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A stylized illustration of a man in a suit sitting at a desk, reading a book. On the desk are several other books, a teapot, and a small container. Behind him is a large bookshelf filled with books. On top of the bookshelf is a mounted deer head with large antlers. To the right, there is a window with blue curtains. In the foreground, a white dog is lying down, and a small box with papers is open. The entire scene is framed by a decorative border.

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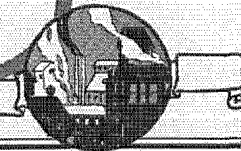
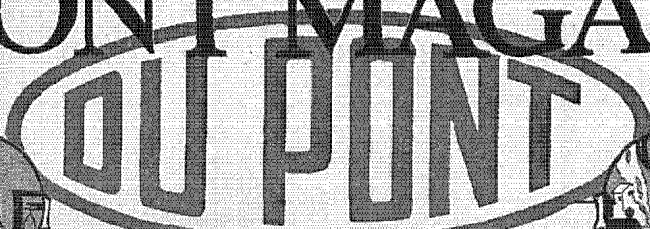
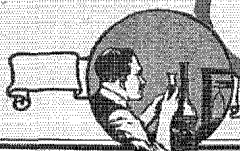
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Wilmington, Delaware



DU PONT MAGAZINE



Volume XII

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The Business Situation

Export trade and money market conditions the vital factors

IN the present business situation two factors loom up as vital in importance:—the condition of America's export trade and of the money market. The uncertainties with which they are fraught make the immediate business outlook somewhat less favorable than it was a few months ago. But fundamental conditions are such that no lessening of business activity in the near future, unless it be of a purely temporary nature, appears probable. Let us see, however, what effects unfavorable developments in the foreign trade situation or in the money market might have.

Export Trade Conditions

For months we have been told by prominent bankers and others conversant with international conditions that we must extend long-term credits in large amount to European countries if they are to buy the commodities actually needed to put them on their feet again. Various plans have been proposed and given wide publicity. Still no action has been taken and the situation has been allowed to drift. The government is not disposed to make further foreign loans; the banks have held back, evidently believing it to be not a banking problem, but rather one to be handled by the sale of securities to private investors; no one has gone ahead. Now the apparent policy of the Federal Reserve Board to prevent further credit inflation places an additional difficulty in the way.

The situation is becoming critical. Low exchange rates are interfering with exports, even when European buyers are able to make satisfactory arrangements for payment; while failure to extend credits on a considerable scale is preventing the large purchases of raw materials and foodstuffs urgently needed by European countries. Adequate financing of this export trade is essential if the interests of Europe and of the United States are to be conserved.

While it is possible that long-term credits on an adequate scale may not be extended, this does not appear likely. If, however, this should happen, a check to business activity and a decline in commodity prices in many lines would doubtless result. Such a depression and price decline could hardly be long-lived, however. A large domestic, as well as foreign, demand for goods exists and must eventually be met, and this condition should prevent any long-continued business stagnation.

Of course, failure on the part of European countries to obtain adequate supplies of food might cause dangerous social and political upheavals abroad, while inability to secure supplies of

By F. LESLIE HAYFORD
Economic Statistician
E. I. du Pont de Nemours & Co., Inc.

raw materials might result in the closing of European factories, followed by an economic crisis. Such an eventuality might produce a crisis here. The possibility of so serious a situation as this, however, appears very remote.

The Money Market

Adequate financing of America's export trade means further credit expansion, whether it be effected by the extension of bank credits or by the issuing of securities. But our credit structure is already much extended. Is the situation inherently a dangerous one?

It is evidently quite possible for the combined federal reserve banks to expand still more without impairing their legal reserve, as the Harvard University Committee on Economic Research has recently pointed out. A considerable increase in loans might be made by member banks before reaching the danger point. A stiffening of rates, however, would doubtless occur and this would tend to prevent unnecessary expansion and make for safety in the banking system.

But the large requirements for properly financing export trade and for taking care of domestic business needs can hardly be handled unless loans for speculative purposes and for non-essential uses are curtailed. Otherwise, a dangerous situation might develop. The safety valve—control of discount rates—is in the hands of the Federal Reserve Board.

If wise control of the banking resources of the country should not be exercised, such a radical curtailment of credit might become necessary as to give a decided check to business. But here again we must conclude that a depression could not long persist. We are not faced with a condition of over-production, but, on the contrary, with an actual shortage of goods.

The Outlook

While the present situation, then, clearly has elements of uncertainty in it, fundamental conditions are not unfavorable. The outlook, unless a very serious situation should develop in Europe and be reflected here, is for a considerable period of business prosperity, even though a brief stage of inactivity might possibly first occur. And barring a failure to arrange European credits, or an extremely radical restriction of banking accommodation in this country, even a temporary depression is not inevitable. Neither our export trade situation nor money market conditions are inherently unsound. On the contrary, both are capable of being so handled as to prevent adverse developments. On the whole, it seems probable both that adequate European credits will be arranged and that the essential needs of business for bank accommodation will be met.

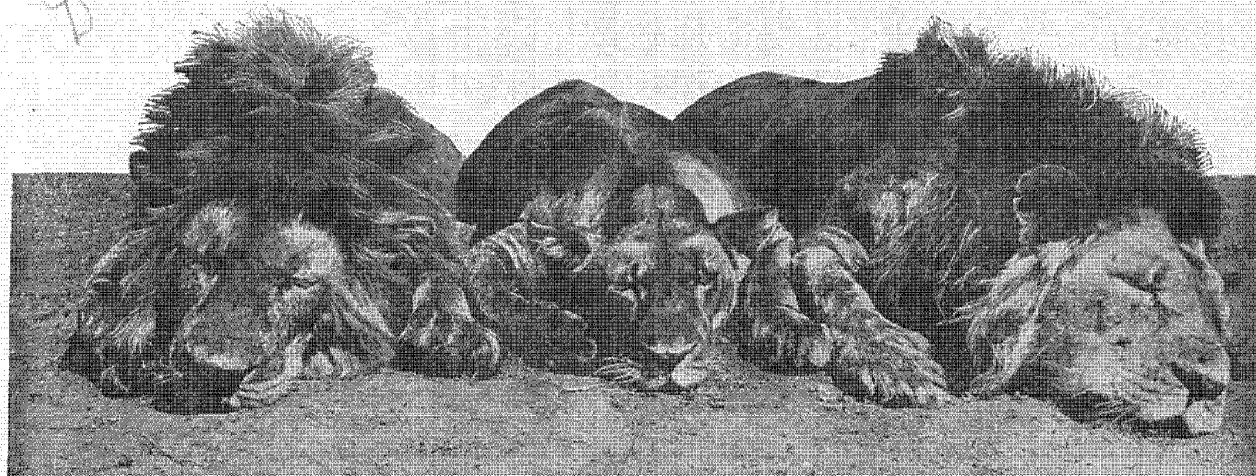
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Hunting the Man-Eater



In Three Consecutive Shots Simson Brought Down Two Lions and a Lioness

SOME people claim that Portuguese East Africa is the native home of the lion. I do not know; but Simson, my brother, and I have seen and shot enough lions on the Urema Plain to know that they are very much at home there. On one occasion my brother counted twenty-five lions at one time, while no doubt others disappeared before he could count them. Several times I have counted from six to ten. So I can recommend this part of Africa to any lion hunter who wants sport and plenty of it.

How well I remember my first lion hunt! On arriving on the plain, Simson and I went out to shoot meat for our porters. We had entered a narrow patch of tall grass to stalk some

wildebeeste and waterbuck, when in a clump of grass about a hundred yards away we saw the head of a lion, half turned and silently watching. Simson raised his rifle and fired—and missed; his aim was too high. Little did we know that nearby and hidden from view eight other half-grown lions were enjoying an afternoon siesta.

The lions were startled by the report and did not know where it came from. It was a thrilling experience to see nine frightened lions running straight toward us at full gallop. When they saw us they swerved, entering the grass on our right, but not before we had killed two and mortally wounded two others. We found what remained of their carcasses the next morning after the hyenas had feasted on them.

A week later together we shot our first big lion. A splendid specimen he was—sleek, fat and immense.

After this we left the plain and camped in a forest glade on the bank of a small, clear stream. Here I had the luck to bag two lions and a lioness the first morning out. Curiously, the lions were nearly maneless from hunting in the thorn thickets. One had apparently been fighting and was in a terribly maimed condition. His neck was a mass of congealed blood, while through the fleshy part of one hind leg his antagonist had bitten two holes, each the size of a 577 bullet. What a royal battle there must have been between these two kings! Often as I look at the skin I wonder how the other lion fared in that fray. Was he victor or vanquished? I never knew, for although we heard other lions near this same camp, we never got a shot at one in that section before leaving the glade country.

The charm of the beautiful forest country and the prevalence

By H. W. REID

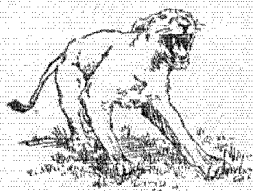
of other game there held us for many days. But the time came when we could no longer resist the impulse to get back on the plain. So we broke camp, forsook the forest and returned to the flat, monotonous country of the Urema for more sport, even at the expense of greater discomforts.

But there were sport compensations, for we were successful in shooting two large elephants, and, as a finale, Simson brought down two big lions and a lioness with three consecutive shots.

