

# Torpedo That Carries An 8-Inch Gun

## Commander Davis's Invention Attacks the Dreadnought at Its Weakest Point.

On March 9, 1902, in Hampton Roads, the little ironclad Monitor laid the foundation for a revolution in naval architecture the fruits of which are seen today in the modern dreadnoughts. Two weeks ago near by the same historic waters another weapon of war was tried which in its turn promises to impose great changes in the construction of the biggest fighting ships. This new weapon is the gun torpedo invented by Commander Cleveland Davis of the navy. In order to appreciate what this type of torpedo represents it is necessary to understand some of the defensive conditions of the warship of today. It has been only within a comparatively brief period that the under-water body of a fighting ship has been seriously menaced by mobile attacks. Of course it was recognized that a submarine mine might lead to a craft's destruction, but mines are generally placed in fixed positions and no cautious commander would trespass wittingly within waters so planted. For a long time the automobile torpedo was so erratic in its flight that the likelihood of its doing effective service under most conditions of probable attack was rather remote and naval officers

where a range of 1,800 yards was considered excellent a few years ago there are authorized ranges of more than 7,000 yards. The speed of the torpedo has risen from 30 to nearly 45 knots. These improvements have all come into practical service since the war between Russia and Japan, so that the results of that conflict are no longer a true index of what this weapon can be counted upon to do in some particulars. At that time, however, the Russians had at Port Arthur a French built battleship, the Czarevitch, which had in addition to the usual cellular subdivisions in the double bottom space the protection of a bulkhead of armor plating. This vessel was injured by Japanese torpedoes, but not enough to prevent her repair and subsequent service against the enemy. The inner wall of armor plate prevented the force of the exploding torpedo from breaking its way into the ship's vitals, and most of the damage was restricted to the steel honey-comb of the double bottom.

The Czarevitch was a novelty in this particular and somewhat in advance of most of the heavy fighting craft of her date. The ships of the Russian fleet were sunk by torpedoes at Tsushima had



DAVIS TORPEDO BEFORE ATTACKING THE TARGET. OUTWARDLY IT IS MUCH LIKE THE WHITEHEAD. SAVE THAT THE FORM OF THE HEAD PERMITS IT TO BE DRIVEN MORE EASILY THROUGH THE WATER.

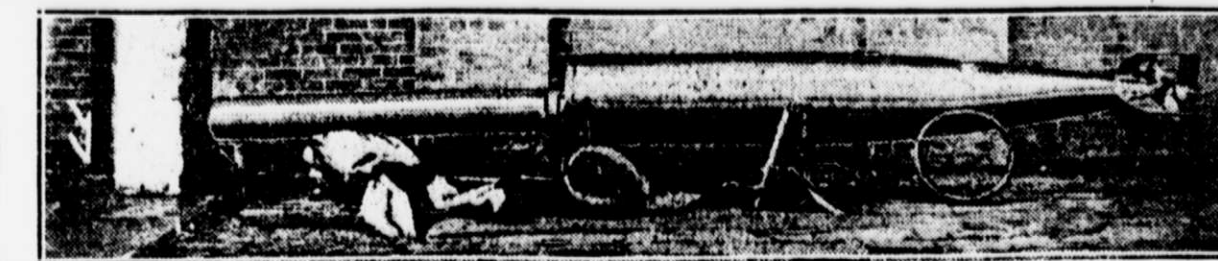
rent in her side she managed to get back to the harbor and under the shelter of the Russian guns. The force of the explosion did not reach her magazines. On May 15 the Japanese battleship Hatsuse hit a Russian mine, which detonated one of her magazines, sending her to the bottom in deep water with most of her crew. On the same day the battleship Yashima

gun torpedo is not intended to expend its energies in tearing large holes either in the outer or the inner bottom but is designed to perforate the hull cleanly and then to exert the full force of its bursting charge within the ship.

In order to accomplish this purpose the gun torpedo dispenses with the war head charge of gunpowder common to

navy Whitehead adapted to carry the Davis gun which at that time was smooth bore and of 8 inch calibre. The shell was loaded with thirty-five pounds of Explosive D, the American secret powerful powder.

