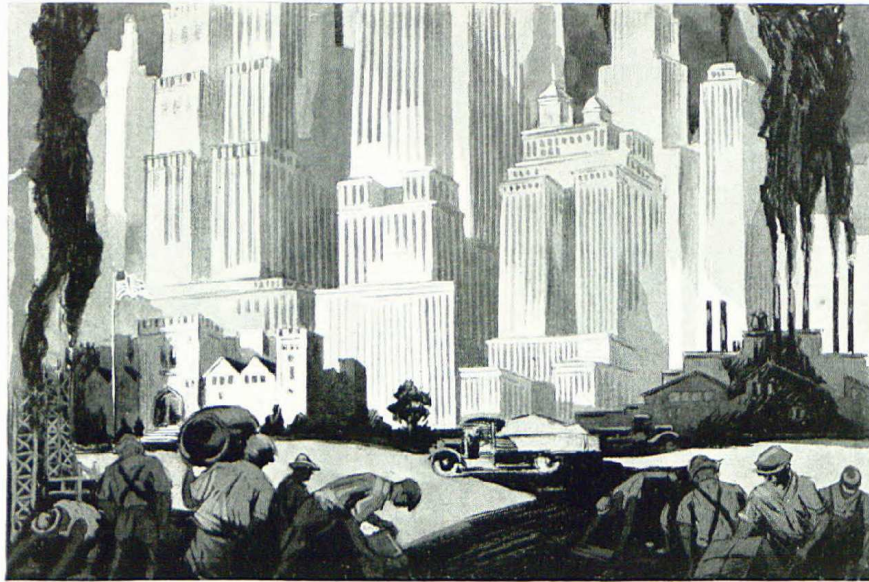


THE DUPONT MAGAZINE





FIRE-RESISTIVE *and* SAFE CONSTRUCTION



TOWERING buildings—tall and mighty symbols of prosperity—
everywhere crowd the horizons of our cities.

They are the homes of the various great agencies created by evolution
to serve our present complex civilization.

Modern, fire-resistive and safe, these par-
agons, anchored deep in the solid rock
and reaching up with their sturdy masses
of steel and concrete to touch the clouds,
have been made possible by explosives.

Explosives have blasted out their founda-
tions and torn from the earth the basic
raw materials for their construction.

Were it not for explosives the fire-resistive
buildings or safe shelters of today would
still be comparatively small brick or stone
structures.

Du Pont is recognized as the leading
manufacturer of explosives and the first
to educate the public in their safe and
effective use.

*The du Pont Company has satisfaction in knowing that it has done
its part in making possible the housing of the great productive,
administrative and service organizations of the modern world in
safe, fire-resistive structures.*

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

Explosives Department



WILMINGTON, DEL.

The DU PONT MAGAZINE

VOL. XXIV

MARCH, 1930

No. 3

A YEAR OF PROGRESS

*A brief résumé of some of the points outlined by President du Pont
in his annual report to stockholders*

THE du Pont Company's volume of business for 1929 was about 13 per cent larger than for the previous year. The general level of manufacturing and sales operations in practically all departments and subsidiaries was higher than in 1928, resulting in a material increase of income from that source.

Production facilities were considerably expanded. In this connection it is pointed out that two new plants were constructed in Virginia, at Richmond and Waynesboro, for the manufacture of rayon by the viscose and cellulose acetate processes respectively, and that a new Cellophane plant was built at Old Hickory, Tennessee. These plants were completed and put into operation during the year. The synthetic ammonia and alcohol plant at Belle, West Virginia, was also greatly enlarged. Extensive construction work is still in progress, so that this plant is becoming one of the large and important sources of fixed nitrogen in this country.

The company's foreign affiliations showed satisfactory progress. Included in this group are companies manufacturing and selling explosives, chemicals, paints and varnishes, Duco, Fabrikoid and other products in Canada, England, France, Mexico, Chile, Australia, New Zealand, and elsewhere.

During the year the du Pont Company joined in the formation of two new German companies to undertake the manufacture and sale in Germany of Ventube and the company's line of pyroxylin finishes, including Duco.

The du Pont Company acquired the minority stockholdings, giving it one hundred per cent ownership, of Du Pont Rayon Company, Du Pont Cellophane Company, Inc., and Du Pont Ammonia Corporation (formerly Lazote, Incorporated). It also purchased all the property and business of Krebs Pigment & Chemical Company, manufacturers of lithopone; and acquired a larger equity in Canadian Industries, Limited.

Approximately 35,000 people were employed by the du Pont Company and its controlled subsidiaries on

December 31. This represents an increase over the previous year of about 2,000 employees.

Referring to employees' group insurance, pensions, stock subscription privileges, bonus awards and the like, the president announced that a coöperative plan would be put into effect January 1, 1930, whereby employees of the company in the United States may obtain insurance to compensate them in part for lost time due to sickness and non-occupational accidents.

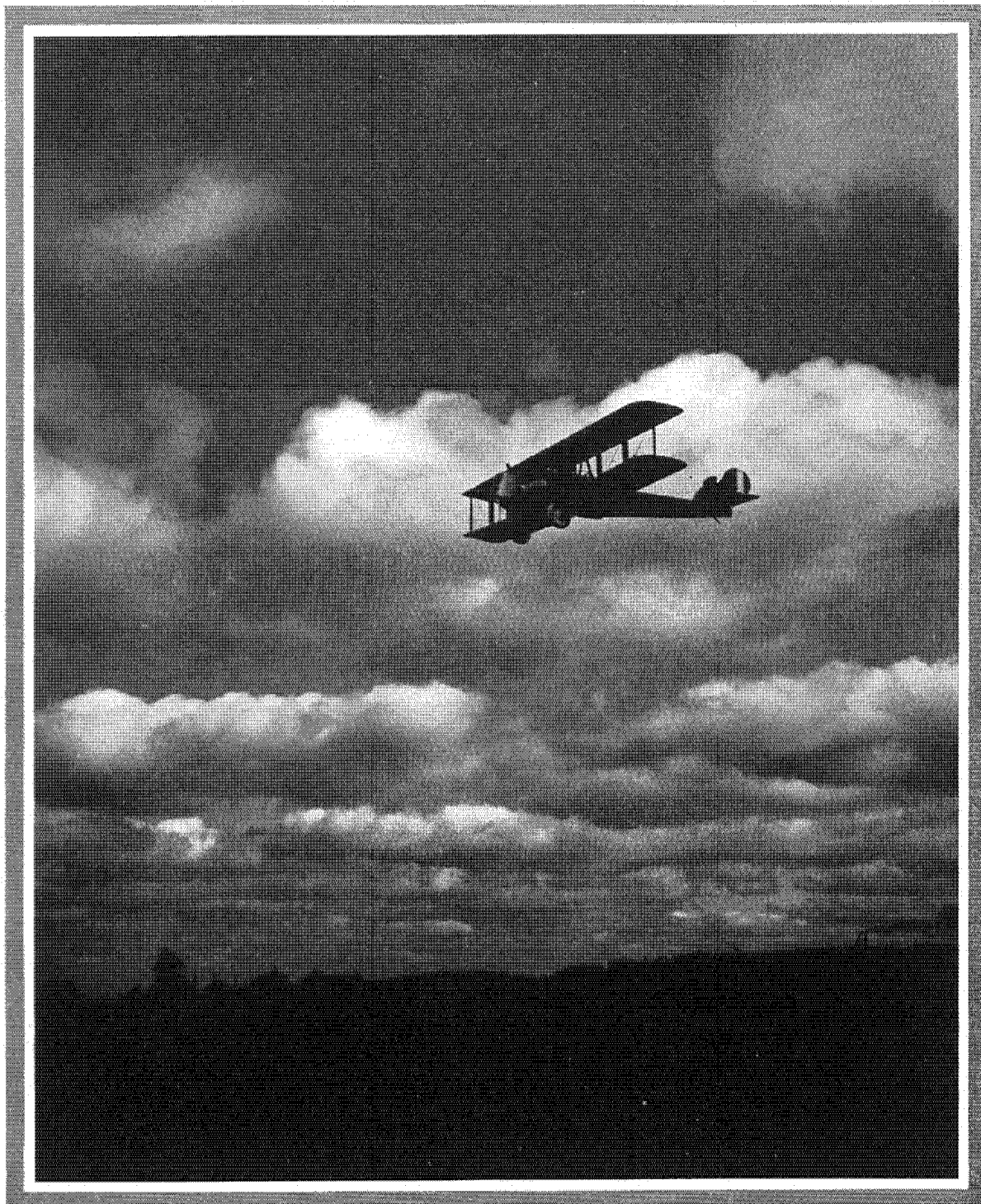
In order to place the Pension Reserve in balance with a revised actuarial calculation, \$3,807,968 was charged to Surplus and credited to the Pension Reserve, bringing the total up to \$14,064,000 on December 31, 1929.

In discussing the company's investments, he pointed out that at the end of the year the du Pont Company's equity in the earnings of General Motors Corporation was represented by shareholdings equivalent to 22.94 per cent of the common stock of that corporation.

During 1929 the number of common stockholders increased by 15,500, or 155 per cent over the number of record at the end of the previous year. It is of especial interest that during the last two months of the year there was an increase of approximately 5,350 in the number of common stockholders; also that approximately 41 per cent of the stockholders of both classes are women, who own approximately 13 per cent of the common stock and 23 per cent of the debenture stock.

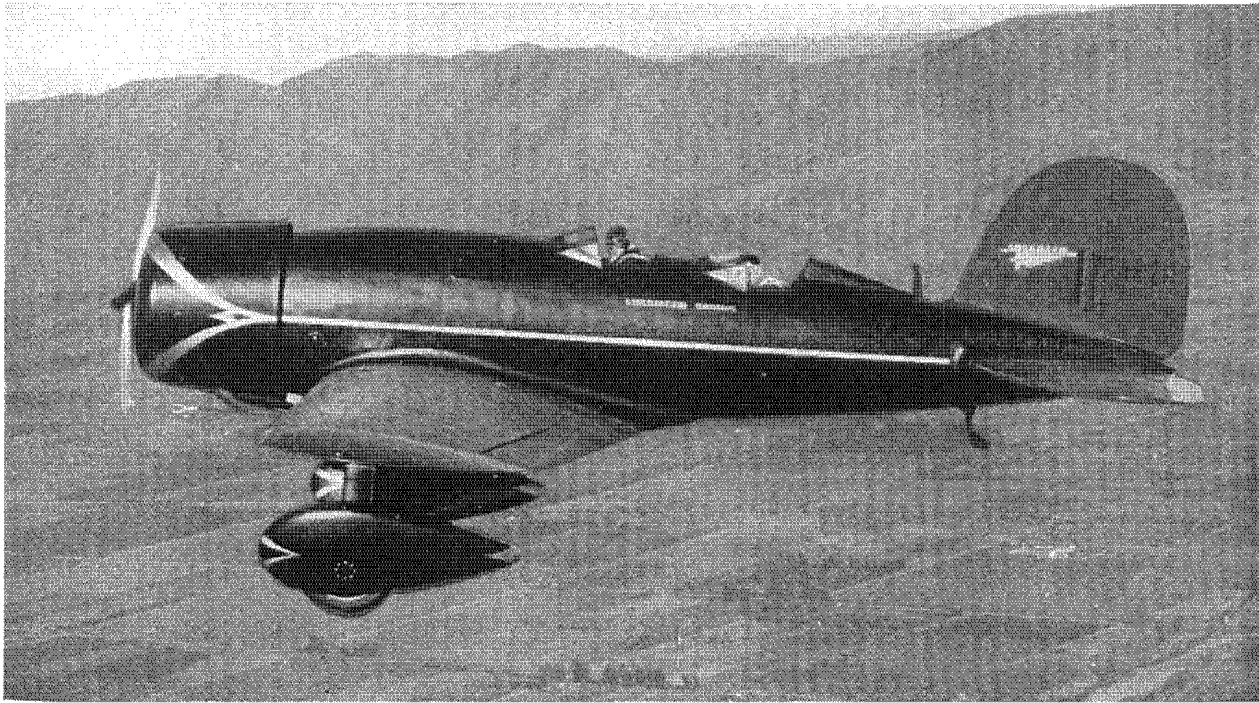
Mention is also made of an amendment to the Insurance Laws of the State of New York, adopted in 1928; whereby domestic life insurance companies are permitted to invest in preferred stocks of corporations which meet certain requirements as to earnings on capital stock. Du Pont debenture stock has been included in the eligible class and as a result a number of insurance companies have become substantial holders of these shares.

The financial position of the company as of December 31, 1929, is shown by the consolidated balance sheet which appears on page 16 of this number.



ALOFT IN THE EVENING GLOW

Aviation is rapidly gaining new devotees, for planes are constantly being improved to make them more dependable and comfortable to ride in. Du Pont-made products are figuring in this development. Pyroxylin dopes for wings, Pyralin for windshields and instrument dials, Fabrikoid and rayon for upholsteries—these are some of the principal products that go aloft with the pilots and passengers of the sky



The longest-range pleasure airplane in the world—built for Colonel Lindbergh by the Lockheed Aircraft Corporation. Because of its large fuel capacity, news writers have referred to it as the "flying gas tank"

LINDBERGH'S LOCKHEED SIRIUS

*Some details of a new-type plane recently delivered to the famous flier
who drew up his own specifications for it*

EVER since Colonel Lindbergh made his memorable transatlantic flight in 1927 and landed at Le Bourget field outside of Paris, public interest in aeronautics has been increasing steadily. Not only did his exploit draw attention to a man of unusual courage and skill, but it had the effect of stimulating to an unprecedented degree the imaginations of thousands of business men who had never given commercial aviation more than a passing thought. The publicity given to Lindbergh's flight forced aviation to the fore in a most remarkable way. There is now no doubt that people are becoming "air minded."

As an example of the rapid strides that have been made recently in the field of aviation, we may point to the fact that for the fiscal year 1928—1929 the number of licensed fliers has been reported as 28,153, and that there are 29,227 miles of established airways and nearly 400 private and commercial airports.

Designs in airplanes have changed radically each year, just as changes have taken place in other phases of the industry. Perhaps the latest development has come about through the Lockheed Aircraft Corporation, a division of the Detroit Aircraft Corporation. And what makes it all the more interesting is the fact that its sponsor is

none other than the famous flier who made the first one-man, non-stop flight to France.

A few weeks ago this company completed a special plane for Colonel Lindbergh called the New Lockheed Sirius Low-Wing Monoplane. The transfer of this plane to its owner was accorded considerable space by the press, which never fails to make special mention of almost everything in which Lindbergh figures.