As you may imagine, the sport of hunting lions and other big game is attended with many thrills and dangers. One cannot always count on his marksmanship to score a hit, nor is it safe to place too great reliance on the effectiveness of a shot fired from a high-power rifle.

On one occasion this was proved by our experience on the plain. We were stalking lions and had sighted a lioness some distance away. Simson and I fired together, we thought, with fatal effect. Far from it. The moment we made a stir in our place of concealment she raised and with a savage growl charged toward us. Again we fired, but failed to stop her. With a mad rush she entered the grass almost within reach of our rifles. Thus, thanks more to good luck than to good shooting, we came through without being badly mauled or perhaps killed. It was a close call that I'll not soon forget.

Should we pursue her? For two hours we debated the question before we could muster up enough courage to follow the trail through the dense, tall grass. In the end, we cautiously made our way, tensely alert for the expected spring, a quick shot and, fate willing, a fair share of luck. In such grass one could not see two steps ahead. Sixty yards in we found her—dead. Two 577 bullets had struck her too far back, exposing the intestines. You could lay your arm in the gash that a soft-nosed bullet had ploughed through above her shoulders, just missing the backbone. Still another had struck her fairly in the chest. But our lioness was dead. I shudder to think what might have happened had we parted the grass to find her alive with only flesh wounds.



Two years later Simson, myself and two pals shot over the same grounds, camping on the banks of the Jadohey, a small stream flowing into the Urema River. Our tent was pitched on a small clearing surrounded by the typical jungle grasses, that skirt all streams of the section. The site chosen was opposite the hut of an old negro who had told us about the nocturnal visits of a man-eating lion, the terror of that whole district.

I did not reach camp until a week after the events related below happened. But I'll give you the story just as Simson told it to me when I joined the party.

"Yes, the tent was up, and because the night was hot, sultry and threatening rain I piled up our chop-boxes to form a weather barricade just outside. My old tent-boy had arranged my bed here and slept beside it. Our black cook and two other boys slept a few feet in front of the tent, and off to the left the porters had dropped down together for their well-earned rest. As usual, before retiring I placed my automatic pistol under the pillow, and turned in early after the long, hard journey.

"About midnight I was awakened by a moan from one of the boys. In a second I was alert, pistol in hand. My tent-boy was sitting up shivering with fright and exclaiming 'Pondola! la Pondola!', which is the native name for lion.

"As I sprang out of bed I could hear above the outcries of the now awakened porters some animal crashing through the reeds and grass of the nearby thicket. Quickly I fired four shots in that direction—and again four more as I advanced toward it, but in the darkness it availed nothing.

"On returning a few yards to the tent, I saw the porters now huddled together and stupefied with fear, while out in front there were only two boys who ran to me exclaiming, 'Wapi la Cook? Wapi la Cook?' (Where is the cook?)

"Thinking that perhaps he had seen the lion approaching and had sought safety in flight, we called him, but no voice answered. The cook had gone—unceremoniously, almost without a murmur. The lion must have grabbed him by the neck and broken it in a second, for there had been no alarm—just the one stifled groan.

"Procuring a flashlight, we ran to the edge of the thicket. But we were unable to see anything except the high lights and deep shadows of the dense wall of high grass; yet somewhere in that jungle we knew our cook was furnishing a meal for the man-eater. The horror of it came over us shortly afterward when we could hear the lion crunching the meat and bones of his human prey. To enter the jungle at night was impossible, so we fired volley after volley in the direction of the sound. The gun fire apparently served no purpose; for at

intervals until shortly before dawn we heard evidence that the gruesome meal was continuing. At daybreak we entered the thicket. A blood-spotted trail led us some distance through the high grass to a matted place where the lion had stopped to gorge himself. Right there I vowed that I'd kill that lion if it were possible before I left the plain.

"At the same time we decided to exercise discretion—the better part of valor—and with a desire to avoid a repetition of so fatal an incident, our boys constructed around the camp a 'boma' of thorn bushes strong enough to resist the charge of an elephant. One end of this barricade was built close up to the tent. The other end was formed out of our chop-boxes. Loop-holes were left facing a large tree, on a limb of which we tied the leg of an eland to serve as a bait.

"Each night we took turns watching the bait. Toward midnight on my first night's watch I thought I saw the outline of my man-eater crouching a few feet away from the tree. So I raised my rifle above the sky line, drew down to what I thought, in the darkness, was the proper level, and fired. To my disgust I found that I had potted an old hyena. But the lion was there, too. Cat-like, he had crept over the grass and was lying beside the tent watching for another opportunity. When I fired, he bolted off into the thicket.

"The following night, taking my double rifle and a flashlight, I entered on my second night's watch. About eleven o'clock I left the loophole to go into the tent a moment, and on the way slipped the top safety bolt on the rifle. Stupidly, I forgot to take it off. This time the lion came after midnight. I saw him lying down a few paces away from the eland's leg. Flashing on the light, I took quick aim and fired—or tried to—but he cleared before I could release the safety.

"The third night he appeared when two of us were watching. This time he grabbed the eland's leg and pulled it savagely just as both of us fired. Most of the load from my friend's 8-bore lodged high in the leg of the eland. Perhaps my bullet went wide; I don't know. The chances are that a few pellets of buckshot struck him, inflicting a slight flesh wound. We followed him a short distance, but on the hard ground we lost the trail and never saw him again.

"I finally left the plain with my vow unfulfilled, but I hope that before now someone has brought down the lion that stole our cook and had the poor grace to devour him within our hearing. Here in the States my house has been entered by burglars, and I have had my pocket picked once in a throng, but none of these experiences ever caused me so much chagrin as the man-eater did when, within fifteen feet of where I lay, he carried off my cook into the jungle grasses of Africa."



One of three shot by Mr. Reid in the thornbush country. Observe that this lion is nearly maneless from hunting in the thorn thickets.

Two half-grown lions killed the first day on the plain. Nine ran toward us when Simson missed the first shot.

Together we shot our first big lion—a splendid specimen, sleek, fat and immense

Washing "Pay Dirt"



Nature Hides and Man Seeks—Gold. These Men Are Seeking It.

FIND gold anywhere on this old earth of ours, and the announcement of its discovery will draw thousands of fortune hunters. It was so in California in the 40's, when thousands scrambled across the plains of the West and over the Rockies to find pay dirt; it was so when the first news of the Klondike filtered through to the States; it was so in South Africa—it has always been so, and always will be. Life's greatest lure is gold.

Nature chose to deposit her golden treasures in out-of-the-way places; perhaps deep down under a mountain where gold-bearing ores may be found if one is lucky, or in the bed of some long-abandoned water-course filled with the silt, loam and stones washed down from the mountains thousands of years ago.

Ore mining is comparatively new. Washing out gold from the beds and banks of streams is almost as ancient a method as ploughing with a forked stick.

Probably the oldest device for washing gold was the "batea," which was nothing more than a perforated basin. It was used by prospectors, first to test the gold content of deposits, and if results warranted, to "pan out" the gold, an expression that is still used figuratively by many people.

A labor-saving improvement on the "batea" was the "cradle" which permitted of washing larger quantities of gravel with less fatigue to the miner. The "cradle" was generally used in the California placer operations before sluices became a factor.

Where a deposit was located near a stream capable of furnishing enough water to wash it, there were developed other devices, some of which were known by the names "Long Tom," "Jenny Lind," "Broad Tom," "Victoria," and others. These devices were modifications of system of three troughs:

First, the feed trough for the water, leading to the washing trough, where gold was separated from the other materials, and finally, the riffle-box trough, where particles of gold might lodge and from which they might be recovered. In Colorado, there are today many placer mining operations where sluices are employed, some of them a half mile long. These sluices serve to wash through riffle bars the material that has been thrown in at the head of the sluices. It has been found that the greater part of the gold is collected in these places in the first two hundred feet of the sluice.

With the adoption of the sluice, Edward Mattison, of Connecticut, developed the plan of directing water through a nozzle at high pressure so that the stream would wear away the bank and conduct the material into the sluice for the washing process. By this method, which is called hydraulicking, he eliminated the laborious use of the pick and bar.

Hydraulicking, of course, presumes that water power can be developed, either from running streams, melting snows, or stored-up reservoirs of rain water. Water power in this way has been developed in Colorado to force a stream of water through a four-inch nozzle with a pressure of from 150 to 200 pounds per square inch.

Where streams cannot be diverted from their course by flumes and water dams, so as to expose the river bed for placer operations, it becomes necessary to excavate by dredges. The dredge for working river beds consists of a flat-bottom scow provided with suitable machinery.

Compared with the modern dredges now used in placer mining operations in Colorado, the first dredge was a crude affair. It consisted of a small scow provided with a spoon which was thrown out from the stern and allowed to sink to the



The Prospectors' Pan Shows Gold



A Primitive Type of Sluice

river bed. The spoon was then drawn along the river bottom by means of a windlass that finally brought a spoon load of material into the scow; there it was dumped and the gravel washed from the gold.

Afterward, came scows with under-shot water wheels, so designed that the axle served as a wind-up cable drum to drag up the material from below. This type of dredge is still used to some extent. Then came the present-day large scows, equipped with modern excavating and concentrating machinery.

