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REMINISCENCES OF BALLOONING IN THE CIVIL WAR.

BY WILLIAM JONES RHEES.*

OF THE SMITHSONIAN INSTITUTION.

IN the winter of 1860 a young man came to Washington to visit Professor Henry, at that time secretary of the Smithsonian Institution, to lay before him, as many others had done, a great discovery, for his critical and sympathetic examination, feeling assured that with his approval success and fame would be guaranteed. Henry always welcomed such visitors, and however crude, fanciful, or impossible their theories or projects, he treated them with kind attention and either encouraged them with judicious advice or helpful suggestions or showed them the "error of their ways" in the mildest and most conciliatory manner. One of the most interesting occasions was the one now to be related.

This young man, Thaddeus S. C. Lowe, was born in Jefferson, N. H., under the shadow of those famous peaks of Adams, Jefferson, and Washington, the daily sight of whose majestic summits must have stimulated his youthful mind to high aspiration and lofty achievement. No wonder then that he was filled with a desire to substitute for the toilsome climb up the rugged mountain sides, which had often wearied his boyish feet, some quicker and easier method of locomotion. He became an enthusiast in balloon adventure and devoted himself not only to the study of what had been done before, but also to the manufacture and actual employment of machines for aerial navigation. Having made successful local ascensions he resolved to try bolder and wider flights, and at last felt convinced that he could accomplish what was a great desideratum but generally thought to be entirely chimerical—a voyage across the Atlantic Ocean.

* Mr. Rhees, the chief clerk of the Smithsonian Institution, had charge of Mr. Lowe's balloon experiments for the Smithsonian Institution in June, 1861, and subsequently prepared the latter's report of his observations at the front for transmission to the War Department. He also accompanied him on one of his aerial trips.

Lowe was so filled with enthusiasm and so self-confident that he made a deep impression on men of usually slow and conservative habits, and he even brought with him to Professor Henry a remarkable letter signed by prominent men in Philadelphia, among whom were the leading scientific and practical writers and inventors, some of them officers of the Franklin Institute, such as John C. Cresson, William Hamilton, W. H. Harrison, Isaac Lea, Firman Rogers, James C. Fisher, J. B. Lippincott, George W. Childs, John Grigg, S. S. Haldeman, John F. Thayer, George Harding, and Morton McMichael. Lowe had spent much time and money in the enterprise, and the citizens of Philadelphia had contributed several thousand dollars to further his efforts in demonstrating the feasibility of transatlantic navigation. With reliance upon him and his plans, they cheerfully commended him to the favorable consideration of the Smithsonian Institution and trusted that aid and advice would be furnished him by that distinguished body, which might assist in the success of the attempt in which they took deep interest.

Professor Henry laid the letter before the board of regents of the Smithsonian Institution, and at its meeting of February 16, 1861, on motion of Senator James M. Mason of Virginia, the secretary was requested to give Mr. Lowe advice as to his experiments, but to decline to furnish any material aid to his enterprise.

In accordance with this action Professor Henry wrote on the 8th of March to the citizens of Philadelphia that as "the board of regents was responsible to the government and to the world for the prudent expenditure of the income of the Smithsonian bequest, and inasmuch as the proposed experiment is one which, in the minds of the majority of considerate and reflective per-

sons, is of great hazard, the regents do not think, whatever might be their individual desire to advance the art of aerial navigation, that they would be justified in making an appropriation from the Smithsonian income to assist in this enterprise." Henry added, however, that any questions which might be propounded would be cheerfully answered as far as he had the means of giving the required information.

Another letter was sent by Henry to Lowe, March 11, 1861, in which he discussed the nature of the air currents over the western continent and declared his belief in the practicability of the proposed experiment.

While Henry had no faith in any plan proposed for navigating the air by artificial propulsion or for steering a balloon in a direction different from that of the current in which the vehicle is floating, the resistance to a current of air offered by several thousand feet of surface being far too great to be overcome by any motive power then known which could be applied by machinery of sufficient lightness, he believed that the only method of aerial navigation which afforded any possibility of practical application was that of sailing with the currents of the atmosphere. He did not hesitate to say that, provided a balloon could be constructed of sufficient size and of sufficient impermeability to gas in order that it might maintain a high elevation for a sufficient length of time, it would be wafted across the Atlantic.