The background of this story properly begins at the Cleveland Airplane Show last year, when Colonel Lindbergh was invited to fly a Lockheed plane belonging to Captain Frank Hawks, who became famous when he made the round-trip transcontinental record in less than thirty-seven hours.

After the Colonel's flight he mentioned to officials of the company that he was looking for an airplane for his personal use and disclosed his ideas as to what kind of plane it should be. As stated in an advertisement in the *Literary Digest*, he specified that "it should incorporate the latest developments in aircraft engineering and design. It should be powered with a proved type of engine and, therefore, obtain efficiency through aerodynamic design rather than through additional power. It should have a

maximum top speed, together with a large carrying capacity, and a landing speed which would permit the use of undeveloped airports far from organized airways." He recommended a low-winged monoplane with two open cockpits.

An agreement was made that Lindbergh would purchase such a ship if it could be built. Lockheed engineers began working, and within seven weeks the plane was completed and ready to fly. A few weeks ago it was delivered. It is understood that Colonel Lindbergh expects to use this new plane in all of his cross-country travels.

The wing span of the Lockheed Sirius is 42 feet 10 inches and the wing area is 265 square feet. From the specification sheet we also learn that this plane is 27 feet 6 inches in length, with a flying range of 3,300 miles, which is three times that of the average one.

An interesting fact in connection with this "mystery plane," as it has been called, is that the maximum speed of 180 miles per hour can be obtained with little difficulty and 150 miles an hour is the estimated cruising speed. Perhaps 55 miles an hour is a little faster than some of us would like to hit the ground in a plane, but a word from the factory states this is its landing speed.

This airplane will climb 1,000 feet in one minute, and 25,000 feet is its service ceiling, or the height above sea level at which it ceases to be able to rise faster than 100 feet per minute.

The cost of building this plane was not determined at the time of contract, but the Detroit Aircraft Corporation has now placed this ship in production to sell for \$18,500 without "pants" and cowling. This equipment costs about \$700 extra. Incidentally, the term "pants" in aviation parlance refers to a protective device around the wheels similar to mudguards on an automobile. Cowling is the detachable metal covering over the motor.

The cowling on this new plane has been somewhat improved by Detroit Aircraft engineers and is now available for all products made by that company. It serves to form a stream line over the engine and when installed and in use adds fifteen or twenty miles an hour to the

speed of the ship. The "pants," or stream-line housings over the wheels, also serve the same purpose. They are claimed to insure an additional rate of speed of five to eight miles per hour.

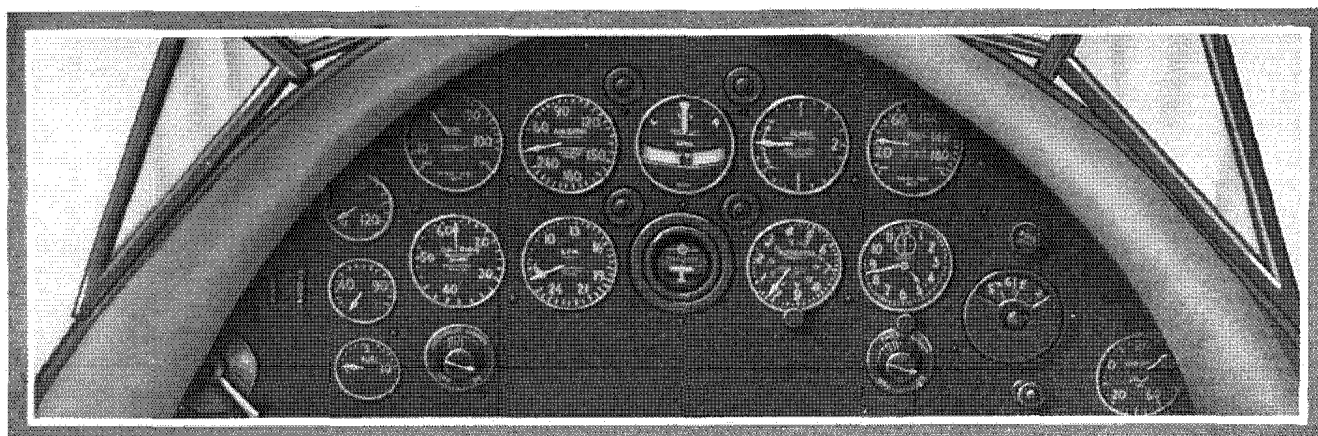
The Lockheed Sirius is equipped with a dual-control system, which operates on the same principle as is applied to other planes of the dual-control type. It was installed on Colonel Lindbergh's plane so that Mrs. Lindbergh could take her turn at piloting the ship when flying with her famous husband.

The main instrument board, as shown in the illustration, is in the front cockpit and contains every safety instrument known to aviation, including the earth indicator compass which Colonel Lindbergh made famous. The rear cockpit has only three instrument dials, the altimeter, tachometer and air-speed indicator.

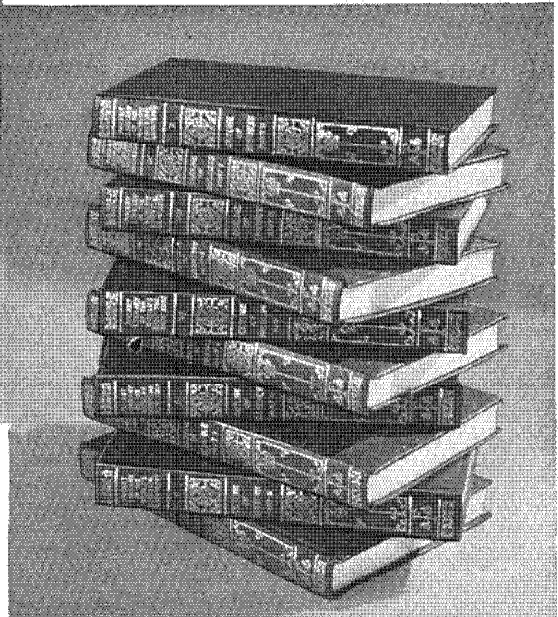
The du Pont Company, alive to the needs of the aviation industry, has offered the resources of its organization for the development of materials which are useful to builders of airplanes.

In this new Lockheed Sirius three du Pont products—Duco, Fabrikoid and Pyralin—are used. The plane is finished entirely in Duco in an exceedingly attractive color scheme. The fuselage is black with striping in gold, and the wings are orange Duco. The wheel "pants" combine black Duco with the gold trim, in keeping with the body of the plane itself. This color combination was selected by Colonel and Mrs. Lindbergh. The upholstery material on the seats of the plane is du Pont Fabrikoid. Some accessories, too, are made of Pyralin.

These are not the only du Pont products employed in the airplane industry. Many manufacturers also use clear nitrate dope undercoats and pigmented nitrate dope topcoats on their planes—both made by the Fabrics and Finishes Department of the du Pont Company. Recently rayon fabrics have found a place in the decorative scheme of palatial air liners. In supplying Duco, lacquer, nitrate dope, Fabrikoid, Pyralin, rayon and the like to the manufacturers of airplanes, the du Pont organization is making a real contribution to the success of the industry.



The main instrument board of the Lockheed Sirius, located in the front cockpit, contains an array of instruments that looks formidable to the layman. It includes every safety control device known to aviation



DETECTIVE STORIES OR PURE KNOWLEDGE

*Mystery Masterpieces or World's Knowledge sets are
offered to new subscribers of the "Literary Digest"*

By PAUL W. SAMPSON

SINCE the *Literary Digest* first made its offer of complete ten-volume pocket editions of either "The World's Best 100 Detective Stories" or "The World's Essential Knowledge" free to new subscribers, hundred of thousands of these sets have been distributed. There seems to be no end to the demand.

The popularity of "The World's 100 Best Detective Stories" was due to no accidental choice on the part of the Funk & Wagnalls Company. They knew it was a case of scratch a reader and discover a detective story fan.

People of high and low rank follow with bated breath the work of the masters of crime and detection. The mysteries of Scotland Yard have been disclosed to them. They enjoy wandering through the labyrinths of crime with one hand guided by Sherlock Holmes and the other by M. Bertillon. They know the intricacies of safe breaking though they have never so much as seen a pickpocket lift a dime.

Ex-President Woodrow Wilson used to find relaxation from the cares of state by burying himself in a detective novel. President Hoover often reads a good detective story just before retiring. The King of England expresses a great admiration for Edgar Wallace, who writes a novel a week, and dashes off a short story while the average man is deciding whether or not to shave. And, if the truth be known, many an American captain of industry has his library lined with gems of literature in

hand-tooled bindings with uncut pages, while he wears ragged the bindings of his \$2.50 detective stories.

In this ten-volume set, which is bound in Imperial Jade Green Fabrikoid, are such names as Samuel Hopkins Adams, Richard Connell, Ben Ames Williams, Carolyn Wells, F. Britten Austin, Melville Davisson Post, Gilbert K. Chesterton, George Allen England, Frederic F. Van de Water, Arthur B. Reeve, A. Conan Doyle, Agatha Christie, Octavus Roy Cohen, Arthur Somers Roche, Sax Rohmer, and so on down the long list of the "greats."

The companion set, "The World's Essential Knowledge" in ten pocket volumes, has also met with a strong demand. Its popularity bids fair to match that of other non-fiction works, such as H. G. Wells' "Outline of History," Dr. Dorsey's "Why We Behave Like Human Beings," and Will Durant's "Story of Philosophy." The entire set represents the work of six professors of New York University.

These volumes outline History, Business, Literature, Philosophy and Science, and while they do not compass all that is known about these subjects, they do form a backbone of essential knowledge. They, too, are given free with a year's new subscription to the *Literary Digest*. You may have your choice—detective stories or pure knowledge. If you are interested in this offer, a line to the *Literary Digest* at 354 Fourth Avenue, New York City, will bring you complete information.

These sets of books are being given away to new subscribers by the Funk & Wagnalls Company. Each volume is beautifully bound in Fabrikoid

An exterior view of the office building occupied by the Duco distributor at Osaka, Japan



This agent maintains a branch office in Kyoto, and has established more than 100 refinishing stations

PAGODAS and tea gardens, rice fields and parasols, teakwood and jinrikishas, cherry blossoms, waterfalls and silk! Probably you will say "That sounds like Japan." Thanks to early lessons in geography and more recent cross-word puzzles, brain tests and travel tours by radio, we readily associate places with names suggesting the environment. But to think of Duco in Japan is to place an Occidental product in an Oriental setting, which brings to mind that in our present-day world of trade and commerce serviceable commodities find a place everywhere.

There is an old saying, "If you want a tree for today, plant the poplar; if you want one for tomorrow, plant the elm." The poplar grows rapidly, sending forth its branches in the spring without developing the strength to support them in the sluggish days of summer. Its roots are constricted, its spread is narrow, its life is brief. The elm is slow to develop, but its extensive root system is adequate to support the tree that grows strong and sturdy and lives for generations.

Business, too, has its poplars—and its elms. One looks to the present alone; the other, to the future. And that is why the du Pont Company, figuratively speaking, chose the elm in establishing a general distribution outlet for Duco and the No. 7 Line of Chemical Specialties in Japan under the direction of D. Nagase & Company, Ltd. This well-established concern maintains headquarters at

Osaka and a branch office at Kyoto, and has gained high rank among the distributors of du Pont products in foreign fields.

Prior to the early 50's Japan was a closed territory to foreign trade, but with the opening of her ports to American commerce, constructive forces were set in motion. In the brief period of three-

quarters of a century Japan has gained world-wide prominence as an industrial nation. The Empire embraces an area of more than 260,000 square miles. Its population is now approximately 83,500,000, which suggests that it is an important market for products of all kinds.

Indicative of the progressiveness of these people is the fact that automobiles are rapidly taking the place

of older means of transportation. Nearly 73,000 motor cars were registered in Japan as of January 1, 1929, the most recent date for which statistics are available. In the Kobe district alone it is estimated that there are from 8,000 to 10,000 automobiles. Even with this comparatively small number of cars, there is a great demand for du Pont Duco for refinishing purposes. D. Nagase & Company, Ltd., has been successful in establishing and equipping more than 100 refinishing stations in Japan, besides training its men how to apply the finish satisfactorily to the ever-increasing number of cars that come into these stations for treatment.

The demand for nitrocellulose lacquers in Japan is growing rapidly, for the damp climate of the island has

DUCO IN JAPAN

The distribution of Duco and other du Pont products in Nippon is efficiently handled by D. Nagase & Company, Ltd.

By REGGIE ELLIS

an unusually harmful effect upon painted surfaces. The ordinary automobile enamel and varnish finishes deteriorate after a few months' exposure to the elements. Nitrocellulose lacquers, on account of their greater serviceability, are becoming increasingly popular, and are used for practically all refinishing jobs.

The sale of American paints and varnishes, especially in the Kobe district, is limited to industrial purposes. This is due, in a great measure, to the nature of the dwellings generally found throughout this country. A brief description of the construction of the typical Japanese home will disclose the reason.

At least two sides of the house are entirely open, privacy being secured by sliding doors, the frames of which are made of wood, over which is stretched a fairly tough tissue paper. Protection is secured against the elements by sliding shutters of unpainted or unvarnished wood. The exterior walls are composed of a layer of mud spread over bamboo laths, on which is imposed either a layer of white or slate-colored plaster or quarter-inch clapboards charred to arrest rot.

In the interior, the floors of the verandas, halls and corridors are composed of two-and-a-half-inch strips of soft wood, which are carefully planed and left in the natural state. They are wiped daily

with a damp cloth, and in the course of time take on a dark color and a high polish, an effect which is infinitely more pleasing to the Japanese taste than can be obtained by any use of varnish. An unbreakable rule, fixed by centuries of custom, requiring the removal of clogs and other footwear before entering a house, protects the flooring of Japanese houses from damage.

The living rooms are floored with mats about two inches thick, the upper surface of which is covered with matting composed of fine grass, closely woven. The interior walls are also of mud, but they are finished with monochrome plaster, colored by specially-prepared sands of various pastel shades—principally brown and gray. All the exposed pillars and beams are smoothly planed and are also left unvarnished and unpainted.

