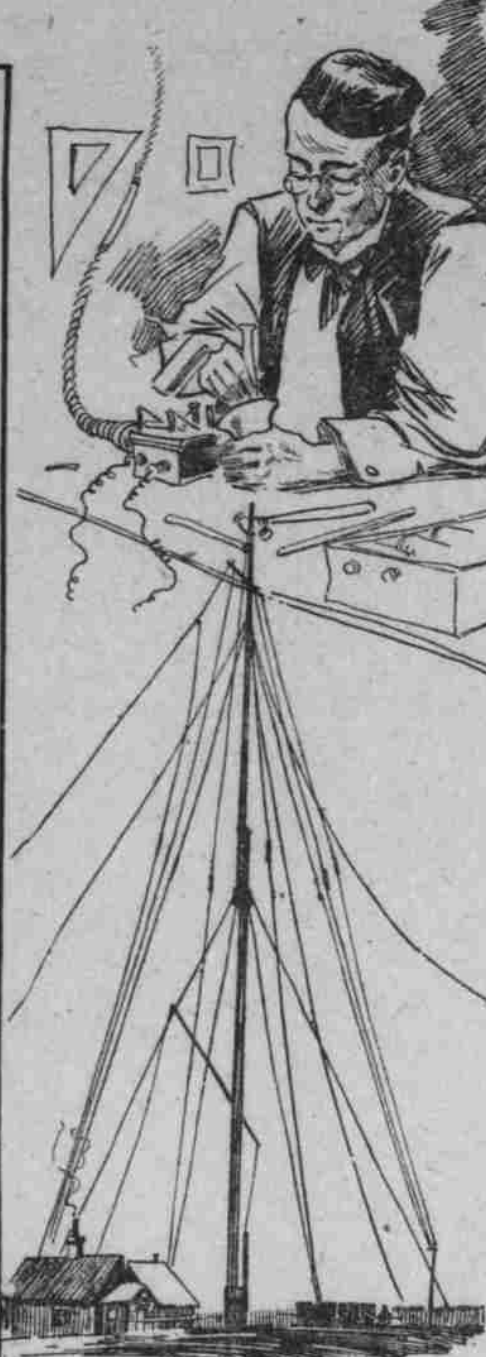


INVENTIVE BRAINS OF 1908

WHAT THEY DID TO ADVANCE THE COMMUNICATION AND MECHANICS. WORLD: NEW RECORDS IN AVIATION, WIRELESS



AT THE INTERNATIONAL "SPHERICAL" RACE, HURLINGHAM TO MALDENHEAD, ENGLAND, IN MAY, 31 CARS COMPLETED, 93 MEN AND WOMEN BEING IN THE BASKETS. ONE OF THE CONTESTANTS REACHED A HEIGHT OF 8000 FT. AN ENGLISHMAN WON.



THE "WIRELESS" STATION AT CULVER, ILL., WHERE THE FIRST LONG-DISTANCE WIRELESS COMMUNICATION WAS MADE. THE STATION WAS BUILT BY MARCONI IN 1901. IT WAS THE FIRST OF ITS KIND IN THE WORLD. THE STATION WAS BUILT ON A HILL, AND THE ANTENNAE WERE 150 FEET HIGH. THE STATION WAS BUILT BY MARCONI IN 1901. IT WAS THE FIRST OF ITS KIND IN THE WORLD. THE STATION WAS BUILT ON A HILL, AND THE ANTENNAE WERE 150 FEET HIGH.



COUNT ZEPPELIN'S FLIGHT IN JULY, IN HIS DIRIGIBLE NO. 4. WITH 12 IN 15 HOURS, HE COVERED 500 MILES IN 24 HOURS, AVERAGING 21 MILES TO THE HOUR, UNDER ABSOLUTE CONTROL.

