains, spare tire covers, and even spare tires. It stops leaks, makes tops look like new, and can be used on all coated top material, whether made of rubber or pyroxylin-coated fabrics. No. 7 Auto Top Finish is easy to apply and dries over night.

When the average motorist notes the highly polished nickel trimmings on his new car, it is with no little trepidation. "Going to be a dickens of a job to keep them shiny," he mutters. To this gentleman and to his discriminating wife is dedicated No. 7 Nickel Polish.

First of all, this polish removes tarnish and rain spots—quickly, thoroughly, completely. No more perspiring over a dingy radiator or headlamp, for this new du Pont product transforms the "spottiness" to gleaming "spotlessness" with a minimum of effort.

No. 7 Nickel Polish is non-explosive, free from grit or acids and may be used on hot metals. After using it on the car, try it on bathroom fixtures, or on any copper, brass, or aluminum articles that need brightening up.

Free samples of the Nickel Polish and full information concerning the entire du Pont No. 7 Line will gladly be furnished to those interested in these products. Requests should be sent to E. I. du Pont de Nemours & Company, Inc., General Motors Building, Detroit, Michigan.



A PLACE FOR EVERYTHING

Do you remember the days back in 1910 when everybody in the front seat of your automobile had to get out when you stopped for a new supply of gas? And how, when tools were needed—and they were needed in those days—the tonneau was cleared of passengers while you groped around for the tool kit in a dark cavern under the rear seat?

If such were the "good old days," few motorists will admit it. Gasoline is now carried in a tank at the rear of the car and modern ingenuity has solved the problem of carrying tools. This latter achievement is exemplified in the Tronick Tourist-Tool Auto Trunk.

No frantic pawing around under seat cushions is necessary if your car is equipped with one of these combination trunks. A neat, built-in rack arrangement provides room for all tools.

They are always in place and ready for use at an instant's notice. The tool compartment, as shown in the

accompanying illustration, may be opened without the necessity of opening the main trunk cover.

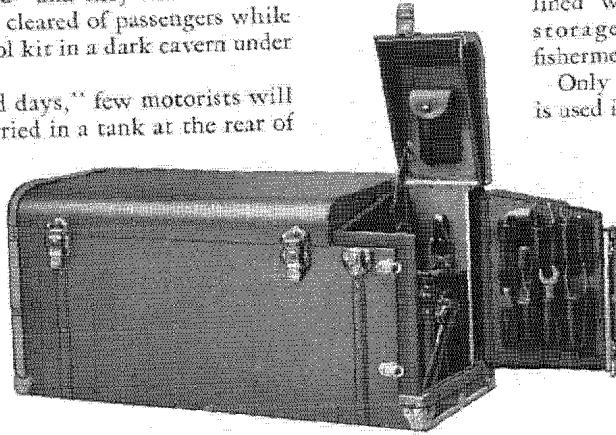
Tronick Trunks are also made in full-width auto trunk models or with the end compartments lined with metal, providing ideal storage facilities for hunters and fishermen.

Only the best grade veneer lumber is used in these trunks. The outside is

covered with Du Pont Fabrikoid to withstand the severe attacks of the elements. The inside is also lined with Fabrikoid and the hardware is solid brass and rust-proof. Practically all the new 1927 color combinations are available to car owners desiring this equipment.

Tronick Tourist-Tool Auto Trunks are sold direct to automobile dis-

tributors and dealers by the Stanley Baggage Company, which is located at Stanley, Wisconsin.



By simply opening one compartment in the Tronick Trunk, the motorist gains access to tools without disturbing his passengers

OF ANY HUE—IN ANY SHAPE

THE popularity of felt hats among women has been emphasized by the corresponding increase in the use of colorful hat ornaments. It is characteristic of women's fashions that today the hats may be of startling color combinations, while next month they may be severely plain. Just as the colors and shapes of hats change, so do the vogues in the colors and shapes of the ornaments.

The good taste displayed in the vari-colored ornaments, now so popular, is chiefly due to the fact that in Pyralin, manufacturers have found a material which is adaptable to a great variety of color effects and one that may be fabricated easily. These color possibilities plus the pliability of Pyralin, therefore, keep hat ornaments strictly abreast of the current vogue—whatever it may be. A glance at the illustration will give an inkling of the

wide scope of effects attainable when the ornament designer specifies Pyralin. The articles pictured here are only a few of thousands from which a woman may select the one to suit her individual fancy.

