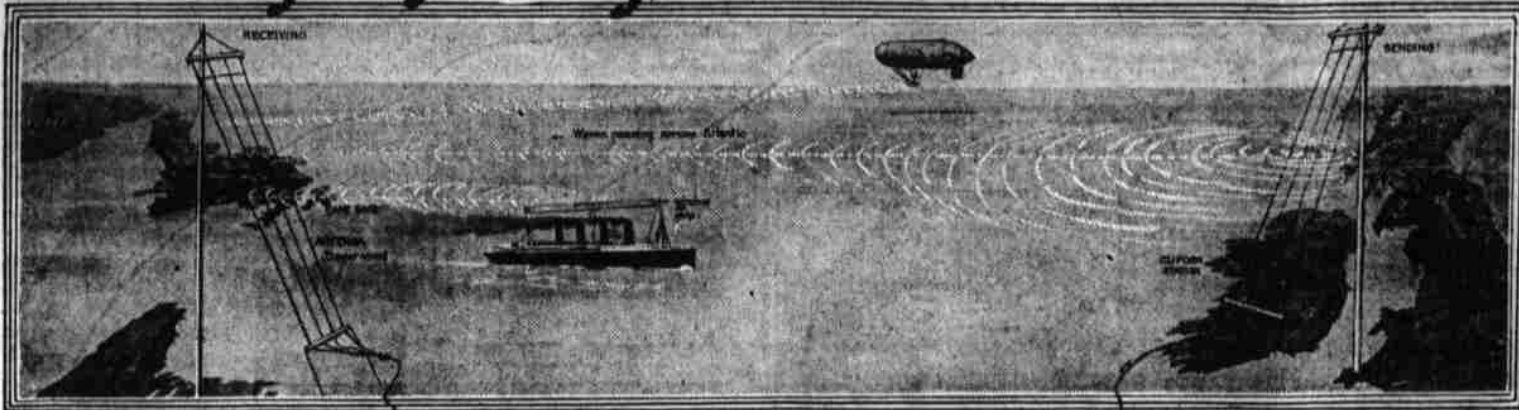


# Scope of Wireless Telegraphy Spreads Fast



**Y**EARS ago a fanciful writer took his readers on an expedition to the north pole. The explorer had been preceded to the region of perpetual ice by a party that had perished there. The hero of the story learned this one day when a torch that he was holding thawed part of a large shaft of ice and there came from the voices of the men who had perished there years before.

Today the fancy of the novelist has become a fact of science. The air is filled with messages that may be heard by any one who has the simple means that are requisite. The man who stands in the noisy crowd of the city and the lonely sheep herder on a fenceless Australian prairie are alike surrounded by them, and it is possible for each to be made conscious of their presence.

This is the accomplishment of wireless. The system of communication without the use of wires to carry the electrical impulses has grown so intimately into the world's business that it takes something out of the ordinary to bring a realization of what is being done and what the outlook is. Wireless was more than ten years old when the ships Republic and Florida collided on January 23, 1909, and the jumping spark under the command of the wireless operator instantly made known that disaster to the world. The Republic, alone in the fog and dark, might have gone to the bottom without news of the disaster being known for days. It was two days after La Bourgnone sank before the story of the catastrophe became known. But a wireless operator, Jack Binns, flashed the news from the Republic to land and drew out of the dark half a dozen rescuing ships.

The story of Jack Binns, the first wireless hero of international fame, spread abroad, and the position of the new method of communication was assured. Wireless had been put to its first great test and passed through it successfully. Another wireless call flashed out in the darkness some weeks ago and sent a thrill around the world. This was the message from the crippled, sinking Titanic. It saved the lives of more than 700 human beings. Harold S. Bride, assistant Marconi operator aboard the Titanic, and Harold T. Cottam, operator on the Carpathia—the one who was instrumental in sending the message and the other whose ship brought aid—have become heroes. Before the investigating committee of the senate the young operators have told their part in the rescue of the passengers.

