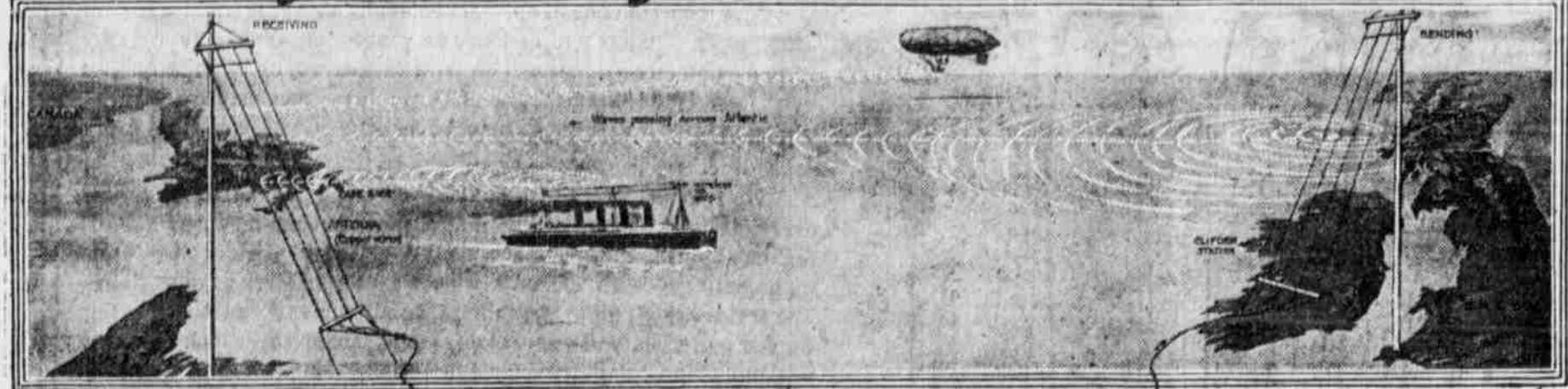




Scope of Wireless Telegraphy Spreads Fast



YEARS 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 this icy prison 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 catastrophe being known for days. It was two days after La Bourgogne 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 was predicted long before the loss of the Titanic, has been appreciably hastened, experts say.