Without going into the details of that test it is enough to say that the torpedo hit the target, the gun functioned properly



DAVIS TORPEDO RECOVERED AFTER ATTACK UPON TARGET. THE GUN AND AFTER BODY OF THE TORPEDO ARE SHOWN INTACT.

stumbled upon a mine of Dalny and had to be beached in shallow water to keep her from foundering. All of these mines carried a heavier explosive charge of gunpowder than the biggest of the automobile torpedoes of the present day. It must be borne in mind that the worst damage was done only when the force of the bursting mine was violent enough to lead to the explosion of a magazine within the ship. If an enemy's armor piercing shell could break its way through the defending walls of hard-ened steel of the ship above water, it burst inside a magazine, shell room or boiler space the fate of that craft would be sealed, as it was when a mine broke through the bottom and reached a store of powder. Fortunately for the ship it is well nigh impossible for a shell to do this today.

Since the Russo-Japanese conflict the explosive charge of the torpedo has been increased, but the underbody of the fighting ship has likewise been strengthened to resist this blow. The torpedo attack against the monitor Florida and kindred experiments abroad have proved that this under-water weapon can sink a modern ship unless walls of armor are interposed to weaken the effect of the bursting charge. Even then, however, enough damage may be done to cause the injured vessel to leak seriously and to force her to withdraw from the combat, but this is about the worst that the torpedo can now be counted upon to accomplish against a modern dreadnought properly safeguarded below the waterline.

The skill of the naval architect has checked the force of the torpedo's wrecking influence by restricting the area of probable damage, the air spaces of the double bottom serving to absorb a large measure of the torpedo's explosive violence and thus reducing the force of the attack against the inner, strengthened hull. A battleship disabled is not necessarily a battleship disposed of, and she may be repaired and made fit to fight a winning battle later on. If the torpedo could break in and pass through the armored bulkhead it would probably effect the certain destruction of the enemy's battleship. This is the purpose of Commander Davis's gun torpedo.

The ordinary automobile torpedo bursts upon hitting any obstruction lying across its path. Taking advantage of this fact, various types of torpedo nets have been devised. These nets are of steel rings or of wire rope mesh sufficiently strong to arrest the flight of the torpedo. The instant the torpedo hits the net the gun-cotton charge explodes and because of the intervening water the craft is not likely to be seriously harmed. It is like holding your foot at arm's length.

Types of net cutters have been developed, but they cannot be depended upon. Therefore all of the principal naval powers of Europe have equipped their battleships with torpedo nets. These can be lowered for defence only when the vessel is an anchor or when under way at low speed and in relatively smooth water, thus leaving many conditions of service where this protection could not be utilized at all. Torpedo nets are not used in the American navy.

The Davis gun torpedo is really an automobile submarine gun carrying its explosive shell right up against the bottom of an enemy's ship and there discharging the projectile at close range. The force of the impulse given the shot is sufficient to drive the shell through several inches of steel armor, making sure that it has got behind this defence and is within reach of the vessel's vitals. The

usual torpedo. In place of the 250 pound mass of gunpowder there is a 12 inch projectile loaded with a bursting charge of either gunpowder or dynamite and a gun of light weight capable of sending this shell on its errand with a velocity of a thousand feet a second. The gun is made of a high grade of vanadium steel. The striking force of the projectile is augmented by the actual velocity of the torpedo at the time of impact.

In this way the Davis weapon outclasses the probable consequences of the assault of even the biggest of the ordinary type of torpedo. Apart from this, the gun torpedo is normally more likely to occasion damage of a really grave character than a contact mine. But some one will say, "There is still the torpedo net, which will keep even the Davis torpedo at a safe distance." The answer to this is, the shell of the Davis weapon can easily pierce any type of torpedo net and still have sufficient velocity to travel through the intervening water and perforate the stoutest under water protection yet designed for any battleship built or building.