There are four recognized types of dredges, each differing from the other chiefly in the manner of excavating the deposits. The suction dredge draws the material up in the scow by air suction. The shovel dredge scoops the material just as the portable steam shovel does in railway construction. The clam-shell dredge bites out its loads. The bucket dredge continuously eats into the gravel and dirt on a principle similar to the mechanics of the endless-chain type of well pump.

In years gone by placer miner and prospectors obtained gold from the surface or shallow washings alone, but they could not work out the deep deposits which are frequently forty or fifty feet below. Even where gold is quite uniformly distributed throughout a deposit, it is usually richer at or near the bed rock. Thus, in these later days, the genius of man has developed ways to obtain gold from depths that our forefathers never could reach.

Gold dredges are installed to work out such deposits. The ground is first sampled thoroughly by means of a chum drill or by sinking small shafts to bed rock. When this work is done by a competent person, great accuracy can be obtained in forecasting the gold values contained in the ground. Gold dredging has thus become a form of mining wherein the element of chance has largely been eliminated.

In locations where ancient rivers have deposited gold along with other debris in deep beds, and where the water is shallow, or at least not available for hydraulic mining, dry placer

dredges are constructed. These dredges are built and fitted out in the same manner as river dredges. Some dig their own channels to float in.

The gold dredge shown in the accompanying illustration is located in Lake County, Colorado, near the summit of the

Continental Divide. It is fourteen miles from Leadville at an altitude of 10,000 feet. This dredge operates under conditions just described. It has an over-all length of 240 feet and a width of 45 feet. The hull proper is built of the finest Douglas fir, 108 x 45 feet, having a draft of 8 feet, requiring a pit 400 x 400 feet. It digs to a depth of 35 feet below the water level, and handles 3,000 cubic yards per day.

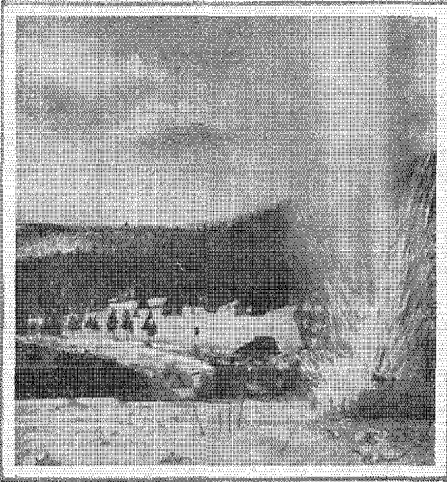
There are 84 buckets in the endless chain used for digging the gravel. Each one is of the highest grade of manganese steel, and weighs about 1,700 pounds. The material from the buckets is discharged into a revolving screen built of solid manganese steel, weighing 40,000 pounds. This screen washes the gravel, the finest of which passes through the perforations to the gold-saving tables, and the coarse material is discharged upon an endless rubber conveyor called the "stacker," which piles it to the rear.

Only three men are required to operate the dredge during each shift of eight hours. Electricity is used as a motive power. This dredge in question has a record of having produced \$3,000 in pure gold in a 24-hour working period, or \$125 per hour.

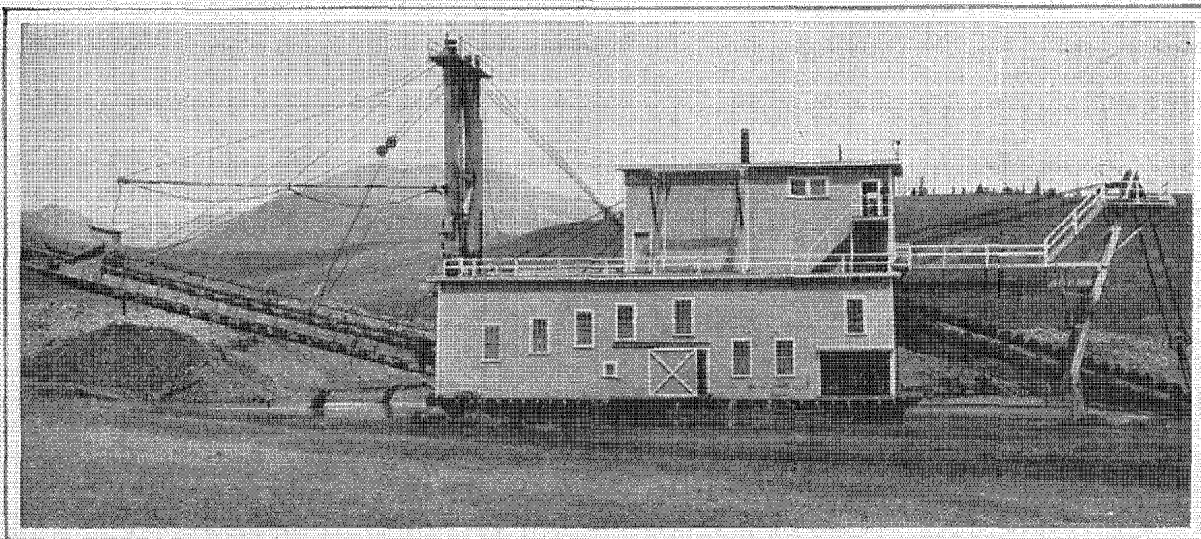
It can easily be understood that at such an altitude as indicated extreme cold prevails during the winter months. Forty degrees below zero is not uncommon. Indeed, it is doubtful if any of the Alaskan gold fields have a more rigorous climate during the four months of the winter season.

The working season for a dredge so located is limited to about eight months of the year; the remainder of the year the dredge is allowed to lie at rest in the pond where it freezes in.

Continued on page 16



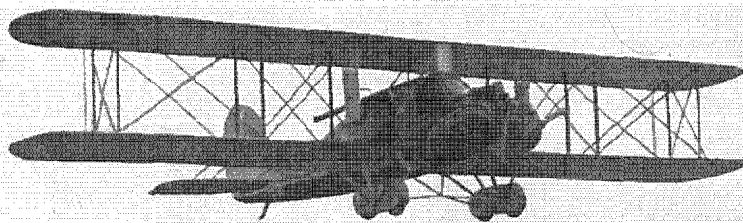
Beating Nature to it. Blasting ice with dynamite to permit early dredging operations in the Breckenridge District of Colorado.



Derry Gold Dredge Near Leadville, Colorado, Where Pay Dirt Is Made to Pan Out Pure Gold on a Big-scale Basis

"All Aboard for New York!"

The demand for increased speed in transportation has been met by the passenger ship of the clouds



The Curtiss Eagle in Flight

A LONG with other passengers you step up the ladder—to a platform and into the enclosed cabin of the aerial liner. You glance at your check. It calls for seat A-1, which you note is on the left-hand side, immediately behind the pilot.

You are well bundled-up, for the air has a chilly tinge. And aerial travel, so you have been told, is a chilly proposition.

A man steps into the pilot's seat. Must be some mistake, because he doesn't wear the clothes that you've seen in pictures of aviators—leather coat, boots, goggles and helmet. This fellow has an ordinary overcoat, a golf cap, and—pearl grey spats!

He is the pilot, though, for he begins fussing round with a few knobs and valves and then tests out the wheel in front of him.

"Everything O. K., George?" he asks the mechanic.

A nod of the head is his only answer.

He works a little knob that reminds you of an eggbeater. There is a grinding noise, a bell-like clang and then the hum of one of the motors. Another twist, clang and hum. And still another. All three motors are now humming. Three propellers are beating the air. He "fools" with controls and throttles a little while, to make sure they are in proper working order. "All clear!" he shouts.

The mechanics pull the blocks of wood away from the front of the wheels, the pilot waves good-bye and settles back in his wicker-chair.

You are taxied out onto the field, the motors are throttled down and then speeded up.

You start down the field, gaining momentum all the while. Buildings rush past you at a dizzy speed. There are no bumping jars as you had anticipated. A short run and the wheels have cleared the ground.

Down the field—two rows of trees!

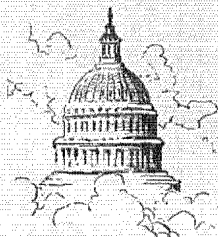
You glance down. You are not more than two feet off the ground.

Nearer and nearer the trees. It is your first flight and you begin to twitch in your seat.

Just when you are about to crash into them, the pilot pulls back on the controls, the big machine answers instantaneously and soars over the tree-tops with yards to spare.

You begin to breathe normally!

Up—up—you climb. You look at the needle on the altimeter—it is registering 200 feet now. A minute later it is pointing to 500—then 1000—then 1500!



By W. D. RICHARDSON

You look out of the window. You are passing over the White House. You can see the sheep grazing on the lawn. The city—numberless squares—buildings! On the streets tiny moving specks—people! Street cars and horses and autos—small creeping things! The city fades into the distance. Patches of light green—fields! Clumps of dark green—trees! Shimmering dashes of silver and blue—rivers and lakes! Straight lines—gray and brown—roads! How deceptive! For the worst road looks like a boulevard from the air.

You are a novice. All sorts of dreadful things flash through your brain. You recall hearing about an aviator friend of yours who lost his life in an aerial duel. You shudder at the thought of a like fate awaiting you.

"My, but it is warm!"

One popular conception has been exploded. You are not freezing to death.

You direct your attention to what is going on below. You are entranced with the view. You've never seen anything in the world like it.