Cottam on the Carpathia explained that he was on duty Sunday night and came off a couple of days later. He sat at his post all Sunday night, all day Monday and Monday night and during the day Tuesday. He caught a few hours of sleep on Tuesday or Wednesday night. Young Bride gave his testimony sitting in an invalid's chair, for one of his feet had been frozen.

Their action under the circumstances was one of the things that Cardinal Farley referred to when he said that one of the lessons which can be drawn from the disaster was the assurance it gave that men could be depended upon to play the part of heroes in any emergency.

The movement to increase the scope of wireless service, which had already commenced before the Titanic disaster, has received a new impetus and the dawn of the new era, which has been predicted long before the loss of the Titanic, has been appreciably hastened, experts say.

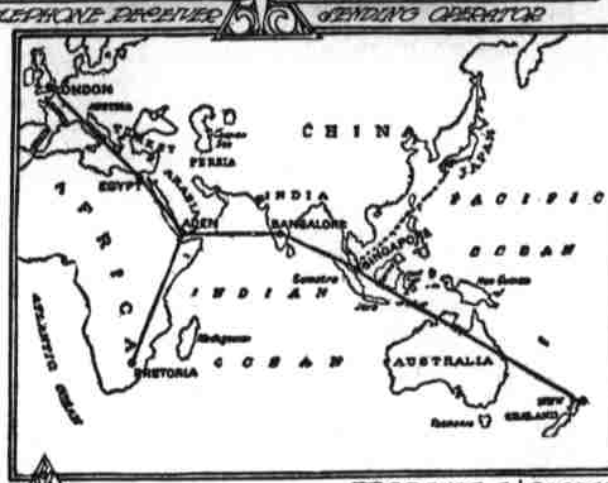
In England the government has entered into a contract which will result in a system for connecting every part of the British empire. Arrangements are already in progress and in due course a system will be started, it was said in parliament, which will extend from England to Cyprus, from Cyprus to Aden, from Aden to Ceylon, from Ceylon to the Straits Settlements, from the Straits Settlements to western Australia and from western Australia to New Zealand, forming a series of six stations, the British dominions on the other side of the world. Official Marconi publications say that the agreement will be followed by others of a similar nature with other countries.

An interesting part of the extension of the wireless is an arrangement with the Marconi company which will afford a trans-Pacific wireless service for an American land telegraph company. This company has entered into a traffic arrangement with the Marconi company whereby it will receive and deliver Marconigrams to and from Europe. The agreement provides for the extension of the Marconi system from the Pacific coast of the United States to Hawaii, China, Japan and the Philippines, thus giving wireless trans-Pacific service.

This agreement virtually gives the American company a large share of the wireless business. The English Marconi company is understood to be planning a long distance wireless apparatus for direct communication between New York and London, and it is said that a station near New York would permit messages to be sent to Cuba, Panama and South American countries.

The Arlington station will have three steel towers arranged in the form of a triangle. The aerial wires are to be strung from the taller tower to the other two on either side of it. The installation for transmitting wireless at this station will be duplicated at the others.

In picking out locations for these new stations many points have had to be considered. In most cases some sort of wireless equipment is already in operation at these stations and the advisability



of erecting the larger plants has depended to a great measure on the success of those already working. This is evidenced by the Arlington station, which is across the Potomac from Washington and near the military reservation of Fort Myer.

From Arlington the north Atlantic ocean can be covered and the naval base at Guantanamo, Cuba, is within its radius, as is also San Francisco. This, it is pointed out, brings the canal zone into direct communication with Washington. The Pacific coast will be dominated by the station at San Francisco.

At the Brooklyn navy yard the sailors who are to take places in the wireless room of the battleships receive a training in their work. For this branch of the service a building 300 feet long, 50 feet wide and two stories high has been set apart. The course in wireless proper takes seven weeks. The first week is given over to the study of the theory of wireless communication and the next week sees the pupil at a sending key studying and practicing the continental code. Messages are sent by an automatic transmitter.

