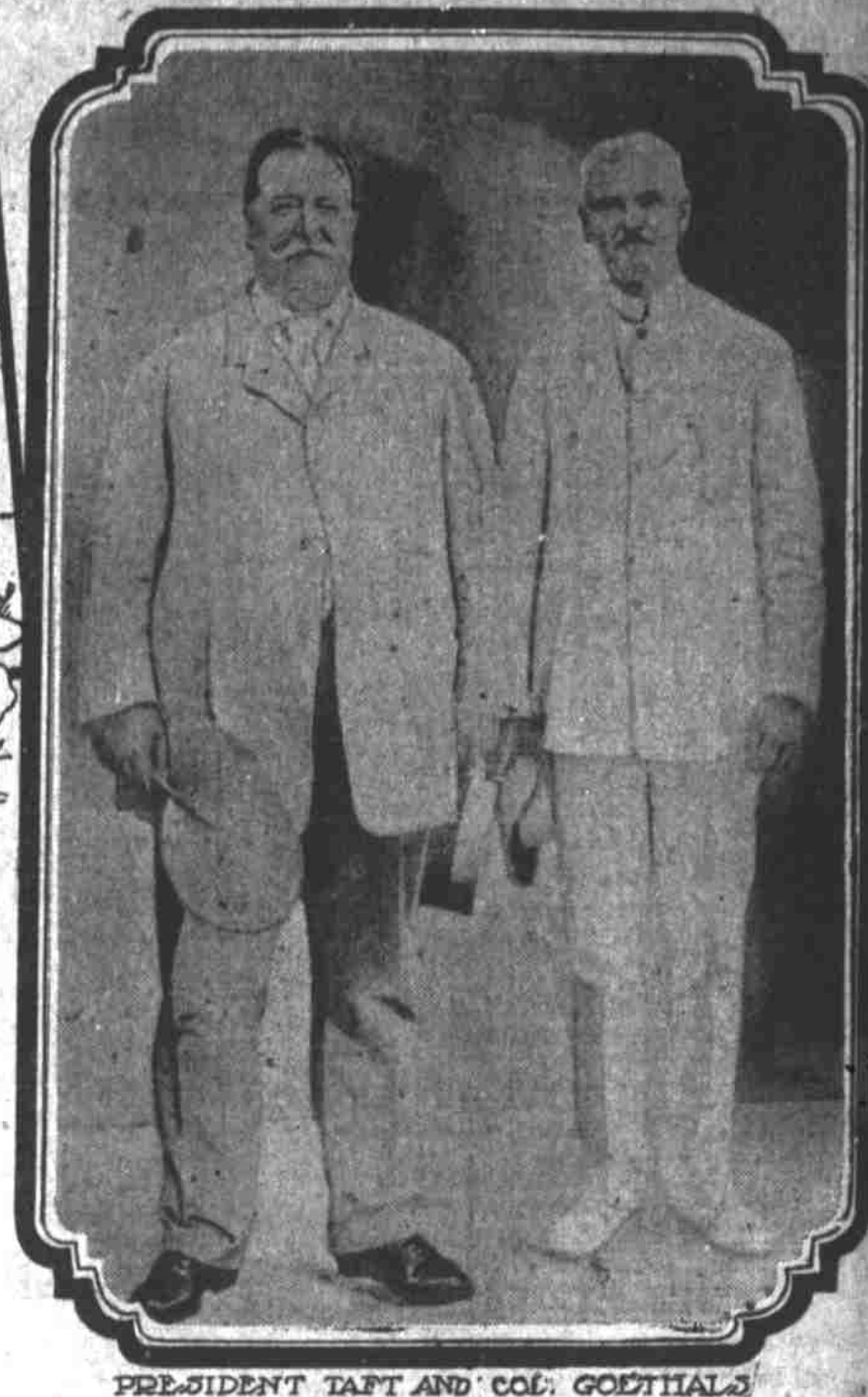
