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When getting off the car always face the way the car is going--Use care whenever you board a car or alight from it.

Omaha & Council Bluffs Street Railway Company

NEW METALS FOR MAN'S USE

Tungsten, that Was Once Cast Aside by the Miners.

COMES INTO ITS OWN AT LAST

Now It Helps to Light the World, Toughens Steel and Has Household Uses--Auto Owners Much to Tungsten.

DENVER, March 12.—Not so long ago such metals as tungsten, molybdenum, vanadium and uranium were so rare that the commercial world knew nothing about them, and as a rule only students were aware that they had been discovered. Few people ever saw boron, silicon, titanium and chromium except in museums.

Goethe's dying cry for "more light" has been echoed around the world until cities now blaze at night with the glory of the tungsten lamp, and this has been made possible by some of these rare metals. So, too, automobiles owe their present perfection in part to the once rare metals that temper and toughen steel. In other industries also these metals play an important part.

Until a comparatively short time ago these rare metals were left in the dump heap at the mines, being deemed not only valueless, but actually detrimental to the concentration of the ore which was considered of value. In Boulder county, Colorado, the miners used to throw away what they called black jack. Now that they know black jack to be wolframite, an ore of tungsten, they are carefully smelting the dump heaps, as tungsten forms a valuable branch of mining.

In Cornwall, England, the miners found tungsten ore, but called it mock lead because of its high specific gravity, and they, too, left it in the dump. Upon learning the value of the stuff they are working over the refuse heaps to recover the valuable tungsten.

In 1842 this ore was found in Lan's mine at Trumbull, Conn., and Eben Smith discovered it in 1876 in Colorado, but it is only within the decade that it has become of value commercially. In the summer of 1904 some prospectors working their way along through Okanogan county, Washington, with pick, shovel, drill and powder, staked a claim which abounded in a new ore that they believed to be filled with gold and silver. Much excited, they filled

their pockets and hastened to an assayer in Loomis to secure an analysis. When neither gold nor silver was found, they gave up their claim. But the assayer noticed unfamiliar crystals in the ore and proceeded to investigate and found it impregnated with tungsten acid. When this fact became known there was soon a new industry for the region.

Tungsten is now in demand for incandescent lamp filaments. In the form of sodium tungstate a fireproofing of value is produced. Tungsten brought joy to the heart of the housewife in that it fixes dyes so that wash goods will wash. Silk merchants rejoiced, for other tungsten salts added weight to silk.

Tungsten steel is extremely tough. Projects made from it have penetrated through fourteen inches of the best armor plate. Tungsten compass needles are the best on the market.

In the form of ferro-tungsten it has produced a high-speed tool steel that was never thought possible by mechanics. Even pianos have been benefited, as tungsten gives added strength and quality to the wires. Its high melting point gives it value in the manufacture of the highest grade crucibles.

Tungsten ores have been melted in electric furnaces, but the problem now is to produce it by direct pig iron blast furnace smelting. The American Smelting and Refining company has recently appropriated \$10,000 for experimental work on the treatment of tungsten ores.

Tungsten is now mined in Arizona, California, Nevada, Montana, Idaho and Colorado, which produces 90 per cent of the output. The tungsten belt in Colorado is three miles long and eight miles wide. The world's production of this ore in 1906 was 3,973 tons, in 1907 4,394 and in 1908 5,791 tons. The production in Colorado in 1907 was valued at \$500,000, and the market for tungsten has become almost as staple as that for copper, zinc or lead.

A possible rival to tungsten is molybdenum, a metal discovered in 1775, but as yet found in such scant quantities that the uncertainty of the supply makes it commercially second to tungsten. Alloyed with steel it has the same effects as tungsten, and there is the very great advantage that only half or a third as much is required. Its chief use is in the manufacture of chemical reagents. It is highly valued in the artistic world, for in the manufacture of pottery the salts impart a fine, rare, blue color. An important use is in rifle barrels, large cannon, propeller shafts, wires and high-speed tool steel.

Though Tantalum has been known for a century, it was not commercially useful until Moissan in 1903 brought it into the limelight through the electric furnace. It is found in the Black Hills of Dakota and its most important minerals are columbite and tantalite. A small quantity has been kept in this country for experimental work, but the yearly output, amounting to several tons, has been shipped to Germany.

The most important use to which tantalum is put is in the manufacture of filaments for incandescent lamps. They were put on the market in Germany in 1905 and in the United States in 1906. The tantalum lamp scores on these three points—high efficiency, ability to withstand high currents and whiteness of light.

Tantalum pens give promise of being the pen of the future, as they are not only hard and elastic, but resist chemical action. Steel pens are both hard and elastic, but do not resist chemical action. Gold pens resist chemical action, but are soft and pliable.