BY WARWICK JAMES PRICE.
THURSDAY, May 14, 1908, was noteworthy in the history of human advancement. An aeroplane flew eight miles under perfect control; a Los Angeles scientist made known plans for improving the race of man as Burbank has improved plant life; a Scotch astronomer discovered that Jupiter had captured a comet and put it to work as a satellite, a full day and encouraging for those who would see the sum of our wisdom increased.

It was, moreover, typical of the twentieth century in which it fell. Brain, not brawn, set the index to the now-closed year—skill, not mere strength, mind, not matter. Nineteen-eight has gone down to posterity as a season of onward marching along the world's bright highway of intelligence. Time was (and not so long ago) when each new manifestation was a matter of local excitement. The cotton gin supplanted human fingers; Fulton's Clermont churned notably up the Hudson; "Old Ironsides" clanked slowly across the Pennsylvania meadows; even electricity was materialized by a wire stretched taut against the sky. But today, if a merchant wishes to talk to a man in London, his words are shot up to the tip of a pole by the seashore, flicked into the sky—and sucked out of space again by a lonely spar on the coast of Ireland. Perhaps, after all, "the sun do move."

With Wires and Without.
It has been a "wireless" year. January came in with a greeting to Annapolis from far-off Colon, and 24 hours later New York was in communication with Guanajuato, 3490 miles away. On the Tiber, Naupolis, Prussia, had for eight days maintained wireless connection with the Blanco, bound out to the Canaries (210 miles), but—as was right and proper—an American promptly went that record one better. C. D. Reeves, U. S. A., conversed with the Tatosch for nine days after she had cleared the mouth of the Columbia River (260 miles).

This pace was maintained throughout the passing months. To give but five sample items from a score or more, all noteworthy:

February—The burning in midocean of the St. Cuthbert, reported in both New York and London—the first instance of the kind.

June—Messages from Atlantic liners picked up by the Swiss station on the summit of St. Gothard.

July—Point Loma, Cal., in communication with the Connecticut, 200 miles out in the Pacific.

July—For the first time California and Honolulu "talked."

September—The British Admiralty in London directed all maneuvers of the home fleet in the North Sea, being in unbroken communication.

Now has achievement in this relatively new field stopped here. It may yet be that wires will prove a drug in the market, for Hans Knudsen, a Dane, has demonstrated (September) before a London audience that a typewriter may be operated in a distant room by wireless "waves"; and wireless telephony has been conclusively proved practicable, not only by Poulson (April) and Mercer (August), but by the officers of our battleship fleet, orders being readily transmitted over a distance as great as nine miles. That pictures may be so transmitted, and type set, is a mere detail. Telephony by wire, after all this, reads tamely, though Jules Armand, a French scientist, has practically perfected an invention by which use of a present-day phone may see his correspondent at the other end of the wire.

In the Laboratories.
Henri Lemoine, a Frenchman, of quite a different type, did not make good his promise to turn out diamonds to order, but the world's laboratories have, none the less, witnessed remarkable experiments brought to full fruition. Professor Ohmer, of London, has liquefied helium (July); Professor Dewar, of the British Royal Institute, has liquefied hydrogen gas, getting nearer to the ultimate zero

than any man yet; and Sir William Ramsay (September) has convinced himself that he is on the path which will allow science to turn silver into gold.

And are we to have bottled gas—sold over the counter? A German claims to have discovered such an illuminant, which, compressed to 1-100 of its normal gaseous bulk, and enclosed in a steel flask, furnishes a large amount of both light and heat. Think of going home with enough gas in your pocket to last a week. Think of never again being faced by that Ananias of automata—a meter!

It is almost equal domestic value is a wall-covering introduced this year is British India, where ordinary paper is useless owing both to the dampness of the rainy season and the insect life of all seasons. Raw copper has now been worked into sheets averaging six 1-1000 of an inch thick, which are said to be damp-proof, insect-proof and capable of going half a dozen years without cleaning.

Assisting Dame Nature.
The botanists in the employ of our Agricultural Department have not yet succeeded in producing orange trees hardy enough to flourish in Vermont (though they say they will in time), nor has any gardener yet evolved a blue rose (though a black one was on exhibition in London in July), but 1908 has, nevertheless, stood sponsor to three happenings in the realm of plant life well beyond the usual.

