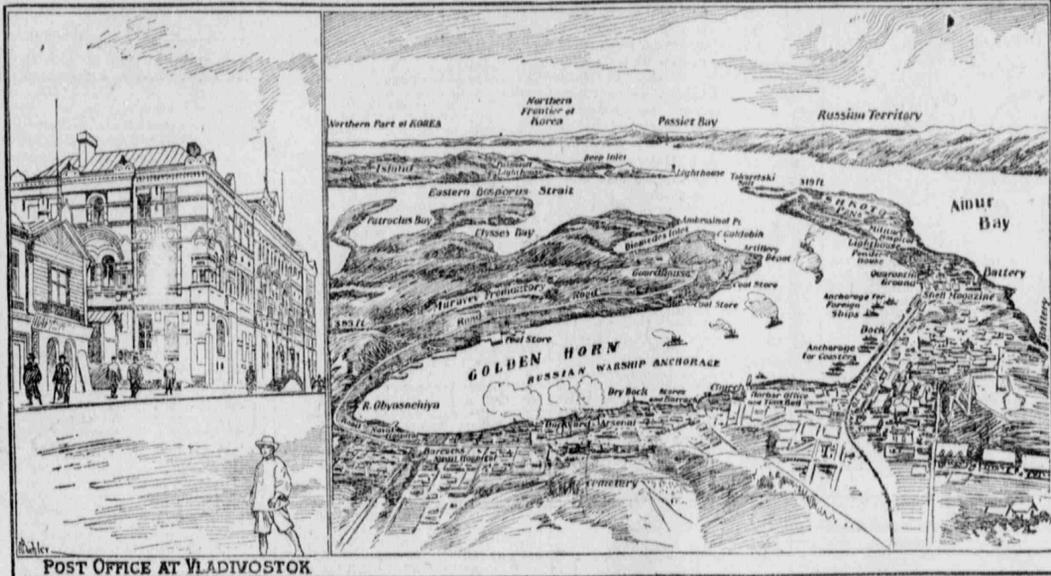


The Campaign Against Russia's Last Eastern Stronghold; The Crowning Humiliation of the Russo-Japanese War

At the beginning of the Russo-Japanese war and even previous to the first brilliant naval demonstration at Port Arthur it seemed to be the opinion of the outside world that the Japanese plan of invasion was likely to be restricted to the east Asian littoral. In those speculative days it was conceded that the Japanese naval power was a thing to be reckoned, but the strength and availability of the empire's land forces were undervalued. After Port Arthur it was confidently predicted that the blow inflicted upon the astonished Russians would be followed by a similar demonstration against Vladivostok. The exhibition was given as advertised, and it was a vivid one, but the magnitude of the task of reducing Port Arthur and the subsequent activity on the mainland relegated Vladivostok to comparative obscurity.

Now, however, the project of subjecting Russia's remaining stronghold to the same to a similar experience awakens the keenest interest in everything that concerns that solitary fortress. It is announced authoritatively that Japan is planning a land and sea campaign against this advanced post of the Russian empire in the east. With the sickening fate of Port Arthur fresh in mind, this latest frank and direct avowal of the Japanese intention comes with a shock.



POST OFFICE AT VLADIVOSTOK

VLADIVOSTOK, AGAINST WHICH THE JAPANESE WILL SHORTLY OPEN A CAMPAIGN BY LAND AND SEA.

actual observation, Vladivostok is strong where Port Arthur was strong and strong also where that fortress was weak.

First and of great strategic importance is the fact that Vladivostok cannot be invested by a hostile force, either by land or by sea, during the long and pitiless Siberian winter. It is as

safe from all external molestation during its protracted hibernation as is the shrew in its burrow. This natural defense confers impregnability on the port for several months in every year. Whatever is done toward its reduction must be carried forward with dispatch in order to avoid being overtaken by the rigors of a subarctic winter.