And all the time there's a hum of the motors and the sound of propellers cutting through the air.

Something black ahead! Unconsciously recalling your experiences with motor cars, you "feel" for the brakes! The pilot is paying no particular attention to it. He doesn't go over it, nor under it, nor to the side of it, but through it! Nothing but a cloud! Below you and off to the side—white, fleecy things—more clouds. Above—blue—the sky!

You gaze around at your fellow-passengers. One is reading one of H. G. Wells' latest novels. Another is writing a letter. Another is pondering over some figures. You remember that you are traveling with one of the biggest financial men in the country. He is rushing to New York to attend an important meeting at 2 o'clock that afternoon! Another is munching an apple, and another—asleep!

Cities and towns pass below you. Off to your right—a railroad track. Far ahead—a train.

You have no idea how fast you are traveling, but you begin to figure! Trains average thirty or forty miles an hour—sometimes they travel at fifty—on fast routes. This one must be the Washington-New York Flier. It left Washington an hour before you did, and it is the one you missed! You hover over it for a moment. Then you have passed. Now it is left far in your wake.

"How fast are we going?" you ask the pilot.

"Not more than a hundred," he answers.

A hundred miles an hour!

Your attention focusses itself upon the pilot.

You are struck with the ease with which he handles the

"ship." An occasional movement of the wheel to right or left or fore or aft—not more than an inch in any direction.

You compare it with automobiling. To round a curve—considerable effort. To slow up—grinding brakes and gears to shift.

This is nothing like it; no effort—no strain.

You yourself are conscious of no jerks, pitches or tosses. Occasionally you feel a slight bump, but it is scarcely noticeable.

You glance at your watch. One o'clock! You left Washington at noon and you are passing over Philadelphia.

One hundred and twenty-five miles in an hour!

Soon Trenton appears in the distance. You know it is Trenton because you have an aerial map before you.

Princeton—the home of Princeton University! You don't

have to look at your map, because you recognize the stadium. Newark! The Hudson River—hundreds of boats. One considerably larger than the others, perhaps the Leviathan! You recognize the Woolworth Building—far below you.

Then open country—a group of flat-looking buildings—six of them in a row. A group of small objects that look like butterflies on the adjoining field. It is one of the government aviation fields, you surmise.

It is your landing field. How small it looks! The machine you are traveling in certainly cannot land in that small space.

The motors stop. The nose of the machine is tilted down—slightly. A peculiar feeling comes over you. You remember having experienced it once before in a descending express elevator.

The ground is coming up to meet you. You are prepared for the worst.

Perhaps you'll need the ambulance after all.

No, for the machine has leveled off. The wheels must be on the ground. You are not sure that they are, for you braced yourself for the expected jolt and it did not come. But you have landed.

The motors start humming again. You are being "taxied" to the hangar. A mechanic rushes out with a platform-ladder.

You are at your destination! Another popular fallacy has been broken down. You are whole—there's no white ambulance awaiting to pick up your broken remains. There must be some exaggeration because you were advised that the airplane was about as safe as a trip over Niagara Falls in a row-boat.

You pick up your hand grip and step out.

Out of curiosity you glance at your watch. It is just 2 o'clock.

You have made the aerial voyage from Washington to New York in just two hours. The "flier" which you passed the other side of Philadelphia will reach New York about 3.30!

You wait for someone to come round with a whisk-broom—a porter!

There isn't any need—because your clothing is dustless!

Even your collar is unsoiled!

The foregoing is an "impression" of an actual experience.

Ten years ago the writer of such an article would have been classed either as an intellectual visionary or a plain, ordinary, everyday fool—most likely the latter.

Ten years ago three "visionaries" were working with "things to fly"—the late Wilbur Wright and his brother, Orville, and Glenn H. Curtiss. But in those days flying was confined to fastening yourself to a structure with wings attached to it and coasting until you had sufficient momentum to carry you through the air for the marvelous distance of perhaps fifty feet.

Today we have machines that sustain themselves in the air for several hours.

Even five years ago, progress, measured by what has happened during the past year, was slight. Aviation was still in its swaddling-clothes, so to speak, and fliers were placed in the category of "men flirting with Death."

However, as a result of their daring, the world has been saved from the domination of a madman!

It is now a generally accepted truth that it was aviation and aviators who settled the fate of Europe and America. When the Allies finally got the upper hand—aerial supremacy—it was the turning-point of the war. The enemy's eyes had been put out and, without eyes, artillery supremacy passed to the other side. When the war ended, aviation, as a result of its

deeds and accomplishments, had won for itself a place in the serious side of our thoughts. It had been useful in war; why not in peace?

A year has elapsed, and in that year things have happened.

The commercial airplane has arrived. It has demonstrated to a sceptical world that it has a place in the world's transportation scheme and it has taken that place.

Today we find merchants, traveling men, photographers, bankers and business men, oil operators, doctors, financiers, engineers and architects using airplanes. Several lines of aerial passenger-carriers are actually in operation and a great many more are under consideration.

The aviation world awaited a machine that combined safety, speed, comfort and economy.

It was with these specifications in mind that the Curtiss Aeroplane and Motor Corporation last year brought out the Curtiss Eagle—the first three-motored land machine produced in America for commercial use.

Nothing was omitted to make the machine safe for air travel. Even the plate-glass windows are proof against shattering and thus injuring passengers in case of accident. Each window is reinforced with Du Pont Transparent Pyralin Sheeting, which is inserted between two pieces of plate glass and welded under heat and pressure to form a solid pane of clear transparency. This type of glass will not shatter or fly if the machine comes to earth with a sudden jolt.

The Eagle, with its three Curtiss K-6, 150 horse power motors, has an actual land-speed lower than that of many smaller machines of the present day. This means that it can be operated from fields of ordinary size.

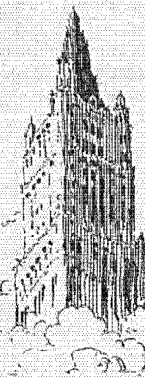
First-class equipment insures comfort. The passengers ride in wicker chairs which are handsomely upholstered. The material is Du Pont Fabrikoid which has been found to be ideal for the purpose. In appearance it is exactly like grain leather; it is durable, easily cleanable, moisture-proof and sanitary.

This machine, which carries seven passengers, or a commercial load of 1350 pounds, has distributed costs in such a way as to enable it to compete on an equal basis with the railroad, the motor truck, and the steamship.

The commercial airplane has come to stay. It is the fastest method of travel we have. It is the nearest approach to a fulfillment of the wish to be in two places at the same time.



Interior of Curtiss Eagle. Passengers sit on Fabrikoid-cushioned chairs and look out through windows reinforced with Transparent Pyralin Sheeting.

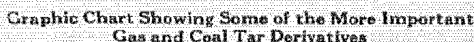


How a waste by-product has become the key to gigantic industries

By STANLEY F. WITHE

A few years ago a tourist, passing through the western Pennsylvania coal regions at night, could see the flames of hundreds of old-fashioned beehive coke ovens, and if he were of an economical turn of mind, he might reflect that this display of fireworks was costing the country \$75,000,000 a year, besides consuming the irreplaceable fuel supply of the future.

With the development of the chemical industry and the recognition of the value of coal tar, all that has been changed. Within the last ten years by-product ovens have come into use, and now nearly half our coke is made in them. The introduction of the by-product coke oven has enabled



Likewise, in the coking industry, no attempt was made to recover the by-products. In place of the modern by-products recovery ovens the coking was carried on in so-called "beehive" ovens, which were merely large beehive-shaped chambers

By a further distillation and chemical treatment of these oils are obtained the "crudes," which form the raw materials of many important and diversified industries. From the light oils is obtained crude benzol.

From these "crudes" we get benzol, toluol, xylol, solvent naphtha and other more complicated compounds used in the manufacture of dyes, drugs, paints, varnishes and explosives. The higher grades of benzol, by reason of their great solvent power, are also of great importance in the preparation of rubber solutions for use as cements, and as solvents for use in vulcanizing rubber. Recently, as a result of the advancing cost of gasoline, benzol has been used more extensively as a motor fuel, especially in Europe. The future undoubtedly will bring further developments in this line that will exert a powerful influence on the whole coal tar industry.

The carbolic or middle oils, as they are sometimes called, furnish us naphthalene. This product in its crystallized form is the chief ingredient of moth balls. However, it is of prime importance to the chemist as a crude from which many important dyestuffs are made. The residue remaining is crude carbolic acid, which is used in large quantities in the manufacture of disinfectants and antiseptics. The crude acid is also often refined by subsequent distillation. The pure carbolic acid, called phenol by the chemist, together with the compound known as cresylic acid or cresol, is used principally in the manufacture of insecticides and fungicides.

The creosote or heavy oils consist of a number of different compounds of great value in the manufacture of pharmaceuticals, stains and wood preservatives. Creosote has been found superior to all other oils as a preservative for wood buried in the ground or submerged in the water.

From the anthracene oils is obtained the important substance

anthracene, which is used as the starting point in the manufacture of alizarine and many other important dyestuffs.

The year before the war the American custom house listed 5674 distinct brands of synthetic dyes imported, chiefly from Germany; but some of those were trade names for the same product made by different firms or represented by different degrees of purity or form of preparation.

