

# NAVY'S WIRELESS SCHOOL

GOVERNMENT TO MAKE MOST EXTENSIVE USE OF WIRELESS OF ALL NATIONS



BOYS TRANSMITTING MESSAGES



GETTING THE "CQD" DANGER SIGNAL

What was considered the dream of a visionary inventor a few years ago—wireless telegraphy—is now an accepted fact, and the most skeptical admit its practical use when the war and navy departments assign officers to develop the new invention and begin to drill recruits as operators, says Lillian E. Zeh, in an article in *The Christian Herald*.

Our government has decided to make the most extensive use of wireless of all the nations of the world, and the navy department has just asked bids for the erection of a high-powered station in Washington. This will keep the navy officers in touch with ships 3,000 miles out at sea, both night and day. The recent triumph of wireless in summoning quick aid to the Republic, thus saving thousands of lives, has forcibly demonstrated the great value of this method of communication. The practical training of young sailor electricians for this new and important branch of the service has been progressing rapidly since the day Marconi started the world by sending his message across both sea and land without the aid of pole and wire.

The wireless school is quartered in the second story of the Bureau of Equipment building in the Brooklyn navy yard, and the students live on board the receiving ship Hancock. Lieutenant Commander Williams, U. S. N., is executive officer of the electrical and wireless school, and Chief Electrician Rice is the principal instructor. The class now being drilled in this new branch of naval work have come up from the electrical class located below, where for three months they have been put through a course of study on electricity in general. The general course is especially applicable to ship and station requirements, where they are destined to be sent for future duty. Actual work is given in the handling of electrical machinery, dynamos, and the manipulating of the electrical switchboard, which regulates the interior communication of a modern battleship. After 12 weeks of preliminary work in the lower school, they receive their final training by going through a month's practical instruction in the wireless class. After completing four months of thorough and systematic instruction, having obtained in this interval a fair knowledge of adjusting and manipulating the apparatus, they are prepared to graduate. An interesting and picturesque sight is afforded by a peep into this novel wireless school-room. Passing down the long corridor of the equipment building, and entering the spacious classroom, the visitor is plunged into a veritable beehive; all is bustle and sound. Seated around long tables are some one hundred bright-appearing young sailors, each deeply absorbed in mastering the wireless apparatus. For a limited time, a squad is drilled daily at the sending key; the remainder, at tables with pen and paper, are engaged in receiving and translating the sound messages sent from the transmitting room. The wireless navy code alphabet is made up of a series of dots and dashes of relative length. These are indicated by buzzes received in the ear 'phone, which must be accurately learned by the beginner. They are also printed by the automatic Morse recorder on a tape line. Receiving by ear is, however, the most speedy, and the method generally employed in active service by operators in ships and shore stations. On weekly examination days, the instructor tests the ability of each individual of the class Ten to 12 words per minute is the average sending capacity. Experienced operators, under favorable circumstances, send from 12 to 15 words, and receive as many as 30.

Chief Electrician Rice imparts the

## Good King Oscar

A Character Sketch of the Late Swedish Ruler  
Written by John E. Fellers.

There is a story to the effect that up among the cold, bleak fields in the northern part of Sweden, there once lived a Lapp, who in some way had incurred the enmity of his Swedish neighbors. His sole earthly possession was a small herd of reindeer. His neighbors sought to drive him away, and among other indignities imposed upon him they killed his entire herd. The Swedish officers controlled the courts, and the Lapp was denied justice at their hands.

It was a dreary winter—never so cold and dreary anywhere else as in that far north country. The snow was deep. It was the "second watch" in the Scandinavian night. More than two months must pass before the sun would return from its summer home.

Securely fastening his "skidor" to his feet, the dejected Lapp glided swiftly over the snow several hundred miles to Stockholm, the Swedish capital. He knew that he was poor and ignorant, but he was a Swedish subject, and as such would be received by King Oscar. He told his story. The king listened. He at once ordered a thorough investigation made and the report verified the Lapp's complaint. The king compelled the slayers of the reindeer to make full restitution to the Lapp and punished the officers who had denied him justice.

This is but one of many instances in which good King Oscar was found on the side of the oppressed. His whole nature was in sympathy with the helpless, because he had read history. His mother was the Empress Josephine's granddaughter. He knew that his illustrious kinswoman was driven from France, repudiated, broken-hearted, a victim of the rankest injustice that ever threw its midnight over a noble life. He knew, too, that although the man who laid the love of Josephine upon the altar of his ambition was the emperor of a great people, and perhaps the greatest military leader of modern times, all his achievements combined were not sufficient to atone for that one cruel act.