The harbor, it appears, is not a whit less baffling in its natural configuration than is that of Port Arthur. Vladivostok is situated on the gulf of Peter the Great, an arm of the Japan sea. The town is built on the slopes of a high ridge forming a tapering peninsula into an irregular landlocked bay. There are two narrow entrances to the harbor,

both flanked by highlands which bristle with batteries and fortifications. The entrances are further guarded by forts erected on an island at their mouths and innumerable forts just outside on the Great, an arm of the Japan sea. The town is built on the slopes of a high ridge forming a tapering peninsula into an irregular landlocked bay. There are two narrow entrances to the harbor,

Golden Horn, are continuous chains of earthworks and other defenses. The lofty hills on the northwest protect the port from the land side, and in the deep water of the Golden Horn, which is at least four miles in length and a mile in width, the largest ships may ride safely at anchor, free from the menace of attack and beyond the reach of the weather.

Like Port Arthur, Vladivostok consists of three portions. That nearest the water is the military town, extending along the harbor and given up almost exclusively to storehouses, military quarters and officers' residences. On the extreme north of the harbor are the official buildings and the private dwellings of the government employees and private citizens. Beyond and higher still is the arsenal, strongly fortified. The population is about 15,000, excluding the military. There are at least 6,000 Chinese and Koreans in the town, and the remaining population is exceedingly cosmopolitan. The garrison consists of not less than 20,000 soldiers. At the outbreak of hostilities the Chinese and Koreans fled, but in time they returned and brought their friends.

It is announced that Admiral Uru will make use of the same naval tactics which were so successful at Port Arthur. He will keep his ships well out of range of the fort guns and will at the same time maintain a blockade that sooner or later must be effective. If he succeeds in blocking the harbor entrances as soon as navigation opens in the spring he will have plenty of time to accomplish his purpose. The only resistance that could be offered would be the possible appearance on the scene of the Baltic fleet. The two or three Russian warships now at Vladivostok are not regarded by the Japanese naval authorities as especially formidable, and they are disposed to look upon the Baltic fleet as their legitimate prey. It is not likely that the town could be entered by an invading force

from landward without a repetition of the hard fighting that took place at Port Arthur. The natural disposition of the hills at the rear of Vladivostok has made it possible to interpose many powerful schemes of defense against the advance of an enemy, and the Russian engineers have been puzzling their brains for forty years to make approach from the rear practically impossible. There is nothing, however, to prevent the Japanese from completely investing the place. Once inclosed within the circle formed by the Japanese fleet and the land forces, there would be nothing to expect from outside. The Russians have no means of assembling or maintaining an army in that vicinity sufficient to suggest any prospect of relief, as was the case for awhile at Port Arthur. It would only be a simple question of endurance.

It is undoubtedly a fact that Vladivostok is even better provided to sustain a long blockade than was Port Arthur. When Russia decided to make it the terminus of the Transiberian road she began to build storehouses and military depots the like of which was unknown to Asia. This hoarding of stores has never ceased, and at the present time Vladivostok is full to overflowing of a great bulk of supplies absurdly disproportionate to its size and importance. If Admiral Uru and his fleet could succeed in forcing an entrance into the harbor without giving the enemy an opportunity to fire the rows of giant storehouses which extend to the water's edge they would obtain plunder enough to defray the cost of the campaign.

To lose Vladivostok would be Russia's crowning humiliation. For forty years it has been the empire's Asiatic outlet, and all the schemes of territorial expansion which have inflated the Muscovite breast have contemplated it as a radiating center. To be shorn of it would be bitterness indeed.

JAMES R. FULLER.

Chevalier Guglielmo Marconi, Genius and Benedict, Who Transmits Messages on Invisible Ether Waves

THE recent marriage of Chevalier Guglielmo Marconi to the Hon. Beatrice O'Brien, a charming young Irishwoman of aristocratic lineage, once more brings the distinguished inventor of the wireless telegraph into public observation. With the exception of the German crown prince and possibly that of the youthful king of Spain, no other eligible young bachelors of the present generation has been the subject of so many reported engagements. His final choice of an Irish bride may be regarded as a tender tribute to the nationality of his mother, who was the pretty and clever daughter of old John Jamison, the famous Dublin distiller.