Crude coal tar is very little used at the present time, although in the early days of the industry it was used to some extent in the manufacture of roofing felt, also for tarring roads and similar purposes. The water and impurities, present in the unrefined coal tar, proved to be detrimental, however, and caused its use to be abandoned.

Refined tars are being used in constantly increasing amounts. This is especially true in road building; for motor traffic has created a growing demand for improved methods of highway construction. Coal tar road oils are now used, not only for dust laying and surface protection, but also, in the heavier grades, as a binder for penetration work.

The pitch, remaining as a residue of the distillation of coal tar, is used in the manufacture of roofing felt, paving blocks, electrical insulation, and in numerous other ways.

The compounds mentioned are only the most important of coal tar derivatives. How science and industry can produce from these crudes the endless array of dyes and other coal tar products, many of which are manufactured by the Du Pont Company, is another story. Some of these products and the exceptional facilities for their manufacture will be described in subsequent articles.

Like Attracts Like

A Fabrikoid auto top, like a popular movie star, delights the eye

THE lady is registering satisfaction. She has a new Craftsman Fabrikoid top on her car, and the glances of an admiring public have given it unanimous approval.

The lady is accustomed to registering satisfaction—also joy, anger, hate, surprise and other emotions. She gets paid for that—very well paid—about one hundred times what the county clerk gets for registering deeds, for instance. She is Miss Marguerita Fisher, the celebrated movie star of Santa Barbara, California. This, probably, is the first motionless picture you have seen of this screen favorite.

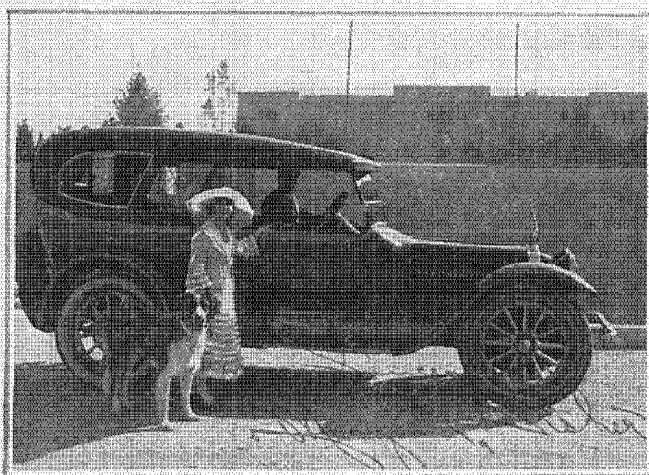
California expects a great deal of its movie stars, especially in all things pertaining to motoring. Elsewhere a necessity or a diversion, in California motoring is a fine art—an art greatly fostered and advanced by the unlimited stretches of perfectly surfaced automobile highways in that State. To this art the movie star brings an unusual refinement in taste, a quick appreciation of what is distinctively elegant, and sufficient funds to gratify any desire.

And, naturally, there has been great competition in California in "dolling up" and displaying really impressive cars. So the elect of the film world build their gasoline palaces finer and finer and adopt everything that will add to the compelling beauty of these wheeled wonders.

In Fabrikoid they have found a type of material that enables them to give their cars the striking individuality which they seek—to set them apart from the common herd of motor vehicles. They can go to the limit of novelty with this material in covering the cushions, tops and entire bodies of their cars,

since the many colors and the great variety of grains and finishes in which Fabrikoid is made offer infinite combinations. These combinations can be as modest or as bold as the fancy of the owner dictates; yet the very boldest conceptions can have perfect color harmony, and there is no danger of the colors fading or any difficulty in keeping the material clean and beautiful with soap and water.

The type of Craftsman Fabrikoid top shown on this car, and the Craftsman Fabrikoid Auto Finish, both originated in California as refinements of the gentle art of motoring. From California this vogue is traveling steadily eastward, and al-

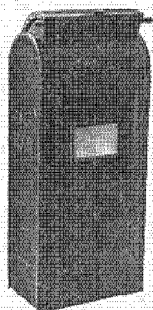


The Lady Is Registering Satisfaction—and It's Real. Her Automobile Is Covered With Craftsman Fabrikoid.

ready we find capable trimming shops in almost every section that are equipped to do this type of work very well. The car with a Craftsman Fabrikoid top, or with its body finished in Craftsman Fabrikoid, is always a show car wherever it appears. It has a beauty that is unmistakable. As like attracts like, the most we can say for the beauty of Craftsman Fabrikoid is that it has attracted Miss Marguerita Fisher.

"Save the Surface and You Save All"

A plain-spoken slogan that has started the nation to think



"THAT'S a splendid slogan for the national campaign," I remarked to a friend of mine the other day. "Yes, it's a clever scheme to sell paint," he replied.

His was a snap-judgment, and not a correct one either—for the national "Save the Surface" Campaign Committee has no goods to sell, nor can it treat of paints and varnishes in other than an impartial and impersonal way. What it does sell is the supremely important idea of surface protection and the conviction that property should more frequently be painted and varnished.

Paint sales have increased and are increasing as a result of the campaign, but the campaign committee is not concerned with merchandising; its function is that of a missionary preaching the gospel of thrift as it applies to the things we own—the gospel of surface protection.

No one who owns anything likes to see it go to pieces; yet all over the land—our own as well as foreign lands—properties are wastefully depreciating for lack of surface protection. Statisticians estimate that the annual depreciation of buildings in this country alone amounts to two and one-half billion dollars. And they say the estimate is conservative.

The surface is the danger point. Owners of property should remember that disintegration, decay, rust, corrosion, wear and tear—all begin at the surface, whether it be of wood, iron, steel, concrete, cement or stucco. Houses, barns, bridges, silos, furniture, wagons, implements, automobiles, ships, toys, fences,—all obviously have surfaces, and it is at the surface that deterioration starts. The battle must be fought there; so we say "Save the surface and you save all."

The floors and doors of your house—damage to them is sure without surface protection. This same wood, standing

and growing in the forest, had its measure of protection in the bark covering. Then Nature helped to heal the wounds. The saw mill robbed the wood of its protection; now it's up to you to protect it

The Save the Surface Campaign is a non-competitive drive to force home in the consciousness of the people something that everyone knows vaguely, and few people realize definitely, about the protective value of paint and varnish.

The slogan of the campaign hits the nail on the head—Save the Surface and You Save All.—*Editor.*

with paint and varnish. Consider the kicks and scuffs and knocks, the scrubbing and the countless contacts with many hands. That's wear. If the floor is kept painted, when you walk on it do you walk on the floor? You do not; you walk on the varnish or the paint, and the wood is preserved.

Your steel garage, metal roof and the metal fixtures of your house—their ruination is certain without surface protection. For just as surely as wood and coal burn from the surface inward, just as surely does metal corrode from the outside in. That's rust.

The porch pillars, cornices, shingle roofs, siding, window frames and other exposed parts of the exterior—they check, crack and decay without paint. That's the effect of the weather.

Time and these destructive agencies cannot ruin any building if the surface is sealed with paint. For instance, there still stands in excellent preservation the Quincy Mansion, Quincy, Massachusetts. The builders began their work in 1685 and finished in 1706. The historic Assembly House at Salem, Massachusetts, is another monument to the enduring qualities of a house kept painted. It was built 239 years ago. Within its four walls were discussed many stirring colonial affairs. George Washington, it is claimed, led a cotillion in the house, which gives it further historic interest. Take Washington's

own home at Mt. Vernon. It is another example of a beautiful house preserved through the years because the owners had the forethought to paint its surfaces and to keep them painted.

Paint protects metal work against rust. Recall that the Brooklyn Bridge, which was started in 1870 and finished at a cost of \$25,000,000, has been kept protected and safe for travel for nearly fifty years by frequent applications of rust-inhibitive paint.

And the world's highest skyscraper—the Woolworth Building—do you know that every inch of its steel skeleton is painted, although the metal is hidden away from contact with the elements? The builders took no chances of deterioration, realizing that to save the surface was to save all, and that paint was protection—needed protection.

Uncle Sam knows the protective value of paint. The iron dome of the Capitol at Washington has been in place for scores of years without replacement. Why? Because it is painted with a weatherproof coat regularly. You rarely see a mail box showing signs of rust. Why? The Post Office Department requires that letter boxes on all street corners be kept well painted. The Navy Department always keeps its war vessels



Interior Surfaces Are Subjected to Wear Unless Protected With Paint or Varnish

well protected with paint, and while we mention government property, let me ask: Have you ever seen a government lighthouse suffering for lack of paint? I never have.

One would think that so palpably a common-sense idea as protecting surfaces with paint would not require an organized campaign to emphasize it, yet human nature is cast in such a mould that comparatively few people do the things that common prudence directs them to do, without someone urging them on. And that's what the Save the Surface Campaign is doing in a national way through advertising in various national mediums.

Is it worth while? The question may be answered by another question: Is it



Exterior Surfaces of Houses Need Constant Protection From the Elements

worth while to attempt to check the enormous fire losses of the nation? If the answer be affirmative, then it's worth while to carry on the Save the Surface Campaign, for all over this country property is rotting, rusting, crumbling and wearing away—the aggregate loss of which is estimated by statisticians as being greater than the annual fire losses of the country. And much of this loss is preventable by the use of paint.