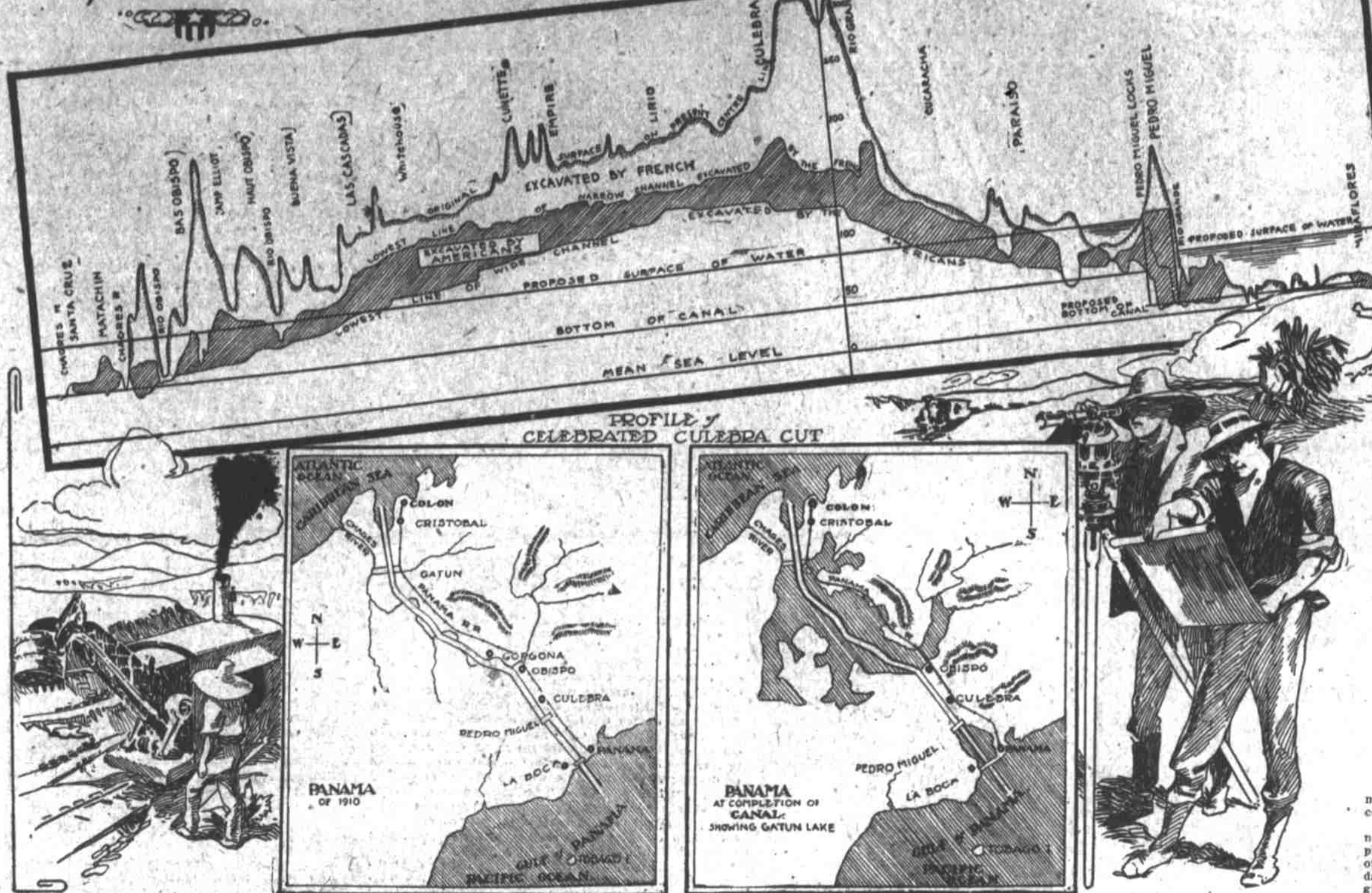