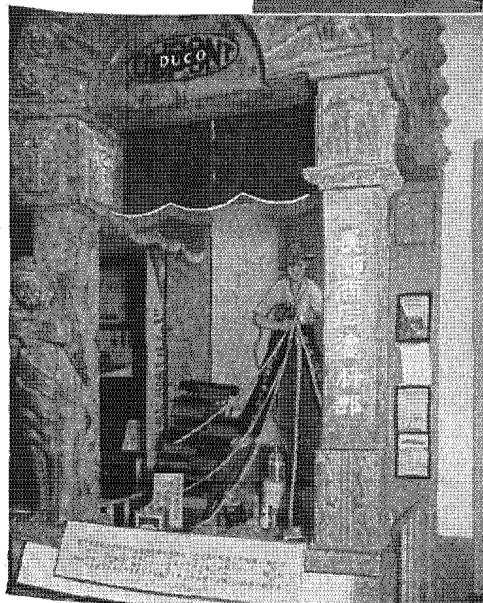
There are, however, slightly more than three hundred foreign-style dwellings in Kobe, of which perhaps two hundred have painted interior walls, the remainder being divided equally between those with interior walls covered with paper and those with calcimine. Few foreign-style dwellings will be found in this district outside of Kobe and its immediate vicinity, where the great bulk of the foreign population is found, except for the scattered residences of American and British missionaries and of the few



Above—Duco was effectively displayed at the Mitsukoshi Department Store in Tokyo, by exhibiting modern Japanese furniture that was finished with this product

Left—The figure in the background of this display is supposed to represent the Japanese people, and the ribbons are attached to the different du Pont products which they use

Right—An interesting exhibit of Duco and the No. 7 Line of Chemical Specialties in the store of D. Nagase & Company, Ltd.



well-to-do Japanese who have homes which are completely or partially constructed in the foreign style.

It should be added, however, that the interior walls of government buildings, and of those occupied by firms engaged in foreign trade, which are in foreign style, are whitewashed. While the number of such buildings is steadily increasing, it is still very small. There are possibly two hundred and twenty-five in Kobe, mostly commercial office buildings, but as this city is the principal port of the district and, therefore, more subject to foreign influences, it does not convey any idea of the limited extent to which foreign-style buildings have been constructed in Japan.

The most popular colors for the exterior of houses are brown and green in various shades. White is not used except in interiors and on window frames and other trimmings. Railway carriages and trolleys are all painted a chocolate color. Besides copper and other ship bottom paints, of which large quantities are used, black paint predominates on ships' sides. Other marine colors that have found use in much smaller quantities are red, white and ochre.

Once in a while du Pont products have the distinction of being associated with royalty and nobility.

Always an outstanding event in Japan is the coronation of an Emperor. The most recent ceremony of this kind, you will recall, took place in 1928, when Prince Hirohito

ascended the throne. All the ancient rites and customs were followed religiously to the smallest detail, and one of them may be mentioned here. Rice wine is the national beverage of Japan.

At the coronation dinner in honor of the newly-crowned Emperor, the guests drank wine made from grain raised especially for the Imperial family. The pump that was used

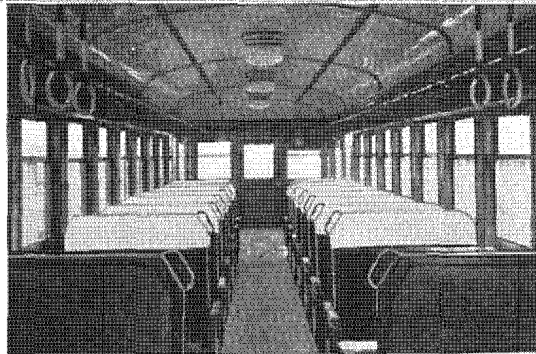
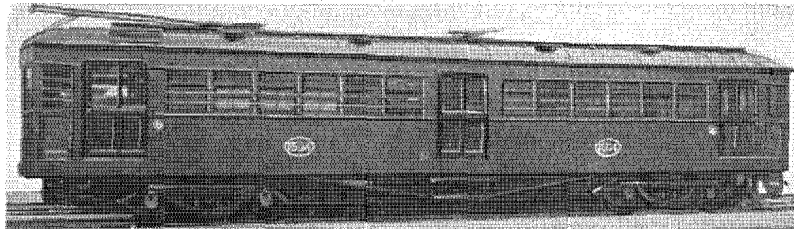
to irrigate the royal rice fields—it is now on exhibition at the Museum in Tokyo—was finished in maroon-colored Duco. This color is used exclusively on everything having to do with the Imperial family. It is by this color that the Japanese identify equipment belonging to the Emperor.

In the retail field the department store, as a factor of distribution in Japan, has had a striking growth. During the past ten years it has carried modern merchandising methods

far beyond the point reached by small shops and stores which hitherto have formed the principal outlets for both domestic and imported products.

The largest stores of this kind in Japan are in Tokyo. Buildings occupied by the four principal ones are seven and eight stories high and are constructed of reinforced steel and concrete. To the average customer a visit to one of the larger stores is an opportunity to enjoy an atmosphere of modernity and luxury that makes a peculiar appeal to the Japanese character. The crowds that daily throng them are comparable in size only to

(Continued on page 23)



Following the example of American railroad companies, Japanese officials of the Keihan Electric Railway are finishing their trains with Duco. The above illustrations show an exterior and interior view of one of the cars that has been completely refinished with this product.



Here you see a group of young Japanese men who are preparing for technical and sales work in connection with the distribution of du Pont Duco under the direction of D. Nagase & Company, Ltd.

TRAINS IN COLORS

Why put color on railroad equipment? The answer is that it is good salesmanship to keep a product bright and attractive

EACH day at a little after noon a passenger train all red and gold backs into South Station (Boston) and prepares to depart for Philadelphia and Washington. It is a handsome train, all Pullman cars and replete with all the customary gadgets from the barber shop in the club car to the comfortable lounge in the observation car. It is very fast. New York is reached in five hours and Washington in nine. But that is not the point. The point is that it is today the only "color train" operating regularly in all New England. Occasionally red cars of the Canadian Pacific or the Pennsylvania slip into North or South station but the "Senator" is consistently a "color train" end to end, and so represents real progress in railroad salesmanship.

Time was when there were several of these trains in New England, the most notable of them the so-called "Ghost Train" which ran over the erstwhile New England road between this city and Hartford and New York. This train with its gleaming white cars was a notable sight. It stirred men's admiration, and their pride in railroading in general. Then came hard years of economy when standardization became the great god with rail executives. In those hard years they reduced their passenger coaches to a dull level of depression and deadliness, painting them in the "Pullman green," which under a few weeks of steady operation often comes to a dirty shade of dusty black.

Foreign trains, particularly those of Great Britain, pride themselves upon their bright colors and the general excellence of their exterior appearance. The "Rheingold" of Germany and the "Golden Arrow" of France are brilliantly beautiful in their outer colorings.

In this country the use of "color trains" is increasing rapidly. The Alton and the Wabash and the Chicago Great Western have recently produced some striking examples of these. The Southern Pacific some time since painted its suburban trains a bright and cheery red and is now preparing to put some of its fast trains in aluminum silver, not merely for appearance but as a preventative against the excessive heat of the sun. Very recently the Central of New Jersey placed in service its "Blue Comet," an all-day-coach train running between New York and Atlantic City—one of the handsomest trains yet seen in America—and still more recently two of the western

lines of the New York Central system have followed suit, in a strikingly beautiful combination of deep brown and cream. The "color train" is on the increase—decidedly.

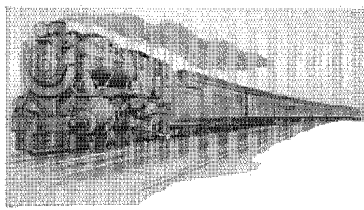
Of course the Pennsylvania and the Canadian Pacific with their handsome red coaches—the "Senator" is staffed with Pennsylvania equipment—and the "Mil-

waukee" with its warm yellow cars have long been familiar features in the eyes of regular travelers. For some unknown reason, the Chicago and Northwestern recently has retrograded, turning back from a distinctive yellow lemon—long beloved of its patrons—to the Pullman green of most of its fellows. Some roads—notably the Boston and Maine, the Baltimore and Ohio, and the Southern—have begun to put some of their passenger engines in striking colors, and with real effect.

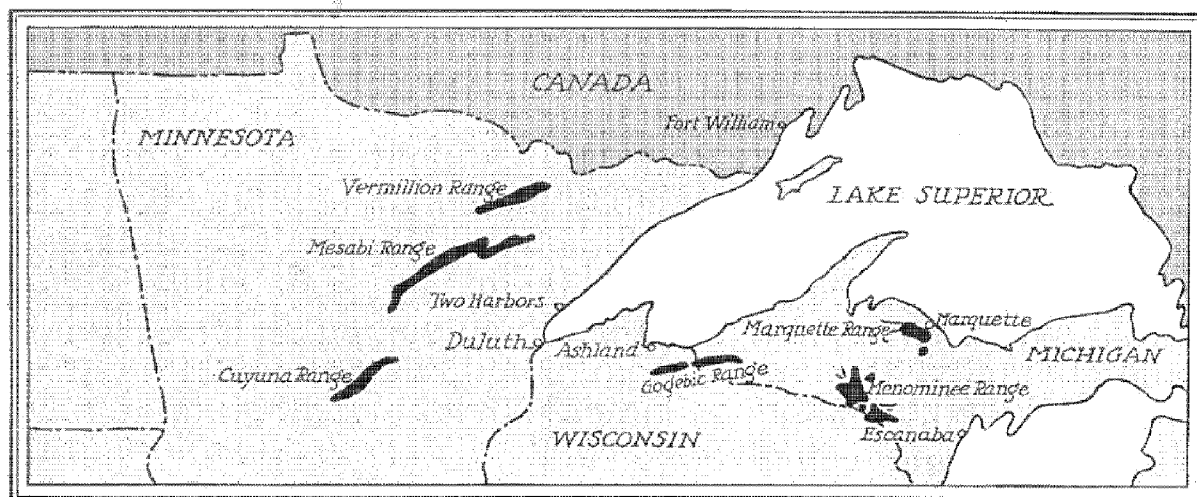
There are some folk who will ask, what value is this color idea on a railroad, anyway? The answer is that it is good salesmanship to keep a product bright and attractive. That is the reason why drug stores and

cigar stores and telegraph offices today, with their bright outer colorings, put to shame their dirty store-fronts of two decades or more ago. It costs a little more—a very little more—to paint and maintain railroad passenger equipment in bright colors, but it is worth all the cost, in the effect not only on the passengers but upon the employees. Light-colored cars mean, of necessity, clean cars, which signify a well-ordered, well-run railroad. There really can be no excuse for any other sort of cars.

Here, then, is what we mean by good transportation salesmanship. It is the putting of the best possible front on the things offered for sale. It may not be possible for some of our roads to go to large expense in replacing passenger trains, now beginning to age, with entirely new equipment, but a generous use of bright colors would work wonders. The New Haven, after a season of economy, in which it permitted its own name to be taken off the sides of its locomotive tenders, now has changed its policy and is placing its handsome and traditional trade-mark upon its best passenger pullers. It feels the effect not only in the morale of its men, but in the pleasure of its passengers. The next step, the placing of trains in attractive colors, is commended, both to it and to its fellows as a matter of good business.



A Boston Herald reporter prepared this story which was published in that newspaper last fall. We reprint it here because du Pont Duco has been used on some of the transportation equipment to which the writer refers. Why put color on a train? Read on.—Editor.



This map will help you to fix in mind the location of the iron ore ranges referred to in the accompanying article

THE IRON ORE INDUSTRY OF THE LAKE SUPERIOR DISTRICT

The nation's chief source of supply lies within this district where immense deposits are being developed by open-pit and underground mining methods

THE terms Lake Superior district and the iron ore industry have become more or less synonymous as each passing year of the last half century has seen an ever-increasing percentage of our nation's iron ore supply mined and shipped from this section. We now find portions of Michigan, Minnesota and Wisconsin almost exclusively identified with this vast industry, the development of which presents an interesting and romantic narrative.

The ore deposits of the Lake Superior district are divided into six ranges—the Vermillion, Mesabi and Cuyuna in northern Minnesota, and the Marquette, Menominee and Gogebic in the upper peninsula of Michigan. The Menominee and Gogebic ranges also extend a short distance into northern Wisconsin. The characteristics of the ore and its formations vary materially on each of these ranges, and this phase alone affords a subject of deep interest for geological study.

Iron ore was first discovered in 1845, under the roots of an old stump on the Marquette range. This range was so named in honor of Father James Marquette, a Jesuit priest who had established missions in this section during the latter part of the seventeenth century. Today along the road between the cities of Ishpeming and Negaunee, Michigan, you will find the historic spot marked by an appropriate monument. Here the first ore was taken from shallow open pits and in 1852 the first shipment, consisting

By R. O. CASH

and

T. H. MICHELL

of a few tons, was packed in barrels for delivery to one of the lower lake ports.

The country was undeveloped in these early days. It was necessary to

transport the ore in wagons or sleds for fifteen miles through the woods to Marquette, Michigan; thence by boat to Sault Ste. Marie, where it was unloaded and hauled past the rapids that separate Lakes Superior and Michigan at this point. It was then loaded into boats and finally transported to those lower lake ports most accessible to the blast furnaces. Fortunately transportation facilities were rapidly improved. The construction of a canal at Sault Ste. Marie in 1855, followed by the building of a railroad between Ishpeming and Marquette in 1857, facilitated the early development of the industry.

The development of the Marquette range naturally led to further exploration in the Upper Peninsula and resulted in the discovery of iron ore on both the Menominee and Gogebic ranges. First shipments were made from the former in 1877 and from the latter in 1884. Since the majority of deposits in the Michigan ranges are covered to a great depth by overburden, most of the ore is removed by underground methods. However, there are some shallow deposits on both the Gogebic and Marquette ranges that are now the scene of open-pit operations.

Prior to 1884 all the iron ore shipped from the Lake Superior district had been mined in Michigan's three ranges, but in that year, with the initial shipment from

Vermillion range, Michigan's prowess as an iron ore producer was first challenged. The finding of ore on this range was important, for it led eventually to the discovery of the large Mesabi range ore deposits in November, 1890. Minnesota soon gained supremacy as a producer of iron ore and its position has never since been disputed. The last range to be discovered was the Cuyuna, which derived its name from its discoverer, Cuyler Adams, and his faithful dog, Una, that had been his constant companion during his prospecting days. First shipments were made from this range in 1911. Development work followed and it now ranks with the other ranges as a steady producer of ore.