Encouraged by this view of Professor Henry's and his personal assurances of desire that the trial be actually made, Mr. Lowe resolved to make a trip. He had become convinced that in the higher atmos-

phere a current exists which invariably moves eastward with but slight variations, no matter how diverse the surface currents may be. This was in accordance with the views of Henry, deduced from scientific

principles. In order to test the existence of this current Lowe planned the necessary machinery and interested a number of wealthy men to help sustain the expense, with a view to the establishment of a balloon system which would convey information across the Atlantic in much less time than that then occupied by the mail steamers. No cable telegraph was then in operation and the interest of



T. S. C. LOWE (1861).

Mr. Lowe's contributors was mainly a mercantile and pecuniary one—to secure the earliest possible transmission of important news.

A balloon was accordingly constructed by Lowe which lifted sixteen tons, including its own weight, and had seven hundred and twenty-five thousand cubic feet capacity. This was fitted up with instruments, provisions, implements, and also a full-rigged life-boat schooner with air-tight compartments, built of light steel plates.

Professor Henry had been so averse to his running any risk by the trip over the Atlantic that at his suggestion Lowe determined to test the existence of the upper western current over a long land distance. He therefore left his large balloon and taking a smaller experimental balloon, "The Enterprise," went to Cincinnati and for about a month waited for favorable conditions of the weather. He finally made his ascent at 3:30 o'clock on the morning of April 20, 1861. Mr. Potter and Murat Halstead of the *Cincinnati Commercial Gazette* were with Mr. Lowe before he made his

ascent and furnished some much-needed and useful supplies to the intrepid adventurer. He took with him a mercurial barometer, an altimeter for determining latitude and longitude, a telescope, a thermometer, a polar-line needle compass, etc.

The balloon at first started rapidly toward the west, bidding fair to prove the fallacy of Lowe's theory, as the surface currents from the east were quite strong. When he reached an altitude of seven thousand feet, however, he struck the desired steady eastward-flowing current. A still further ascent to eighteen thousand feet was made. The balloon made rapid progress, despatches from Falmouth and Lexington, Ky., announcing its passage at daylight. Before reaching the Alleghanies a deep and rapid current of air between that range and the Blue Ridge drove the balloon slightly southward out of the direct eastern path, so he decided to land in the upper part of South Carolina at Pea Ridge rather than to risk going nearer the coast, where only rice fields and swamps appeared in view. The landing was made after being in the air eight hours and traversing three hundred and fifty miles.

His arrival caused much consternation among the negroes and even the whites of that region, and he was warned to leave at once. Another attempt at landing caused the inhabitants to flee at his approach and no one at first offered him any assistance even in anchoring the balloon.

At length a stalwart young white woman responded to Mr. Lowe's calls, and assisted in steadying the balloon until enough gas escaped to allow the car to remain on the

ground. It was not long, however, before curiosity triumphed and a crowd of men assembled on foot and horseback, most of them armed with shotguns. When all the gas had escaped and the balloon collapsed, the lookers-on became more defiant and aggressive. Many of them thought Mr. Lowe was an inhabitant of some ethereal or infernal region, who had floated to the earth to do damage to its inhabitants. He thought he would pacify them by showing that he could live on the substantial things of earth just as they did; so he took from the basket a variety of cakes, crackers, bread and butter, cold meats, etc. He also passed out several india-rubber bottles of water which had frozen solid, and to let them realize how cold it was in the upper region of the atmosphere where he had been, he cut one of them open and took out a large mold of ice, shaped exactly like the bottle. This was the worst thing he could have done, for immediately one man asked how any one but a

devil could put so large a piece of ice through so small a place as the nozzle. At last an old dissipated man suggested that one who was capable of doing such things was too dangerous to run loose and moved that he be "shot on the spot where he had dropped from the skies." Fortunately the brave young woman already alluded to came to his rescue and assured Lowe that these fellows were cowards, and that all the brave



T. S. C. LOWE (1898).

men had gone to the war.

This was a few days after the evacuation of Fort Sumter. As Lowe began removing his instruments from the car of the balloon the alarm of the crowd increased, as

they firmly believed them to be "infernal machines." He finally displayed a large Colt's revolver and threatened to despatch the first man who should make any hostile advances. At length he succeeded in packing up the balloon and equipments, and hiring a wagon team left for the nearest railroad station, escorted by six of the natives armed with shotguns and mounted on shaggy horses.