A GLIMPSE OF THE PANAMA PROJECT

Colossal Problem of Four Centuries



PRESIDENT TAFT AND COL. GOETHALS IN CANAL ZONE.

Facts About the Canal.
January 1, 1915, is the date set for the completion of the canal. The canal is to be 43 miles long, running northeast and southwest. The Atlantic terminus is at Colon and the Pacific terminus at Panama Bay. There is a tide of two feet at the Atlantic end and of over 20 feet at the Pacific. The artificial lake to be created will cover more than 160 square miles, with a channel depth of from 41 to 55 feet. The sites of the present villages on the canal basin will be flooded. The great Gatun locks are of triple construction, each lock having a rise of 25-1-2 feet, 85 feet for the three. Twenty-two million cubic yards of rock and dirt are required in the construction of the Gatun dam. Six men with modern equipment can do as much work in a day as 3000 men could do in a week under the old methods. There are over 15,000 men employed in the central division alone.

laments incorporated "The Company of Scotland, trading to Africa and the Indies," which contemplated the construction of a Central American canal. Germany took up the agitation in the seventeenth century when Alex. von Humboldt, a German scientist, mapped out six possible canal routes. In commenting upon them in 1827 Goethe wrote: "If they succeed in cutting such a canal, that ships of any burden and size can be navigated through from the Mexican gulf to the Pacific ocean, innumerable benefits will result to the whole human race, civilized and uncivilized." But I should wonder if the United States were to let an opportunity escape of getting such a work in their own hands. It may be seen that this young state with its decided predilections for the west, will in 30 or 40 years have occupied and peopled the large tract of land beyond the Rocky mountains.

United States in 1802 for \$40,000,000 by the terms of the Spooner act. By the Clayton-Bulwer treaty of 1850 the United States and England had mutually agreed that neither nation should exclusively control any canal across the isthmus, but the Hay-Pauncefote treaty of 1901 smoothed away the difficulties and Great Britain agreed to recognize the right of the United States to control, police and fortify any canal that might be built. The Republic of Colombia, however, still stood in the way of the United States because Panama was one of its states. But Panama seceded from Colombia and established its independence which was recognized by the United States. The Hay-Varela treaty of 1904 was framed. Thus at last with the American government in control of the canal zone the way was cleared for active work. The same year President Roosevelt, who maintained such an interest in the progress of the canal project, appointed the seven members of the first Panama canal commission. Then came two years of discussion concerning the relative merits of canal routes, the lock and sea level types. The lock type prevailed and in June, 1906, congress authorized the construction of a waterway of this order. So many elements enter into the project that it is difficult to exactly determine the efforts of the various estimates have been prepared, each suc-

ceeding one being larger than the one preceding. Until now the total cost is placed at \$350,000,000. The dominant feature of the canal as it will be built is the creation of a great artificial lake that will cover more than 160 square miles and will be navigable for half the width of the isthmus. The construction of a great earth dam that will close the mile gap through which the Chagres river runs will make Gatun lake possible. Of such magnitude is the project that an adequate account of the work that has been done is impossible within the confines of a single article, yet the glimpses of the work afforded on a single division are sufficient to suggest how the work proceeds.

One of the principal parts of the work is the breaking of the rock in order that it can be removed by the steam shovels. This involves the dangerous processes of drilling and blasting. Soft rock is drilled by well drills that bore four inch holes as deep as 100 feet at a time. Tripod drills, however, are used on the hard rock formations. Once the rock is drilled, the powder gang puts in the charge. Chambers are made at desired places in the rock in which dynamite charges are placed and exploded by electricity. The breaking of 50,000 yards of rock at a single charge is not unusual. Seventy-five thousand cubic yards were displaced in the tragic premature explosion at Bas Obispo which cost the lives of 30 men. A trip through the big ditch in the neighborhood of Culebra is indeed impressive. Here one sees line after line of track in operation all through the day. The huge steam shovels emit giant smokes as they tug away at the rock ribbed banks, while thousands of men are toiling away on all sides as ants in a hill. The shrill whistles of the locomotives, the crunching of wheels over the rails, the pounding of rock drills all help to constitute the babel that greets the ears. And one marvels at the determined industry of it all. Every atom of energy is utilized, every man in every department is working to the same end, and the significance of this is realized when it is recalled that there are 15,000 men employed on the Central division alone. There are 6000 engineers, construction foremen and of five men employed on the work. Most of the laborers are West Indian negroes who are paid 10 cents per hour.