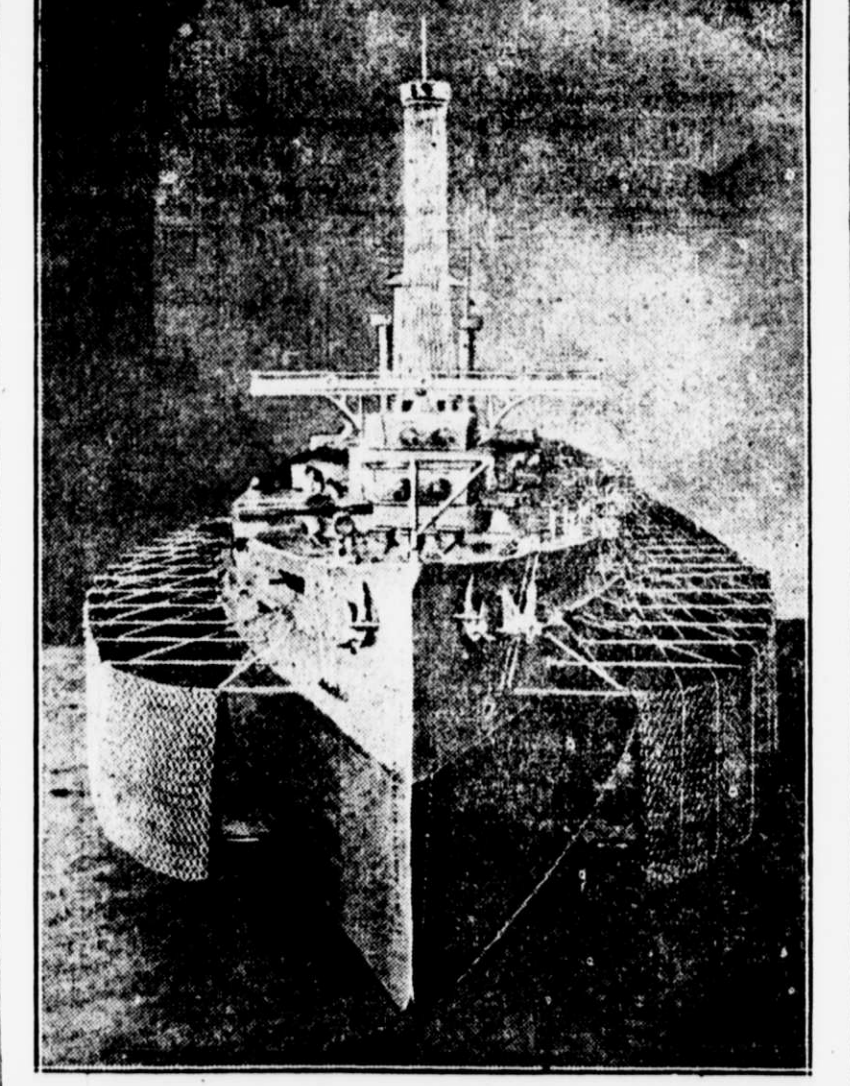
The recent competitive trial of the Davis gun torpedo was not the first test of this weapon. In August of 1908 off Sheep Island, Massachusetts, the gun torpedo was put through its initial paces. At that time a big cylindrical oil tank about twelve feet in diameter and fifteen feet long, strengthened internally by a number of bulkheads, was used for a target. The torpedo was an old 18 inch

and the shell perforated both sides of the tank and travelled a distance of 175 feet through the water before halting on the far side. The torpedo and gun were afterward recovered on the attacking side of the target 50 feet away, showing that the force of the recoil was violent enough to send them backward that distance. The fuse of the shell failed to function, so the projectile did not burst.

The hole on the attacking side of the target was nearly six feet high, while the bulkheads and opposite side of the tank were clearly perforated. The hole on the entrance side was probably enlarged by the direct action of the gases from the gun. It is probable that had the shell detonated within the tank it would have blown that structure into ribbons. The opposing bulkheads were not a sufficient obstacle to make the fuse function, but the armor plate now being placed in foreign ships for under water protection is thick enough to halt the shell in its flight long enough to set the fuse in action.