It is an interesting fact that almost every relative, friend, favorite and sycophant whom Napoleon placed on the different thrones in Europe has fallen from power, while King Oscar, the direct descendant of the Empress Josephine, was one of the most beloved rulers in the world. The descendants of Napoleon, in less than 100 years, have disappeared into commonplace mediocrity, while those of Josephine have risen to kingly power. It seems now that as the years roll on the writers of solemn history will find in the tragic story of these island lovers (for they were each born on an island) more and more that will mark them as actors of equal parts on the world's political and revolutionary stage. Napoleon divorced Josephine that he might establish a perpetual dynasty; but—"Man proposes, God disposes."

When in her childhood home on the Island of Martinique, Josephine was betrothed to the Viscount Beauharnais, to whom she was married at the age of 14. From this marriage two children were born—Eugene and Hortense. The Viscount Beauharnais was executed by order of Robespierre, and shortly afterward Josephine was married to Napoleon. Her son, Eugene Beauharnais, married the Princess Augusta of Bavaria. To them was born a daughter, whom Eugene named Josephine, in honor of his mother. When the younger Josephine was 16, she was married to Oscar I., who succeeded his father Bernadotte as king of Sweden, and nearly ten years after the great Napoleon had slipped into the shadow, the late king of Sweden—Oscar II.—was born to the younger Josephine. We have also a fine example of romantic justice in the fact that the Empress Josephine, after all, gave Bonaparte an heir in the person of her grandson Napoleon III., who was the son of Louis Bonaparte, king of Holland, who married Hortense Beauharnais, Josephine's daughter.

King Oscar was an independent thinker. He feared nothing except to do wrong. He moved slowly, but occasion always found him on time in settling questions of importance. This splendid king, whose rugged character gave strength to every other monarchy in Europe, died as he had lived, bravely, courageously. His influence will shine as the great "Northern Light" in political history throughout the ages that are to be.

In conversation with W. W. Thomas, Jr., late minister to Sweden from the United States, King Oscar once said: "It is a part of my politics to go among my people as much as possible, to mix with them, to learn their wants and aspirations, not only among the citizens of the capitals, but to travel widely among the citizens all over the two kingdoms, to make their acquaintance personally and to take them by the hand."

(Copyright, 1908, by Joseph E. Bowles.)

## Wrote "Home, Sweet Home"

Just where Long Island meets the ocean at its most easterly point, there to-day, as a hundred years ago, sits the little village of East Hampton. Rev. Lyman Beecher was preaching some good sermons in the church of that village when John Howard Payne's father moved his family there and accepted the presidency of Clinton academy. From those sermons, John Howard, though a mere boy, caught glimpses of the road over which the thought of this great preacher traveled to wider and broader hope. It was a case of the brooklet, while yet a brooklet, having found the sea.

Even when a child John Howard Payne was engaging and mannerly. He possessed a remarkably fine address and his mind seemed to be pre-eminently rich. His father was an elocutionist as well as a teacher. Rev. Lyman Beecher, whom the boy almost idolized, was a preacher, but neither of these vocations quite satisfied the boy, so he chose the stage. In 1809, at the age of 17, he appeared in New York as the "juvenile wonder," and for 23 years thereafter he played successfully in both Europe and America.

Few people know Mr. Payne, except as the author of "Home, Sweet Home," but as a matter of fact, he was a great dramatist, a great actor, a great translator. In 1841 he received the appointment of United States consul at Tunis, Africa. The fact that practically no satisfactory information can be found in books of reference regarding Mr. Payne's removal from the service at Tunis, has given the impression that some mistake in his case was made at Washington, which was never corrected nor made public. The tone of disappointment in the following statement made by him a while before he died, rather emphasizes that impression: "How often have I been in the heart of Paris, Berlin, London, or some other city and have heard persons singing or hand organs playing 'Home, Sweet Home,' and I without a shilling to buy myself a meal, or a place to lay my head. The world has literally sung my song until every heart is familiar with its melody, yet I have been a wanderer from my boyhood. My country has turned me ruthlessly from office and in my old age I have to submit to humiliation for my bread."