During the seven weeks of the wireless training the pupil receives instruction in making diagrams of transmitting sets and aerials and tries his hand at repairing and overhauling the various sets in use. At the end of the seventh week if he is able to send and receive fifteen words a minute he is stationed at a receiving booth, where he can have actual experience. Two weeks are allowed for review before the final examination.

Before actual wireless work is taken up by the students each one goes through a short course in the ground work of electrical equipment. He starts at the blacksmith shop, where he learns to build a fire properly. Then he is taught forging, welding and tempering iron and steel, and instructed in the use of soldering iron. In the machine shop he practices on the lathe, shaper, drill press, milling machine, emery wheel and bench.

Engine work follows, for the naval electrician is expected to be competent to repair any part of the ship's electrical equipment. Simple, compound, turbine, oil and gasoline engines are taken apart and assembled, lined up and repaired. Valves, condensers, air and circulating pumps are mastered. There is also three weeks instruction in the work of interior communication and lighting of a ship which teaches the student how to install and inspect the entire electrical equipment of a battleship. The authorities of the navy yard believe that the student is not ready to take up the actual study of wireless communication until he has first mastered the details of the machinery that makes the electrical spark possible.

While everybody knows that wireless messages are being sent, it is not generally understood how this is done.

"To strip wireless of its technicalities and boil it down to the primal constituents is not hard," said an expert who has made a study of the theory and knows the practice. "It is simply transference through space of waves of electromagnetic energy."

"When a wireless operator presses a key, a spark jumps between two pieces of metal. These two pieces of metal are connected with long wires, called antennae, that are strung on poles called aerials. The energy from this spark is spread on these wires and diffused in waves."

"These waves have definite length, which can be determined partly through the power of the sending station. The station that is receiving these is able to put itself in tune to receive wave lengths of the nature sent out by the sending station and exclude others."

Wireless relies on electromagnetic waves as the source of its communication. These waves are sometimes called Hertzian waves and were made use of for the first time in 1850 by Prof. Amos Dolbear of Tufts college. He applied for a patent on a wireless system that had every essential of the plan followed today. He got his patent in 1856, which was two years before Dr. Hertz's discoveries.

What these investigators found was that when an electric spark jumped between two poles there were started, in what the scientists call the ether, magnetic force lines. These force lines detached themselves and traveled on through space at a tremendous rate of speed. This speed has been reckoned at 186,000 miles a second. It was also learned that these force lines went through space in wave lengths that could be measured.

Doctor Hertz found that the presence of these waves could be detected across a room by means of a loop of copper wire. This was called the Hertz loop. The ends of this loop were slightly parted, and it was found that the electric spark on one side of the room caused a small spark to pass between the ends of the Hertz loop. Sir Oliver Lodge and William Marconi used the same spark gap and connected one side of it to a copper plate buried in the earth and the opposite side to wires strung in the air. When the apparatus was constructed in this way the electric spark caused oscillations on the aerial wires and created a wave that could be detected at a considerable distance.

The modern wireless station has appliances to regulate the length of the waves that carry the messages. To prevent interference each ship installation operates on a different wave length and the receiving instruments either on the ships or the land stations are able to cut in or tune in on those lengths. The tuner enables an operator to change the wave lengths on the receiving wires, and so get in touch with the office that is calling.

At the senate inquiry the operators from the Carpathia and the Titanic were repeatedly asked what S O S and C Q D meant. The effect of these messages was very clear to the operators, but they were not entirely sure what the letters themselves meant. Inquiries at the Marconi offices brought the information that the letters have no significance in themselves and are simply agreed code signs.

The call C Q D is made by the symbols for the letters. C is dash, dot, dash, dot; Q is dash, dash, dot, dash; D is dash, dot, dot. The written danger call of the deep would look like this: - . . .