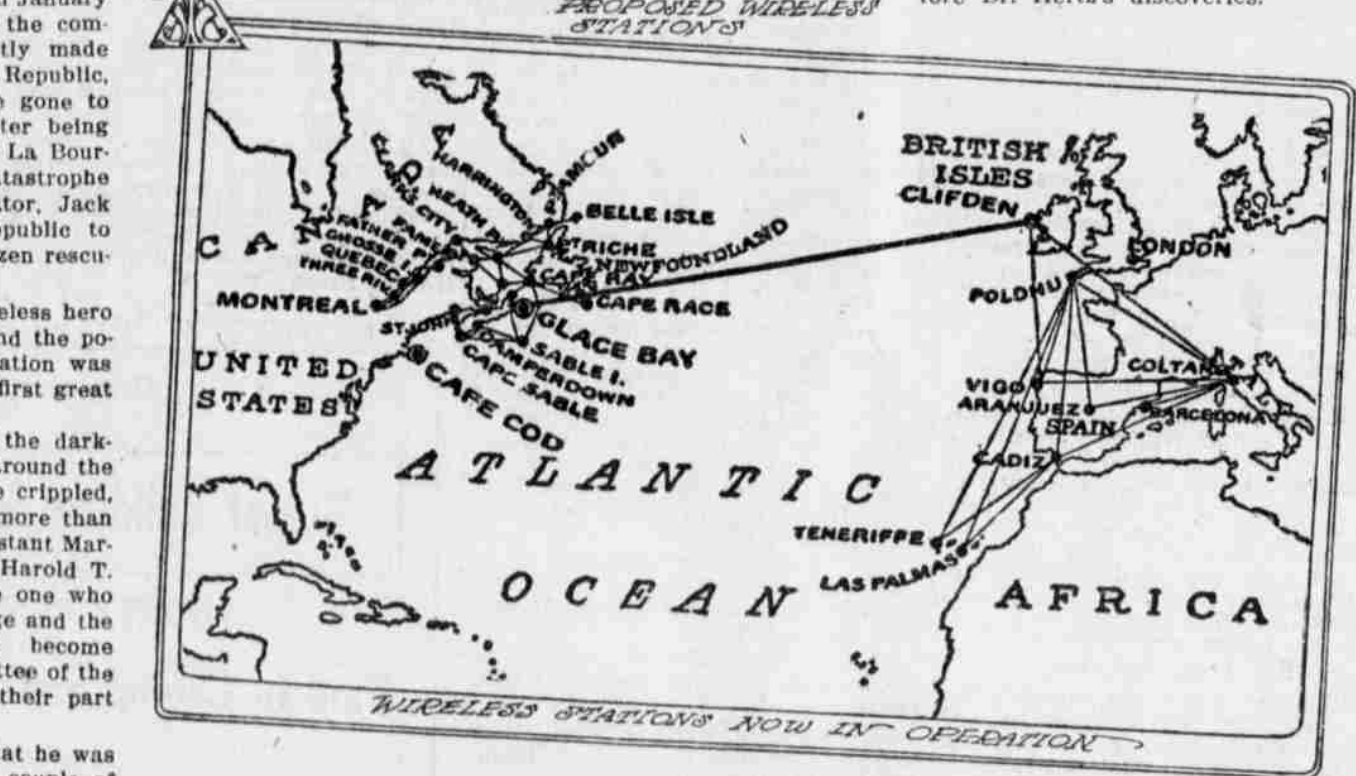
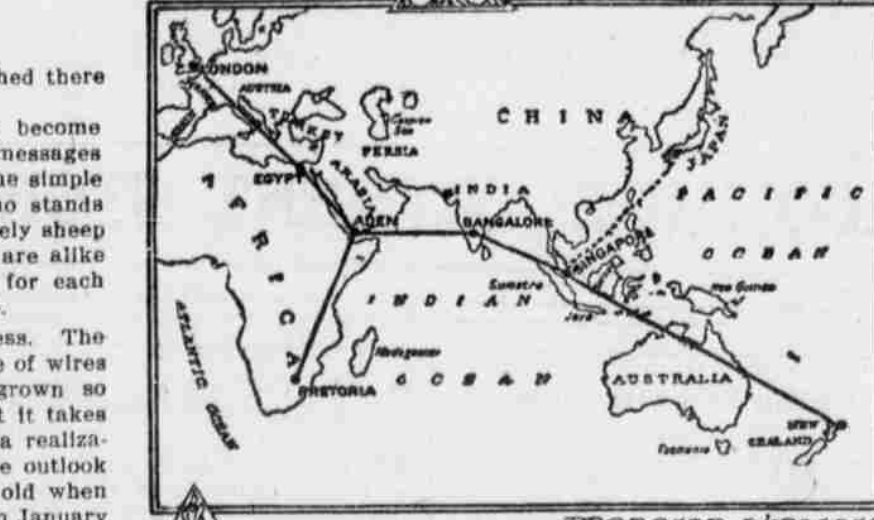
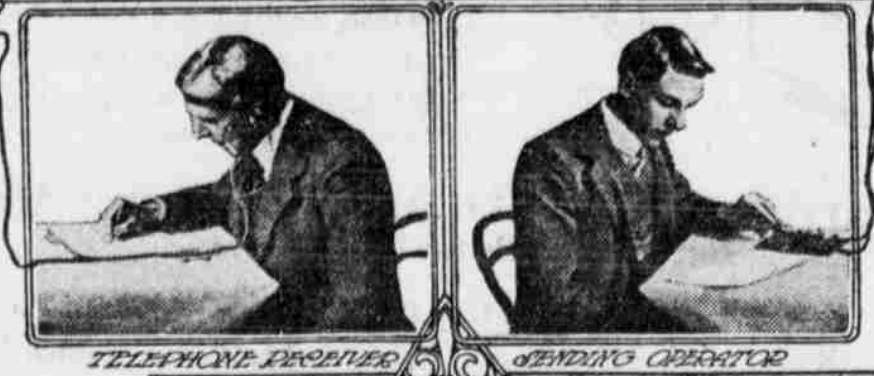
In England the government has entered into a contract which will result in a system for connecting every part of the British empire. Arrangements are already in progress and in due course a system will be started, it was said in parliament, which will extend from England to Cyprus, from Cyprus to Aden, 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 1880 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 1886, 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 means. 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.