"Home, Sweet Home," was a mere fragment—a sort of parenthesis, which was thrown into his opera "The Maid of Milan," to entertain the audience while the scene shifted to a stronger part. It was first sung by Miss M. Tree, a sister of Mrs. Charles Keane, with such marvelous effect that it won for Miss Tree the heart of a rich husband and the publishers of the opera reaped a fortune, although the author received but little benefit. Strange how the names of people become linked to their work, so that the mention of one always suggests the

other. When the name of John Milton is spoken, "Paradise Lost" is remembered. Tell of John Bunyan and the "Pilgrim's Progress" comes again to our thought. We cannot fail to remember "Uncle Tom's Cabin" when we hear the name of Harriet Beecher Stowe, and who hears the name of John Howard Payne and does not at once begin crooning "Home, Sweet Home." The author of this pretty song little dreamed when he wrote it that his name would go down through the ages, borne thither on a Sicilian air, literally sung into fame by the sweet voice of an English girl. He had hoped to be known as an author or dramatist, but "the tide in the affairs of men" bore him singing away from his native land to a home on a foreign shore.

A line drawn directly east from St. Louis would pass not far from a grave in Oak Hill cemetery, Georgetown near Washington, where rest the earthly remains of John Howard Payne. If this line be extended eastward without variation, it will pass directly into the Strait of Gibraltar. But for this strait, Spain would touch the Morocco coast and be a part of Africa. If the line be yet extended eastward, without deflection to the southern point of the Island of Sicily, it would pass through the towns of Algiers and Tunis and would miss the ancient ruins of Carthage but three miles.

I have drawn this line touching these points that I might better call attention to some minor details that usually have no part in a biographical sketch, but which to me seem interesting in this instance. To this town of Tunis Mr. Payne came as United States consul in 1841 and here he died in 1852. His remains were buried near the site of ancient Carthage and not far from the shore of the Mediterranean sea. In 1883 they were removed at the suggestion of some friends from St. Louis, who in their travels had visited Algiers and Tunis some years before. The ship carried the remains through the Strait of Gibraltar directly west to the cemetery near the capital of his native land. There they were reinterred, while a thousand voices, in the same Sicilian air which has carried it around the world, sang "Home, Sweet Home" in honor of the author, who never had a home after the age of 13.

St. Louis, Oak Hill cemetery, Strait of Gibraltar, Algiers, Tunis, ruins of Carthage and southern Sicily, each in turn come under the same rays of the sun, as the old earth rolls eastward on a journey that never ends.

A pathetic story is told of Payne once sitting in the front seat of a theater when Jenny Lind sang "Home, Sweet Home." He was so affected by it that at the close of the concert he sat weeping for several minutes, the spectators having quietly left him alone.

(Copyright, 1908, by Joseph E. Bowles.)

## The ORIGIN of RUBBER

ONE OF THE GREAT ESSENTIALS OF MODERN LIFE



RUBBER GATHERER'S HOME ON THE UPPER AMAZON RIVER



TAPPING A RUBBER TREE IN CHIAPAS, MEXICO

ments, and added another word to the vocabulary. From this date india rubber was more and more an article of commerce; it served many purposes, but it also balked the inventors in many directions in which they had hoped it might be applied. Experiments were constantly being made; even the incorporation of sulphur had been tried, but it was not until 1839 that Nelson Goodyear, in the United States, hit upon a practical method of combining rubber with sulphur so as to retain all its good, unique properties, while losing those that had made it hitherto unsuitable. This process was called vulcanization.

Rubber—india rubber—is a definite chemical combination of carbon and hydrogen, expressed by the (proportionate) formula C<sub>5</sub>H<sub>8</sub>, or C<sub>10</sub>H<sub>16</sub>. It is a whitish solid, opaque, scarcely reacted upon by the ordinary solvents, but forming fluid or gelatinous masses with the ethers and the coal-tar oils. All this refers, of course, to the chemically pure rubber. It will also melt and burn. Physically, rubber will stretch, and when tension is released its mass returns to the original position and form. Unfortunately, however, rubber in the pure state has three awkward qualities: It loses this distensibility at certain degrees of heat and cold, it softens under heat, and has a great tendency to stick to itself or to other masses of rubber with which it is brought in contact. Now, these three qualities of rubber as refined after entering the market from the tropical forests are overcome when it is mixed with sulphur—that is, vulcanized. It can then be molded into various shapes and still remain distensible. The degrees of temperature between which it retains these good qualities are very much wider apart, so that climatic changes are less felt by the manufactured product, and consequently rubber articles of an infinitely more varied type can be turned out from the factories. Vulcanized rubber is therefore the substance really implied ordinarily by the word alone.