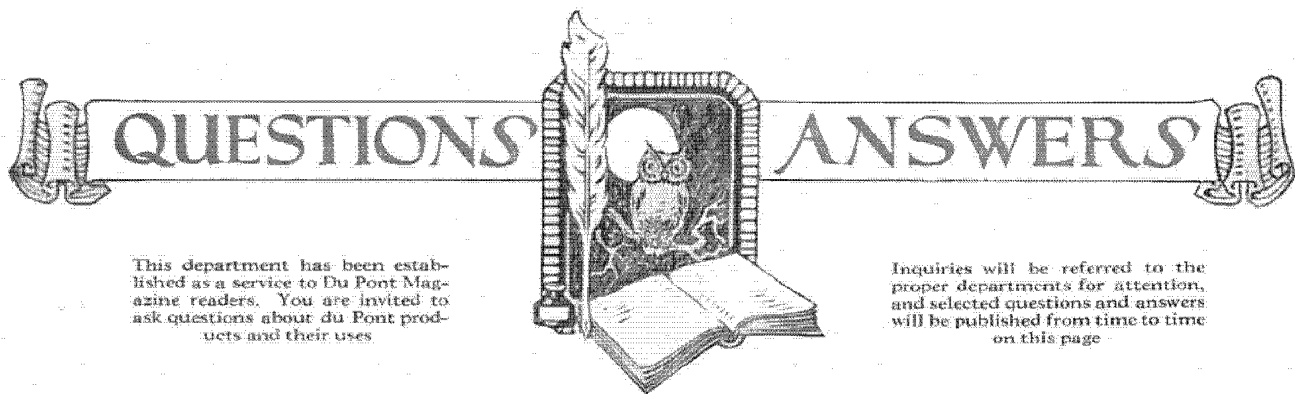


Striking designs and varied color effects characterize these new Pyralin hat ornaments, now enjoying wide popularity

Pyralin also affords many opportunities in the designing of buckles of striking appearance; they may either match the material on which they rest or, if desired, they may be in another color for pleasing contrast.

Hat ornaments and buckles demonstrate in no uncertain manner the ease with which this remarkable du Pont product may be fabricated. Pyralin can be cut, sawed, stamped,

pressed, drilled, beveled, blown like glass, and turned. It may also be tinted, embossed, engraved, printed or lithographed. With it a manufacturer of ornaments or novelties enjoys an almost limitless field of possibilities.



This department has been established as a service to Du Pont Magazine readers. You are invited to ask questions about du Pont products and their uses.

Inquiries will be referred to the proper departments for attention, and selected questions and answers will be published from time to time on this page.

Some years ago your company published a book entitled "Principles and Practices of Upkeep Painting." Are copies still obtainable, and at what price?

Yes, this book, now in the fourth edition, can be purchased from the Paint, Varnish and Lead Division of the du Pont Company for \$1.50 a copy. Address your order to the company at 3500 Gray's Ferry Road, Philadelphia.

I am told that your product Cellophane is being used in preparing certain foods; particularly as an odor-proof wrapping for cooking smoked fish, cabbage and cauliflower. What about it?

It is true that experiments are being conducted by cooking specialists attached to farm and home magazines which may open up a new field for the use of transparent Cellophane. One fish-packing firm has already marketed smoked kippers in Cellophane envelopes, the idea being to place fish, wrapper and all in boiling water. The envelope keeps the food intact and prevents the escape of any unpleasant odors resulting from the cooking process. Definite reports have not as yet been received from those engaged in this experiment.

How long does it take Duco to dry?

Duco is dry to the touch in from 35 to 45 minutes after application, and is ready for recoating in about an hour.

Is there any other wrapping material as transparent as Cellophane?

Cellophane is the only 100 per cent transparent wrapping material that is satisfactory considering all factors, such as flexibility, tensile strength, insolubility and so on.

What are the advantages of du Pont pellet powder that commend its use over black blasting powder?

Pellet powder is packed in wooden boxes, so that there is no temptation to drive a pick through the top.

The pellets are wrapped in paper, so that the powder does not run down the bore hole to the collar and lay a train for a fire to run back to the main charge.

They are not dusty and do not need to be transferred into a powder jack.

Since the cartridges are of uniform size, it is possible to gauge more accurately the amount of explosive needed.

There is less smoke from pellet powder than from granular powder.

Where is pellet powder manufactured in this country?

At present du Pont pellet powder is being made at Moor, Iowa, and Fairchance, Pennsylvania. It is planned, however, to manufacture it at other plants as soon as may be necessary.