The S O S call is made up of S: dot, dot, dot; O: dash, dash, dash; S: dot, dot, dot and looks like this: . . . - . . .

The C Q D sign is a Marconi symbol. C Q is an agreed call for the attention of all stations. Frequently messages of importance are prefaced by these letters. D means danger. It was further stated that S O S was adopted by the Berlin convention in 1902. Every wireless operator understands these calls.

In some of the foreign ships, where the operators do not speak English it is customary to write the symbols of the message and have them translated.

## Temperance

### TERRIBLE LURE OF LIQUOR

Power Which Drags Down Votaries of Cup is Little Understood—Few Awful Examples Related.

"If there sat a glass of whiskey on that table, and I knew that if I should drink it I would lose my right arm, I could not help but take the liquor, even though my arm were chopped off piecemeal."

Thus expressed himself to the writer a 56-year-old man who had spent 18 months in a Michigan prison for the commission of a crime for which liquor was most largely responsible, writes William H. Vinn in the Detroit Journal.

How little we can understand the power which drags down the votaries of the cup. Said a man to one of our police captains in Detroit: "I have not a waking moment when I am free from the craving for liquor." If we knew more about the lives and experiences of the men whose forms go staggering by on our streets, or who stand before our bars of justice, pity would often replace blame and sympathy would occupy the place of scorn.

Last week I met a poor fellow on the street who had been released from police court in the morning. From his actions it needed no prophet to foretell that he would face the judge ere long, and sure enough he was in the same court next morning. For over a decade he has been under the complete domination of John Barleycorn. His experiences cause one to think of the custom of certain African chiefs who express their peculiar affection for certain of their subjects by maiming their bodies. All sorts of cripples are thus made by these rulers and it is related that the persons so maltreated take a particular delight in their sufferings, for to them it is a mark of the esteem of their chief.

Some years ago, while under the influence of liquor, the man of whom we are writing lost a limb. He hobbled about on a peg-leg for a time, but he still held sway over him. About four years ago, while drunk, he became mixed up with a railroad train and lost an arm at the shoulder—limb off on one side and arm on the other. Still he clung to the glass.

Somewhere in this city toils a little, sweet-faced lady of upward of 70 years of age, still earning her own living at housework of a light order. She is the mother of the man above referred to, and he is her only son. Her prayer is that she may be spared to bury her boy. Saving all that she could from her scant earnings, she procured a satisfactory artificial limb for her drink-crazed boy. Were that limb possessed of the power of speech it could tell many tales of adventure while supporting its owner or while reposing "put up" for drinks.

One incident is recalled. Two years ago Judge Stein requested the writer to take this unfortunate man to the carers for the county house. Noticing his limb was replaced by a wooden peg, on inquiring we learned it had been put up for security for a drink bill in a saloon not two blocks away from the police court. On payment of 45 cents the limb was secured and the man sent to Eloise. At present the poor fellow is being upheld by the peg-leg again.

That was a peculiar stunt which was "pulled off" by a resident at McGregor mission many years ago. Becoming very thirsty, and possessing no belongings which would serve as security, he betthought himself of his false teeth, and back of the bar they went as a warrant for the payment of the drinks. Still, there was more sense in this transaction than in the one above referred to, for while a drinking man needs all the legs he can get, he can very well dispense with the molars, which are a useless luxury at such a time, as he cannot drink heavily and eat.