Vanadium in small quantities is distributed in sandstones, limestones and igneous rocks. Its greatest value, when alloyed with iron as ferrovanadium, is in the making of steel. The addition of from one-tenth to one half of 1 per cent of ferrovanadium enormously increases the strength, toughness and elastic limit of the resulting steel products.

The automobile business has greatly increased the market for vanadium. The spurs used in Sir Thomas Lipton's racing yacht Shamrock III were of vanadium steel and so were those on Emperor William's yacht Meteor.

In the form of vanadic acid vanadium is used as a mordant in dyeing; in medicine it is used as a vanadin it has a use; waterproof black ink is made from vanadates and tannin acid. It is also used in developing photographs in stained glass and in a beautiful imitation of gold bronze.

Uranium, in many respects the most interesting of all the rare metals, was recognized as an element in 1782 by the chemist Klaproth, who named it after the planet Uranus. The chief ore of uranium is uranite, commonly called pitchblende, and from pitchblende comes radium.

Uranium is found in Joachimsthal, Bohemia; in Saxony, Germany; in Cornwall, England; and in Glinn county, Colorado, where it is said to have been discovered by Dr. Garrett in 1878. Its uses are not many. Two of its oxides produce pure black glass for porcelain and some of its salts are used in photography. It is a steel hardener, but is in no way superior to the manufacture of incandescent gas mantles its presence is said to improve the properties of thorium, cerium and silicon salts, applied for the same purpose. The entire world's production at the present time only amounts to about 300 tons of ore yielding from 3 to 12 per cent of the metal.

Though rich lodes of pitchblende are in Colorado the ore has been shipped almost entirely to Germany for treatment. The chemical products have been imported. Thomas F. Walsh has endowed the School of Mines at Golden, Colo., with a research fund for the special purpose of promoting interest among the mine operators and prospectors in the search for pitchblende. The fund pays the assayer's bill. As a result of this generosity Colorado is being carefully prospected for pitchblende.

Free Asthma Cure.

D. J. Lane, a chemist at 313 Lane building, St. Marys, Kan., manufactures a remedy for asthma in which he has so much confidence that he sends a \$1 bottle by express to anyone who will write for it. His offer is that he is to be paid for it if it cures and the one taking the treatment is to be the judge.

"FRENCH ARE POOR LOSERS"

This Assertion by Orville Wright Causes Turmoil in Paris.

FRENCH TRY TO RETALIATE

May Refuse to Send Airships to America to Compete in the International Events This Year.

PARIS, March 19.—(Special to the Publishers Press.)—The French aeronauts are figuratively "up in the air" by reason of the decision of the American courts in favor of the Wrights in the litigation over the aeroplane patents and the statement by Orville Wright that the French are poor losers. The things which have been said about Mr. Wright have been hot enough to float a dirigible.

Whether or not the court proceedings will prevent the entry of French machines in the international cup races to be held this year in America is a question not yet decided. It is feared, however, that it will keep some of the French aviators out who otherwise would have been contestants. M. Esnault-Potier, president of the Association des Industries de Locomotion Aérienne, said in regard to the matter: "I have no hesitation in declaring, with my French colleagues, that the recent judgment given by Judge Hand is iniquitous. Such a decision would have been impossible in a European court of justice. Evidently only the American point of view is considered, and it is not the first time that we have had to register an example of pure selfishness from Americans. We Frenchmen still remember the Seldon affair."

French Will Retaliate.

Frenchmen have contributed more than any other people to the progress and perfection of aviation, and it is unthinkable that the machines evolved out of their brains should be condemned and barred at the bidding of the two Wrights. I intend to bring the matter before the Association des Industries de Locomotion Aérienne, with a view of taking action to protect French aviators and, if necessary, to organize reprisals in view of the hostility to Wright aeroplanes in America. I do not know yet what form such measures will take, but where there's a will there's a way, and you may be sure that in this case the will exists.

"In any case, I question whether French aviators will avail themselves of the Wright brothers' kind authorization to compete with them this year on American soil. It is still present in the memory of French aeronauts that, in spite of a similar affirmation that they would receive good treatment on the occasion of the great St. Louis race, M. Santos-Dumont's balloon was slit open and lacerated with a knife and the culprit was never brought to justice. It would teach the Americans a lesson. If European aviators abstained 'en bloc' from all participation in the contest for the Coupe Internationale if held in America."

"For myself, after the experience of the Wrights' action and of other disagreeable indications of the feeling in America towards foreign sportsmen, I should not think of taking part in any contest there or of sending my machines across the Atlantic for such a purpose."

Other leading aviators express similar views. Americans in Paris. Among the Americans in Paris this week have been Miss Eva Arthur, Edgar K. Bennett and George F. Pittsburg.