Are the fumes from Duco injurious?

No. There is no poisonous material used in Duco.

How much Rug Anchor should I use under a rug?

When it is used to keep small or medium-sized rugs from slipping, the under surface should be covered up to within one inch of the edges. In the case of a large rug covering practically an entire floor, it is better to lay the Rug Anchor under the whole surface, but satisfactory results may be obtained if it is laid around the edge to a depth of two or three feet.

I am told that du Pont Ventube improves ventilation in mines. In what kind of mines is it used?

Ventube is used in both coal and metal mines; also in tunnel construction work.

Why does paint peel from galvanized iron?

Galvanized iron buildings may be left unpainted for three or four months, or slightly longer, without serious effect. At that time they are in prime condition for painting. The period of weathering is long enough to eliminate the film of oil and slight acidity produced in the galvanizing process, so that the paint will adhere properly. The danger lies in permitting such surfaces to remain unpainted for a longer time. Rust will start in very suddenly, and, unless checked, will within a comparatively short time seriously weaken the structure. Not many years will elapse until repairs become necessary.

After repairs, the new galvanized iron surfaces should be painted immediately. This can be done if the surface is first washed in a solution of eight ounces of copper acetate or copper sulphate dissolved in a gallon of water. The surface should be washed thoroughly with this solution and allowed to dry. Any good paint may then be applied with the assurance of satisfactory results.

Can Duco be applied to leather?

Yes. But first make sure that the surface is free from grease, wax and oil.



E. I. DU PONT DE NEMOURS & Co., INC.

General Executive Offices

WILMINGTON

DELAWARE

All Inquiries Regarding du Pont Products Should Be Addressed to the Company—the Nearest Office

ACIDS AND HEAVY CHEMICALS

*Acids, alums and miscellaneous
heavy chemical products.*

Philadelphia, Pa.
35th & Gray's Ferry Rd.
Newark, N. J., 256 Vanderpool St.

AMMONIA

Anhydrous and Aqua Ammonia.

Lazote, Incorporated
Du Pont Bldg., Wilmington

CELLOPHANE

Du Pont Cellophane Company, Inc.
New York, N. Y., 40 W. 40th St.
Chicago, Ill., Railway Exchange Bldg.
Michigan Ave. and Jackson Blvd.
San Francisco, Calif.
Balfour Bldg., 351 California St.

CHEMICAL PRODUCTS

*Bronze powders, collodion, household
cement, leather belting cements, Duco,
No. 7 Duco Polish, pyroxylin lacquers
and enamels, split and patent leather so-
lutions and other pyroxylin preparations
and solvents.*

Boston, Mass., Everett Station 49
Chicago, Ill., 2100 Elston Ave.
Detroit, Mich., General Motors Bldg.
Flint, Mich.
Parlin, N. J.
San Francisco, Calif., 569 Mission St.

DYESTUFFS

*Dyestuffs and dyestuff intermediates.
Rubber chemicals and seed disinfectants.*

Boston, Mass., 274 Franklin St.
Charlotte, N. C., 232 W. First St.
Chicago, Ill., 1114 Union Trust Bldg.
New York, N. Y., 8 Thomas St.
Philadelphia, Pa., 126 S. Front St.
Providence, R. I.
709 Hospital Trust Bldg.

San Francisco, Calif., 569 Mission St.
Bombay, India, Jacob Sassoon Bldg.
Rampart Row, P. O. Box No. 1010

Kobe, Japan
No. 88 Nakamachi-Dori
P. O. Box No. 384

Hankow, China
No. 23 Tung Ting Road

Shanghai, China
Robert Dollar Bldg.
3 Canton Rd., P. O. Box No. 393

Tientsin, China, 52 Taku Road

MOTION PICTURE FILM

Positive and Negative.

Du Pont-Pathé Film
Manufacturing Corp.
New York City, 35 West 45th St.

EXPLOSIVES

*Explosives for all industrial, agricultural,
military and sporting uses.*

Birmingham, Ala.
601 Brown-Marx Bldg.
Boston, Mass., Harvey Building,
Chauncey & Bedford Sts.
Buffalo, N. Y., Prudential Bldg.
Chicago, Ill., 1814 McCormick Bldg.
Denver, Colo., 406 Ideal Bldg.
Duluth, Minn., Hartley Bldg.
742 E. Superior St.
Huntington, W. Va.
Suite 1004 Union Bank Bldg.