He arrived at last safely at Unionville, S. C., where he was treated fairly, having met in the hotel-keeper a former acquaintance. After a night's rest he was awakened early by the landlord, who apprised him that a large crowd had assembled, and were denouncing the stranger as a dangerous Yankee. On meeting some of the prominent people of the town and convincing them of the truth of his story by producing a Cincinnati paper published the very morning of the day he had landed at Pea Ridge, he was allowed to proceed on his way to Columbia, the capital of the state. Here he was again interfered with and only escaped rough treatment by appealing to the officers of the South Carolina College, who were able to testify to their knowledge of Professor Henry of the Smithsonian and to assert that his indorsement of Mr. Lowe should prove a passport anywhere. A formal document of protection was therefore given to him by the mayor. He made the journey back to Cincinnati, through Nashville, where he stopped long enough to attend a meeting of the legislature of Tennessee when secession was decided upon.

Lowe tells an amusing story of the influence his costume had among the southern people on this trip. He wore a Prince Albert and silk hat, and while traveling on the train through Tennessee noticed at each station several persons entering the cars, mostly well dressed, generally in black, with high silk hats, gloves, and the conventional gold-headed cane. These he recognized as southern gentlemen of the old style, who held official positions. In this case they were members of the Tennessee legislature, and it was interesting to observe how one "silk-hatted" gentleman would naturally

approach another and enter into conversation as though they were already acquainted. The silk hat seemed to be a kind of passport or mark of recognition and Lowe was frequently addressed on the subject uppermost in their minds. When they reached Nashville, though the hotels were said to be full, the "silk hats" had no difficulty in securing rooms and attention, Lowe among the rest, much in contrast to his reception a few days before in the sand-hills.

It may have been this good fortune which induced Lowe ever afterward to wear a silk hat and a black frock coat, which he did on his balloon ascensions during the war while at the front, much to the disgust of the officers and men of the army, who thought he was entirely too much of a "dandy" to be in active warfare.

Lowe as soon as he arrived in Cincinnati telegraphed to President Lincoln the information he had gained on his accidental visit to the South and was the first to inform him of the decision of Tennessee to join the Confederacy.

On his return to Philadelphia he became deeply impressed with the value to the Government of balloons in the conflict then entered upon, and proceeded to Washington to offer his services and lay his plans before the army officials. But he was rebuffed only with rebuffs and discouragement. He again appealed to his friend Professor Henry. He went at once to the Hon. Seward Cameron, secretary of war, who requested Henry to make a thorough investigation of the matter and report directly to him. The result. Lowe accordingly brought his balloon to the Smithsonian park, had construction made with the gas-main in the ground and made repeated ascensions with a private balloon to the height of a thousand feet between the 10th and 21st of June. These balloons were made of the clearest woven and strongest pongee silk, varied in capacity from fifteen to twenty thousand cubic feet.

On one of these ascensions, June 15th, Lowe took a telegraph apparatus with him, which was attached to a wire connected with the president's house. He sent f

his aerial perch a despatch to the president and received a reply from him. The distance between the instrument and the battery was about half a mile.

The altitude attained permitted the observer to note with great distinctness everything below for many miles around. The following despatch was transmitted to the president when the balloon was at the greatest altitude :

BALLOON "ENTERPRISE."

Washington, D. C., June 18, 1861.

TO THE PRESIDENT OF THE UNITED STATES :

This point of observation commands an area near fifty miles in diameter. The city, with its girdle of encampments, presents a superb scene. I have pleasure in sending you this first despatch ever telegraphed from an aerial station, and in acknowledging indebtedness to your encouragement for the opportunity of demonstrating the availability of the science of aeronautics in the military service of the country.

T. S. C. LOWE.

The complete working of the telegraphic wires in this case proved that the balloon could be used advantageously and safely in ascertaining the numbers and movements of an enemy's camp.

About the same time other aeronauts offered their services to the army, and General Butler sent La Mountain of Troy, N. Y., in the latter part of June to Fort Monroe.

The report made to Secretary Cameron by Professor Henry was so favorable that Lowe's services were engaged. He proceeded at once to invent and manufacture special portable apparatus for generating gas and was soon at the front with the army in the neighborhood of Washington. As his ascensions were independent of any branch of the service, Lowe considering himself a direct appointee of the president and responsible only to him, his efficiency was greatly impaired and there was constant friction between his assistants and the army officers.

The balloon was used in the Yorktown and Williamsburg campaigns and attracted the fire of the Confederates. It was used daily on a tour of inspection from near Gen. Fitz John Porter's headquarters. One day the balloon broke from its moorings of ropes and sailed majestically over the enemy's

works, but, fortunately for its occupants, it soon met with a counter-current of air, which returned it safely within the Union lines. General Porter made over a hundred ascensions. The Confederates fired repeatedly from their camps on the balloon but never hit it.