Ore deposits of the Vermillion range lie deep beneath the surface and are necessarily removed by underground methods. A majority of those on the Cuyuna and Mesabi ranges are comparatively shallow, and are easily accessible for economical stripping and open-pit operation, although there are several ore bodies that are more advantageously mined by underground methods. Both systems are in current use.

The Mesabi range, by virtue of its large yearly production, its enormous reserves and magnificent civic

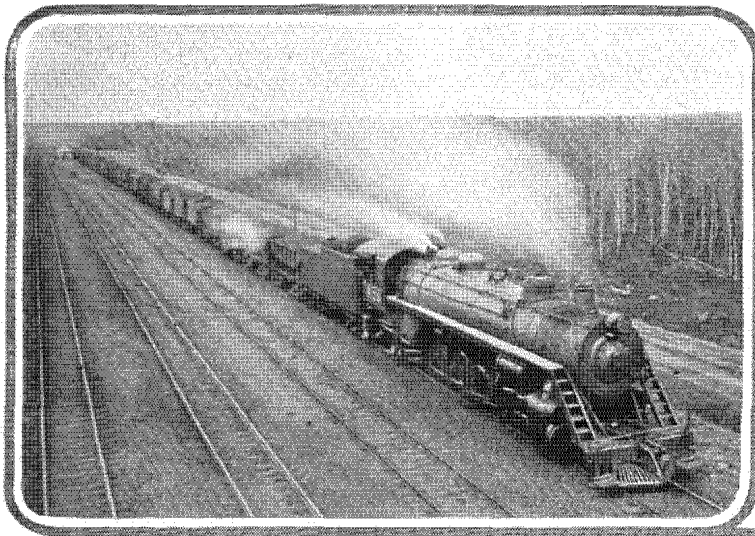
improvements, is perhaps more popularly identified with the iron mining industry than any other. The name "Mesabi" originally came from the Ojibwa Indians and referred to a mythical giant, who, according to Indian legend, had his home in this long range of hills. The gigantic tonnage of ore, since found in its deposits, has proved that the original Indian name was an especially appropriate selection.

Since the discovery of ore on the Marquette range in 1845, including the shipments of 1928, records show that 1,398,478,044 tons of ore have been mined and shipped from the Lake Superior district. This enormous tonnage is divided among the various ranges approximately as follows: Mesabi, 816 millions; Gogebic, 174 millions; Marquette, 165 millions; Menominee, 163 millions; Vermillion, 55 millions; and Cuyuna, 27 millions. The 1928 shipments amounted to nearly fifty-five million tons, of which approximately thirty-five came from the Mesabi; seven from the Gogebic; five from the Menominee; four from the Marquette, and two each from the Cuyuna and Vermillion ranges. These figures will give the reader a basis upon which to determine the total production of the six ranges in this district at the present time.



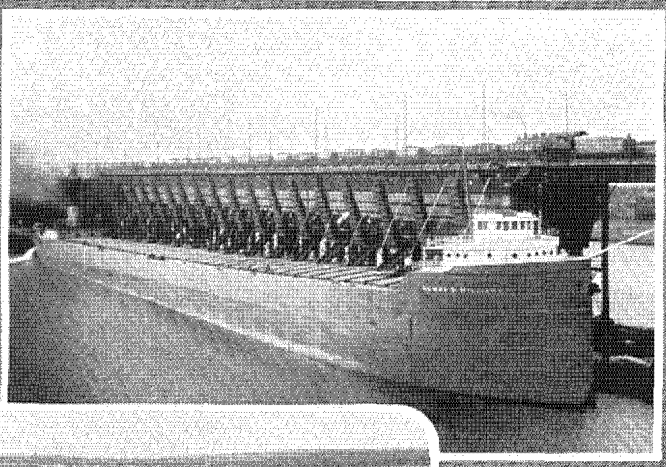
Travelers between Ishpeming and Negaunee, Michigan, pass by this pyramid, with its self-explanatory inscription: "This monument was erected by the Jackson Iron Company in October, 1904, to mark the first discovery of iron ore in the Lake Superior region. The exact spot is 300 feet northeasterly from this monument to an iron post. The ore was found under the roots of a fallen pine tree, in June, 1845, by Marji Gexick, a chief of the Chippewa Tribe of Indians. The land was secured by a mining 'permit' and the property subsequently developed by the Jackson Mining Company, organized July 23, 1845."

AMERICA'S IRON ORE COMES PRINCIPALLY



Above—Iron ore is hauled from the mines to the docks in trains carrying sufficient tonnage to fill completely an ore boat of average size

Below—Looking down into the deepest open-pit iron ore mine in the Lake Superior district. At this distance the power shovel, right, and the train of cars in the background look small enough to be mere toys

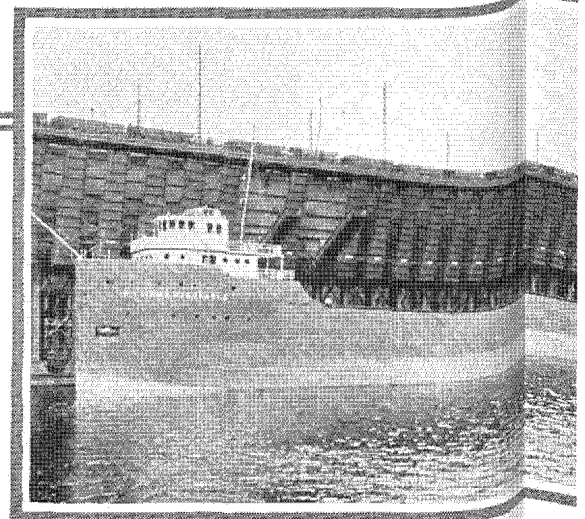
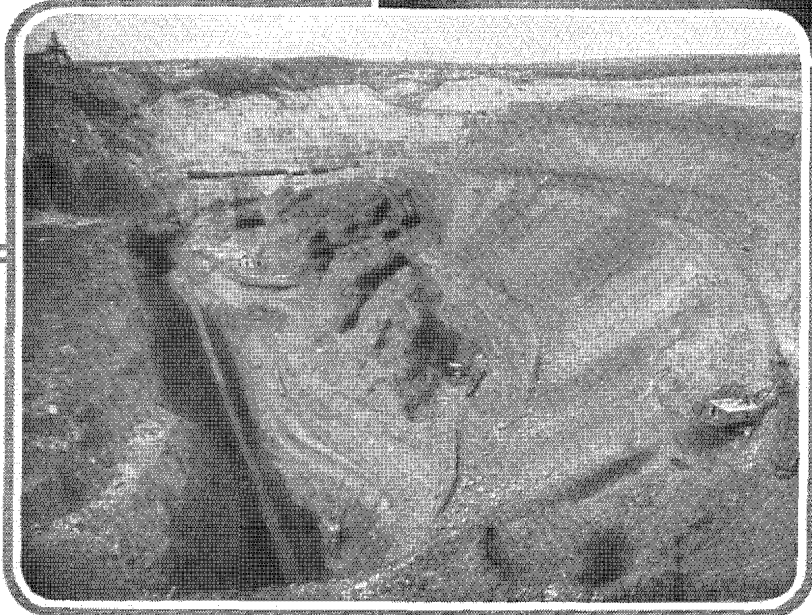


Above—Iron ore that cannot be recovered by open-pit operations is mined by underground methods. This illustration shows a panoramic view of one of the largest mines in the district

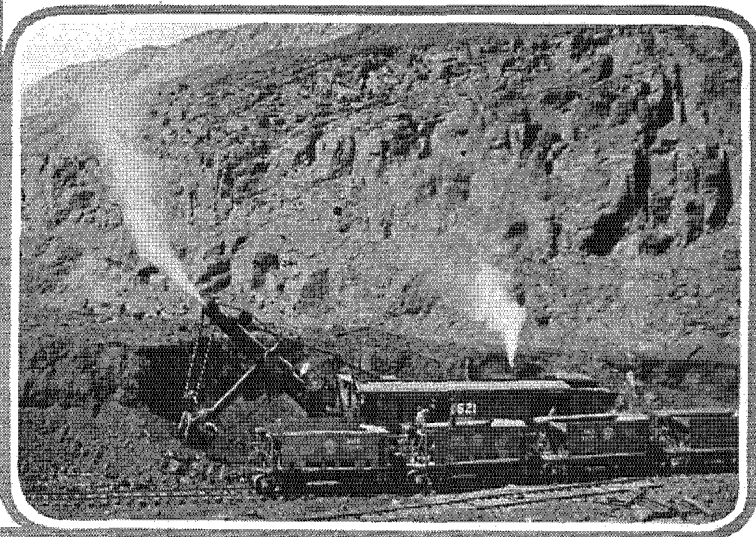
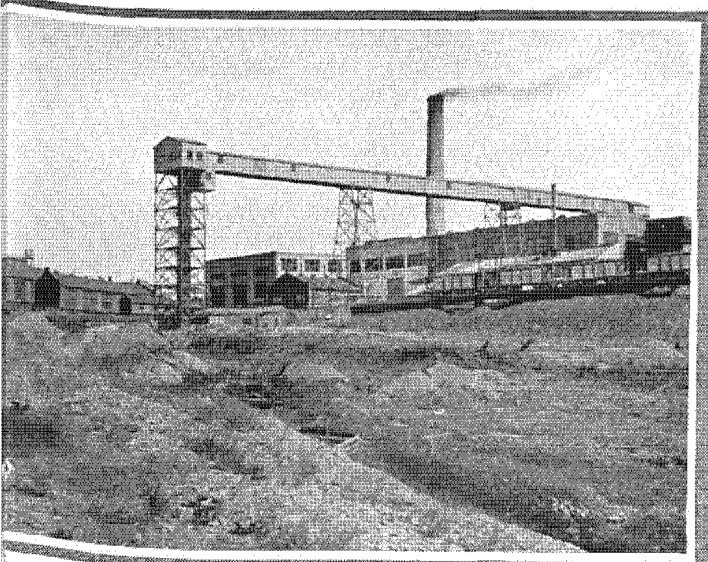
Left—Large fleets of boats, similar to the one appearing below it, are kept busy throughout the shipping season, loading and unloading ore from the Lake Superior docks. The boats are loaded and unloaded advantageously to the barge

Right—This picture, which is a close-up of a 100-ton ore boat, shows a 100-ton ore boat loading ore from the open pit at Hibbing. This gives you some idea of the size of this

Below—This is the largest ore boat in the world, and is located at Duluth, Minnesota. It is owned by the Mesabi and Northern Railway Company. The vessel waiting to take on



LY FROM THE LAKE SUPERIOR DISTRICT

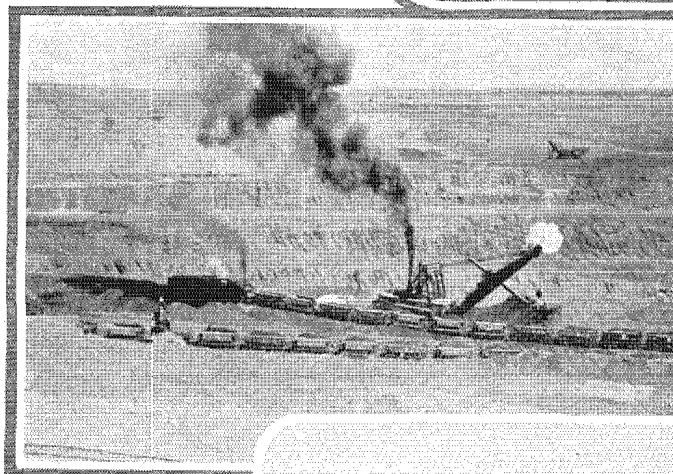


re recovered economically by
underground methods. This
view of the surface buildings
the Lake Superior district

imilar to the one illustrated,
shipping season transporting
locks to ports located most
the blast furnaces

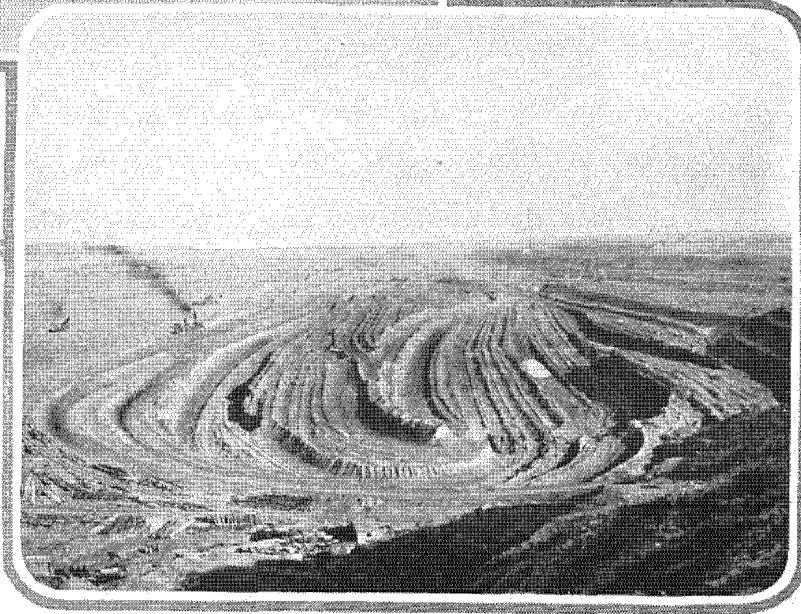
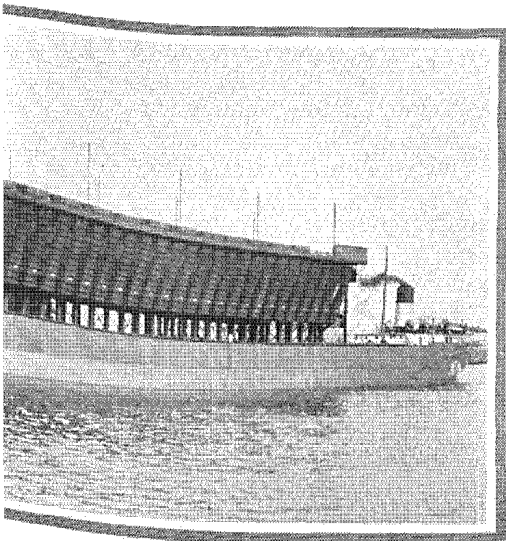
a companion to the one
00-ton power shovel loading
bing. This view also gives
of this mining operation

ore dock in the world. It is
and is owned by the Duluth,
Company. Note the length of
ike on a cargo of ore



Above—One of the large steam
shovels at work in an iron ore
pit. On the ledge at the left
may be seen a crew of men drill-
ing holes for the next shot

Below—Looking toward the
Hull-Rust-Muhoning iron ore
mines at Hibbing, Minnesota,
the largest open-pit operations
of their kind in the world. Mil-
lions of tons of ore are removed
annually from this pit, which
is approximately one mile wide,
three miles long and three hun-
dred feet deep



The iron ore deposits of the Lake Superior district resulted from the disintegration of iron-bearing rocks and formations by erosion, folding, faulting, and other geological actions, which were then concentrated, by the circulation and filtering of underground waters, into small, enriched ore bodies, during the geological eras. Each range varies widely in geological formation and the ore bodies are correspondingly different, but for the most part the ores of this district are either a hard or soft hematite (Fe_2O_3) or magnetite (Fe_3O_4). Thus far production has been chiefly limited to hematite ores and will doubtless so continue as long as these deposits are available.