The Save the Surface Campaign is timely. Material and labor costs are high. Men of average means cannot afford costly replacements to their property. The times call for economy, for conservation. Everywhere is heard the plea to check waste and extravagance; to conserve everything as much as possible so that production may gain headway to fill urgent reconstruction needs. The Save the Surface Campaign links with government efforts in this direction for national welfare.

The campaign pointedly proves that it is cheaper to paint than not to paint, and instills an appreciation of the value of property and the wisdom of keeping it valuable. Moreover, it is observed that bankers customarily loan more money to clients who care for their properties than to men who allow them to show signs of

neglect. This is another spotlight thrown on paint and varnish that the people are beginning to notice as a result of this splendid educational campaign.

The campaign also promotes the cause of sanitation. Surfaces painted or varnished are more sanitary than are those not so protected. Hospitals are frequently and thoroughly painted, for they must be made sanitary and kept so. Paint kills disease germs and provides a sanitary and washable coating wherever it is employed whether in hospitals, in factories, office buildings, hotels or residences.

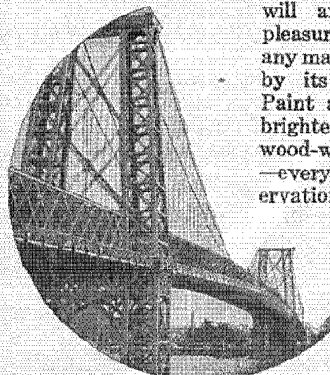
Singularly, the appearance that paint and varnish give to surfaces is overshadowed by the bulk of copy aiming to prove the truth of the slogan. No doubt this is the intention of the committee; for people generally, perhaps too generally, estimate paint and varnish values in terms of color and color harmonies, and too infrequently consider them as protective coatings to save the surface. Yet no one will deny that a house taste-

fully painted without and varnished within gains in beauty and attractiveness; nor will any one deny that the pleasure in the possession of any material thing is enhanced by its attractive appearance. Paint and varnish lighten and brighten the surfaces of walls, wood-work, floors and furniture—everything susceptible to preservation and adornment; they

have an esthetic value that cannot be discounted. Yes, paint is pretty, but get this: paint protects.

In a word, the Save the Surface Campaign is pre-eminently a campaign of education—not to

extoll brands of paint and varnish, for that's competitive—not to tell how attractive painted surfaces are, for the public knows that thoroughly; but to emphasize this one dominant fact, that when you "save the surface you save all." In effect, it is a campaign for thrift, conservation, economy, sanitation, health, balanced judgment and business efficiency. This is the broader interpretation of the slogan, "Save the surface and you save all."

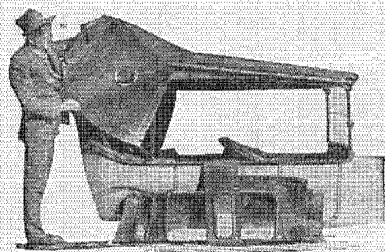


Paint Is Insurance Against Metal Rust and Corrosion

A Topcoat for Your Car

You can bundle up your automobile in an overcoat and laugh at winter's blasts

ONCE it was the general custom to lay motor cars up for the winter. With the growing custom of keeping cars out all winter came the demand for a warmer and more weatherproof



The "Over-the-Top" Automobile Top Slips Over the Top—

top to replace the ordinary collapsible top and curtains on open model cars, thus adding to their value and utility.

The December number of this magazine contained the description of a top of the solid frame type built into the framework of the car after the original top had been removed. We now describe a winter top of entirely different type and construction, yet thoroughly practical in its field, made by Baker & Lockwood Manufacturing Company, of Kansas City, Missouri.

This company has been manufacturing automobile tops, curtains and accessories for many years. When it decided to enter the winter top field, it began looking for a light-weight, snug-fitting top, that in addition to being easily installed would give an open model car practically all the utility of a sedan or coupe and that would be salable at a price within the reach of every motorist.

After careful study it found a top which met all the requirements of light weight, stability and comfort in the "Over-the-Top" Auto Top, and acquired the rights to manufacture and distribute this top under the Baker trade-mark.

This new top can best be described as an overcoat. It slips on over the old top and can be installed by anyone. The tops are made from patterns to fit the standard makes of cars.

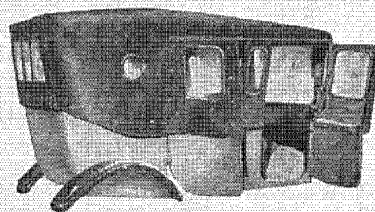
Patented side panels, equipped with plate glass or with flexible pyralin windows, snap easily and quickly into place. These panels open and close with the doors and when not needed can be removed. Thus the "Over-the-Top" Auto Top gives the car owner all the utility of a first-class top re-cover.

For Ford cars the "Over-the-Top" Auto Top is made in two styles. The regular style has all-glass windows except

over the right front door, where the shape of the body and top makes a pyralin window necessary. The special style for Ford cars has all-pyralin windows.

The wearing qualities and durability of the Baker "Over-the-Top" Auto Top and its resistance to weathering and climatic conditions are very high. This is guaranteed by the use of high-grade top materials made by the Du Pont Fabrikoid Company, which materials are selected because of their fine appearance, good tailoring qualities and long life under the most severe service conditions.

The Baker "Over-the-Top" Auto Top weighs less than 50 pounds for the largest cars. It can be applied easily by any person of ordinary skill. It adds to the appearance of the car as well as to its comfort and convenience.



—and Has Panels That Open and Close With the Doors

Defending the Fenders

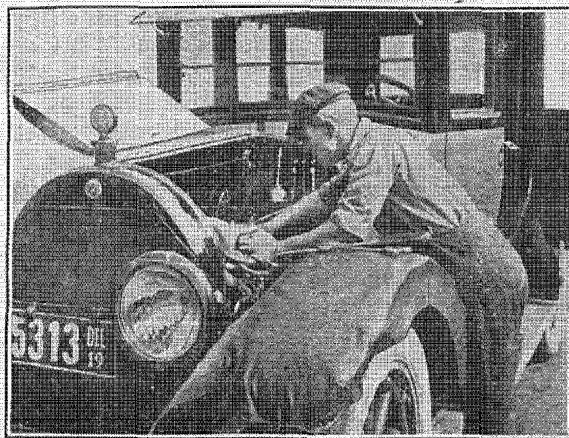
If you want to protect your car in the garage, try this method

DID you ever put on a new pair of shoes and ten minutes later stub into a brick or a nail, scuffing up an ugly triangular tear on the toe piece? If you have, you know something of the angry glow that comes over the face of a motorist who leaves his car at the garage for carburetor repairs and has it returned to him next day with fenders all scratched and marred. When work is to be done on the motor of a car, the highly polished mud guards are very much in the way and very likely to suffer injury during repairs.

Next time you are in a garage, notice how the motor repairmen have to lean over the fenders and often rest a considerable part of their weight on them. In this way they often scratch the enamel with the buttons on their clothing. Sometimes, too, a mechanic thoughtlessly lays or accidentally drops a wrench or other tool upon a fender and scars the enamel. Not infrequently slight adjustments or other work on a motor involve more labor in fixing up an accidentally scarred or dented mud guard than in making the principal repairs.

Mr. H. R. Freck, of the Delaware Motor Sales Company, decided that he

would end this garage trouble by providing a protective cover for fenders. He realized that a material selected for this use should have three qualities. First, it should be comparatively thick and shock-



How Fenders Are Protected With Craftsman Fabrikoid Covers

resistant; second, the top surface should be acid and grease proof, and, third, the lower surface next to the fender should be soft and velvety to prevent scratches.

The one material that filled all these requirements was Craftsman Fabrikoid. So he procured the material and had

fender covers for both right and left sides sewed up in such a way that they would be useful on practically any car. A pocket was provided along the outside, to accommodate the edge of the fender; also a flap to protect the side nearest the car body.

These covers have given splendid service. The heavily napped back of the Fabrikoid keeps the polished fenders unscratched, and the material is thick enough to serve as a cushion and render harmless ordinary friction and blows from the tools used.

When cars are being moved in close proximity to the car receiving attention, these covers prevent scratches and dings from accidental collisions.

As evidence of the satisfaction they have given, Mr. Freck has added Fabrikoid door covers to his equipment. These covers protect the door linings from being soiled by contact with the greasy clothing of the workmen. Any grease or dirt adhering to this material can readily be washed off with soap and water, so that door covers and fender covers can at all times be kept presentable.

Mr. Freck is now having some protective seat covers made of Fabrikoid.

Ivory Pyralin Production Increased

Sales sometimes outrun production, but we have anticipated demands for 1920

A DEMAND for toilet articles made of materials other than gold, silver or tortoise shell already existed when Ivory Pyralin toiletware was first introduced to the American public. At that time comparatively few people could afford to buy articles made of precious metals or shell.

Like the first graphophones put on the market, the first articles of this material were made in plain patterns. Later on, there came the call for period designs. To satisfy this demand the well-known Du Barry pattern was introduced. This pattern has been more popular than any other period design made for toiletware.

Unfortunately, we were not able to predict future sales. This prevented our manufacturing enormous stores of Pyralin before America entered the war. Consequently, when our factory production was being devoted to war purposes, we were merely able to fill a proportionate amount of our orders, and were hampered in the development of new ideas and

designs. However, new ideas and designs were being kept in mind. One of these new designs, which was afterward produced, is known as the La Belle pattern, and is distinctive in pattern and in contour. The unprecedented demand for La Belle articles during 1919 obliged us temporarily to withdraw the line from sale.