The following story is told by Gen. W. B. Taliaferro of the Confederate army, in writing of Jackson's raid around Pope :

It may be of interest to relate an incident which illustrates the pinched condition of the Confederacy even as early as 1862. The Federals had been using balloons in examining our positions and we watched with envious eyes their beautiful observations as they floated high up in the air, well out of the range of our guns. While we were longing for the balloons that poverty denied us, a genius arose for the occasion and suggested that we send out and gather together all the silk dresses in the Confederacy and make a balloon. It was done, and soon we had a great patchwork ship of many and varied hues, which was ready for use in the seven days' campaign. We had no gas except in Richmond, and it was the custom to inflate the balloon there, tie it securely to an engine, and run it down the York River Railroad to any point at which we desired to send it up. One day it was on a steamer down the James when the tide went out and left the vessel and balloon high and dry on a bar. The Federals gathered it in and with it the last silk dress in the Confederacy. This capture was the meanest trick of the war and one I have never yet forgotten.

Gen. E. Porter Alexander of the Confederates remarks in speaking of the battle of Gettysburg, "I was particularly cautioned in moving the artillery to keep it out of sight of the signal station upon Round Top," and he adds in a foot-note, "This suggests the remark that I have never understood : why the enemy abandoned the use of military balloons early in 1863 after having used them extensively up to that time. Even if the observers never saw anything they would have been worth all they cost for the annoyance and delays they caused us in trying to keep our movements out of their sight."

For some unexplained reason the use of balloons was discontinued quite early in the war. Lowe disposed of his aeronautic machinery to the Brazilian government.

Lowe, after relinquishing aeronautics, devoted himself to inventions and obtained

many valuable patents which secured for him fame and money; such as the manufacture of ice and water-gas, now in use in almost every city in the United States. Of late years he has devoted himself to the construction of an electric mountain railway which conveys the tourist five thousand

feet above the sea-level to the summit of "Mount Lowe" in the Sierra Madre range at Pasadena, where he has a fine observatory, in charge of Prof. Lewis Swift. He is regarded as one of the most enterprising citizens and foremost benefactors of southern California.

CHINESE OFFICERS.

BY A. OSKAR KLAUSSMANN.

TRANSLATED FOR "THE CHAUTAUQUAN" FROM THE GERMAN "ÜBER LAND UND MEER."

A CHINESE mandarin, a magistrate, gave a goldsmith a commission to procure for him two ingots of gold. The jeweler executed the commission, came to the magistrate with the gold ingots, and was asked the price.

"There is a fixed price for gold," answered the vender, "and every one knows that. But from you, noble sir, I will ask only half the accustomed price."

"Good!" said the mandarin as he gave back one of the ingots. "I will keep one and give you back the other, so we are even."

"But —" replied the vender, but before he could proceed further the mandarin interrupted angrily, "You have received your own price from me without any haggling, and do you still complain? Be off, or I will have you thrown into prison!"

This anecdote, taken from a Chinese newspaper, shows the native officer in his true light.

The Chinese law-giver truly intended to allow only the most eminent spirits of the nation to enter the career of an officer, but with the mandarins more than with any one else in the world are theory and reality entirely at variance. Let us see how this difference arises, while at the same time we follow the history of a Chinese mandarin from the first beginnings of his career.

Whoever wishes to become a mandarin must first have passed the state examinations, for without this he cannot be chosen for the lowest position, and those wishing to undertake these state examinations must

naturally acquire a certain amount of information beforehand. But, to our knowledge there are in all China no public schools. In their stead are private schools, and here the children of the more civilized class learn to read a few thousand Chinese characters and to draw on paper; besides this they receive religious instruction. In these schools they do not learn geography, history, foreign languages, no word is mentioned of what passes in the whole world, of discoveries and inventions. When the pupils have finished this private school those who wish to undertake the state examinations enter another private school where the real preparation now begins.

They are not always children who attend these higher preparatory schools; find, rather, people of a ripe old age, by a life of toil must first earn the money in order to take the instruction and to afford the cost of the examinations and the means of subsistence. So all ages, from boy to gray-haired men, are represented in the second school. Here nothing is taught except the history of literature. The Chinese, who can look back upon a history of many thousand years, have a great number of famous poets and philosophers who are numbered with the "classics" of the country. The pupil must learn by heart the writings of these classics and be able to explain every word, every sentence, every grammatical figure. Nothing except what these classics touch upon is taught in the schools, and also nothing else is demanded for the state examination. T