Not many inventors of Marconi's caliber have been called upon to suffer fewer discouragements in the exercise of the promptings of their genius than has the discoverer of the wireless system of telegraphy. He had no superlatives to combat, no accepted and arbitrary natural dicta to overturn. Everything contributed to the development of his find. He was not obliged to feel his way cautiously. Mankind had already been so surfeited with marvels sprung from natural sources that it could no longer be taken by surprise. The thing to be feared was that popular expectation could not be fully met, that the powers of nature would fall short of the public demand.

When the discovery of the wireless telegraph was announced there was no shout of derision and little manifestation of incredulity. The world had been thrilled too frequently to exhibit rapture over this latest revelation of natural possibilities. The conclusions of the young Italian experimenter were received with a dignified acquiescence,

and he was bidden godspeed. The only injunction that was imposed upon him was that he should not delay; that he should proceed as rapidly as possible to make his theories practical. This Marconi did, and now at the age when most geniuses are shackled with the uncertainty and lack of appreciation of the evolutionary stage he has so nearly accomplished his work that he is prepared to partake generously of the good things of life.

The wireless process as developed by Marconi is so simple that one is amazed that the clever Italian has been the first to appreciate it. It demands primarily a transmitter to give the impulse to the ether and a receiver to record it. The transmitter consists essentially of a powerful induction coil, with one end of the secondary wire in the earth and the other in the air. At the receiver a wire of corresponding height is elevated, and with it the waves are recorded. This sounds elementary, and it really is. It is so simple that there is absolutely nothing that is likely to interfere with the success of it. Details that furnish complications come afterward. The sending and receiving wires are both perpendicular because it has been found that horizontal aerial wires are of no avail whatever. These wires must be elevated a considerable distance from the surface in order to deal with wide areas. This disposition of wires is the leading feature at the Marconi stations. They are affixed to high masts at the permanent stations and are elevated by means of balloons or kites at the temporary ones.

Into the perpendicular wire of the transmitter oscillations of electricity are forced. This is done by means of the induction coil, the power being furnished by an ordinary alternate current generator. In the transmitting current is a telegraphic key. By de-



GUGLIELMO MARCONI AND HIS BRIDE, HON. BEATRICE O'BRIEN.

pressing this key for longer or shorter periods or intervals waves corresponding to the touch will be produced, and the dots and dashes of the Morse system may be multiplied at will. From high perpendicular wires, thus alternately charged and empty, waves are sent through the ether, spreading in all di-

rections. They reach the perpendicular wire of the receiving station, and an induced current is the result. At this point a vital feature of the Marconi system comes into active use. In the receiving wire, as a part of its circuit, is what has been termed by its inventor a "coherer." This is a small glass tube

almost filled by two silver plugs, one at each end. There is a space of only about the thirtieth of an inch between the enclosed ends of these plugs, and it is filled with a mixture of nickel and silver filings. The resistance of these filings is so great that a current cannot pass until

an ether wave strikes them and the wires attached, when the filings close to such an extent as to permit the passage of a small current from a local battery circuit attached to them. When the wave ceases this second current, which is actuated by the local current, relay, in turn, operates the recording

instrument. Now a little tapper like the buzzer used in electric bells starts automatically and raps the glass tube until the filings separate anew. This is in substance the manner in which messages have been ticked into the receptive ether at one point and extracted from the same medium at another far distant.

Guglielmo Marconi's childhood and early youth were passed near Bologna, where he was born in the year 1874. His father, a landed proprietor of considerable wealth and standing, married for his second wife Anna Jamison of Dublin, who was a student in music at the Bologna conservatory. A brother and a sister are now living with the father and mother in a handsome house in Bologna. The children of this later marriage learned English from their mother. Both sons speak it so fluently that there is no accent observable.