Exploration work, first carried on in shallow ore bodies by means of small shafts and test pits, soon gave way to diamond drilling as the search for ore extended to the deeper deposits. This work, in the deeper mines of Michigan, is largely executed by underground drifting, which operation is also supplemented by the use of diamond drills set up in underground locations. The churn drill has likewise been used in many of the Mesabi range properties, especially in surface and soft ores, where it has been found to give better results than the diamond drill.

The results of exploration work not only define the limit and depth of the deposit, but also furnish accurate samples of the ore encountered, so that after the drilling and drifting have been completed, an estimate of the tonnage and grade of ore the property contains can be accurately computed. Such data and preliminary estimates govern the plan of operation and development. Whether the ore shall be won by underground or stripping methods depends upon the calculated ultimate cost per ton of ore recovered.

If the overburden is not too deep and the ore body large enough to warrant the removal of such surface yardage so as to obtain ultimately an economical tonnage of merchantable ore, then the open-pit system of mining

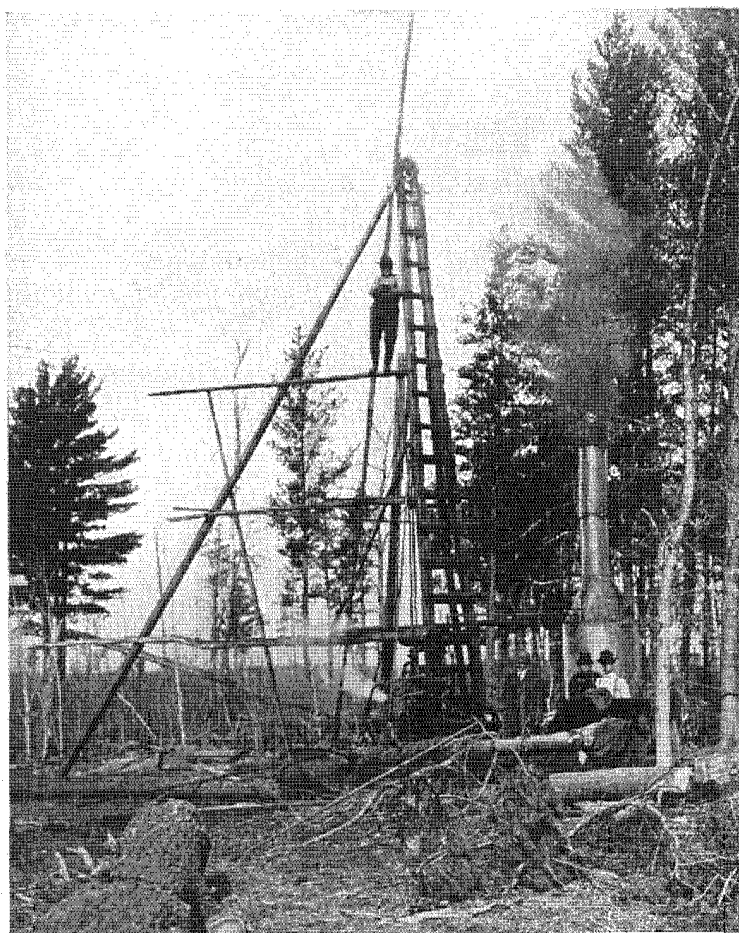
is employed. This method offers the advantage of a large and flexible production with comparatively few employees; and in periods of depression or inactivity it exacts relatively small maintenance charges. All surface material is first removed from the ore body by the use of power shovels, locomotives and dump cars; this waste material being transported to nearby ore-barren-land.

Then the ore is loaded direct into railroad cars by power shovels and hauled out of the pits with locomotives. It has become necessary, in later years, to crush and wash some of the open-pit ores before shipping them. In such cases the material is loaded into dump cars in the pits for transportation to the crushing or washing plants. After treatment, it is then loaded into railroad cars for shipment.

The development of this mining method has largely been a romance of mechanical progress. The first steam shovel, a small 35-ton model with half-yard dipper capacity, made its appearance on the Mesabi range in 1892, and other mechanical equipment such as locomotives and dump cars were likewise correspondingly small. Today, this early equipment has been supplanted, in some

extreme instances, by 300-ton, full-revolving, caterpillar traction electric shovels with eight-cubic-yard dippers, and large-type locomotives weighing 125 tons on their drivers, as well as air-dump cars of 30 cubic yards capacity. Some of the mines recently stripped have installed large electric locomotives as regular equipment, and the loading of ore from such properties is almost completely a mechanical process.

Thus, despite a constant increase of wage and supply costs, and with fewer working hours, the operator has been able to keep the cost per ton at a satisfactory figure by the use of modern labor and time-saving machinery. Industry in other sections has greatly profited by mechanical improvements developed in open-pit iron mines. A specific example is the modern steam or electric shovel,



In development work the diamond drill is employed to locate the ore body and to determine its depth and quality

which has been developed and improved almost entirely as a result of its extensive use in these mines.

Iron ore that cannot be recovered economically by open-pit operations is mined by underground methods, of which there are many different systems in use, since each ore body offers its own particular mining problems and difficulties. Perhaps the most common method employed is that of top-slicing, in which a shaft is sunk just outside of and to the bottom of the ore body. At the bottom of the shaft a main haulage drift or level is driven and developed. Raises are then put up from this main level to the top of the ore body, and from them subdrifts and levels are driven and developed at vertical intervals of from twelve to fourteen feet. The ore in the top sublevel is mined first, being removed in horizontal slices after the subdrifts have been driven to the property line or ore limits. Then the surface is caved, after which the next lower sublevel is mined and so on until the main level is reached. Such ore, mined in slices, is trammed through the subdrifts and dumped into a nearby raise. It is collected at the bottom by cars and motors on the main level and is then transported to a shaft pocket and hoisted in skips to the surface. During the summer months the ore is loaded direct into railroad cars. In winter, when navigation is closed, it is stock-piled to be reloaded into railroad cars with the opening of the shipping season.

The increased cost of labor and supplies has likewise made it necessary to turn to mechanical and labor-saving equipment in underground mines. In drifting work where mucking was formerly done by hand, mechanical loaders or scrapers are now used; modern high-speed drills are in action where formerly the slow, laborious hand-augers

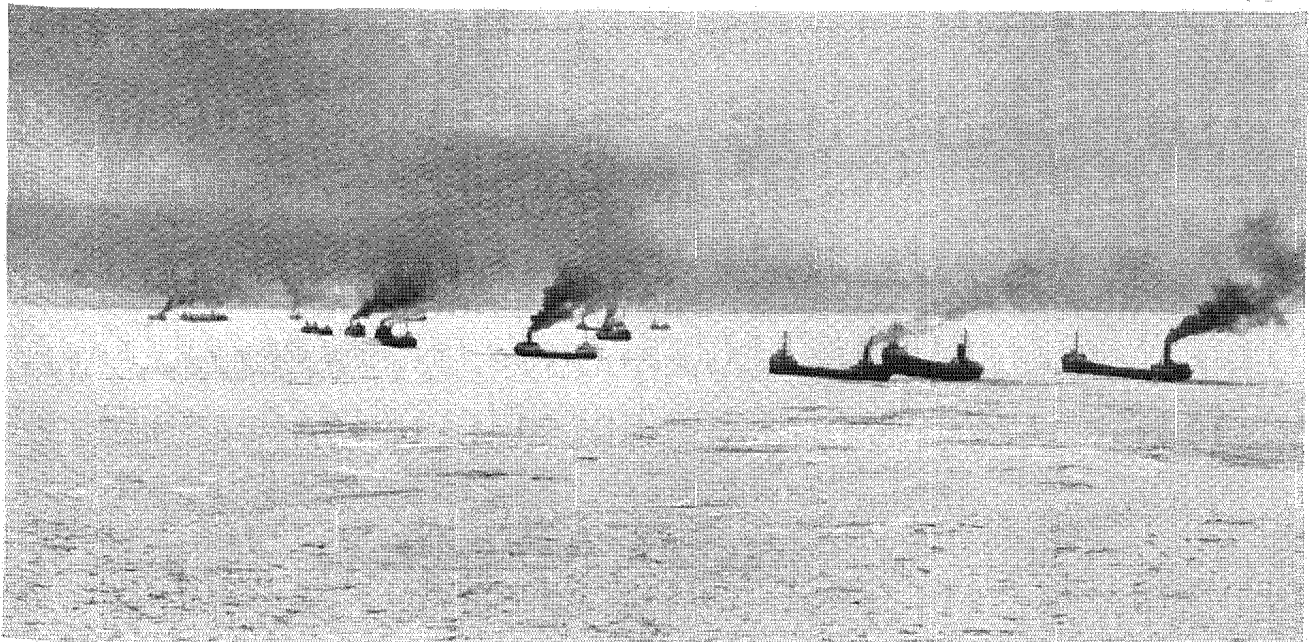
were employed; and in the slices and sublevels where ore was previously hand mucked into small cars which were hand trammed and dumped into raises, electric-double-drum scrapers now convey the ore direct from the blasted pile into the raise. Such advancement is only logical, for underground costs must relatively keep pace with those of open-pit operations.

Since the ore varies in natural iron and other mineral values, depending upon the composition, it is sampled and analyzed before shipment. Each operator is allotted a number of pockets in the ore docks, into which ores of similar analysis or desired grade are dumped and stored until tonnage sufficient for a cargo has accumulated. Then it is loaded into a boat and transported to a lower lake port.

Railway and lake transportation equipment has developed hand in hand with that used in the mines. Wooden cars of thirty tons capacity once served to haul ore from the mines to the docks, but they have given way to all-steel cars of fifty and seventy-five tons capacity at the present time. Huge modern locomotives can now pull, in most instances, a sufficient tonnage of ore from mine to dock in one train load to completely fill an ore boat of average size.

Large fleets of boats, maintained by various steel companies and independent interests, are kept busy throughout the shipping season transporting ore from the Lake Superior docks to those lower lake ports located most advantageously to the blast furnaces. Some idea of the magnitude of this lake carrier industry alone may be gained from the fact that approximately 350 vessels with a total trip capacity of almost three millions of tons of ore will be in operation during the present

(Continued on page 24)



Rear-Admiral Byrd was recently reported to be ice locked in Antarctica. But why go so far away to experience that thrill? This view shows a fleet of ore boats ice bound in Lake Superior. Old Man Winter has the upper hand

The DU PONT MAGAZINE

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E. R. MANCHESTER, Editor

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VOL. XXIV

MARCH, 1930

No. 3

STUMPING IN THE NORTHWEST

THE photograph reproduced on the front cover page shows what happens to a Douglas fir stump when a well-placed charge of dynamite finds an outlet for its energy. The scene is typical of operations in the State of Washington, where many stumps have to be removed in the logging of virgin forests.

In that country trees grow big and tall, commonly measuring ten feet in diameter at the base and raising their heads two hundred feet in the air, which explains why the stumps remaining in the ground after the loggers get through are much too large to be removed without the aid of explosives.

This picture—one of the best of its kind we have ever seen—was taken by Alfred Mathewson, a du Pont representative who has collaborated with others in some interesting research work with stumping powders in the Pacific Northwest region. We hoped to have him tell you about it this month, but illness has prevented him from preparing the manuscript. It will be published along with other illustrations in some subsequent number.

TRANSPARENT ENVELOPES

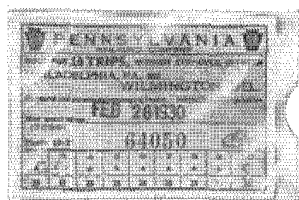
MUCH interest was shown in an article published in the March, 1929, number of this magazine describing the transparent Pyralin envelopes made by the

Williams & Marcus Company of Philadelphia, and used mainly for protecting menu cards, blue-prints, records and the like from dust and dirt. At that time the edges of these envelopes were held together by some kind of binding material.

Since then, however, Williams & Marcus has improved

its product, for a new method of joining these edges has been developed which makes the holders neater and much more attractive than they were before.

The new envelopes are transparent from "tip to toe."



Envelopes similar to this one may be obtained in many different sizes

There is no unsightly binding to hide any reading matter that may be at the edge of the card. In fact, it is difficult to determine whether or not the card has a covering at all because of its almost perfect transparency.

Additional information about these envelopes may be had by writing to Williams & Marcus Company, Tenth Street at Lombard, Philadelphia, Pennsylvania.

E. I. DU PONT DE NEMOURS & COMPANY CONSOLIDATED BALANCE SHEET, DECEMBER 31, 1929

ASSETS	
Cash.....	\$ 20,977,697.55
Marketable Securities and Call Loans.....	15,627,109.48
Accounts Receivable.....	23,834,249.61
Notes Receivable.....	3,245,918.06
Inventories at Cost.....	43,311,071.85
Total Current Assets.....	\$106,996,046.55

Investments:

General Motors Corporation common stock—equivalent to 9,981,220 shares carried at \$16.50 a share (9,843,750 shares of which are represented by E. I. du Pont de Nemours & Company's 70% interest in General Motors Securities Company).....	\$164,690,130.00
Miscellaneous Securities.....	26,519,966.87
Plants and Properties.....	214,936,556.85
Patents, Good Will, etc.....	27,965,702.81
Deferred Debit Items.....	878,311.32
Total Assets.....	\$541,986,714.40

LIABILITIES

Accounts Payable.....	\$ 12,758,883.72
Notes Payable.....	3,050,000.00
Dividends Payable on Debenture Stock.....	1,492,978.50
Dividends Payable on Common Stock (See Note).....	4,232,014.98
Deferred Liabilities and Credit Items.....	864,489.36
Total Current Liabilities.....	\$ 22,398,366.56
Bonds of Subsidiary Companies in hands of Public.....	\$ 1,457,000.00
Capital Stock:	
Debenture Stock Outstanding.....	\$ 90,531,983.84

	Authorized	Issued	In Treasury
Voting.....	\$ 10,000,000.00	\$ 1,738,750.00	\$1,166.66
Non-Vot.	150,000,000.00	97,794,400.00	—
	\$160,000,000.00	\$99,533,150.00	\$1,166.66
Common Stock Outstanding.....			\$206,784,840.00
Authorized.....	15,000,000 shares	\$20.00 Par Value	
Issued.....	10,339,242 shares	\$20.00 Par Value	
Reserve for Depreciation and Obsolescence.....			\$ 44,602,856.72
Reserves for Insurance, Bad Debts and Contingencies, including obligation to Trustee under Pension Plan....			22,291,452.58
Surplus.....			144,920,215.20
Total Liabilities.....			\$541,986,714.40

NOTE: On November 18, 1929, an extra dividend of \$0.70 a share, amounting to \$7,225,615, was declared on du Pont Company's \$20.00 par value common stock, payable January 4, 1930. Of this extra dividend, \$4,232,015 appears as a liability in the above statement; the balance, or \$2,993,600, does not appear as a liability, nor does there appear as an asset \$2,993,600, receivable January 3, 1930, in respect of an extra dividend on General Motors Corporation common stock.