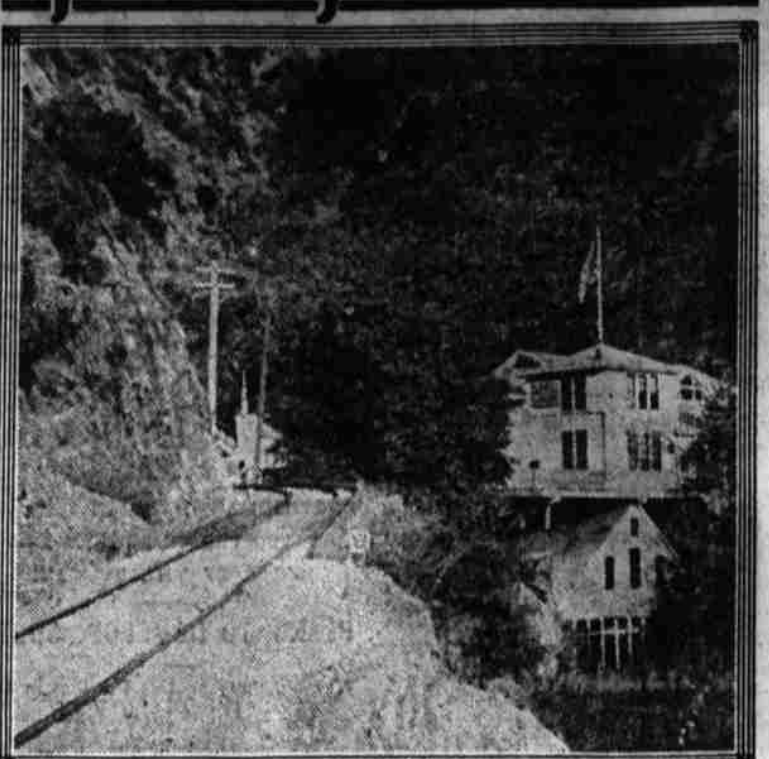
No crusader ever followed Peter the Hermit with a greater devotion than the drinker pursues his "cup"; no howling or dancing dervish can equal the utter abandon of him who "tarrises long at the wine." What does he not surrender at the call of that demon rum! Fortune, family, friends, health, life even—all are ungrudgingly offered to his thirsty god, and he will beg, steal or starve that he may keep the fires aglow on the unholy altar. The great Paul tells us "God loveth a cheerful giver." In the Greek the word translated "cheerful" is "hilarious," from which comes our word "hilarious." Very few are the disciples of the Master who give themselves and their belongings as hilariously as does the votary at the altar of Bacchus.

### MISCHIEF DONE BY DRINKING

Drunkenness Lies at Bottom of All Social and Political Troubles—Most Vital Problem.

There is today in English-speaking countries no such tremendous, far-reaching, vital question as that of drunkenness. In its implications and effects it overshadows all else. It is impossible to examine any subject connected with the progress, the civilization, the physical well-being, the religious condition of the masses, without encountering this monstrous evil. It lies at the center of all social and political mischief. It paralyzes beneficent energies in every direction. It neutralizes educational agencies. It silences the voice of religion, says the New York Tribune. It baffles penal reform. It obstructs political reform. It rears aloft a mass of evil-inspired power which, at every salient point, threatens social and national advance; which gives to ignorance and vice a greater potency than intelligence and virtue can command; which deprives the poor of the advantages of modern progress; which debauches and degrades millions, brutalizing and soddening them below the plane of healthy savagery and filling the centers of population with creatures whose condition almost excuses the immorality which renders them dangerous to their generations.

## Up the Big Santa Anita



NEARING THE CANYON

**I**T WAS a glorious morning. The rains seemed to have turned their attentions elsewhere for the time being. All the mountains stood clear-cut against the blue, with tops whitened by snow; the foothills and the whole valley were wearing the new green mantle of spring.

We had taken the early car for Sierra Madre, a car always filled on "days off" with a merry collection of city folk who love the wild and who yearn the week through for the higher places, the rocky canyons and the dashing streams, and for the racing blood, red cheeks and renewed energy that such retreats give to those who seek them, writes H. C. Hurst, in the Los Angeles Times.