Marconi developed a taste for electrical investigation when he was a child and a pupil of the same educational institution in which the great Galvani was once a professor. He was afterward sent to England at the solicitation of his mother, and he conducted a series of experiments in that country which gave him an insight into his future career. Returning to Bologna, he continued to work out the problem on his father's estate and was given every encouragement by both of his parents. Finally, believing that he had succeeded, he took his models to England and submitted them to the authorities of the postoffice department. They were enthusiastic over the discovery, but no contract was made at that time, and Marconi returned to Italy.

The Italian government was greatly interested in the matter and gave the young man every opportunity, at one time placing at his disposal two battle-ships to be employed in a test.

SILAS B. HUTCHINS.

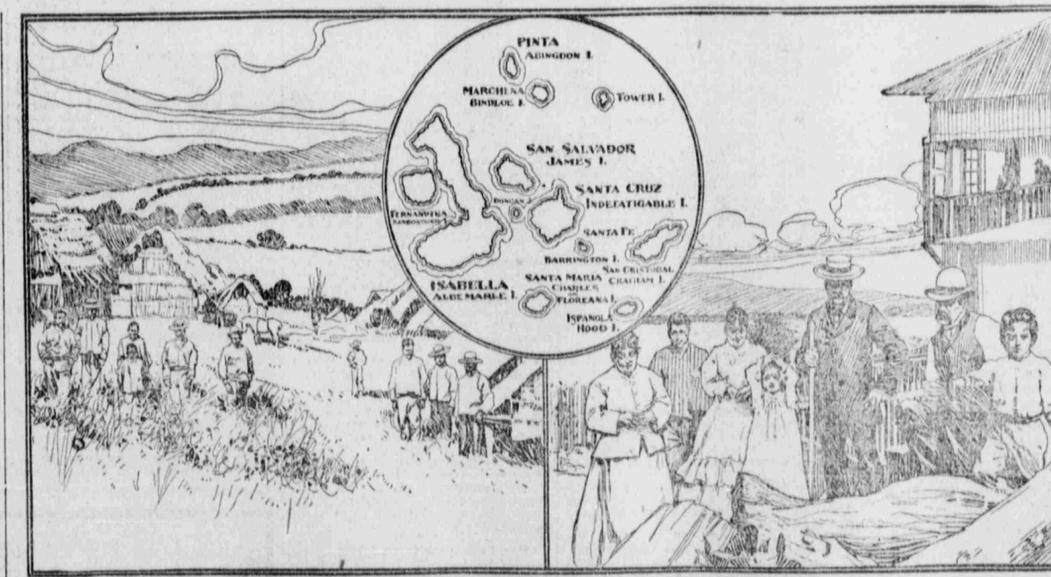
An Important New Pacific Naval Station For Uncle Sam; The Negotiations With Ecuador Are Now Progressing

THE persistent rumor that the United States government has decided to purchase the Galapagos islands has recently derived additional strength from certain semi-official admissions made at

Washington. The probability of such action on the part of the government is demonstrated still further by the announcement that diplomatic negotiations of importance are in progress between the Washington authorities and Ecuador, the owner of the property in question. In his last message the president of Ecuador discussed the matter of the sale at considerable length.

Senator Lodge introduced a resolution into the Fifty-sixth congress proposing the purchase of the archipelago, but nothing came of it. It was suggested at the time that about the only reason that could be urged in favor of the purchase was that of forestalling some meddlesome European power. Since the acquisition of the Panama Canal by the United States the matter has assumed a different aspect. Under existing circumstances the islands would form an excellent base for naval safeguarding.