At the recent tests in the lower Chesapeake the Davis weapon was of an improved form and the target was built so that one side represented the usual double bottom construction of a vessel, while the opposite side was reinforced by armor plate three inches thick in addition to the steel honey-comb. There were two internal armored bulkheads of vanadium steel, each nearly an inch thick.

In the first attack the gun torpedo, guided along a wire, hit the target on the unarmored side. The projectile perforated the outer and inner plating, passed through both armored bulkheads, pierced the inner and outer bottoms on the opposite side and then exploded in the water beyond.



MODEL OF ARGENTINE BATTLESHIP RIVADAVIA, SHOWING TORPEDO NETS IN POSITION.

# One of Lincoln's Pardons

## It Was Granted to a Deserter, It Is Now in the Capitol at Albany, and There Are Gaps in Its History.

Five gray haired men, three of whom are veterans of the civil war, act as guides to the visitors at the Capitol in Albany. In reply to the question what he considered the most worthy of notice of all the attractions in the building one of the men without a moment's hesitation replied: "The Lincoln letter in the bureau of military records."

To him no mere architectural design, no wealth of carving in wood or stone, not even Richardson's great Senate staircase could compare with the timeworn half sheet on which Lincoln had written.

On a level with the eye, in one of the glass enclosed cases, is the treasure to which each veteran leads his party of visitors. He waits patiently until the document has been read. He has no story of it, knows nothing of the dead soldier from whose body it was taken; not even the date when it was deposited in the bureau is known.

Attention is directed to the fact that it is one of the rare documents signed by Lincoln with his full name Abraham, for usually the President signed with the initials A. The guide may sometimes add that this is only one of many hundreds of such pardons that the tender hearted

partment in 1861 and was known as the Ira Harris Guard, named for one of the United States Senators from New York at that time. Company F was made up of men from New York City, Albany, Waterbury, Clinton County, Hudson, and Cape Vincent. The records of this company contain only this note of Rowell McIntyre:

McIntyre, Rowell [sic], age, date and place of enlistment or muster in as private, Company F, not recorded, captured at Sportsman's Court, Hudson, Va., April 30, 1862, transferred to Company E, Second New York Provisional Cavalry, June 17, 1862.

The records of Company E, Second Provisional Regiment, contain this additional information of Private McIntyre. That after five days captivity with the Confederates he was paroled May 5, 1863, at City Point, Va., and the muster out rolls of the company mention that he was "serving lost time for desertion; no further record." Both records also give McIntyre's Christian name as Rowell instead of Rowland, as Mr. Lincoln wrote it.

### Executive Mansion.

Washington, Oct. 4, 1864

Upon condition that Rowell McIntyre of Co. E, 6th Regt of New York Cavalry, returns to his Regt on faithful service for term, making two terms, or until he is lawfully discharged, he is fully pardoned for any supposed desertion heretofore committed, and this paper is his pass to go to his regiment.

Abraham Lincoln

From the body of R. McIntyre taken from the battle of Five Forks Va. 1864

THE PARDON IN PRESIDENT LINCOLN'S HANDWRITING PRESERVED IN THE CAPITOL AT ALBANY.

President issued to save from ignominious death. It is as follows:

EXECUTIVE MANSION, WASHINGTON, Oct. 4, 1864. Upon condition that Rowell McIntyre of Company E Sixth Regiment of New York Cavalry, returns to his regiment and faithfully serves out his term, making up for lost time, or until otherwise lawfully discharged, he is fully pardoned for any supposed desertion heretofore committed, and this paper is his pass to go to his regiment.

At the bottom of the half sheet is written: "Taken from the body of R. McIntyre at the battle of Five Forks, Va., 1864." On the left hand margin appears partly stamped with a written date and signature: "Oct. 22, 1864, transportation furnished to Baltimore, Md., 413 H. Brownson, Capt. & A. D. G."