Joplin, Mo., 816 Joplin Nat'l Bank
Bldg.
Juneau, Alaska, P. O. Box No. 231
Kansas City, Mo., 225 Scarritt Bldg.

Miami, Florida, 305 Clark Bldg.
343 S. W. North River Drive
New York, N. Y., 120 Broadway
Pittsburgh, Pa., Fulton Bldg.
Portland, Ore.
Northwestern National Bank Bldg.

St. Louis, Mo.
17th Floor, Arcade Bldg.
San Francisco, Calif.
Suite 403 Balfour Bldg.
351 California St.

Seattle, Wash.
Hoge Bldg., 2d Ave. & Cherry St.
Scranton, Pa., 710 Traders Bank Bldg.
Spokane, Wash.
721-22 Old National Bank Bldg.

Riverside Ave. & Stevens St.
Springfield, Ill., 716 Reisch Bldg.
Wilkes-Barre, Pa.
728 Second National Bank Bldg.

FABRIKOID

*Fabrikoid for auto and furniture uphol-
stery; auto topping, bookbinding, luggage,
novelties, etc. Tontine Washable Window
Shade Cloth.*

Newburgh, N. Y.
San Francisco, Calif., 569 Mission St.

RUBBER PRODUCTS

*Pontop for auto tops and curtains. Rain-
coat fabrics, gum rubber, Rug Anchor,
Ventube for mine ventilation. All kinds
of rubber proofing.*

Fairfield, Conn.
San Francisco, Calif., 569 Mission St.

RAYON

Du Pont Rayon Company, Inc.
P. O. Station B, Buffalo, N. Y.

Greensboro, N. C.
708 Jefferson-Standard Bldg.

Greenville, S. C., 408 Woodside Bldg.
New York, N. Y., 132 Madison Ave.
Old Hickory, Davidson Co., Tenn.
Philadelphia, Pa.

1209 Land Title Bldg.
Providence, R. I., 937 Rhode Island
Hospital Trust Building
Reading, Pa., 31 N. 6th St.
San Francisco, Calif., 569 Mission St.

LITHOPONE, DRY COLORS & PIGMENTS

*Products for paint, ink, oilcloth, linoleum,
rubber and other industries.*

Boston, Mass., Everett Station 49
Chicago, Ill., 2100 Elston Ave.
Cleveland, Ohio
876 Union Trust Bldg.

Los Angeles, Calif.
Citizens' Warehouse
1904 Atlantic St.
Newark, N. J., 256 Vanderpool St.
Philadelphia, Pa.
3500 Gray's Ferry Rd.

PAINTS, VARNISHES, DUCO (FOR HOME USE)

*A complete line of paint and varnish prod-
ucts for all home and industrial uses.*

Boston, Mass., Everett Station 49
Chicago, Ill., 2100 Elston Ave.
Newark, N. J., 256 Vanderpool St.
New York, N. Y., 21 E. 40th St.
Philadelphia, Pa.
35th & Gray's Ferry Rd.
San Francisco, Calif., 569 Mission St.

PYRALIN AND VISCOLOID

Pyralin—Arlington, N. J.
Viscoloid—Leominster, Mass.

*Pyralin toiletware of Amber, Pearl, Shell
and Ivory and combinations of these colors.
Novelty and transparent sheeting, rods,
tubes and beading. Also Cleanable Collars.*

Boston, Mass., Harvey Bldg.
52 Chauncey St.
Chicago, Ill., North American Bldg.
New York, N. Y., 330 5th Ave.
San Francisco, Calif., 569 Mission St.

PACIFIC NOVELTY DIVISION

*Toys, rattles, infant sets, hair ornaments,
New York, N. Y., 330 5th Ave.*

*When you are in Atlantic City, New Jersey,
Visit the Du Pont Products Exhibit, at 1121 Boardwalk*



RESPONDING to the demand for sets of the American Game Bird Pictures, E. I. du Pont de Nemours & Co., Inc., is prepared to fill a limited number of orders. These pictures are reproduced from original oil paintings by Lynn Bogue Hunt, with descriptive text of each game bird on the reverse side by Edward Howe Forbush, State Ornithologist of Massachusetts. Eighteen pictures to the set in four colors, all ready for mounting. Size 13 by 14½.

Retail Price—\$2.00 the set, delivered. Liberal discount to dealers. Orders for less than ten sets should be accompanied by check or money order.



E. I. DU PONT DE NEMOURS & CO.

INCORPORATED

Sporting Powder Division

WILMINGTON

DELAWARE