Mrs. A. H. Boyd and Mrs. John O. Watson of Minneapolis; Mr. and Mrs. E. Clarence Holmes, Nat and Minnie Boas of San Francisco, L. Lehman of Oxnard, Cal.; A. Lehman of Lampere, Cal., and Miss Eleanor Shotter of Savannah, Ga.

New French Dreadnoughts.

The six new battleships, plans for which have been accepted, will be among the most powerful afloat. They will have a displacement of 23,457 tons and will be armed with twelve 36-millimeter guns and twenty-two 138.6-millimeter guns. Their speed is to be between twenty and twenty-one knots, with a steaming capacity of 2,900 miles at twenty knots and 28,000-horsepower. The heavy guns, which are of the 1904 fifty-caliber type, firing a 440-kilogram mellite shell, will be disposed in pairs in six turrets. The arrangement of the turrets—four along the center line of the ship and one on each side amidships—will permit ten guns to be fired broadside and eight ahead or astern. The four turrets are to be about eight feet higher than the aft turrets, and the highest placed gun will be nearly thirty-eight feet, while the lowest will be over twenty-one feet above the water line. The radius of fire of the guns in the center turrets will be 270 degrees and in the side turrets 180 degrees. The secondary armament will be arranged in eight independent batteries, each with a radius of fire of 130 degrees. The armor will consist of an armored belt 20 millimeters thick amidships and 180 millimeters thick at the two ends. The armored decks will be seventy and forty-eight millimeters thick. The battleships will cost \$2,600,000 each.

Plea for Tourists.

The matins is worried over the aftermath of the flood. In a recent editorial it says: "Foreigners, believing that Paris has become, owing to the recent flood, a city of ruins and desolation, have ceased to visit us. Our theaters, hotels and restaurants are empty. Our pessimism has exaggerated. It is time we informed the foreigners that Paris is still Paris."

Pays to Be Honest.

General Picquart has found that standing for principle sometimes at least brings its reward in this world. The man who braved ruin for Dreyfus has just been appointed commander of the second army corps at Amiens, one of the most coveted posts in the French army. General Picquart's role in the Dreyfus case will be remembered. This was followed by his disgrace, then his reintegration in the army. Next he was chosen by M. Clemenceau as his war minister, and now he is further rewarded by being given one of the most coveted appointments in the French active army.

Her Plan Poor.

A peasant woman named Redon at Lavallée, France, who concealed £5 in a loaf of bread to prevent the money being stolen while she was at market, had the loaf snatched from her by a dog, which ate it.

Wild Beasts Raid Farms.

Owing to the persistence of the heavy snowfall a number of wolves and wild boars have left the woods in the vicinity of Clermont-Ferrand and are roaming around the villages terrorizing the inhabitants. No fewer than fifteen wild boars were killed in the canton of Pontgibaud alone recently. In one instance the famished wolves penetrated into a farmyard and devoured the watch dog.

Honor for Police Chief.

Parliaments derive great satisfaction from the fact that the Academy of Moral and Political Sciences has awarded M. Lepine, the prefect of police, its grand prix, valued at £600, in recognition of his splendid work during the days of the great flood, "honoring in him all those who, placed under his orders, have co-operated with the same devotion in the relief work which he has so splendidly directed."

FRATILE OF THE YOUNGSTERS.

Small Lois was watching her mother working among the flowers. "Mamma," she said, "I know why flowers grow; they want to get out of the dirt."

Small Harold was unable to fathom the mystery of death and asked his mother about it. After she had tried to explain it, he said: "Oh, now I know. When a man dies it's for all the rest of his life."

"What do you mean?" "Look here, the grass is all covered with perspiration."

Stern Parent—See here, young man, if you go skating again without my permission you'll catch it.

Little Johnny—Why, papa, is skating contagious?

Minister—So you are going to school now, are you, Bobby?

Bobby (aged 6)—Yes, sir. Minister—Spell kitten for me. Bobby—Oh, I'm further advanced than that. Try men on cat.

Three of a Kind.

The other night Dr. Edward Goodrich Acheson was given the Perkins medal by the Chemists' club. The Perkins medal is an article of esoteric significance bestowed upon a chemist who has largely distinguished himself during the last year. While the ceremonies were in progress a late comer entered the club room. Dr. Acheson was standing on the platform, with two other scientists at his side. "Who," said the late comer, "is the party making a chest up there?" "The stranger whom he addressed said, in a tone designed to put the late comer in his place: 'That is Dr. Acheson.' 'Ah,' said the unabashed person, 'and that's Topeka and Santa Fe with him, I reckon.'—Cincinnati Times-Star.

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