Our objective point was the Big Santa Anita. Neither Henry nor I had ever been in this canyon. We had seen its little sister many a time as we climbed up the Mt. Wilson trail, but there is always an added zest in the unknown, in not knowing what is ahead around the next corner is a new town, around the next bend in the trail, or what the next week, or month or year holds for us in that larger journey called Life. We questioned our nearest fellow-passenger, a young fellow in complete corduroy suit and mountain boots, who looked as though he had always climbed mountains. Yes, he had been clear through the Big Santa Anita, and there were some ticklish places in it, but we could make it all right. He himself was bound for the west fork of the San Gabriel by way of Mt. Wilson.

It seemed no time at all before we were stepping from the car in beautiful Sierra Madre, and before the train crew would have time to turn their trolley pole the whole crowd was streaming up the road toward the foot of the everlasting hills. Most of these bearers of lunches and kodaks kept on to where the burros in their corrals watched with big, brown eyes at the foot of the Mt. Wilson trail. We turned to our right and followed a roadway which led down hill, across a silver creek, and up a long grade through groves of orange and lemon, with now and then a bungalow showing about the green leaves. The trees were loaded with fruit, and a man who did not look in the least like a grouch was carrying a large armful of signboards and planting them at frequent intervals along the edge of his golden acres, said boards threatening dire things to the person who dared to more than look at the yellow temptations on his trees.

**Start Up Canyon.**  
We cut through an orange grove and came out on a high mesa overlooking the wash and heard the roaring of the stream as it dashed over the large boulders as though deadly eager to meet with the San Gabriel river out there in the valley and compare notes on their respective trips through the mountains.

A large party of boys and girls were scrambling down the bank when we arrived, and as they stopped to take a picture of the group we passed them and started up the canyon. We realized at once that it was a time of high water and that travel through those narrow passes would be a vastly different affair than in midsummer, when the streams are low. Indeed we kept dry from the start only by making almost impossible leaps from boulder to boulder, or by working our way along the walls of the cliff by precarious handholds.

Finding some better going, we pressed on and came at last to a scene of wonderful beauty, but one which seemed to block all farther progress up the canyon. Walls of solid rock towered high in the air on every side save that from which we had approached. At their base a vast pool was spread like a lake, probably 50 feet across, and of great depth, and into this leaped from a cleft in the cliff the whole river, a beautiful waterfall some 25 feet in height. Two hikers had preceded us, and we sat down and watched them cross the shallowest part of the pool and climb up the very crude ladder which leaned against the cliff and led to the top of the falls. It seemed to take them a long while to cross the stream at the top of the ladder, and when we followed them we did not wonder, as we found ourselves standing on a shelf of rock a foot in width, from which place a flying leap must be made across the stream, with only a sloping rock wall to land upon. Some way Henry made it without falling in, and with his help I too got across, but slipped after safety was reached, and as a result I found it expedient to climb up the mountainside, which here sloped conveniently, and lie in the warm sun and dry out.

**House of the Hermit.**  
Soon the canyon narrowed and where the creek rushed between vertical walls we must needs wade the stream. Off came the shoes and stockings, and in we went. It was a cold

job. I'm sure that ice water would be only milk-warm in comparison to that little river.

Thus we went on, wading when necessary, and reaming our shoes and walking when we could.

Later we sat by the big pool, churned by a plunging waterfall, and watched several trout as they darted about in the liquid home. And when we went on again, Henry, with his usual luck, passed this pool dry-shod, and I slipped down the smooth side of a rock big as a house, and plunged into the dashing stream, and for the racing blood, red cheeks and renewed energy that such retreats give to those who seek them, writes H. C. Hurst, in the Los Angeles Times.

When the canyon opened out a little and there was at last a trail through vines and trees and ferns high above the creek, we hurried along and covered some miles in short time, only to be confronted by a wall across the canyon, down which leaped a large fall in three cascades of tumbling silver.

We saw the game was up in that direction, but were glad to find a trail leading up the side of the hill and over a divide; and standing at the top, we knew we were about to reach our goal, for below us the stream ran circling through a valley and several stone houses or huts.