BUILDERS OF GOOD WILL

Advertising novelties belong to that classification. Some excellent articles of this kind are made of du Pont Pyralin

ELBERT HUBBARD was right when he said, "We prefer to do business with our friends." And he might have added that it always pays to cultivate more and more of them. The old canard that "there is no sentiment in business" never was believed by thoughtful men, even though the phrase has been repeated times without number. The real fact is that friendship has a part in dictating the placement of a very large volume of business each year.

Advertising helps to build business, helps to cement the ties of friendly interest existing between buyers and sellers of goods and services. Among the various mediums employed are novelties or specialties, as they are sometimes called. The advantages recommending their use are that they are intimate and personal in character, and while not of great intrinsic value, they are either useful or decorative and are therefore likely to be preserved. When properly used, their value as an advertising medium is out of all proportion to the actual money cost.

Incidentally, the present year marks the golden anniversary of the first use of specialty advertising in its present form. In 1880 a bank started the practice of distributing book bags to school children. It proved to be an effective way of reaching the parents and of building up deposits. Since then many banking institutions have adopted this medium. Financial houses furnish an outlet for millions of novelties which are distributed in connection with thrift campaigns.

Each year large sums are invested in novelty advertising. How extensively it is employed would be hard to say, but at least there is this basis for an estimate: About three years ago a research organization made a nationwide survey to find out how advertisers spend their money. The expenditures of 250 companies, representing thirty-five leading lines of business, were broken down into groups. "Sampling and Novelties" was one classification.

How much was spent for novelties alone was not disclosed, but percentages were shown under that heading for thirty-one of the thirty-five lines, and they varied from less than one-half of one per cent to nearly nineteen per cent of the total appropriation.

There are, of course, people who are opposed to this kind of advertising. They decry it—sometimes under circumstances that are not without a touch of humor. One interesting case came to notice recently.

As the story runs, a novelty salesman was trying to sell his line to an advertising manager who listened with growing impatience to what the man had to say. Finally he interrupted him almost with a show of temper.

"No, sir," he declared, "I don't believe in novelties." And to emphasize the remark he waved the paper knife he held in his

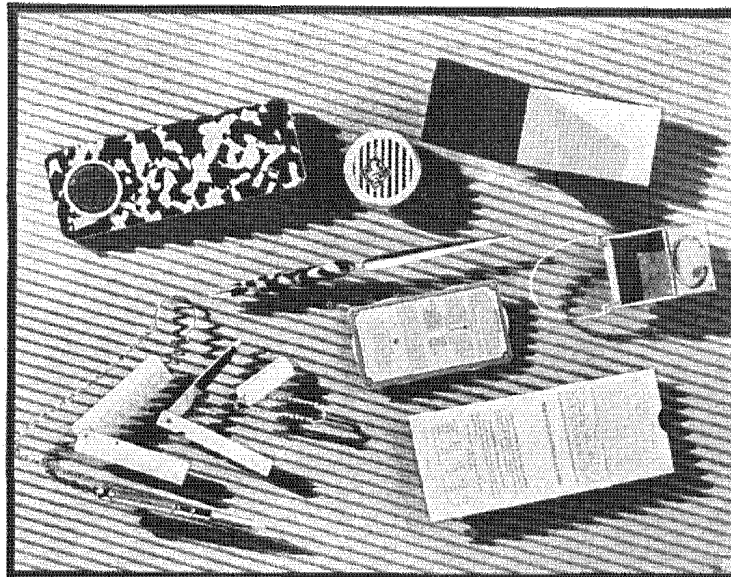
hand. Now it so happened that this knife was an advertising novelty. It was worth only a few cents, but it had won a place on his desk and he used it every day. It also happened that many of his own company's customers were still using a little novelty the house had distributed years before he took over the advertising portfolio. The salesman had all the ammunition he needed to close that sale.

This case is cited to stress the point that lack of faith in novelty advertising is usually the result of prejudices which should have no place in a business man's mind.

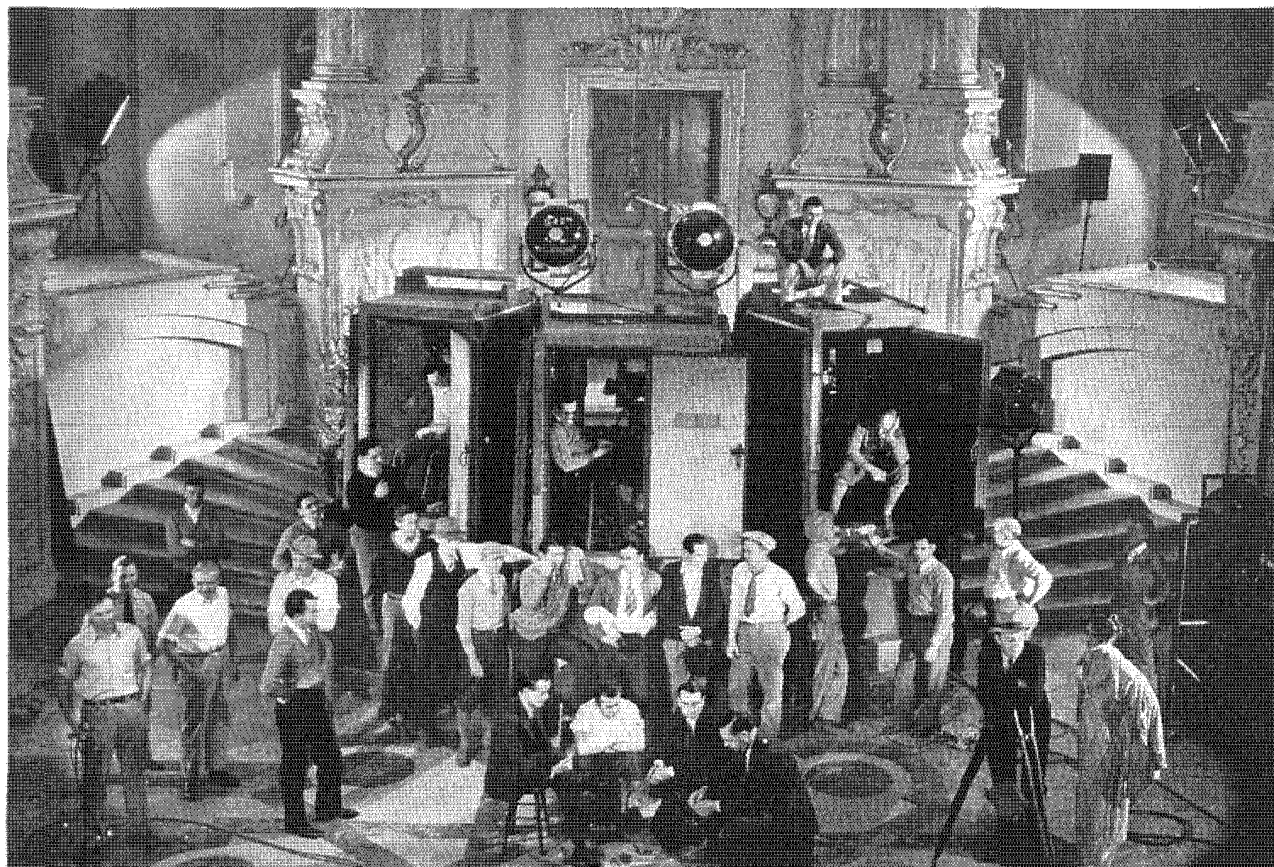
Novelties, intelligently designed, purchased and distributed, are useful in building business and good will. Some of the largest industrial companies in America employ them year after year; and if they did not produce satisfactory results it is certain that they would not remain long in the budget.

Millions of useful articles of this type are made of du Pont Pyralin. Novelties fashioned from this beautiful, lustrous material convey the impression of class. They

(Continued on page 24)



Here are a few recent selections of Pyralin-made advertising novelties that have proved popular. The group, you will note, includes articles for both sexes



The Technicolor and sound crew on a set at First National Studios during the filming of the "Bride of the Regiment." Note the cameras, each in its sound-proof booth, trained on a medium-shot scene to be enacted in front of the doors

COLOR GOES INTO THE MOVIES

*And because of its great popularity producers predict that
the end of the black and white picture is near*

THE motion picture after two years of readjustment, made necessary by the coming of talking pictures, now finds itself again on the dead run, trying to catch up with another new development—color.

Just at the time color was sweeping its tintful way over bathrooms, motor cars and a hundred other products—the names of which can be supplied by any Duco or Pyralin salesman—the movies found themselves up to their eyes in it.

The coming of color was different from that of sound. The latter caused a tremendous upheaval in motion pictures. It demanded tons of new equipment and thousands of men and women to run it. It necessitated an entirely new technique and the result for a time was panic.

Color slipped into the movies with a click like the right key in the right lock. For years the motion picture

By JEROME BEATTY

producers had wanted it. One morning they awoke and there it was.

The perfection of the Technicolor process brought color to the screen. At once everybody wanted it and the only thing that delayed the stampede was that Technicolor couldn't build cameras and laboratories fast enough to keep up with the demand. The cameras worked double shifts, shooting one picture in the daytime and one at night. The laboratories never locked their doors.

Now new ones have been completed and the men who build the delicate cameras are turning out one each week, and producers, such as Jesse L. Laskey, predict that the end of the black and white picture is near.

Sound helped the demand for color and gave the producers a chance to stage musical comedies. After all, what good is a musical comedy in black and white?

Warner Brothers' "On With the Show" was the first.

singing, talking, dancing, all-color picture. Its success was immediate and the other producers leaped to color.

Paramount made the "Vagabond King." Metro-Goldwyn-Mayer produced "The Rogue Song" with Lawrence Tibbett. Radio Pictures presented "Rio Rita." First National made "Sally" and Universal gave us "The King of Jazz." These were in Technicolor, as were dozens of others that immediately went into production.

It has been found that color enhances nearly every element of a motion picture. Its proper use makes music more impressive. Color raises the dramatic power of actors and helps stir the emotions of the audience. It makes the women more beautiful and the men more—well, whatever it is that motion picture actors ought to be.

Technicolor is a two-color process. Two negatives are made simultaneously, one through a red filter and one through a green. The film is printed from the two negatives, one after the other, by a method somewhat like that used in lithography.

Dr. Herbert T. Kalmus, president of the Technicolor Company, recently completed plans for building a laboratory in England. Europe, too, wants colorful pictures.

Color is bringing a third dimension to motion pictures. By the trial and error method, experts in the studios are learning what the Technicolor camera will do with certain colors under certain lights. They are discovering that the proper use of light and shade and the correct blending of color give a definite roundness to form. The first outstanding example of this was noticed in a test of an early Technicolor picture, when the leading man in the scene stepped in front of a colored background and into a colored shaft of light. Immediately his figure leaped out apparently 100 pounds heavier. In this case the wrong application of light and color had made a fat man out of him.

At once this tendency was tamed and now color makes plump women thin and short men tall. Color properly introduced shows actors as they really are. Where black and white often distorted beauty, color registers the real face and eyes and hair. For this reason many actors and actresses from the legitimate stage, to whom the black and white camera had been unkind, are coming into motion pictures. Many a Broadway star was barred from them because she did not photograph well in the black and white movies. Color puts her on the screen exactly as she appeared on the speaking stage.

Because color improperly used is like dynamite, into the studios have come color experts. The only director of this kind is Mrs. Herbert T. Kalmus, wife of the president of the Technicolor Company, who has grown up with this technique and knows how to make it sing beautiful tunes when soft music is required, and how to make it snarl when the scenario calls for rage.

Mrs. Kalmus selected every color used in the "Vagabond King." For some of the costumes special silk was made in order to get exactly the proper photographic effect. Every costume was placed on the sets so that the entire picture would harmonize—except in the duel scenes and in the attack of the mob of vagabonds. Here the colors clashed to heighten the dramatic effect.

So exact were these combinations that in one scene one of the hundred extra men appeared in the wrong costume, which threw the entire color scheme out of balance. Shooting was held up until he took off the green suit and got into a purple one.

Schedules already set show that more than one hundred feature motion pictures in color will be shown in 1930.

Note: Technicolor, Inc., is a user of du Pont Negative Film.

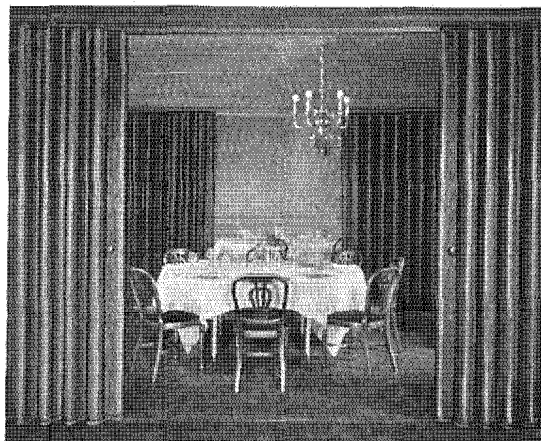
DECORATIVE FOLDING DOORS

IN its ceaseless efforts to discover new fields for its products, the du Pont Company recently uncovered a unique building specialty manufactured by the Folding Products Corporation of Chicago. This company makes decorative folding doors, known as Fol-Dec.