Each visitor, after reading the line "Taken from the body of R. McIntyre at the battle of Five Forks, Va., 1864," turns away with a feeling of added regard for the President who could not bear to see a soldier needlessly sacrificed and who had the courage to board Stanton to save an erring private condemned to death. Next comes the thought that McIntyre made good at the last, thus justifying Lincoln's pardon of his desertion in the face of the enemy.

What was the story behind the desertion? There must have been one, but it is not known.

The Sixth New York Cavalry was organized under authority of the War De-

partment was transferred into another regiment more than that of his original enlistment sixty-seven days after that battle, so it could not have been his body from which Lincoln's pardon was taken. Further, the official records of the War Department show that the Sixth New York Regiment of cavalry, of which McIntyre was a member, while participating in the battle of Five Forks suffered no loss of officers or men killed, and that only two officers and three privates were wounded. Then how came that indorsement on the pardon? Certainly McIntyre was not killed at the battle, for he was alive when mustered out of the service several months later.

When these facts were laid before the veteran Capitol guides none could offer an explanation. All had for years believed that McIntyre had perished upon the field of battle and were really shocked when confronted by the records. One, who has served as guide for eighteen years, recalls that in former years there was a slip of paper about the battle of Five Forks, Va., which had been deposited in the bureau's keeping by Lieut. Ellison M. Morton, Lieut. Morton was 21 when he enlisted in the Sixth New York Cavalry in 1861 and therefore must be 68 if still living; possibly he can shed some light upon how this pardon came into his possession and who was responsible for the lines "Taken from the body of R. McIntyre at the battle of Five Forks" written upon it.

### STATE WILL OWN REEFFOOT.

#### Disputed Property Scene of a Tennessee Tragedy.

From the Baltimore American.

"The State of Tennessee is going to buy Reeffoot Lake and convert it into a reservation for the pleasure and benefit of the people," said R. J. Strayer of Memphis.

"Reeffoot Lake, you will remember, was not long ago the scene of a tragedy of national wide interest. It is a body of water in Union county, in northwestern Tennessee, not far from the Kentucky line, some thirty miles long and in parts five to ten miles wide. The lake was not in existence prior to the Lisbon earthquake of 1811 and is believed to have originated in the seismic disturbance. The years came and went and the farmer folk of the surrounding country went to the lake to take out bass, perch, pike and other eatable fish, with which its waters teemed. The idea that there was any private ownership was never given a thought; it was free as the air of the heavens and any man who willed to fish could help himself.

### NUGGET IN DUCK'S CROP.

#### It Led to Discovery of Gold in Bed of San Carlos Creek.

From the San Francisco Chronicle.

Pure, glittering gold, "21 nuggets as peas, lies in the beds of the streams of the San Mateo foothills. After man has tramped over these hills for years and their wooded slopes have become the estate of the wealthy, a poor, simple duck detected the presence of the yellow metal and had to die to give the secret to the world.

"While preparing a duck which she had purchased from Alexander Dombroski, a poultryman of San Carlos, Mrs. John H. H. of Redwood City found several pieces of gravel and a nugget of pure gold as large as a pea in the crop. Dombroski had recently covered his poultry yard where the duck had been feeding with gravel from the bed of the San Carlos Creek.

The gravel was taken from where the creek passes through the country estate of Col. N. J. Britton, the San Francisco capitalist. During the summer months the stream is dry and many loads of gravel are extracted, but the presence of gold was never suspected.

Following the sensational find of the duck, who now almost ranks with the goose that laid the golden eggs, the sluice will be applied to the sands of many San Mateo creeks which wind through the foothills on the west side of the county, and the laws of the State of the country home of the gold miner will be laid out as placer claims.



ENTRANCE SIDE OF TARGET AFTER BEING HIT BY DAVIS GUN TORPEDO.

generally gave little heed to this weapon in planning the bigger fighting ships.

There were too many elements of promise in the torpedo to lead to its abandonment. It was plain that developments in other directions were making the chances more remote of destroying an armored ship by shot or shell, while the underbodies of these same vessels remained substantially defenseless, thus offering the only logical way of delivering a destructive blow to the otherwise carefully protected vitals, as the engines, the boilers and the magazines and shell rooms are called. There was therefore a special incentive presented to the torpedo expert to improve his weapon.