The Galapagos group lies about 600 miles west of Ecuador, and it is of no actual value to that republic. She has never made but one attempt to colonize it, and that was a dismal failure. About sixty-five years ago a penal colony of 200 convicts, all negroes, was established on one of the islands, but in the course of time all of these unwilling settlers managed to return to the mainland. Since then the islands have been practically deserted, except Chatham, the property of Senor Cobos, who has established a plantation there and peopled it with Guayaquil laborers. If the Galapagos were inhabited they



MAP OF THE GALAPAGOS GROUP AND TWO SCENES ON CHATHAM ISLAND.

would become the stopping place for all the vessels plying between North and South American ports. They lie about ninety miles on either side of the equator and consist of eleven good sized islands and a host of unimportant outcrops. They are of unmistakable volcanic origin. Charles Darwin once visited them and came away enthusias-

tic over their scientific attractions. He pronounced them one of the wonders of the world. It was his theory that the islands had never been united, but had always protruded from the water as separate volcanic peaks. Each of the larger islands is a succession of peculiarly uniform volcanic cones welded together by black lava once poured from

the brims of hundreds of blazing craters. Six years ago, when the United States was agitating the question of purchase for reasons not so important as those which now obtain, Commander Tanner of the navy was sent to explore the group. His report shows that Alber-

marie, the largest island in the archipelago and, save one other, the farthest from the continent, is sixty miles in length and about fifteen in width at its center. It is topped by six huge craters, the greatest 4,700 feet in height, all surrounded by hundreds of lesser cones. One of the harbors selected by the commander as a suitable station for the

American navy lies between Albermarle and Narborough, the westernmost and highest of the group. This prospective harbor is formed by an extinct crater, and its shores are so precipitous that the interior is not perceptible from the open sea.

From Albermarle Commander Tanner proceeded to Charles Island, which lies to the southeast of the large member of the group and is only about twenty-four miles in circumference. It is a succession of round topped cones, the loftiest 1,780 feet in height. This is the island upon which Ecuador made the attempt to establish a penal colony. The settlement was five miles inland on a lava plain 1,000 feet in height. Commander Tanner found Charles Island uninhabited by human beings, although the live stock left by the abandoned convicts had multiplied greatly.

Several years subsequent to the abandonment of the island as a penal station a party from the vessel Albatross went ashore to collect specimens. Greatly to the surprise of the visitors, they discovered a man, who seemed to be a second Robinson Crusoe. He was almost naked, and his hair had grown to a great length. He had lost all notion of time, but could still speak brokenly. He informed his discoverers that he had come thither many years before with a party in order to obtain a boat load of valuable moss. His fellows had deserted him, and since then he had been master of all he surveyed. He had been able to obtain enough food to sustain life from the animals left by the convicts.

All of the islands are barren along their coast line, the landscape showing only a waste of shattered masses of lava. In the wet season, however, they do not appear to be so infertile when viewed from the sea. The lava is half hidden by masses of verdure which on closer inspection proves to be a variety of cactus which flourishes during the rainy season and then withers and

turns black. Toward the interior the prospect grows quite different. Ascending from the coast to an elevation of from 500 to 1,000 feet, one enters a region of the most luxuriant vegetation. In the craters of the extinct volcanoes the decomposed lava soil is extremely rich, and all forms of tropical plant life are developed rapidly. Numerous springs are found in these basins, and showers are frequent.

The Galapagos archipelago is the habitat of some of the most gigantic species of land tortoise known to naturalists. It was from this animal—the galapago—that the name of the group was derived. Single specimens of this huge creature frequently weigh 400 pounds and over. One mentioned by Darwin required eight men to lift it from the ground. This giant reptile, easily taken and inoffensive, furnishes a bountiful supply of delicious meat, and its shell is a marketable commodity. Such numbers of these tortoises have been taken—a single vessel has been known to carry 700—that they threaten to become extinct.

Chatham Island, one of the group which has been most frequently explored, now the scene of Senor Cobos' hacienda, is populated by thousands of domestic cats, all of them perfectly black. It is believed that they are descendants from cats which have escaped from ships that have stopped at the island. They live in crevices between the lava masses near the shore and subsist on crabs and fish. Other animals derived from domestic progenitors are numerous. There are dogs in packs, fowls in flocks and herds of cattle and wild asses. The latter animals are reported to have acquired the remarkable habit of sitting on their haunches precisely like rabbits. When Darwin visited the islands, sixty-five years ago, he found forty-nine species of animal life which were comparatively unknown on the mainland.

CHARLES E. FENNO.