A higher class of laborers, including Spaniards, Italians and Greeks are employed on track work and receive 15 cents to 20 cents per hour. The laborers are divided into groups of from 20 to 60 men each, in charge of American foremen. The laborers who operate the drills and the members of the powder gang receive as high as 25 cents per hour. There is marked division of labor maintained throughout that makes for the systematic conduct of the work. And while the personnel of the engineers and foremen in charge is repeatedly changing, due to climatic conditions, the work proceeds just the same, and within a short period the time will arrive when the great waterway will assume definite shape. All will be in readiness, the water will be admitted and great ships will be locked across the isthmus from ocean to ocean. Then will the dream of the sixteenth century become the achievement of the twentieth.

Historical Events Coincident With the Reappearances of Halley's Comet
B. C.
2618—Death of Methuselah. (Tradition).
2349—The Deluge. (Tradition).
1900—Destruction of Sodom and Gomorrah. (Tradition).
884—War between Greece and Persia. Battles of Cnidus and Coronea.
317—Empire of Alexander the Great being torn to pieces by his successors.
240—War between Rome and Carthage—Carthage almost destroyed by revolt of her mercenaries.
163—Antiochus Epiphanes ravages Asia Minor.
87—Civil war in Rome between Marius and Sulla. Rome besieged by four armies.
9—Hermann (Arminius) defeats the Romans under Varus in the great battle of Teutoburg.
A. D.
70—Sack of Jerusalem by Titus.
147—Greece conquered by Rome.
218—Death of Emperor Macrinus and accession of Elagabalus.
290—Persecution of Christians under Diocletian.
347—Great rebellion of Africa begins the breakup of the Roman empire.
451—Attila's defeat by Aetius at Châlons. The last great battle that Rome ever won.
530—Belisarius reconquering Rome—Death of King Athur.
607—Mahomet, the prophet, has visions and prepares to establish Mahometanism.
684—Saracens conquering North Africa.
780—Charlemagne about to become king.
837—Danish ravaging England—Saracens conquering Sicily.
918—Normans conquering northern France.
989—War between the Roman emperor and the Saracens in Germany and Italy.
1066—Norman conquest of England—Egypt taken by the Turks. Alp Arslan conquering Armenia and Georgia.
1142—War between the Guelphs and Ghibellines begins—Civil war in England—Darkest period of English history—France under a papal interdict—Crusades lead the chivalry of Europe to reconquer Jerusalem from the Saracens.
1222—Wars of Guelphs and Ghibellines ravage Europe—Ghengis Kahn conquering Asia.
1299—Foundation of the Ottoman empire.
1377—Return of the popes from Avignon to Rome—Venice and Genoa at war.
1456—Comet exercised by Pope Calixtus III.—Wars of the Poles in England—Belgrade saved from the Turks by Hunyadi—Civil war in Austria.
1531—Turks advance in Europe—Persecution of Protestants at its height—Pizarro conquering Peru.
1607—Holland defeating Spain in war for independence—Moors driven from Spain—People believe end of the world is coming.
1682—Munmouth's rebellion in England—Aurangzeb conquering India—Halley discovers comet is periodic.
1793—Civilians conquering India for England—Capture of Quebec by Wolfe—War between England and France.
1835—Reform Bill passes in England—Fitt at the height of his fame—Carlist rebellion in Spain—Florida Indian war.
1910 ? ? ?

Seeing By Wire

PARIS, Feb. 8.—The day is very near when one can sit comfortably in one's own room and not only listen to the voice of a friend miles away, but see him as distinctly as though the friend were sitting in a chair beside him, and when from his palace a monarch or president can inaugurate some public exposition thousands of miles distant, being both seen and heard by the assembled people.



M. FOURNIER

Coinventor with M. Rignoux of the Television apparatus.