Another achievement of 1919 was Colortone Pyralin, a composited Pyralin made in three colors, blue, ebony, or coral on grained ivory and known under the trade names of Azurtone, Ebotone, and Coraltone. They are engraved in circular and moiré effects. The merchants who received these beautiful articles lost no time in displaying them to the best advantage in counter and window. These decorative patterns took the country by storm, and the demand for Colortone Pyralin became so great that, much to our regret, we found it necessary to withdraw this line from sale for the time being. This was occasioned by the fact that it required considerable

time and skill to increase production sufficiently to meet the demand. Production for 1920 has been increased so that from every indication at the present time it is expected that the 1920 output, not only of the regular lines of toiletware articles, but also of the La Belle and Colortone Pyralin articles, will be sufficiently great to meet all demands.

Jewelry stores, department and drug stores have found that the demand for Ivory Pyralin toilet articles is constantly increasing because the sale of these products, instead of being seasonal, is rapidly extending to a year-round demand.

The beauty of Ivory Pyralin in itself would be sufficient to create a steady demand for it. But this is not the only quality it possesses. When compared with sets made of other material it is found to be much more economical and is more easily cleaned. From a sanitary standpoint it is desirable, as it may easily be cleansed with soap and water or Ivory Pyralin Cleaning Cream.

PATHFINDERS

Drafting Board and Table Covers

During the past year several large manufacturing concerns have found it worth while to equip the drawing boards and tables used in their drafting rooms with covers of medium-weight Fabrikoid. These covers are laid over the blue prints and drawings whenever the draftsmen are not at work. They serve as a protection against dust and against possible damage from water or chemicals that might be used in case of fire.

Fabrikoid proves to be the ideal material for this purpose. Contact with ordinary chemicals or moisture does not penetrate or injure it. It does not oxidize, crack, peel or fade in use. It rolls up evenly, and, when unrolled, lies flat. With care such covers will last a long time.

Buy New Ones? No, Paint Them

Are your window shades shabby, wrinkled, with the filler worn off almost to the point of transparency? Cheer up! New shades are not necessary. A coat of paint will make them look like new. It can be done easier than you think.

Just get a can of Harrisons Sanitary Flat. Remove the shades from the rollers. Lay them flat on newspapers, spread out on the floor, and secure the corners with thumb-tacks. Now open the can of paint and add about 25 per cent of turpentine to thin it. Stir until the turpentine is thoroughly mixed with the paint, then apply evenly and stipple with a dry, stiff brush. Allow the curtains to dry for twenty-four hours, then refasten them to the rollers. Simple enough, isn't it?

A Double-Purpose Cap

A manufacturer in St. Louis has brought out a very practical cap for motorists, golfers, motorcyclists and sportsmen. The feature of the cap is that it is made with a double vizard, one imposed on the other. The upper vizard is of the same material as the cap itself, which is made of bronze khaki waterproof cloth. The under vizard is made of green Transparent Pyralin Sheeting, edged with the khaki cloth.

You may wear the cap for every day use and no one will suspect that it is other than an ordinary cap. But if you wear it while motoring, you can protect your eyes simply by raising the upper vizard and pulling the lower vizard down over the eyes. The sheeting is as transparent as glass, and the protective vizard serves the same purpose as a pair of automobile goggles would.

When the world releases a thinker no one can predict what the result will be.

New things are the outcome of thought applied in the use of materials that are as old as creation.

The waves of wireless were here from the beginning of time, but Marconi put them to work and civilization advanced another notch because he gave his discovery to the world.

Let us have the benefit of your thought in the use of Du Pont Products.—Editor.

Painting Milk Cans for Protection

For years dairymen have followed the practice of painting a distinctive mark on their cans, the more easily to distinguish them from others at the milk station. More recently they began to paint the entire surface of their cans for protection as well as for identification, using Antoxide—a rust inhibitive paint that serves both purposes. This metal paint is obtainable in four colors, which permits each dairyman to adopt a distinctive color or a combination of colors for his cans. Quick identification is thus made easy. The additional advantage is that a coat of this paint makes each can rust-proof. It is important to paint the bottoms of milk cans, for the tin coating wears off there more quickly than elsewhere on the body of the can.

A Resourceful Young Lady

Dark tarnished spots on a Wilmington girl's cloth-of-gold dancing pumps just spoiled her otherwise perfect attire for the ball.

The time crowded the hour for the first dance and the soiled slippers loomed as a blemish to mar her anticipated pleasure. A few moments' reflection suggested the remedy—Du Pont Gold Enamel. Five minutes later she raced downstairs—ready, with not a trace of the tarnish remaining on her pretty pumps. She had renewed the gold color with all the lustre the manufacturer gave to them when first made.

Ideal Poultry Leg Bands

In rural sections, particularly, where chickens, ducks and turkeys have the run of the neighborhood, it is difficult to identify one's flocks from those of the neighbors. Many a dispute over the ownership of poultry has been put up to the justice of the peace for settlement. The necessity of identification for this purpose, and also as a means of keeping up-to-date records for breeding purposes, has established the use of poultry leg bands, which heretofore have largely been made of aluminum. More recently leg bands have been made of Pyralin Sheeting, a material ideal for the purpose on account of its light weight and the many colors in which it may be obtained. Leg bands of this material do not rust, nor do they cut or chafe the leg of the fowl—features that also recommend Pyralin for this use.

Blasting Cargoes

Blowing up boats with their cargoes was a favorite pastime with the Huns during the war. With submarine torpedoes? Yes, and by stealthily placing dynamite bombs with timing devices in the holds of our steamers bound for France. We heard much about it at the time. But here's a new one: Americans are blasting cargoes in the holds of barges and schooners right along, and not a word about it ever gets into print—because the work is accomplished without damage to the boats.

Boatloads of phosphate rock are now shipped to fertilizer factories along the eastern shore of Delaware. On arrival the rock is found to be hardened in the hold, like cement exposed to the weather. It isn't practicable to dig it out by hand labor, so light charges of dynamite are exploded to break it up, whereupon the rock is easily removed and the boat returns to the port of original shipment for another load.

Insoles for Outdoor Shoes

Boy Scouts are taught to be resourceful. And they are. Recently a Wilmington scout, who enjoys skating and the long hikes over the hills, thought of Fabrikoid as a possible means of preventing his feet from getting cold. So he bought a strip of Craftsman Fabrikoid and cut out a pair of insoles, which he inserted in his skating shoes with the coated side down and the napped surface in position to act as a cushion. "The coated side keeps my feet dry," he says, "and the napped surface keeps my feet as warm as felt would."

IMPORTANT ANNOUNCEMENT

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Wilmington, Del., January 31, 1920

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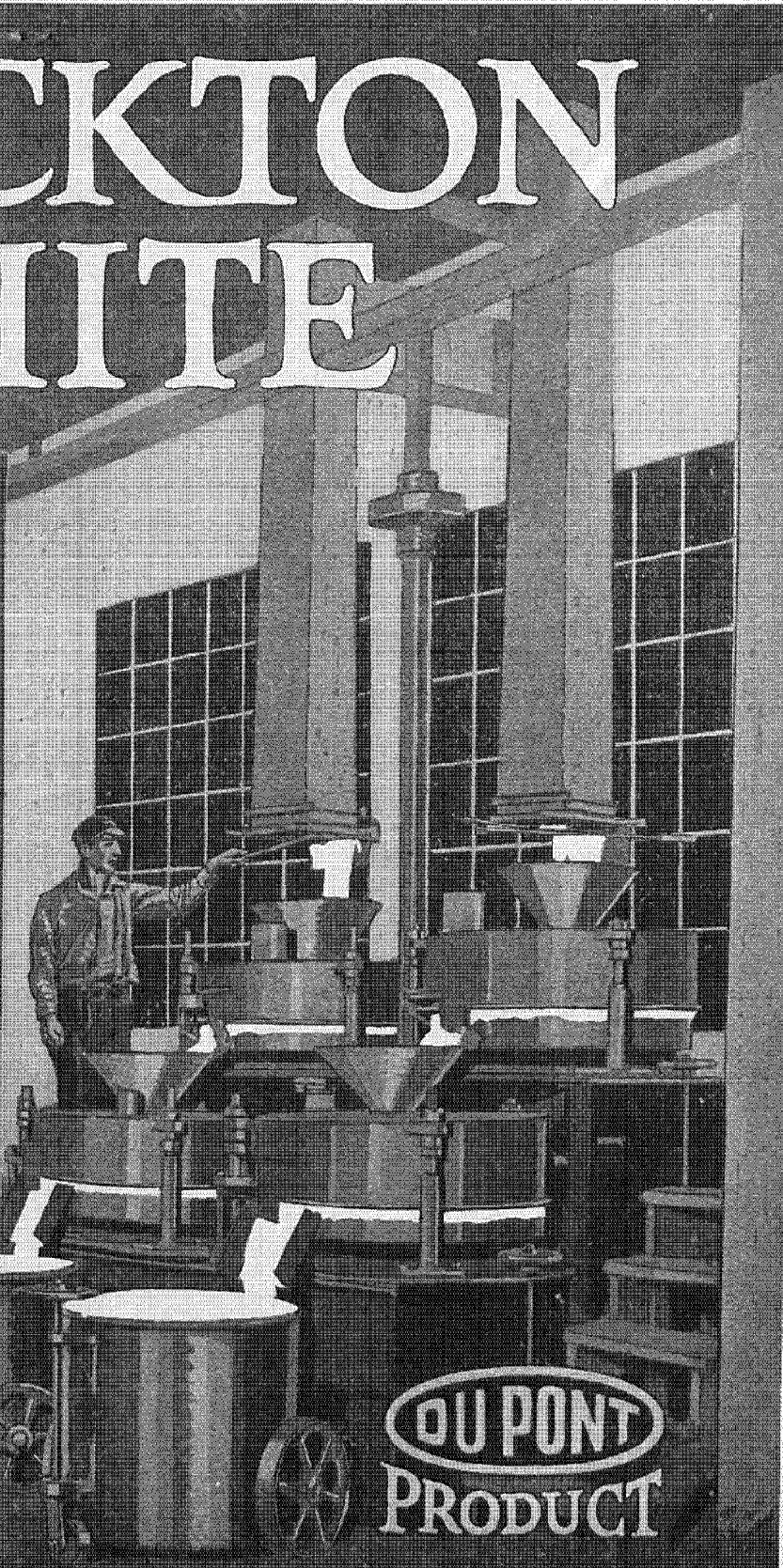
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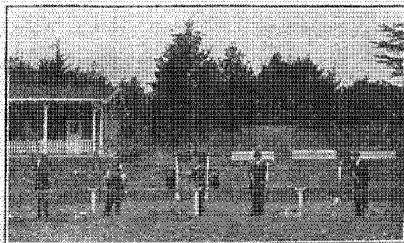
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The Olympic Club Tournament