These doors are patented and are used for closing off adjoining rooms or for dividing big rooms into small units. They carry the general appearance of draperies and yet their scientific construction combines all the strength and rigidity of a door made of wood. The framework is covered on both sides with a layer of felt and over this is

placed an ornamental covering of Fabrikoid velour or tapestry, which is detachable so that it can be cleaned with the utmost ease, or the color scheme can be changed, if desired. The double layer of felt, with air space between, possesses excellent sound-resisting properties which insure the greatest privacy to the occupants of the room. The use of these doors results in economy in building construction and adds beauty to interiors.

Fol-Dec doors are being used extensively in hotels, clubs, churches, schools, apartments, offices, gymnasiums, hospitals and funeral chapels.



NEW PLEASURES FOR OWNERS OF MOTOR CARS

*There is a greater opportunity than ever before for individual
expression of taste in automobile styling*

"MANY years ago . . . Germany decided it could use the British Indian market for silk and cotton goods, which had always been controlled by English firms. It had always been the custom of the English salesmen to sail for India with four or five differently-colored pieces of silk or cotton materials. The merchants in India were offered these and had to pick their stock from the samples. When the Germans entered the market the salesmen carried pieces of white cotton or silk and a box of water paints. They told the Indian merchant to make his own designs and choose his own colors and their factories would produce materials to correspond. Naturally, the merchants bought from the man who could offer them endless varieties of colors and color combinations rather than from the salesman who had four or five inelastic samples."

Thus *Automotive Daily News* editorially quoted the sales manager of a great motor-car manufacturing organization which has lately expanded its give-the-public-what-it-wants policy to embrace the offering of all its models in many variations of color schemes. The arc of the rainbow has bridged another chasm of sales resistance.

No more fitting example than this could be cited to justify the existence and future growth of the Authorized Duco Refinishing Station. The motoring public has expressed its desire to have a voice in the styling of its cars.

The new car buyer naturally thinks in terms of style and modern color. The man who is not yet ready to purchase a new model is being awakened to the possibilities of restyling his present car by refinishing it. The trend is furthered in most cases by the economy represented. An extra year of satisfaction from a car that is still in good running order, with the element of modernity added, is the inducement.

To establish the Authorized Duco Refinishing Station

By G. F. BALDWIN

as an arbiter of correct style in motor-car finishing, two du Pont divisions render constant service. From Detroit operates the Duco Color Advisory Service, a department catering to the development of new color adaptations in the interests of the car builders. Through this service authorized Duco

stations are acquainted with the color production schedules of the manufacturers using Duco, so that they may render prompt service in the event of damage to the finish on a new car and may also gauge color trends for the future.

From New York and Paris operates the du Pont Style Service, augmenting the work of the Duco Color Advisory Service by forecasting color trends based on observations in other trades in which color predominates. For it is a foregone conclusion that if beige is popular in Paris silks this season, then the vogue will be reflected later in American motor cars.

Correct interpretation of color values is but one phase of service rendered at an authorized Duco station. Perfection of workmanship, economy in operation and other factors coördinate to make for public approval of the modern auto refinishing plant. In these measures, the du Pont Company is constantly schooling the personnel of its approved stations. Before the sign of authorization is granted, strict supervision has been exercised to prove

that the station satisfies du Pont requirements. After authorization this supervision continues.

Hence with confidence the du Pont Company places its name behind the Authorized Duco Refinishing Station. It suggests to you that you avail yourself of the service which this authorized Duco station can render. It recommends that you consider the economy of this service. There may be thousands of miles of unused transportation in your present automobile to be enjoyed if your car is given the "appearance attention" it deserves.

How to get
your car refinished
by the du Pont Process

The du Pont Duco Authorized Refinishing Station sign is now displayed by more than 2,200 shops throughout the country. At these shops you can be sure that your job will be done by the du Pont Process.

DUCO—MADE ONLY BY DU PONT



"LIKE MOTHER USED TO MAKE"

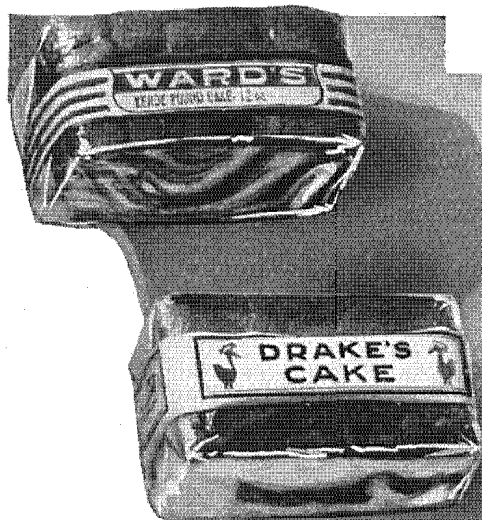
A moisture-proof Cellophane wrap helps to preserve all the goodness associated with cakes made in the home

By W. J. HARTE

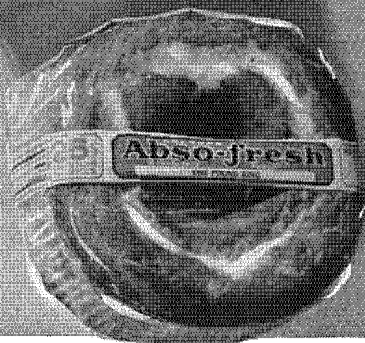
Another indication of the increasing use of bakers' cakes is shown in the following report of the American Bakers' Association: "The consumption per capita on bakers' cakes for 1925 was \$1.75; for 1927 it was \$2.14, an increase of 22.3 per cent." A few years ago housewives learned the economy of using bakers' bread. Now we find that cakes are gradually getting the same acceptance.

After developing cakes of quality and taste for sale, the large baker found it necessary to make them attractive and to keep them fresh by some form of wrapping. Moisture-proof Cellophane has proved to be ideal for the purpose. It dresses up the cake, shows every detail of its rich content and texture, and keeps it fresh until sold.

And after all, isn't this what we want—a quality cake that tastes well, stays fresh and saves us the fuss and muss so generally entailed in home baking?



Leading bakers realize the advantage of keeping their products clean, fresh and visible. That is why their quality cakes are wrapped in moisture-proof Cellophane



"WHY, I had no idea you baked so well, my dear. This cake is delicious," says friend husband at the evening meal.

"I didn't make this cake. Why should I, when they have such a variety of fresh-baked ones at the corner store?" replies his wife.

Today, the home-made cake has a serious competitor. We can safely say that the housewife is no longer the nation's cake baker, for large companies are now making cakes as rich in quality and as wholesome as the cakes baked in the home.

An interesting proof of the baker's confidence in his own cakes was shown recently by a challenge sent out to a number of housewives by a large baker in the Middle West. He said in effect: "Use my formula, the same ingredients, and duplicate my cakes. Compare the two, mine and yours, and see which you like better. If they are equal, why not let me do your baking and save you all the time and trouble in a hot kitchen?"

PRIVATE CLUB SANCTUARIES

*More refuges are needed for wildfowl on their migratory flights.
Hunting clubs are helping to provide them*

WILDFOWLING is notoriously uncertain. Therein lies much of its charm. Good days are always few and anything that can be done by man to lessen this uncertainty is worthy of our serious attention.

The Federal program, under the Norbeck-Anderson Bill, is just a step in solving the problem. Its benefits will not be permanent without the support of an equal program on the part of the individual states, at their own expense. All this will take funds and years of effort, and time is precious. In the meantime we must look for moral and financial backing to the substantial business men who are interested in duck shooting and willing to make some sacrifice for this particular recreation. These men must be encouraged to acquire, hold and improve wildfowl habitats in order to balance the constant destruction by drainage, commercialization and pollution.

Probably one of the greatest wildfowling areas in North America lies along the Illinois and Sangamon rivers. Generations of duck hunters have successively enjoyed the marvelous sport to be obtained in this section. Even in the face of changing conditions, the ducks continue to be as plentiful as ever.

Intensive agriculture and various drainage projects have to some extent changed the volume and area of water on which migratory birds may rest. Present-day methods of transportation, improvements in firearms and ammunition, and a constantly increasing population of hunters have also affected our transient duck population over much of their range in migration.

One principal reason for the continuance of the splendid shooting along the Illinois River is because the owners of many of the private hunting clubs have spent large sums of money, and have given liberally of their time and personal attention to maintaining an adequate supply of food and suitable resting areas for migratory birds. These refuges are usually of considerable size, providing plenty of clean water, food and freedom from disturbance for waterfowl on their long southern flights. Such sanctuaries influence to a great extent hunting conditions for hundreds of miles along the lanes of flight.

A good example of such a hunting

By EARL E. FEITZ

club is the Crane Lake Club, at

Crane Lake, Illinois. It is backed by such responsible men as W. C. Peacock, Edward Swift, Robert Morris and Charles Thompson of Chicago, and controls a large area

of marshland that is very attractive to waterfowl. Thousands of bushels of corn are fed each year to migratory birds, in addition to regular plantings of wild rice, wild celery and other duck foods. Crane Lake itself, a body of water several miles long, is maintained an inviolate sanctuary throughout the year. Such shooting as is done by the club members is confined to other waters some distance from the lake itself. Strict observance of a moderate bag limit and hunting governed by all the written and unwritten laws of good sportsmanship prevail at this club, as they do at most well-established clubs everywhere. Probably no other single factor has contributed so largely to the number of ducks along the Illinois and Sangamon rivers as the sanctuary at Crane Lake.

The vast range of free shooting in the United States enjoyed by the past generation has been very much reduced. In some cases this may be due to overshooting but in most cases it is due to the change in character of marshlands and water areas inseparable from the advance of civilization. We must look to the refuge areas provided by such clubs and to state and Federal agencies to offset these changed conditions. Today much attention is being paid to the scientific side of game conservation and to biological studies of our game birds.

We are more and more coming to realize that the stock of wildfowl is not inexhaustible; that the annual toll of game brought to bag must only be the surplus over and above breeding requirements.

To the red-blooded wildfowler nothing quite equals the thrill of a ragged wedge of ducks flying in before a northeasterly gale, over the mud flats and reed beds, towards the decoys.

Let us preserve this enjoyment for ourselves in the autumns of our lives, and then bequeath it, a precious legacy, to the wildfowlers of another generation.



It's a great sport, and well worth perpetuating. More sanctuaries for wildfowl will help make that possible

DUCO IN JAPAN

(Continued from page 8)

those attending theaters. In these stores are found a wide range of articles, including all principal foreign and Japanese products in common use. In fact, to a great extent, shopping has been reduced to terms as simple as in the United States. The merchandise layout is in general very comprehensive and the displays are attractively arranged.

One of the illustrations on page seven shows an attractive display at Mitsukoshi Department Exhibition, featuring du Pont Duco on various pieces of modern Japanese furniture. This display attracted much attention and was of great interest to the thousands who saw it.

A note of interest pertaining to furniture has to do with finishing materials. The Japanese people for ages past have never had their furniture painted or finished in any way. They liked to admire the wood from which it was made. However, the modern Japanese has turned from this idea, and in his home one may see modern furniture, finished in nitrocellulose lacquers.

The use of Duco as a railway finish is increasing each year. Just recently the interiors and exteriors of cars

belonging to the Keihan Electric Railway were entirely finished in du Pont Duco. D. Nagase & Company, Ltd., has succeeded in having Duco applied to several electric cars owned by the Nagaya Municipal Electric Railway and also for the exterior finish of several electric cars. The principal uses for paints and varnishes are for railway coaches, tram cars and ships.

A high value is placed upon advertising—especially in magazines and newspapers—by D. Nagase & Company, Ltd. As an indication of progressive merchandising through the printed page, this enterprising concern, after seeing the Duco booklet published in America entitled "A Color Scheme for Every Room," rewrote the text in Japanese, had cuts made to suit its purpose, and then made an extensive distribution of this literature to the trade.

Note: It may be in order to mention that the Dyestuffs Department of the du Pont Company also maintains a sales office at Kobe, Japan, as noted in the list appearing on the inside back cover.

A NOVEL KITCHEN DISPLAY



One way of merchandising roll goods is shown by this miniature kitchen which was displayed in the R. H. Macy & Company basement, New York City. It was made to scale by the Architectural Miniatures Company for the du Pont Fabrikoid Division and is perfect in its detail. It is 60 inches long, 30 inches deep and 24 inches high. Fabrikoid Fabrics shelving is on the kitchen cabinet, hemstitched Fabrikoid covers are on the tables, and throws of Fabrikoid are on the ice box and cabinet tables. The windows, decorated with Fabrikoid drapes and edged valances, are equipped with du Pont Tontine washable shades. This is an interesting and practical method of showing housewives the actual use of roll goods.

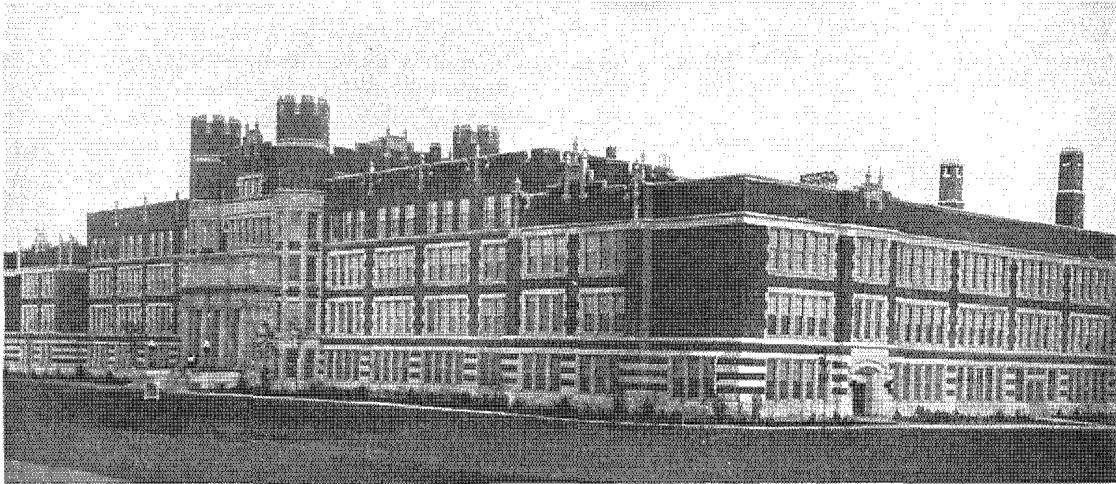
THE LAKE SUPERIOR IRON ORE INDUSTRY

(Continued from page 15)

season. Lake Superior has long been noted, among vessel men and shippers, for its severe storms and dangerous channels. Navigation is especially treacherous in the early spring and late fall months because of bad weather

while company dwellings, and in some instances company schools and hospitals, are well maintained for the use of employees and their families.