Rubber is one of the great essentials of modern industrial life. With iron or steel, with copper, and with glass it may be compared in the diversity of its use; it has the advantage over these, and may be compared in this latter respect to corn, wheat, and the necessary foods, in that it is capable of eternal reproduction if mankind will but apply to its cultivation his experience and scientific knowledge.

There is scarcely a device of daily commerce into which rubber does not enter as a necessity, and yet in the annual statistical publication of the department of commerce and labor—Commerce and Navigation of the United States—the student will look in vain for the word "rubber," and not until he examines the word or the phrase "indiarubber," "India rubber," or "India-rubber" will he be able to see how vast and important is the subject before him. This conservatism—if the term may be here applied—is traceable throughout all the literature of all the libraries of the English-speaking world. The aboriginal native word describing the substance first discovered by the early Europeans was cauchu, probably pronounced but surely corrupted into caoutchouc. This latter word has spread into the languages of Europe. In French it is the same word; in German the only modification is to substitute a k for the c, and in Russian nearly the same change takes place. To be sure the Spanish uses frequently the word goma, equivalent to our gum, and this is made more specific by adding the adjective elastica, and the Portuguese has the word borracha, but cauchu is commercially well understood, as might be supposed from the first association with the source of supply. Rubber, or India rubber, however, is undoubtedly the term which will continue to be employed in English to distinguish this indispensable product of the tropics.

Caoutchouc directly explains the descent of the gum and its adoption into arts, but india rubber embraces not only this history but conceals one of the romances of the industries. Travelers—and it is said Columbus himself was one of them—noticed that the Indian inhabitants of America, thought then to be an unknown portion of the Indies, played ball with a curious substance grown in the primitive forests and prepared according to native ways. This substance was also made into shoes; it formed a protective coating for garments, and from it were made bottles which could be squeezed together so as to eject the liquid contents. This substance was called cauchu in some parts of America, and the gatherers were caucheros; in other parts the gatherers were called because of the shape of the bottles and the uses to which the Portuguese saw them put, seringueiros, syringe-men. From this origin the india prefix of the word is derived. At first the gum, gona elastica, according to the Spanish, was merely a curiosity; it was imported into Europe and studied chemically with great interest; it was made into tubes and put to practical use in the laboratory. But in 1770 the English chemist Priestley recommended the use of the gum for effacing the marks of the lead pencil. It, rubbed out these marks and was, therefore, a rubber. It became more widely known as experiment showed its value, and in 1823 Macintosh discovered the method of waterproofing gar-

### Max Pemberton's First Book.

Max Pemberton's first book was called "The Diary of a Scoundrel," and he had the usual trials and tribulations with it. Soon after its publication he received a letter from a firm of well-known solicitors complaining that he had grossly libelled a client of theirs. The publisher of the book was in a state of alarm, and Mr. Pemberton took the bull by the horns and went to see the lawyers. He was at once shown into the principal's room. "Your client claims to be the original of this picture, doesn't she?" the author asked.

"She does," was the reply. "Have you read the book?" continued the author. "No, I haven't."

"Is there any trouble about the age of my characters and the lady you represent?" was Mr. Pemberton's next question. "Why do you ask?" exclaimed the lawyer.

"Because," said Pemberton, "my character happens to be seven years old."

The lawsuit fizzled out, but the book did not sell, and Mr. Pemberton declares to his positive knowledge that there was only one copy ever bought by anybody, and that was by a friend of his. The friend asked the boy in the book shop for "The Diary of a Scoundrel."

### Plants Grow in Darkness.

While many plants close their petals or fold their leaves as darkness approaches, the testimony of most scientists is to the effect that none cease to grow. A series of experiments was recently made in the east with quick-growing plants, such as asparagus, lettuce, radishes and the like, with a view of ascertaining whether the growth continues at night with as great rapidity as during the day. The result determined that, while the growth is continual with most plants, it is by no means so rapid during the dark hours as during the light. There are, however, many exceptions to this, not a few plants being nocturnal and growing more and faster during the night than in the daytime. These, however, are usually tropical, and their habitat is commonly in dense forests, where even during the daytime no great amount of light is able to penetrate.

(Copyright, 1908, by Joseph E. Bowles.)