INCIDENTS BEFORE THE BIG REPUBLICAN CONTEST IN THE COLISEUM AT CHICAGO

Chicago, June 10.—The chief duty of the Chicago hotel clerk just now is to point out the political celebrities. It has been necessary to describe big men of the convention for persons seeking them so many times that John Burk, head clerk of the Annex, can give finest identifying details of attire and build of a statesman in a moment.

A great part of the population of the hotel consists of newspaper, magazine, and free lance photographers. Twelve snapshots were in an arc about Senator J. M. Dixon of Montana, Colonel Roosevelt's manager, when he consented to be photographed on his arrival.

Before the senator reached the hotel on Wednesday two men had been led out on Michigan avenue by the camera squad in the belief that each of the accommodating strangers was the Montanan. One photographer would be "lipped off" that "the tall, white haired man in the Panama is Senator Dixon."

The stranger at once would be invited out in the street for different poses in the sun. Of the two cases of mistaken identity one was A. B. Butler of Washington, a Taft camp aid. It is said the other was a Boston linen salesman. He did not deny he was Senator Dixon, and posed graciously with and without his hat and facing in different advantageous angles.

A New One From Texas.
Col. Cecil Lyon of the Texas delegation, and an irrespressible supporter of Roosevelt, had a new story to tell to take the place of his old one about the cataclysm in Yoakum county, Texas, where a Democratic county convention instructed for Roosevelt, causing Wilson supporters to bolt.

"I was walking down the street with Charles Hilles in Washington the other day," began Colonel Lyon, after some one had said President Taft's secretary had arrived at the Blackstone hotel.

"A small delivery wagon passed," the colonel continued. "I looked up and saw four large volumes stacked on top with the titles facing us. Three of the books were reports of the Republican conventions of 1900, 1904 and 1908. The fourth was 'Problems of the Day,' by William H. Taft. I directed Mr. Hilles' attention to the load of books. He seemed offended."

Borah's Bushy Hair.
Senator Borah of Idaho is one of the few big men of the convention who cannot be called picturesque, unless his bushy hair entitles him to that description. It is said his only reason for wearing so much hair is to conceal a bad scar on the back of his head received in an accident in his youth.

Mr. Borah, like Jonah K. Kalanianoale, Hawaiian delegate, has a round, chubby, Buster Brown type of physiognomy. His dignity, however, is such that none would think of calling him "Cupid"—and that is the brown skinned islander's nickname in congress.

Has His Name on \$5 Bill.
A southern delegate was much excited over the appearance of a tall negro at the Coliseum annex who figured in several conferences.

"Have you a \$5 bill?" asked a friend. When the currency was produced the friend called attention to the signature of the registrar of the treasury, Judson Lyon.

"That same dark person over there is Judson Lyon, delegate from Georgia," was the explanation.

Urey Woodson's Story.
Urey Woodson, secretary of the Democratic national committee, is telling a story which has what he claims is a moral.

"You Republicans," says Mr. Woodson, "remind me of old Colonel Guffre, who, although a Democrat, lived in a stronghold of Republicanism. One winter he blew in and asked to be sworn in as a member of the Democratic legislature.

"Colonel, did you sure enough beat a Republican?"

"Sub, I beat three of 'em at once."

"Now that is what we are going to do in less numbers. Get together and scrap, but after it is over watch us Democrats beat two of you, Taft and Teddy, all at once."

Want Sherman Renominated.
Former Governor Franklin Murphy of New Jersey took his seat with the national committee minus the vice-presidential boom which he had with him four years ago. This year Mr. Murphy is singing the praises of Vice-President Sherman for another term.

"I know that custom is against renominating a vice-president," he said, "but there is a strong current in favor of renominating Vice-President Sherman. It will probably be an eastern man and all the gossip I have heard has been for Sherman."

Mr. Murphy added that the "vice-presidential bee" has ceased to buzz in his direction.

A group of out-of-town newspaper representatives were on the point of making an enumeration in the vicinity of the Coliseum of emergency cafes for reference in times of busy sessions.