A Lancashire (England) farmer, named Garton, after 37 years of what he calls "accelerated evolution," crossing a highly developed oat with certain varieties of wild oats—has produced a grain yielding something over 160 bushels to the acre, which is fully twice what is held a good yield in other parts of the tight little island.

On this side of "the big pond" W. H. Croft, of Atlanta, Ga., has perfected a process by which serviceable paper may be made from the hitherto waste stalks of the cotton plant, while parallel experiments made by the chemists of the Federal Bureau of Plant Industry have demonstrated that corn stalks, also, may readily be converted into paper.

Hereafter every stalk in the long field will be at liberty to consider itself the agricultural column in some newspaper!

Machines That Think.
Such machines as these are far from the most wonderful of the year. A Jap, Shinowara, by name, has perfected a typewriter which, though only 11 inches square, is capable of writing 250 "ideographs," while shorthand by machinery has become possible through an English invention called "the stenotyper." Even more remarkable is another British-made instrument (G. Bowen is the inventor) which constitutes an interesting accessory to the gramophone or phonograph, providing a means of seeing the sound waves, which a record makes as it revolves.

More practical than this, Barnes Cranmer, a Norwichester, has patented a mechanical money-sorter, already in use in many Parisian mercantile houses—the simplest thing in the world, once you've seen it. Coins pass into the hand of the upper end of an inclined conduit, roll down, pressed against the outer wall by centrifugal force, and separate themselves into pockets through orifices varied to suit their respective heights.

Under this head, too, mention should be made of the advances '88 has chronicled in photography. Color "cinematographs" appearing first last year, has been brought to a high degree of perfection by G. Albert Smith, of Brighton, England, and Professor Lippman, of the Sorbonne, in April "took" like another reproducing the impression of relief shown by the ordinary photograph looked at through a stereoscope. Noteworthy, too, was the success (April) which attended Hier Eremman's attempt to make "moving pictures" from a balloon, a thing often before tried but never till now with reproducible results.

Up in the Air.
This brings the telling of '88's achievements in skill and science "up in the air." Darius Green is vindicated; his query whether "the wren and the phoebe

are smarter'n we be," is heretofore to be answered in the negative. With the war departments of all first-class powers experimenting in aviation; with monarchs attending exhibitions of the experts (and sometimes actually ascending with them); with scientific journals giving pages of accounts and diagrams of various machines; with an aeroplane "lighting place" provided on the roof of a Parisian skyscraper—with these things become matters of fact it is within the mark to write that the problem of aerial navigation has been solved. Tomorrow's fond parent will have new advice to give the home-leaving child:

"Mother, may I go out to fly?"
"Yes, my darling daughter."
"But if you tumble from the sky, try and be shipshape, mother!"

Wilbur Wright, who has done more than any other to make all this true, voices the following prediction:
"Things will happen with aeroplanes as they did with steam engines and motor cars. In a few years there will be hundreds of swift, light flying-machines of various sorts near every large city. Man will no longer conquer the air as quickly as he has overcome distance on terra firma."

Victors in the Contest.
The mere honor roll of real achievement in this sort, since January last came in, is formidable—Zeppelin, the German, Farman, the Englishman, the Frenchmen Petrie, Legagneux, Delagrang and Bleriot, and the Americans Baldwin, Curtiss, Knabenshue and the brothers Wright. It is a marvelous story in three chapters, headed "Planes," "Dirigibles," and "Sphericals,"—and the statements of never-ending facts will best tell the tale. Economy of space demands that only the best record of each aeronaut be given, and the happenings are as "odorous" now as when Mrs. Malaprop first said so:

Aeroplanes.
June 8—Paris. Petrie flew over a mile at a height of 130 feet, using a monoplane with batlike wings; the first flight of a machine of this type.

