

## STORY OF PLATINUM



Testing Thermometers Is Part of Platinum's Job.

### Platinum Has Many Uses in Modern Science, Industry and Warfare

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IF YOU were to ask a bride what her platinum wedding ring has in common with armament races, she probably would stare at you in bewilderment.

Yet the same metal that goes into her marital badge also is an important element in the manufacture of munitions. It serves the armament maker in fine fuse wire for torpedoes and shells; indirectly, it acts as chemical agent in the production of nitric and sulphuric acids, used together in making explosives.

A seldom-told tale of the World war concerns a dangerous and difficult mission of a young American engineer in Russia, who, just before the United States entered the conflict in 1917, undertook to transport nearly a ton of platinum from Petrograd (now Leningrad) to Washington.

Crossing the Atlantic was too uncertain. So, armed with a courier's pass, he set out, with his boxes of treasure marked "embassy documents," to make the long trek across Siberia to Vladivostok and thence over the Pacific.

With travel complicated by the Russian revolution, he outwitted secret agents and bandit raids. Time and again he met peril, delay, and disappointment as he rode in trains jammed with fretting, sweating humanity. But the platinum came through!

Several nations have considered platinum coinage, made patterns and trial pieces, and then abandoned the scheme.

Once Called "Unripe Gold." Valuable as platinum is now considered, its practical career has been brief.

"Unripe gold," Colombian Indians once called it. Prospecting for gold, they used to toss white grains of platinum back into the rivers—"to ripen" into the yellow metal!

In Tsarist Russia, over a century ago, a silversmith was hanged because he substituted platinum for silver.

People now living can remember when platinum jewelry was a novelty. Long before platinum was used in legitimate coinage, this metal was circulated as money—but gilded and in counterfeit of gold.

"Throw it into the sea. Bury it," fumed the Spanish government when racketeers of the day began palming off the new white substance from South America for good gold doubloons.

Only recently, therefore, has platinum come into wide use. In verse and fiction it is the gold rush or silver bonanza that grips imagination. Few realize that platinum, too, lures men to drag tropical rivers and then frozen northlands, and, still more provocative, to conjure it, genie-like, out of intricate chemical processes.

It was the man in the laboratory who put platinum on the world's economic map.

Remembering the excitement that swept San Francisco when gold was discovered and the sensation of the Comstock Silver Lode, the arrival in England of the first crude Colombian platinum, in 1741, may seem a little dull.

Not so to chemists and physicists of the time. Quietly they set to work deciphering the mysteries of this stuff that one of them called "white gold, or the seventh metal."

It was not an entirely unknown quantity. Back in the sixteenth century a queer infusible metal had been observed in Mexico and what is now Panama. Later Don Antonio de Ulloa had mentioned platinum (little silver), described in his account of South American adventures as "a stone of such resistance that it cannot easily be broken by a blow on a steel anvil."

Its resistance to scientific analysis was also great. Years passed before it was learned that platinum, like other metals, could be melted if made hot enough.

In the eighteenth century someone rolled a bit of the metal into foil and drew it into wire—a great

feat then, and the first faltering step toward present-day achievement, when one troy ounce of platinum can be stretched into a virtually invisible wire nearly 11,000 miles long, enough to go nearly halfway around the earth at the Equator.

Frenchman Found Way to Work It. The first crude platinum crucible appeared, pointing to its wide use for the laboratory. But it was late in the 1700's before they knew how to make a workable solid-platinum ingot, a necessary preliminary to the widespread modern industry. The first bar is credited to Chabaneau, French chemist working for Charles III of Spain, who received a patent for his discovery in 1783.

Chabaneau's biographer says that the king himself, a dabbler in science, used to visit the scientist's workshop and help with experiments. Once Chabaneau in a rage at the apparent inconsistency of platinum ore, threw precious solutions, apparatus and all out of the window, vowing never to touch the stuff again.

Finally, however, success! And to demonstrate the amazing weight of this metal in pure form, he played a little joke.

Placing the shiny four-inch cube on a table, he asked a friend to raise it. The man could not. "You have fastened it down," he said. But Chabaneau lifted it—a weight of about 50 pounds.

Chabaneau's friend would have been still more astonished could he have followed the career of this metal into the future.