To this end the first thing required was some means for making the torpedo keep to a straight course. This was found in the gyroscope. Then improvements were made in the gyroscope. The torpedo expert sought a way to increase the speed and hence the range of the torpedo. The first step led to a longer torpedo so as to accommodate a larger air flask within which could be crowded more air at a higher pressure for the driving of the motive engines. Then it was discovered that increased propulsive value could be given a fixed quantity of compressed air by heating it, using for this purpose an alcohol flame, within the air flask, which was ignited mechanically by the instant the torpedo was started on its under water run.

This idea has been developed in various forms with remarkable results; and

not this internal, under water protection of heavy steel, and the torpedoes were able to rip great gaps through both the outer and the inner bottom so that the water rushed in and sent the vessels to their doom.

On April 13, 1901, a flotilla of Japanese destroyers, torpedo boats and mine layers in the dark of the early morning planted contact mines just outside of Port Arthur and in the path usually followed by the Russian fleet. Later on that day Admiral Togo entered the Russians out of the harbor by means of a weak decoy squadron which purposely kept at a safe distance. Admiral Makarov followed until he discovered the enemy's main fleet hull down on the horizon, when he decided to return to his base, not being then prepared to come to battle with his foe.

On his way back to the harbor Admiral Makarov's flagship, the Petropavlovsk, had a couple of mines planted by the Japanese in the early morning. The blow was so violent that the ship sank bow first inside of two minutes, only forty men out of a complement of 700 being saved. Admiral Makarov went down with his ship. The Petropavlovsk was sunk because the shock of the exploding mines was enough to detonate the powder in one of her magazines.

On the same day the battleship Pobieda was damaged by a mine, but was able to get into port even though leaking badly. In June 23 the Sebastopol struck a Japanese mine, but notwithstanding the huge

# They Burn It

## Tenderfeet in a Bungalow Get at the Reason for a Los Angeles Custom.

LOS ANGELES, Oct. 30.—"Do you notice anything peculiar about this place?" said Jimmy.

"We were sitting in Westlake Park, one of the prize exhibits of Los Angeles, metropolis of southern California. I looked around critically before answering.

"No," I was compelled reluctantly to answer. "As I'm 3,999 miles away from home I see many things that are strange to me but nothing that is peculiar."

"Well I do," Jimmy returned. "In our old park at home there'd be discarded papers about every other bench. And paper bags and lunch boxes would be painfully conspicuous. But here there's not a newspaper nor a scrap of paper nor a box to be seen, and people have been here since early this morning."

"Your mystery's easy of solution, Jimmy."

"I said loftily. "There's a law against leaving such rubbish in the park."

"Newspapers at five per are not exactly rubbish," Jimmy remarked meditatively. Then he continued: "Have you seen anything resembling an officer in the two hours we've been here? I haven't, so of course you haven't. Human nature is human nature. If such a law were posted on every blade of grass human nature

would leave its rubbish here unless there were an officer in sight."

"Now Jimmy!" I exclaimed, "California human nature may be different."

"Do not observe," Jimmy responded, "the large receptacle tucked away under your pergola? Not being near sighted you do, now that I have called your attention to it. It is marked 'For a clean park,' and is a bait for rubbish."

"Now I have been watching the people for the last hour. Seven folded their newspapers carefully and stowed them about their persons; others just as carefully collected their boxes and bags."

"All of them passed that can and only two persons threw anything into it, and what they threw in was orange peel. The others carried their stuff out of the park with them."

"Ah!" I exclaimed. "Undoubtedly the other side of the can says 'No paper.'"

Jimmy looked disappointed.

"That may be," he said. "We're going out that way and we'll look as we go."

We looked. There was no prohibitory legend on the yawning can. The mystery once again existed.

"We'll hunt up an official and ask him," Jimmy said jubilantly.

We did. And this is what we said to him both at once, because we were excited:

"Is it against the law to leave papers and boxes and bags in the park or to throw them into the can?"