Soon we were in the house of the Hermit, and were drying out before the wood fire on the hearth. Outside, the river roared along under the naked trees, and the wind tore by the cabin, shrieking that a storm was coming. But little we cared as we undid our lunch and accepted at the hands of the Hermit tin cups of black and steaming coffee. It mattered not that it was poured from an ancient sprinkling can, or that the room was not up to good housewife standards of neatness. Poor Hermit! For ten years this room has been his library, granary, kitchen, wood-house and storeroom. But his heart was kind as his black beard was long, and when he found a silver dollar in one of the returned coffee cups, the presence of which none of us could account for, his protestations were long and sincere.

At three o'clock that afternoon we left our shelter, and bidding the Hermit goodby, started up the steep trail to the top of the ridge. Soon we were above the noise of the stream, but the wind was louder than ever, and a rain started to fall, changing soon to a sleet. However, it was only the edge of the storm that we were in; across the canyon and back on the farther ranges we could see the clouds dropping their burdens of moisture in great sheets, and saw soon, too, the slopes whiten under falling snow. As we came out on top of the divide snow was coming down upon us, also, and through its filmy curtain we looked out and saw the San Gabriel valley shining in the sun and the new green on the hills on the farther side appearing like great crinkly folds in a cloth of velvet, a rare and never-to-be-forgotten view.

### Legend of the Hands.

An old legend says that once three young women disputed about their hands, as to which were the most beautiful. One of them dipped her hand in the pure stream, another plucked berries till her fingers were pink, and a third gathered flowers whose fragrance clung to her hands. An old, haggard woman passed by and asked for some gift, but all refused her. Another young woman, plain, and with no claim to beauty of hand, satisfied her need. The old woman then said: "It is not the hand that is washed in the brook, nor the hand tinted with red, nor the hand garlanded and perfumed with flowers, that is most beautiful, but the hand that gives to the poor." As she spoke, her wrinkles were gone, her staff was thrown away, and she stood there an angel from heaven. This is only a legend, but its judgment is true. The beautiful hands are those that minister, in Christ's name, to others.—The Christian Herald.

### Ancients Knew About Eclipses.

The ancients found out how to predict eclipses of the moon, but those of the sun baffled them. They observed the lunar cycle of 18 Julian years 11 days, in which the moon returns to almost the same position in the heavens, but they could not apply this to solar eclipses, although the period of failure was that, although solar eclipses recur in a fixed order within the cycle, they are not visible again at the same part of the earth's surface. Eclipses of the moon are universally visible.—Pall Mall Gazette.

### Electrical Thief Catcher.

A new electric thief catcher for stores consists of a button concealed under the counter, which, when pressed, closes and locks all the doors and rings a bell.

## Is Not Typical of France

"Parisienne" in Parisian, and in No Way Representative of the French Woman.

The Parisienne is not, and never has been, representative of the French woman, although she might be described as the distilled essence of all that is French. She is too volatile to be typical of the women of France. She is too haughty, and the Frenchwoman, broadly speaking, never is. She is gay and morbid at one and the same moment. She is eternally young, yet born with the cynical wisdom of age. She is brave to the point of folly, she is free from any taint of provincialism, and in a way stands on a small pinnacle apart from the rest of womankind, with a smile that has some fellowship with that of the Sphinx. Her charm

is world renowned and indisputable, and of a peculiar kind. She is never merely pretty, but charm runs in her blood, and it is as natural for her to use it as it is for the sun to shine. Everything about her is wit, and she is free from any taint of provincialism, and in a way stands on a small pinnacle apart from the rest of womankind, with a smile that has some fellowship with that of the Sphinx. Her charm

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Columbia's First Book Plate. The first book plate for the library of Columbia college was made in 1795. It was designed and etched on copper by Alexander Anderson, the first American wood engraver, while he was a medical student. Asserting Himself. "Faw," said little Dick, "you can swear at me all you want to, but I won't swear any more at you. I'll be damned if I don't go and tell a pious man!"