For platinum itself, science was to discover, does not stand alone. It belongs to a family of six allied metals, each with its own peculiar and valuable properties for art and industry. It was platinum's combination with these other metals that caused the "inconsistencies" which upset Chabaneau's calculations.

Other chemists, too, found experiments contradictory. Sometimes the platinum substance would become strangely brittle; again, to their surprise, it would "burn" (depending, as we know now, on how it was alloyed).

At last, however, the group stood clear. And as palladium, rhodium, osmium, iridium, and ruthenium appeared in addition to platinum, like rabbits out of the empty hat of a vaudeville magician, infant industries reached for the shining boon.

Plays Vital Part in Industry

Fifty years ago, we had no radio communication, no X-ray, no transcontinental or oceanic telephone, to name but a few man-made miracles in which the platinum metals play a small but vital part.

In airplanes now platinum is standard contact metal for high-tension magnetos.

Fountain pens became practical when an alloy of two of the platinum group was found to make a wear and acid-resisting point.

A farmer who may be indifferent to platinum bracelets can still appreciate platinum's agency as a catalyst in making synthetic nitrates for fertilizer.

In your electric refrigerator and thermostat heat-control unit a thin strip of metal changes shape as temperature rises or falls, making or breaking electrical contact and thus starting or shutting off the motor. Since platinum offers high resistance to hot electric sparks, it is particularly useful here for contact points.

From obsolete telephone equipment thousands of ounces of platinum, palladium and gold are salvaged annually—minute quantities from each piece. After the metal has been put through special processes, back into service it goes in the form of more contact points. Platinum and palladium are important factors in radio and long-distance telephony.

Dentists use a large proportion of our annual supply in alloys for bridgework, foil, and fillings. And when you are sick the doctor may puncture you with an iridium-platinum-tipped hypodermic needle. War surgeons find many practical uses for these metals. One World War flyer has 17 bone replacements of platinum.

## SEEN and HEARD around the NATIONAL CAPITAL By Carter Field

Washington.—There is no discounting the jubilation in New Deal circles over the present status of the TVA investigation by a special congressional committee. It is true that a very loyal supporter of President Roosevelt, Sen. George L. Berry of Tennessee, has been more or less thrown to the wolves. That is regarded as too bad, of course, for, as is evident in several other Southern states, notably Georgia, South Carolina and Texas, it is not as simple as picking daisies to replace stubborn independent Southern senators with men who see eye to eye with the President on economic issues.

But so far that is the only loss the New Deal has sustained, whereas the effect of the first few days of the investigation has been to offset, to at least a small degree, the unfavorable public reaction which came when the President "fired" Dr. Arthur E. Morgan, chairman of the TVA.

No one familiar with the TVA situation has actually changed his views as a result of anything so far disclosed or likely to be brought out prior to exhaustive inquiry. The people who thought Arthur Morgan right still think he was right. The people who disapproved of David E. Lilienthal's proceedings still disapprove of them.

But the important thing that has happened is that the first salvos of the two sides have been fired, and, from a publicity standpoint, the Lilienthal side came out with less damage. General feeling in Washington is that the public, and the newspaper editors, were disappointed at the lack of fire in Arthur Morgan's attack, at his unwillingness to call names and use epithets which would make good headlines.

Morgan's carefully prepared case, the general impression here is, is not calculated to fire the man in the street with a desire to take a club to Lilienthal. It is not even calculated to make the "milkman in Omaha" read through it. Quite the contrary. If any candidate for the Presidency could be assured of the votes of every man and woman who did not wade through Dr. Morgan's attack, he would not even lose Maine and Vermont.

Morgan Is Mild

This might be true in any event, no matter what Dr. Morgan had said in his first appearance before the committee. But far more important was that he did not use any language which would make a real fighting headline, which the man in the street would read. There is a general feeling, even among Dr. Morgan's warmest supporters in congress, that he has fired most of his ammunition, that what is to come is detail, and that the newspapers would not have printed as much of his first statement as they did had it not been for the marvelous advance notices, notably in the sensational refusal of Arthur Morgan to present his full case to the President.

The general impression, also, is that Lilienthal is so much cleverer than Morgan at this business of presenting his case, either to an investigating committee or to the public, that there is little expectancy that in the general fighting to come Arthur Morgan will have much chance.