The du Pont Company has long been identified with



The High School at Hibbing, Minnesota, is said to be one of the largest and best-equipped buildings of its kind in the United States, with accommodations for about 3,000 students

and ice conditions. Often, at these times, large fleets of ore boats are caught in the ice and delayed for days.

Within recent years, blast furnaces and steel mills have been constructed at Duluth, Minnesota, mainly for the manufacture of wire and nail products. Thus within a radius of seventy miles from the city of Duluth, one can see the raw iron ore taken from the earth, converted into pig iron, steel and various finished products.

Living and working conditions have long been recognized as vital to the progress of the industry, and they have steadily improved. Each employee's health and welfare while at work is guarded by the most rigid enforcement of modern measures of safety and sanitation,

the progress of basic industries. The important rôle it has played in the drama of iron ore production in the Lake Superior district comes about because explosives are indispensable to the mining industry. The company has supplied enormous quantities of explosives to the operators on the iron ranges. Its chemists have kept pace with the ever-changing requirements of the industry by improving old products and developing new ones. Du Pont technical representatives have made intensive studies of blasting practices in the iron mines and have coöperated actively in solving many problems. This organization deems it a privilege to serve an industry that contributes so largely to our national prosperity.

BUILDERS OF GOOD WILL

(Continued from page 17)

are obtainable in a wide range of beautiful color effects and tints and are in all respects worthy of their mission.

To obtain best results, it is important to select the right kind of novelties. The average business executive is a busy man. Many letters addressed to him never reach his desk. Many visitors never get farther than his outer office when they call. But the well-chosen novelty, especially if new, interesting, useful and appealing, usually finds its way to the individual for whom it is intended and serves its purpose not merely for the moment but for months and sometimes years.

If you want proof of this, ask a dozen of your friends

to empty their pockets in your presence. You will probably find a calendar card, a Pyralin rule, a comb, a nail file, perhaps a memorandum book full of addresses, a pencil, and maybe two or three other things—all working to the end of making your friends remember certain advertisers and their products.

Perhaps we can help you with the problem of selecting an appropriate novelty for some of your clients or customers. We shall be glad to put you in touch with a number of our customers who manufacture novelties from du Pont Pyralin. They are ingenious people, full of ideas and rich in experience. Their suggestions should be of value to you. Write to Department 32, Du Pont Viscoloid Company, Inc., 330 Fifth Ave., New York City.

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, HEAVY CHEMICALS, DRY COLORS, ZINC OXIDE AND OTHER PIGMENTS

Grasselli Chemical Company, Inc.

Chemicals for leather, textile, paper, paint, rubber, battery, glass, sheet, tin plate, steel and petroleum manufacturers. Lithopone, dry colors, pigments. Chemically pure acids, electrolyte, filter alum, spray products for fruit trees, vegetables and flowers, Grasselli odorless plant food for lawns and gardens, silicate of soda, soldering fluxes, zinc, zinc chloride.

Albany, N. Y., P. O. Box 228
Birmingham, Ala., 2000 First Avenue, North
Boston, Mass., 80 Federal Street
Brooklyn, N. Y., 152 Morgan Avenue
Charlotte, N. C., 930 W. Morehead Street
Chicago, Ill., 2101 Canalport Avenue
Cincinnati, Ohio, 305 Walnut Street
Cleveland, Ohio, 629 Euclid Avenue
Detroit, Mich., 1530 E. Hancock Avenue
Los Angeles, Calif.,
Dry Colors & Pigments, 2034 Bay Street
Chemicals, 363 New High Street
Milwaukee, Wis., 715 South Canal Street
Newark, N. J., 256 Vanderpool Street
New Haven, Conn., 36 River Street
New Orleans, La., 527 Canal Street
New York, N. Y.,
District Sales Office, 347 Madison Avenue
Export Office, 347 Madison Avenue
Paterson, N. J., 6 Waite Street
Philadelphia, Pa., 3500 Gray's Ferry Road
Pittsburgh, Pa., 307 Fifth Avenue
San Francisco, Calif.,
Dry Colors & Pigments, 274 Brannon Street
Chemicals, 576-584 Mission Street
St. Louis, Mo., 408 Pine Street
St. Paul, Minn., 2303 Hampden Avenue

LITHOPONE

Grasselli Chemical Company, Inc.

(See offices listed above)

Krebs Pigment & Chemical Co., Inc.
Newport, Del.
Cleveland, Ohio, 424 Hickox Building
New York, N. Y., 217 Broadway

ANHYDROUS AMMONIA, METHANOL AND SODIUM FORMATE

Du Pont Ammonia Corporation

Anhydrous ammonia in car lots.

Wilmington, Del., Du Pont Building

AQUA AND ANHYDROUS AMMONIA

National Ammonia Company, Inc.

Anhydrous ammonia in cylinders.

Aqua ammonia in drums and tank cars.

Chicago, Ill., 332 So. Michigan Boulevard
New York, N. Y., 81 Fulton Street
Philadelphia, Pa., Frankford P. O.
San Francisco, Calif., 77 Minna Street
Seattle, Wash., 2224 Northlake Avenue
St. Louis, Mo., 3600 N. Broadway

CHEMICAL PRODUCTS, AUTOMOTIVE FINISHES

Duco and a complete line of finishing materials for all automotive purposes.

No. 7 Duco Polish, No. 7 Auto Top Finish,
No. 7 Nickel Polish, No. 7 Touch-up Black.

Chicago, Ill., 2100 Elston Avenue
Detroit, Mich., General Motors Building
Flint, Mich.
Parlin, N. J.
San Francisco, Calif., 351 California Street

INDUSTRIAL FINISHES

Duco, Duco Household Cement, bronze powders, collodion, leather belting cements, leather finishes, nitrocellulose and cellulose acetate and their solutions, DuLuz synthetic resins, pyroxylin preparations and solvents and a complete line of finishing materials for all industrial purposes.

Boston, Mass., Everett Station 49
Chicago, Ill., 2100 Elston Avenue
Parlin, N. J.
San Francisco, Calif., 351 California Street

CELLOPHANE

Du Pont Cellophane Company, Inc.

Cellophane - Sheets and rolls. Cellulose caps and bands (formerly Capes-Viscose, Inc.). Visking Cello-Tubing (Visking Casings).

New York, N. Y.,
Executive and General Sales Offices,
2 Park Avenue
District Sales Office, 145 Hudson Street
Boston, Mass., Little Building
80 Boylston Street
Chicago, Ill., Conway Building
Clark and Washington Streets
Philadelphia, Pa., Liberty Trust Building
Broad and Arch Streets
San Francisco, Calif., 351 California Street

DYESTUFFS

Dyestuffs and dyestuff intermediates.
Rubber chemicals.

Boston, Mass., 274 Franklin Street
Charlotte, N. C., 232 W. First Street
Chicago, Ill., 7 So. Dearborn Street
New York, N. Y., 8 Thomas Street
Philadelphia, Pa., 126 S. Front Street
Providence, R. I., 709 Hospital Trust Bldg.
San Francisco, Calif., 351 California Street

SEED DISINFECTANTS

Bayer-Semesan Company, Inc.
New York, N. Y., 105 Hudson Street

MOTION PICTURE FILM

Positive and Negative.

Du Pont-Pathé Film
Manufacturing Corp.
New York City, 35 West 45th Street
Hollywood, Calif., 6656 Santa Monica Blvd.

EXPLOSIVES

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

Birmingham, Ala., 601 Brown-Marx Bldg.
Bluefield, W. Va., 607 Commercial Bank Bldg.
Boston, Mass., Room 404 Charles Chauncy Building, 38 Chauncy Street
Chicago, Ill., 1814 McCormick Building
Cleveland, Ohio, 766 Union Trust Building
Denver, Colo., Midland Savings Building
17th and Glenarm Streets
Duluth, Minn., Hartley Building
742 E. Superior Street
Huntington, W. Va., Suite 1004 Union Bank Building
Joplin, Mo., 816 Joplin Nat'l Bank Building
Juneau, Alaska, Room 503 Goldstein Bldg.
Kansas City, Mo., 210 Scarritt-Arcade Bldg.
Miami, Florida, 120 N. E. First Street
New York, N. Y., Graybar Building
420 Lexington Avenue
Pittsburgh, Pa., Clark Building
Seventh Street and Liberty Avenue
Portland, Ore., American Bank Building
Portsville, Pa., 516 Schuylkill Trust Company Building
St. Louis, Mo., 17th Floor, Arcade Building
San Francisco, Calif., 351 California Street
Seattle, Wash., Hoge Building
2d Avenue and Cherry Street
Scranton, Pa., 710 Traders Bank Building
Spokane, Wash., 721-22 Old Nat'l Bank Bldg.
Riverside Avenue and Stevens Street
Springfield, Ill., 716 Reich Building
Wilkes-Barre, Pa., Brooks Building

FABRIKOID

Fabrikoid for auto and furniture upholstery; auto topping, bookbinding, luggage, novelties, etc. Tontine Washable Window Shade Cloth.

Chicago, Ill.,
Fabrikoid Office, 840 No. Michigan Avenue
Tontine Office, 1411 So. Michigan Avenue
Detroit, Mich., 5-236 General Motors Bldg.
Newburgh, N. Y.
New York, N. Y., 21 East 40th Street
San Francisco, Calif., 351 California Street

RUBBER PRODUCTS

Pontop for auto tops and curtains. Raincoat fabrics, Rug Anchor, Ventube for mine ventilation. All kinds of rubberproofing.

Chicago, Ill., 840 No. Michigan Avenue
Detroit, Mich., 5-236 General Motors Bldg.
Fairfield, Conn.
New York, N. Y., 21 East 40th Street
San Francisco, Calif., 351 California Street

RAYON

Du Pont Rayon Company, Inc.

Viscose Process Department
New York, N. Y., 2 Park Avenue
Charlotte, N. C., 611 Johnston Building
Chattanooga, Tenn., Provident Building
Philadelphia, Pa., 1503 Land Title Building
Providence, R. I., 941 Hospital Trust Bldg.
San Francisco, Calif., 351 California Street
Acetate Process Department
New York, N. Y., 2 Park Avenue
Waynesboro, Va.

PAINTS, VARNISHES DUCO (FOR HOME USE)

A complete line of paint and varnish products for all home and industrial uses.

Boston, Mass., Everett Station 49
Brooklyn, N. Y.,
Building No. 26, Bush Terminal
Chicago, Ill., 2100 Elston Avenue
New York, N. Y., 21 E. 40th Street
Philadelphia, Pa., Public Ledger Building
Independence Square
San Francisco, Calif., 351 California Street

PYRALIN, LUCITE AND VISCOLOID

Pyralin toilettware and the new Lucite boudoir accessories. Toys, rattles, infant sets, hair ornaments. Novelty and transparent shooting, rods, tubes and beading. Also Cleanable Collars.

Factories at Arlington, N. J., and Leominster, Mass.

Du Pont Viscoid Company, Inc.
New York, N. Y., 330 Fifth Avenue
Boston, Mass., Room 404 Charles Chauncy Building, 38 Chauncy Street
Chicago, Ill., North American Building
San Francisco, Calif., 745 Mission Street

FOREIGN OFFICES

(To which inquiries about du Pont products may be addressed)

Bombay, India, Jacob Sassoon Building
Rampart Row, P. O. Box No. 1010
Buenos Aires, Argentine Republic, S. A.
Foreign Trade Development Office
Ava Roque Saenz Pena 616 (Casilla 490)
Hankow, China, No. 23 Tung Ting Road
Havana, Cuba, Room 548 Manzana de Gomez Building
Kobe, Japan, No. 83 Kyomachi
P. O. Box No. 384
Mexico City, Mexico, Edificio Cidosa
Avenida Uruguay 55
Paris, France, C. E. Michaux, Inspector of European Agencies, 14 Rue Lincoln
Shanghai, China, Robert Dollar Building
3 Canton Road, P. O. Box No. 393
Tientsin, China, 52 Taku Road

When you are in Atlantic City, New Jersey, visit the du Pont Products Exhibit at 1121 Boardwalk

The Great



Window Shade Mystery



HERE is a beautiful home. With scrupulous regularity, the furniture is dusted, the rugs are vacuum-cleaned, the windows, draperies and woodwork are washed. You might well think that it was a model of cleanliness. But here's the mystery. The window shades have *never* been washed. Why? Because they *cannot* be scrubbed clean.

Some women dust their shades religiously. But dusting doesn't do much good. A damp sponge isn't enough. The dirt gets right into the material.

The only way to clean a shade is to SCRUB it. If you scrub the average shade, it goes to pieces. So what's the answer?

The answer was discovered by the du Pont Company. They found out how to make a shade that would not fade, crack, pinhole or fray and which could be SCRUBBED. Its name is TONTINE.

The New and Improved du Pont Tontine shades cost very little more than ordinary shades. They come in

a wide range of lovely colors, figured designs, and in the corded effect now so popular. Sun and rain will not hurt them and—because they are made with the same basic substance contained in the famous du Pont Duco—they will look spotlessly new after years of use. For complete satisfaction, ask the dealer to mount them for you on Tontine Guaranteed Rollers.

SPECIAL OFFER

A sample Tontine shade for \$1.00

Send us the coupon below with a dollar bill, checking which color you prefer. We will send you a shade made up to your measurements. When you get it, test it. Deliberately smear dirt on it—then scrub with a brush, soap and hot water. Its beauty will be instantly restored. Only one shade (not exceeding 40" wide) can be sent to any one home at this special price. The regular retail price, depending on length, width, etc., at the authorized Tontine dealer's in your city, is from \$1.75 up.

Measure from tip to tip, including pins. Use yard stick.

E. I. DU PONT DE NEMOURS & CO., Inc.
100 du Pont Avenue, Newburgh, N. Y. D. M. MARCH
Canadian subscribers enclose \$1.50 and address coupon:
Canadian Industries Limited, Fabrikoid Division,
New Toronto, Ontario, Canada.

Herewith \$1.00 pinned to coupon. Please send me complete TONTINE shade.....inches wide, tip to tip (cannot exceed 40 inches), and.....inches long. (shade unrolled)

White ☐ Cream ☐ Ecru ☐ Green ☐

Name.....

Address.....

(This offer closes July 1, 1940)



TONTINE

THE WASHABLE WINDOW SHADE