June 10—Toledo, O. Knabenshue made 25 miles an hour, with three passengers in the car, and the wind dead ahead.

July 4—Hammondsport, N. Y. Curtiss accomplished 1-1/2 mile in one minute, 42 seconds, winning a \$200 prize for the "first heavier-than-air machine to cover one kilometer in a straight line." July 5, he made successful circles in flight.

August 10—Paris. Legagneux flew 220 feet in 12 seconds.

September 6—Paris. Delagrang covered 15-1/2 miles, remaining in the air within five seconds of 55 minutes.

September 11—Washington. Orville Wright, remaining up 70 minutes, 24 seconds, cut "figure eights," doubled on his track, and reversed his curve of flight.

September 21—Le Mans. Wilbur Wright remained aloft 52 minutes, covering a distance of nearly 6 miles. On October 10, with a passenger aboard, he flew for nearly ten minutes over the hour.

October 31—Chartres. Bleriot, in a monoplane, flew 50 miles.

October 31—Mourmelon, France. Farman flew to Rheims, (30 miles distant) in 30 minutes, at a height of 153 feet.

December 18—Paris. Wilbur Wright broke all records by remaining in the air one hour, 53 minutes and 23 seconds.

Dirigibles.
July 1—Count Zeppelin, leaving Friedrichshafen, at a height of 1000 feet, crossed Lake Constance and Switzerland. At Lucerne he circumnavigated the lake, following each bend and indentation. Then he visited Bregenz, Hungary, before returning home—having covered nearly 300 miles at an average speed of 34 miles an hour, with 14 men in the car.

August 15—Washington. Baldwin's

airship, for 125 minutes, circled at the inventor's will over a 5-mile course, attaining 20 miles an hour under perfect control in circular evolutions.

August 15—Farnborough, Eng. The dirigible of the British Army, "Nulli Secundus," three men aboard, covered 30 miles, with and against the wind, in 45 minutes.

September 12—The German military semi-rigid dirigible "Gross," was aloft two minutes over 13 hours, sailing at will over the Berlin district.

September 15—The German Army's dirigible "Parseval," remaining at an altitude of 1600 feet for 11-1/4 hours, visited Tegel, Potsdam, Brandenburg, and Magdeburg.

Sphericals.
March 11—The "Stevens, No. 21" flew from Pittsfield, Mass., to Hampton Falls, N. H., maintaining an average of 43 miles an hour for more than three hours.

May 5—Forbes' giant car "Conqueror" covered the 75 miles between North Adams and Canton, Conn., in less than two hours.

May 30—Hurlingham, Eng., 21 balloons, representing German, French, Swiss, and Belgian owners, as well as British, raced 35 miles to Maldenhead, an English ship, "The Valkyrie," finishing first. The ascent was noteworthy in that 11 ladies took part. One car attained a height of over 8000 feet.

June 2—The American "Chicago" accomplished 800 miles in 11 hours, averaging 73 miles an hour.

June 20—A long-distance "spherical" race, under war conditions, starting from Bochum, Prussia, resulted in the winner reaching Jaroschin, Russia, 450 miles off, in 15 hours.

June 23—The "Felding" car, starting from Chicago, accomplished five complete laps, reaching Quebec (\$28 miles) in 23 hours.

October 16—Prince George of Bavaria, the first royal aeronaut to go aloft, rising from Augsburg in the "Augusta II," covered 65 miles in 15 hours, under most trying weather conditions.

October 31—The Swiss "Sphaeral," "Helvetia," won the Bennett long-distance cup, against 22 competitors, including the American "St. Louis," covering 300 miles.

October 31—Van Sleet's car "Greylock" sailed from North Adams to Waterville, Conn., (40 miles) in 30 minutes.