The one episode that was expected to inflame the public was the attempt of Senator Berry to collect a few millions from the government on his marble claims. This is now bogged down to a contest as to whether Arthur Morgan or Lilienthal showed better judgment in his plans to protect the government. Lilienthal, it is thought, deliberately abandoned any thought of protecting Berry's reputation, despite the fact that the Tennessee senator is now engaged in a primary fight. Best opinion on that is that the President agreed with Lilienthal the sacrifice was necessary.

Stiffer Taxes Coming

Much stiffer taxes next year are a certainty. This is true despite some very misleading inferences made recently because budget predictions were shown to be not very far wrong. What was omitted, and what made these stories misleading, was that the budget forecasts were that the deficit would be large. They happened to be right.

But not even the most enthusiastic New Dealer denies that taxes must be increased by congress in the next session. The New Dealers will give varying explanations, most important of which is an attack on congress for too drastically modifying the tax on undistributed corporation earnings and the capital gains tax.

Actually two factors are both far more important than this one. One is that the corporation and personal income tax returns to be made next March will be tremendously short of those which were made last March. The Treasury is fully aware of this situation. Nothing that could conceivably happen between now

and the end of the present calendar year could change this result.

The point is that 1937 earnings of corporations, and 1937 private incomes, were excellent for the first nine months of the year, that is, excellent compared with anything since 1929. But in the last three months of 1937 the falling off became sharply manifest. Despite this obvious fact, there is a certain momentum attached to any such movement which delays its full effect for a time. As for instance, the fact that many corporations, badly hit in the 1929 situation, continued to pay dividends through 1930 and some of them into 1931, though eventually they were forced to discontinue.

Incomes Reduced

Reduction of dividend and bond coupon payments at the present time hits the income tax returns to follow much harder than was the case in 1929 and through to 1933. At that time the Treasury did not tax normal individual income rates on dividends. It was assumed, up until a later tax bill, that the British system, holding that the corporation income tax had covered the "normal" individual income tax on dividends, was fair.

There is another important point to be remembered in estimating tax receipts. If a rich man's stock fails to pay \$100,000 of expected dividends, because the corporation in question did not earn the money, then the Treasury loses more than three-quarters of the money. The government fails to collect the corporation income tax, which was 15 per cent, and is now, under the new bill, 18 per cent.

But then the whole amount is subject to the top bracket of that rich man's income. So when a corporation's income declines, as far as the Treasury is concerned the depression skims off the cream, leaving only skimmed milk.

The other factor in the certainty that taxes must be increased is that virtually everything that is waiting for action by the federal government contemplates greater spending, not smaller. This is true of the navy, of the army, of the merchant marine, of trust busting plans, and of social security.

Even the attempt at ear marking the relief appropriation was not an economy move, but merely one to prevent the administration from withholding pork from individuals in the house and senate that it wished to punish.

F. D. R. Still Strong

Planned economy of business, with close government supervision of production and competition on much the same pattern as Secretary Henry A. Wallace is now regulating agriculture, will be pressed strongly by left wingers as the next step toward "recovery." President Roosevelt is disposed to go along with them, though questioning the political expediency of such a move on the eve of the congressional elections.

Right wing advisers hope that victory for the wage-hour bill may dissuade him, but more economic planning is the prospect at the tag end of a session in which the President was turned down on government reorganization and his favorite tax theories, with an indication of more independence in congress and more turning-to-the-right by the government in spite of Roosevelt's personal views. It is the prospect because of utter failure of pump-priming and credit inflation to give business and employment the lift that the left wingers predicted. It is the prospect also because, despite the failure of the Roosevelt recovery measure and despite the desire for independence on Capitol Hill, various tests show that Roosevelt still stands strong with the voters—that he has the power to defeat, if not the power to elect.

Conservative independents on Capitol Hill are distinctly worried by numerous developments, hence are not only afraid themselves but are gaining few recruits. Florida nominated a New Dealer and a Townsend plan advocate over an independent conservative. Florida in a run-off election proceeds to nominate a Townsendite and a New Dealer for the seat in the house which that independent conservative now occupies. Oregon Democrats beat a sitting governor for renomination largely because he had insisted on preserving order in labor disputes.