"Col. Cecil Lyon has just put through a motion making newspaper men guests at a cafe service to be installed in headquarters at once," said a committeeman who left the session before adjournment.

Colonel Lyon was proposed for dark horse candidate—immediately and unanimously.

Good Nature the Rule.
Good nature is the rule among all of the national committeemen and delegates. None is too harassed by puzzling political entanglements to deny any one a smile and handshake.

"An old crab has lots of luck in this game—I don't think!" laughed Senator Dixon, Roosevelt's manager, after he had passed out a dozen pulsating hand grasps. Then he walked over to former Senator Dick—Taft contest director—in the lobby of national committee headquarters at the Coliseum annex and slapped him on the back.

"Lo," said Mr. Dixon. "Right back at you, senator," smiled Mr. Dick.

Those who were near the two chiefs of the hostile camps could hear a boyish "Joe" and "Charley" being exchanged at times. They were like old college chums. Friendly eye twinkling scenes between chiefs and lieutenants and subalterns of the opposing forces were common.

One noteworthy meeting that started amicably and ended in a torrid argument was between Joseph Keating of Indiana and Congressman Lucius C. Littauer of New York.

Importance of the Bell Boys.
The bell boys of the big hotels have been pressed into service for all sorts of duties. They not only carry ice water and life preservers to the various headquarters and rooms of delegates, but also serve in the capacity of page, "state house messenger," marshal of delegations, office boy, introducer, and general headquarters attaché.

There are hundreds of different documents to be exchanged between headquarters, with verbal explanations to go to the men in charge.

"Here's the list of delegates from Alabama with the Twenty-third district left out," a delegation chief explains to the boy in buttons. "Take it up to Senator Blank with my compliments, and inform him I will send the rest to him in half an hour."

When a hop was dispatched with a copy of the recommendations of the rules committee, to be submitted to the national committee, a senator remarked:

"That young man has a mission of more widespread influence than that of any other boy in America."

"Whoo-ee," sighed a bell boy. He was counting change. "Nine hours on the hop and only \$1.60 in tips. I am going to vote the Democratic ticket straight."

Teddy's Bulldog.
When the Roosevelt press bureau arrived from Washington they brought with them a new campaign song, which is causing a smile even among the Taft delegations. It is to the tune of "Casey Jones."

Teddy's gotta dawg, but he aint no hound,
He's a square jawed bull, and his face is round,
His legs is short, and he's close to the ground,
And you bet they ain't kickin' Teddy's dawg around.

CHORUS.
Square jawed bull, and his face is round,
Squared jawed bull, and his face is round,
Short legged bull, close to the ground,
And you bet they ain't kickin' Teddy's bull around.

The Democratic dawg, the unlucky hound
That the boys have all been kickin' around
Is the same old dawg that's been stickin' in 'roun'
Since old Abe Lincoln came to Washington town.

And now he comes back, the measley hound,
With his face and his tail still hangin' down,
The jaunty, sly old lop eared hound,
No wonder the boys have been kickin' round.

All Taft Types.
It has been noticed that a great part of the delegates that have arrived are robust men. "All Taft types," commented an admirer of the president. Chief among the heavyweights is A. M. Stevenson, Colorado national committeeman, who hails from Denver. Mr. Stevenson weighs more than 300 pounds.

Delegation From Hawaii.
Seated in a corner of the Pompeian room at the Congress hotel was a little party composed of the Hawaiian delegation. Prince Kalanianoale, generally called "Prince Cupid," and C. A. Rice, delegates from the island; H. L. Holstein, national committeeman; A. Horner, secretary to the delegation, and Colonel S. Parker, the "Mark Hanna of Hawaii," made up the party.

"It can't be all work and no play," said the prince.

Since a Roosevelt delegation came into the Congress singing a parody on the "Houn' Dog," Taft supporters have begun to put themselves in practice for the campaign yells.

Short, long, loud and sharp, they come in all varieties. Some are for use before and some after the nomination. A mourning song is being written, bemoaning the fate of "Teddy," and several in jubilation, in anticipation of the success of Taft. A farewell yell will be put in use later. The last line tells the whole story. "We're going home, we're broke."