Planes, dirigibles, or sphericals, achieving height or distance or more perfect control, it is throughout a more than remarkable record of the achievement for eight short months. Here, unquestionably, lies 1908's high-

ENGAGEMENT OF EARL GRANARD TO MISS BEATRICE MILLS IS RUMORED



EARL GRANARD



BEATRICE MILLS

NEW YORK, Jan. 2.—(Special).—The engagement of Earl Granard to Beatrice Mills has been rumored since the Earl came to visit the Mills family at Newport last summer. Granard is Lord-in-Waiting and Master of the Horse to King Edward. He has an estate of 20,000 acres in Ireland. He saw service in the South African War. Miss Mills is the daughter of Ogden Mills, and grand-daughter of D. O. Mills. She will inherit a large fortune.

the much-tunneled bed of old Father Thames has once again been pierced, at a trifling cost of \$10,000,000 (June).

From Peace to War.
"Hashimura Togo," (and why should not the same Japanese schoolboy be himself enrolled among the intellectual assets of the passing 12-month?) had this to say not long ago:

"Hon. Maxim Jr., child of Hon. H. Maxim, explosion man, have invent a species of powder which explodes silently. When this is used soldiers can talk during entire battles without fear of interrupt. If Hon. Maxim Jr. can fill July 4 with his noiseless powder, won't he be a greater benefactor to human races than Sir Isaac Newton?"

Hiram Percy Maxim's noiseless rifle is, however, no joke; it is a solemnly terrifying reality. Tested in New York last June, it sent a 32-caliber bullet from a Winchester through six inches of a city directory with no more noise than would have been made by dropping a nail on a wood floor. Is the roar of battle to join the vanished smoke? Or is this merely another step to making war the more unthinkable because the more terrible?

By Land and Water.
And man has been quite as busy on terra firma as above it. France, for instance, has seen the adoption of freight and passenger service over railless roads, hundreds of hamlets, heretofore reached only by slow-going diligences, being now in constant contact with the outside world by "Explosive Engine Motor Trains," making 15 miles an hour. Germany not to be outdone by her traditional rival, is using a fireless locomotive with marked success,—an invention on the storage of steam pressure plan offering absolute safety from flying sparks, eliminating the smoke nuisance, and doing away with the use of a fireman.

By water, too, have the "Brains of the Year" accomplished much. A new era in ship propulsion is said to be foreshadowed by the successful working of a suction gas engine on H. M. S. Rattler, no stokers being required and a cheap grade of coal being as good as the best. The English destroyer Tartar, too, with turbine engines burning oil, has maintained 35-1/2 knots an hour for six hours,—something over 40 miles each 60 minutes. France contributes to such a chronicle the item of near 40 miles to the hour achieved (October) by the Lela's hydroplane "Ricochet II," a little vessel resembling a punt, 13 feet long, decked fore and aft, with a flat undersurface sloped gently up so as to skim the water (on the principle of "Ducks and Drakes") and propelled by a 12 horsepower engine.

Of similar marine interest is an American device for dispelling fog—a carbine generator powerful enough to work over a radius of three miles,—and the rediscovery by the Englishman W. S. Simpson of an old Roman secret said to prevent "weeping," oxidation, and vegetable or animal growth, on the hull of which it is applied.

Then, too, trains are running under the Hudson, linking up the Jersey shore with New York City. (That long step was first taken last February) and

is it not in that big hall where the high-priced guide leads you; no, it is in a comfortable red-upholstered room just back thereof. This is the House of Representatives; it is the throne-room of Uncle Joe.

It used to be the room of the ways and means committee, but a while back the House, recognizing that it was not coming to have the greatest absolute monarch on earth conduct his business in a cubby-hole, assigned this room to Uncle Joe. The greatest absolute ruler on earth? Why, yes; in Russia the Czar is hedged about by bureaus; in Persia the Shah holds his throne by man strength; the President of the United States has to take counsel with Cabinet, Senate and House, and the boss of Tammany Hall with his district leaders; but the "Yes" of the Speaker of the House of Representatives passes a bill and makes a law, and the "No" kills it.