Faces Bad Situation

Washington faces the unprecedented situation of a bad depression and increasing unemployment actually helping the administration in power, instead of crushing it as has invariably been the case in this country's political history. Congress construes the various votes and polls as a mandate to the President to proceed with economic experimentation. The only question is whether the President will "press his luck" and go forward with plans he has long contemplated and approved. These include plans to avoid increasing capacity to the point where profits are turned into "additions to plant which are now standing stark and idle" as he said in his 1932 acceptance speech. Also plans to prevent unfair competition, monopolistic methods in business, collusion to produce identic bids on contracts, movements of plant to reach cheaper labor for exploitation. In short, plans to attain the ideal of planned economy with no depression, no booms, no underprivileged, no speculative profits of any kind, and very small profits for all business units.

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## Secrets of Ancients Survive Attacks of Modern Science

With television soon to become serious rival to the movies, and giant airplanes and "press-the-button" warships things which raise little comment from the average man, it is surprising that there are many secrets known to the ancients which have survived the attacks of modern science, says a writer in London Answers.

The Greeks could not weave linen or wool on anything like the scale we weave them today. But they wove them into the pilema, a form of cuirass which could not be penetrated by the sharpest dart or arrow. The secret has been lost—perhaps forever.

The Romans sank wells for water to great depths. Exactly how they did the boring is unknown.

The beautiful purple dye, known of old, has eluded the dye-makers of today. And modern builders can make nothing of the strong and durable cement used by the Greeks and the Romans in their walls. This cement was stronger and harder than the stone itself.

The knowledge possessed by the ancient Egyptians was very extensive. They had a method of dressing stone to withstand the ravages of time and weather. They also perfected the art of embalming. Probes, forceps, and other surgical instruments have been found in Egypt. For what purpose they were used we will never know.

That secret, along with many others, passed away with the destruction of the famous library at Alexandria in the Fifth century. The loss of the knowledge contained in that library was a blow to civilization.

Reading and Thinking

Reading furnishes the mind only with materials of knowledge; it is thinking makes what we read ours. So far as we apprehend and see the connection of ideas, so far it is ours; without that it is so much loose matter floating in our brain.—Locke.

## Must Books Be Read?

The collector of books need not fear the challenge that is sure to be made, sooner or later, by his skeptical acquaintances: "Have you read them all?" The first idea he ought to get out of his head is that he must only buy books for immediate reading.

"The charm of a library," said that devout book lover, the late Arnold Bennett, "is seriously impaired when one has read the whole or nearly the whole of its contents."

Bennett confessed that he had hundreds of books that he had never opened, and which, perhaps, he never would open. But he would not part with them. He knew they were good, and as he gazed on them, he said to them, "Some day, if chance favors, your turn will come. Be patient!"

Best Thoughts

Try to care about something in this vast world besides the gratification of small selfish desires. Try to care for what is best in thought and action—something that is good apart from the accidents of your own lot. Look on other lives besides your own. See what their troubles are, and how they are borne.—George Eliot.

## WHEN LIFE DEPENDS ON TIRE SAFETY

**IT'S ALWAYS Firestone**

FOR 19 CONSECUTIVE YEARS THE WINNERS OF THE INDIANAPOLIS 500-MILE RACE HAVE PROTECTED THEIR LIVES WITH FIRESTONE GUM-DIPPED TIRES

On May 30, Floyd Roberts shattered all track records for the 500-mile Indianapolis Race, averaging 117.2 miles an hour using Firestone Gum-Dipped Tires.

THEY said it couldn't be done — that tires could not withstand the torture of the new high speeds. Yet Floyd Roberts set a new record, at this year's Indianapolis Race, averaging 117.2 miles an hour for the 500 miles on Firestone Gum-Dipped Tires.

With the sun-baked brick of the straight-away and the granite-hard surface of the turns pulling and grinding at their tires, 33 daring drivers, every one on Firestone Tires, waged a thrilling battle for gold and glory. Never before have tires been called upon to take such punishment. Never in all the history of the motor car has tire safety been put to such a gruelling test. Yet not one tire failed — not one single cord loosened — because Gum-Dipping, that famous Firestone patented process saturates and coats every cotton fiber in every cord in every ply with liquid rubber counteracting the tire-destroying internal friction and heat that ordinarily cause blowouts.

Why risk your life and the lives of others on unsafe tires? Join the Firestone SAVE A LIFE Campaign today by equipping your car with Firestone Triple-Safe Tires — the only tires made that are safety-proved on the speedways for your protection on the highways.

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