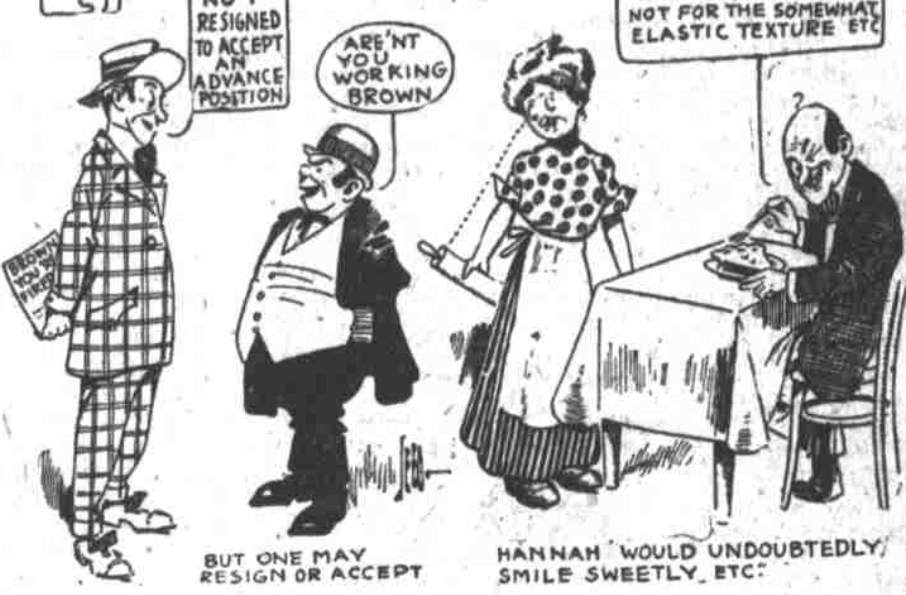
The very interesting experiments in "television" that have just been made at La Rochelle by a young French scientist, M. Georges Rignoux, aided in his work by the advice of M. Fournier, director of the Municipal laboratory of that city, give strong hope that these dreams will soon be realized. Some weeks ago the famous German electrician, Ruhmer, successfully carried through for the first time an experiment in "television," or seeing at a distance. Similar researches had been made for a long time in France, but these trials had always been surrounded by a mysterious silence. The French inventors were awaiting the moment when their apparatus would be perfected before giving to the world their discovery. Professor Ruhmer's publication of his experiments obliged them to break their silence, and the first trials of these two French scientists have been much more conclusive than those made by the German.

Under the ancient porticoes in the historic old street, M. Rignoux, at the head of a dark and narrow court yard, Rignoux and Fournier have installed their laboratories. The first room as one enters contains the transmitting apparatus. A couple of rooms beyond is a darkened chamber, the tomb-like blackness being increased by the aid of great rolls of black paper which cover the whole wall. Here one finds the receiver. "It seems very rudimentary, and yet it has been working on it for more than two years," said M. Rignoux. "We have called our apparatus 'teletopie.' As the telephone transmits by wire variations of sound, the 'teletopie' transmits the luminous scales, variations of shadows and lights. The transmitting apparatus is very simple. A concave mirror projects a beam from a Nernst lamp of 2000 candle power on the object of which one wishes to transmit the image. Each point of the object thus lighted is projected by a lens on a surface formed of 64 cells of selenium. "As you see, we use 64 cells, while as well," said M. Fournier,

This cut as made by the French was very narrow and the Americans have had to widen it, which has proved to be a dangerous and expensive undertaking, but this has been accomplished and the cut is now being worked downward in steps of 10 feet at a time. This work is done by 95 ton steam shovels, the highest type of machine known in construction work. Each of these shovels has a capacity of five cubic yards and can easily dig 15 cubic yards a minute if the rock is well blasted. There are over 30 of these great steam shovels employed on the central division alone, and they supply 18 car trains of a capacity of 20 cubic yards per car which trains make two and three daily trips each to the dumps that are situated from four to ten miles distant. The difficulties presented by the great Cucaracha slide is evident from the fact that there are two million cubic yards of dirt, boulders and even solid ledges of rock in continuous motion toward the cut. The preparatory work to cope with this slide required two years' time, and it is even now necessary to keep three large steam shovels at work at the foot of the slide digging away the earth as it moves down. Other slides have proved disastrous. From November 15 to December 15, 1909 there was 42 inches of rainfall that caused a single landslide of 110,000 cubic yards near the town of Cucaracha which blocked the tracks and hindered the actual construction work. In spite of these and other obstacles, however, the dirt files just the same, due to the splendid organization that is under the control of Chief Engineer George W. Goethals.