And all this is done, not in the House, but in the red room. In the House, true, a lamentable farce comedy is enacted after the Speaker has decreed the fate of a measure. A man who has seen him in the red room two hours before arises and says, "Mr. Speaker." The Speaker bangs his gavel and says, in a surprised fashion, "For what purpose does the gentleman rise?"

"I rise, Mr. Speaker," the man on the floor volubly assures him, "to ask for the present consideration of the following bill."

"The bill has already been passed. It was passed in the red room two hours ago. But the Speaker recognizes him as he has never heard of it, and the House goes through the sad comedy of voting for it."

Sometimes the man who has made the arrangement with the Speaker is not there. He has gone out to see a constituent, or get a drink, or buy a cigar, or eat lunch. The Speaker, unaware of this fact, but consulting the little pad in his hand giving the list of bills that have been passed in the red room, says, "The gentleman from New York."

There is a pause. The Speaker looks up and says, a bit angrily, "The gentleman from New York."

Another pause. An alert clerk whispers to the Speaker that the gentleman from New York is not in the House. The Speaker flushes, bangs his gavel, and says, "The gentleman from New York asks the present consideration of the following bill."

The Democratic leader—Williams, or now Champ Clark—sees a chance to have a little fun. He arises and demands to know of the gentleman from New York—absent all the time—what is the purpose of this bill. He does this, knowing that the gentleman from New York is elsewhere on that lunch-bent errand. But meanwhile the Speaker's scouts have been scouring restaurant-ward for the forgetful member, and he comes dashing into the hall, wiping the last remnants of pie from his mustache, and explains. If he

Three other of the year's advances of this sort are:

A rapid-fire rifle capable of 1200 shots a minute, worked by electricity and therefore smokeless, invented by Alfred Poyteux of Dijon, France.

An electric cannon, able to hurl a projectile of 3000 pounds a distance of 300 miles, invented by the British metallurgist Simpson, already mentioned.

And a non-explosive, sleep-producing drug, spread from an exploded submarine shell, which C. M. Wheaton, of Newtonville, Mass., claims has crowned nine years of experimenting.

Finally add the name of Gustave Lautet, of Paris, to the 38 already here recorded, for he has perfected fireworks which do not merely explode in the firelessly monotonous way of yesterday and the day before, but emit such timely remarks in their passing accolades as "Vive la Republique" or "Three cheers for Washington."

WARWICK JAMES PRICE.

Speaker Cannon's Red Room

Where the Little Dramas of Congress Are Played in Rehearsal—And Then.

THE House of Representatives—where is it? Not in that big hall where the high-priced guide leads you; no, it is in a comfortable red-upholstered room just back thereof. This is the House of Representatives; it is the throne-room of Uncle Joe.

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Now and then the souls of Congressmen revolt from having to "go hat in hand down the corridor to the Speaker's room and beg," as one of them expressed it in a speech, and they cheer some intrepid Cushman, or Cooper, or Murdock who has lashed himself to the point of making a public attack on the system. But they take it out in cheering and go next morning, hat in hand, and beg.

There is more of a finality in a Cannon "Yes" or "No" than in that of any other man in America, but there is nothing brusque or offensive about his way of saying it. His manner is dispassionate, his voice a rather a high-pitched drawl, his delivery unburied. He listens to the petitioner with a kindly air, his cigar cocked at his famous angle and sending forth large clouds. Usually he is standing, having little use for such luxuries as chairs, and his favorite attitude is to stand on one leg with the other long limb resting crookedly on the top of a desk. When the petitioner has got through the decision comes in that quaint drawl and it never leaves anything open to debate—New York Times (Hog).

Hogs Like to Drink Johnnie Oil.
Washington (Pa.) Dispatch to Philadelphia Record.
In the trial of the case of Robert Ashmore against the Southwest Pennsylvania Pipe Line Company, now being heard in the Washington County court, the plaintiff bases his claim for damages on the ground that 81 of his hogs were killed by drinking oil which leaked from a line of the defendant company. The defense is that well-behaved hogs would not drink oil, and that Ashmore's drove died from other causes.