Let lower California be the scene of the world's championship battle between Carpentier and Dempsey. Who cares? California—to be more specific, the Lakeside grounds of the Olympic Athletic Club of San Francisco—will be the scene of another world's championship trapshooting tournament to begin February 19, 1920. And that's more interesting!

The club grounds are splendidly laid out and equipped. The location is ideal for a tournament of world championship class.



Section of the Trapshooting Grounds of the Olympic Club

For natural beauty these grounds are said to be unsurpassed by any in the country.

The Olympians opened their traps in January, 1919, and have been very active in conducting local shoots and tournaments. More than 300,000 targets were trapped during the last year.

The approaching tournament is the first big offer of the Olympic Club to the trapshooting world. Its success is assured by the backing of the most prominent athletic clubs in the Far West.

Cash prizes of a value of \$1000 and trophies valued at \$1000 more will be offered in the program for this tournament, which will be registered. Contestants may shoot for purses and trophies;

for purses only, or for trophies only. Each shooter is allowed his own option.

Formal program announcements are not yet available, but it is known that there will be trophies for high guns, trophies for five-men teams, for the world's championship, for junior championship, and many other trophies will be awarded to reward those who enter and make top-notch scores.

Any amateur in good standing in the American Trapshooters' Association is eligible to contest in the tournament. All shooters interested should address the Olympic Club, San Francisco, California, for further particulars.

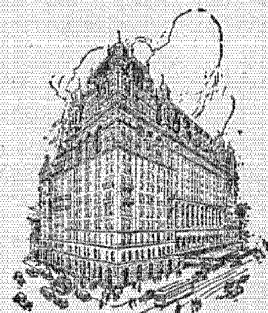
Washing "Pay Dirt"

Continued from page 5

In the early spring it is given a thorough overhauling and at the first thaw hundreds of holes are drilled in the ice preparatory to blasting and breaking it up with dynamite, so that the dredge boat may have room to swing about or turn.

The method of procedure is as follows:

Holes are punched through the ice to the water. From four to twelve sticks of $\frac{1}{4}$ x 8-inch Du Pont Gelatin are tied together with a wire or strong cord and the bundle lowered in each hole so that the explosive is in the water and below the ice. One of the sticks is primed with a No. 6 cap or detonator. A wire or cord, attached both to the bundle of dynamite and to a stick laid across the top of the hole, keeps it in position. Leading wires are connected with the blasting machine and when all charges are ready the operator jams down the rack-bar of the machine with results such as you see illustrated. Mr. Hopkins, of the Tonopah Placer Dredge, says fine results are obtained by this method; in

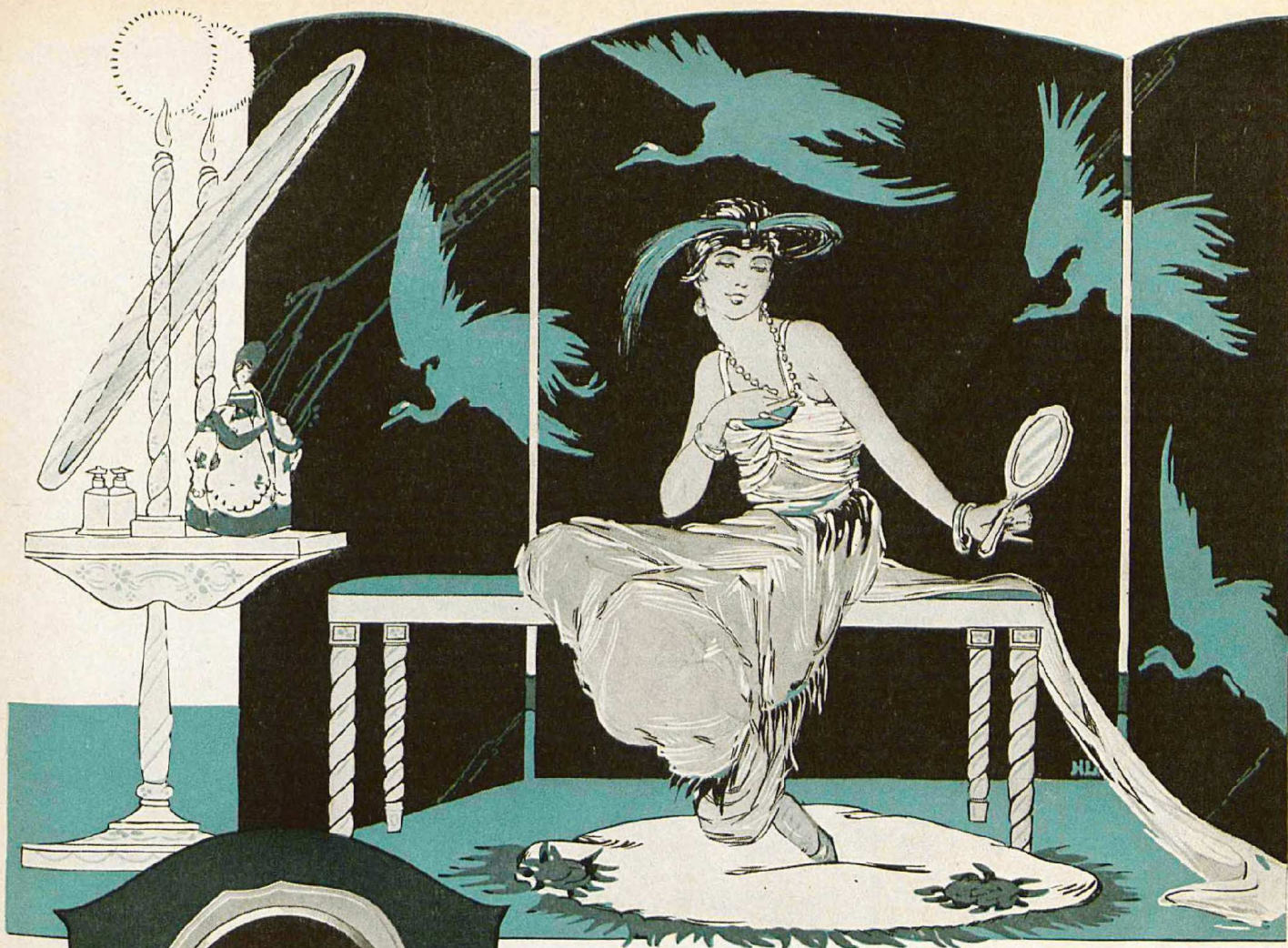


THERE is nothing spectacular about the Waldorf-Astoria. It is an hotel where comfort and luxury are unassuming—yet unmistakable.

The Waldorf-Astoria
 Fifth Avenue 33rd and 34th Streets, New York
 L. M. Boomer President

fact, this is the only way the work can be satisfactorily done.

During a freezing period of four months this ice has been found to be six or seven feet thick, and the gravel banks surrounding the pond in which the dredge floats have been found frozen to a depth of fifteen feet. This material also has to be broken up with dynamite before the dredge can handle it.



IVORY PYRALIN

Serviceable-Individual-Exquisite

The beautiful, mellow, ivory-like grain of Ivory Pyralin, the charm of its possession, the variety of up-to-date patterns and decorations make it the most salable feature of the toilet goods department of any store.

Every piece stamped with the name Ivory Pyralin, with addition of pattern name, when in Du Barry, La Belle, or other patterns, assuring customer satisfaction when buying.

Write for your copy of the new 1920 Ivory Pyralin catalog, just out.

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