Comets of Long Ago
They were watching for a comet in Pepsy's days. Halley at the time was only 8 years old. "My Lord Sandwich this day," says the diarist, December 21, 1684, "writes me word that he hath seen at Portsmouth the comet, and says it is the most extraordinary thing he ever saw up all night till past 2 o'clock this morning, our porter being appointed, comes and tells us that the bellman tells him that the star is upon Tower hill, so I, that had been all night setting in order of my old papers in my chamber, did now leave off all, and my boy and I went to the Tower hill, it being a most fine, bright moonshine night and a great frost, but no comet to be seen." Later the same day, however, Pepsy "saw the comet, which now, whether worn away or no, I know not, appears not with a tail, but only is larger and duller than any other star."

More Euphemism.



EUPHEMISM is a great thing. It is the constant servant of the educated; prime aspiration of the ignorant; last hope of the disconsolate; the refuge of the weak; chief mediator in dispute; the basic principle of diplomacy and first aid to bluffers. Half the people of Portland would absolutely perish without it. Old Noah Webster will tell you that euphemism is the use of an expression couched in mild, delicate and indirect terms in place of plainer and more accurate phrases, and Noah is right as far as he goes. To be absolutely truthful, approach so closely to that large black crime called falsehood that chemical analysis couldn't discover a difference. For instance: Joseph Brown just out of college with degree of A. B. C. D. E. etc., aspires to the job of soda mixer and after a week the druggist rises in his wrath and— "Does he fire Joe?" "Oh, mercy, no. Ask Joe himself and you will learn that "finding the situation undesirable, he resigned to accept an advanced position" as delivery boy in meat market. Oh, the sins of "resignation" and "acceptance." In modern parlance it is impossible to "expel," "dismiss," "lie-the-can-to," "throw out," "drop," or even "remove" an employee. It is equally impossible for anyone to "hunt a job," "look for work," "plead to be reinstated," or "be accepted on trial." But one may "resign," or "accept" and someone does it, 999 times a day. Then there are other little matters. One does not "get a bowl of soup at the serve self." One "partakes of a hurried luncheon." Bill Simpkins has "his residence remodeled" instead of "building a lean-to kitchen." Your diplomatic senator does not impress on "hunt a job," "look for work," "plead to be reinstated," or "be accepted on trial." But one may "resign," or "accept" and someone does it, 999 times a day.

In agony and nervous perspiration, James dashed for the front door, grabbed it open and streaked it down the street in his pajamas yelling "fire." The burglar completed his raid and departed, bearing the family valuables. And yet, in the neighborhood today, you may learn how James, on realizing that a man was in his rooms, deliberately stalked to the door, almost frightening the marauder to death, and holding his man at bay, backed down the steps to summon officers. Only cunning, born of desperation, enabled the burglar to elude his grasp. Miss Oldgirl announces her engagement to Sir Wilfrid Jolliboy, but after the second week Willy elopes with an actress and disposes of his borrowed diamonds, for which he is promptly arrested. Miss Oldgirl therefore feels it her duty to announce that the elopement took place the night she refused him for the thirty-second time. Would you or anybody else step up to Honorable Jack Johnson, pugilist, and remark: "You great big African, you are going to get your face beaten in?" Would you? Not for \$50,000 and a running start, you wouldn't. But possibly you would say: "Mr. Johnson, in my humble opinion, you distinguished adversary, Mr. Jeffries, has at the present moment, an infinitesimal advantage over your esteemed self, and while I would in no wise cast aspersions on the recognized champion of the world, nor intimate a doubt as to his corporeal perfection, it seems reasonable to suppose that the approaching struggle will be one of colossal dimensions."

See the difference? All done in nine letters. Euphemism. A lot of trouble in this world comes from the fact that euphemistic talents are allowed to lie undeveloped. Suppose you say to your wife: "Hannah, would you mind making a decent plait?" This crust is like a piece of unloved prairie sod. Well, Hannah will probably shed scalding tears all the way home to mother. But if you remarked usually: "Hannah, if it were not for the somewhat elastic texture of your charming dessert it would be an unqualified and unmistakable success." Hannah would undoubtedly smile sweetly and maybe never discover what you really mean.