"What?" said the official. "Well, I guess it ain't. You haven't been here long, have you? And you ain't keeping house, are you? I only wish there was a law compelling 'em to leave 'em here," he chuckled.

Then he shut up like a clam and suddenly heard duty call in another direction. Said Jimmy to me a few days later: "This paper business is giving me insomnia. Los Angeles as a city is not cheery about its cleanliness; it's all climate with it; but you hardly ever see paper rubbish even in the downtown districts."

"And the times that you see newspapers lying around here are so few that you can keep account of them. The maid that attends to this room is honest. She doesn't even take tips. But where papers are concerned she's a kleptomaniac. She moves them out almost faster than I move them in."

"Why this attitude toward paper and newspapers?" ever lingered upon the tips of our tongues; but somehow we never asked it, because we were strangers in a land where we were not looked upon as a land strange indeed, and we remembered the laugh of the park official.

Then one day we fell victims to the earnings for some of our taking. The woman carried in her arms a basket portable and the man bore with equal care a basket whose contents proved to be a meagre pile of newspapers. Jimmy

looked furtively at me and I looked furtively at Jimmy.

"Some day," I said reassuringly.

"The same" day came when I opened the door to our fourth caller. She was the widow of a poet, but it was not of poetry we talked.

"Where I came from," I said, "the garbage man called every day. But here he calls only twice a week."

"He does," she assented. "For this is the people's town and the garbage man is a haughty person."

"And the can and ashes man calls every other week," I continued.

"Terrible, but true," she replied. "And the can and ashes man is like unto the garbage man, proud of men and unapproachable unless the palm be crossed with silver."

"And what," I asked, "do you do with your paper and newspapers?" At home the Salvation Army man came and—

"Misericordia!" she exclaimed, yet through being the widow of a poet she was not excited. "Is it possible that you don't know?"

"Here only millionaires may burn wood. It is as costly as gold and of much more value. And the same is true of coal. Carbon briquets, a by-product of the gas company, are cheaper, but they are dirty and therefore not popular. And in Los Angeles one may get quite as cold as one cares to be and live, though this is contrary to the habituation existing in the East. The mornings and nights are cool, always."

"So in my room I have an airtight stove and in it I burn newspapers and newspapers only, because real poetry, my dear, never was a profitable business. And in my living room I have a grate and there too I burn papers. I roll 'em tight and twist the ends and, believe me, my dear, they make a lovely fire."

"All during the warm season when the

fuel demands are not so heavy we hoard our newspapers, paper bags and everything of the nature of paper. Why, my neighbor keeps by her an empty cereal box and puts into it scraps of paper so small that they might otherwise escape her. "A good idea, my dear, I'm going to adopt it."

"The unwritten law here is to the effect that if a some trusting friend lends you a newspaper it is to be returned. Now there's a man who lends me all his New York papers because he knows that otherwise I would never see 'em. But do I keep 'em? Never, my dear, never. It would be a breach of etiquette if not something more serious. In fact it would amount to the same thing as helping yourself from your neighbor's woodpile."

"Jimmy," I said that evening as we sat before the wood fire of our Eastern dreams and watched our bank account crisply burning, "I want you to stop the paper we're taking and take the other morning paper instead."

"What?" Jimmy exclaimed. "Why that's the paper we tried and didn't like."

"I know," I said sadly, "see didn't like it, but everybody takes it because it's the biggest newspaper in the world."

Puzzled but Grateful.

From the San Francisco Chronicle.

A very small man—not only small as to stature but lacking also in width of beam—sat in a pay as you enter car on the Hayes street line until he became tightly wedged in from both sides. Then there entered the car a large handsome woman, upholstered to the minute. She took the strap in front of the small man and was hanging to it in snugly assisted discomfort when the small man arose with a flourish of politeness and touched her on the arm.

"Take my seat, madam," he said with a bow and a smile.

"Oh, thank you very much," she replied, and turned toward the seat.

Then smiling genially again she asked: "Where did you get up from?"