

nets which line the bank, give this valley a maritime aspect. While the Housatonic farmer would talk of trading a "beef creetur" with you, and the Naugatuck Valley manufacturer would speak of the money that could be made out of his patent rat-trap, we would expect the voracious dweller upon the river-bank to expatiate upon the unprecedented "run o' shad" in '85. To avoid such a risk we cross the river at Middletown, seeing and hearing the little river-steamer *Silver Star* as she whistles for the drawbridge which spans the river at this point. Fearing that the wind might change, and that I should be unable to reach Norwich, which lay due east about twenty-five miles, and seeing that the stretch of country ahead was covered with woods and lacking in railroads, I concluded to land. As I neared the earth the wind changed, and I was surprised and chagrined at the speed of the lower current of air.

The shadow of the balloon seemed to fly over the earth's surface. As it skipped over valleys, woods, and pastures like a ghost, a feeling of discontent began to assert itself. As we scooted along just high enough to clear obstructions, valve-rope in one hand and bag of ballast in the other, I could not help thinking "something was going to happen." Places soft enough to land upon from a balloon which is tearing along a mile a minute are scarce in Connecticut. While over a tract of woods on high ground, in East Hampton, the valve was opened in hopes of being able to make a landing in the valley on the other side, out of the wind. As the machine settled down the side of the mountain, the car became engaged with the limb of a large chestnut-tree. The momentum was too much for the limb; it snapped off close to the tree, at which place it was certainly ten inches through, and the journey down was continued. The grapnel with one hundred feet of rope was thrown out. It caught in and tore down three lengths of a six-rail fence. I passed the time of day with a terrified farmer, who was at work in the

lot, and, dropping a fifteen-pound bag of ballast, rose up over the hill into New London county. I shall never forget the picture of horror depicted upon that farmer's countenance, as he saw his fence melt away, and looked up at me whooping along over his head.

After two other unsuccessful attempts to make a safe landing the ballast gave out. Unless the anchor should catch a secure hold at the next attempt, I might hear something "drop." As I neared the earth the anchor was thrown out again. I should explain that the anchor, or grapnel, is drawn into the car after every unsuccessful attempt, to avoid the danger of its being caught in the tops of trees; for if the anchor with a hundred feet of rope attached becomes securely hooked into the top of a tall tree during a gale of wind, there will be trouble.

It was gratifying to see the anchor finally take strong hold. Knowing that it would not pull out when the slack was taken up, I pulled the rip-cord, making a hole twenty-two feet long in the balloon; but when the balloon reached the end of the slack rope the speed was too great, and the heavy hickory hoop overhead, to which the anchor-rope is always attached, parted, causing the ropes which attached the car to the balloon to pull upon one side only; the car was bottom side up in a minute, twenty-six feet from the ground. I got out, and, in company with a thermometer and a porous-plaster advertisement that some one had thrown into the car at the outset, started out to make a landing. I struck into the top of a white birch-tree, broke it off, and fell from limb to limb until I landed on the ground, with no bones broken. The balloon could go but a short distance with the great rent in its side, so I secured the services of a kind farmer living near, and soon the balloon and its owner were on their way to Goodspeeds Landing on the river. I landed in Colchester at 4:28 P. M., having covered seventy-four miles in eighty-eight minutes, averaging nearly fifty miles an hour.

Alfred E. Moore.

BALLOON EXPERIENCES OF A TIMID PHOTOGRAPHER.

MY FIRST ASCENSION.

ALTHOUGH I had always wished (as who has not?) to taste the pleasures of a balloon ascension, yet, when in July, 1885, Mr. A. E. Moore confided to me that he was having a large balloon built, and asked my opinion concerning the possibility of photographing

from it, nothing was further from my thoughts than that I should ever realize my aspirations.

Later Mr. Moore consulted me about the construction of some parts, but still I had no suspicion that I was destined to be his companion in two ascensions.

The first ascension with the new balloon was made from Winsted on July 29th; and on his return from what was to him an eventful trip, Mr. Moore proposed that I should go with him, and attempt the feat of photographing from the balloon. This direct proposal nearly threw me into a fever; but I wished to go, and had a good degree of *theoretical* confidence in the success of the venture. After a serious consideration of the matter, I decided to accept the offer, and after this decision, which I felt to be final, went about with the emotions of a criminal whose sentence is deferred; for the day of the ascension had not been fixed. As, however, we expected to ascend soon, it became necessary to make all the photographic preparations at once; and I wrote my orders for apparatus and materials in such a condition of nervous apprehension that, to this day, I wonder that they were understood.

At length Mr. Moore came to me "with a piece of bad news," as he put it. There was to be an ascension on the 2d of September! Upon receiving the announcement, my heart stopped for two beats, and then went on to make up for lost time.

Feeling now that I had but a week to live, my preparations and experiments were continued with great care. If a balloon was mentioned in my presence, my heart would give a fearful throb, and I could feel myself grow pale; if I glanced up at a cloud floating high overhead, the thought would instantly come, "Perhaps I may go higher than that cloud!" and I would at once grow sick and faint with the dizzying fear.

I detail the "premonitory symptoms" with such minuteness, in order to show that no one who ever thinks of making an ascension can possibly dread the experience more than I did, and to give the reader some faint idea of the revulsion of feeling which took place when the ascension was made, and I at last found myself where I had feared to be — higher than the clouds!

On awaking in the morning of September 2d I was somewhat comforted to find that a strong wind was blowing from the north-west; but on visiting the ground from which the ascension was to take place, I was shocked to discover that preparations for the inflation were already begun. I heard a gentleman say to the aeronaut, "Isn't it too windy for you to go?" and listened eagerly for his answer, which was a confirmation of my worst fears: "Oh, no; we wouldn't go if there was not wind enough to take us away from Winsted."

After partly inflating the balloon, it was decided, notwithstanding this courageous declaration, to wait awhile, and let the wind moderate if it would. At noon the wind was

still strong, and to my great relief it was thought best to wait until two P. M. Two o'clock arriving found the wind apparently as fresh as ever, and after a consultation another postponement was made to four o'clock. Then, if the wind continued as strong as ever, Professor Brooks was to go alone.

During the day some of my kind friends advised me not to go; others offered to bet that I wouldn't; and some one started a story that I had backed out. These latter persons receive a large share of gratitude, as they helped materially to strengthen my resolution.

A large part of my fear was lest when once up, and too far away for retreat, my fears might serve to unfit me for the business for which alone I was to be taken from the earth.

As four o'clock approached, the inflation was resumed, and I noticed with an increase of alarm that the violence of the wind was much abated; but, after all, there was a chance that only one could go up, as the gas, which had been standing in the balloon since morning, had lost much of its buoyancy.

At last the great balloon was filled, and rounded out to its enormous proportions above the heads of the crowd. It is necessary for the passengers to take their places before the basket is attached to the netting. Moore took his place, and I was told to get my apparatus and get in; camera and plate boxes were brought from their place of storage, and I made my way back through the crowd gathered around the balloon, conscious of being very white, and moving very carefully to avoid trembling.

Even to the last moment the vague hope, which was half a fear, remained that the buoyancy of the gas might not be sufficient to carry both the aeronaut and myself. The car contained, besides its two passengers and a rather bulky amount of photographic apparatus, a large coil of rope attached to the anchor, and two bags of sand for ballast, with a frame intended to hold my camera perpendicularly over an opening which had been left in the bottom of the car for the purpose of taking views directly beneath us, and a bag containing three pigeons. Having taken our places in the car, the hoop was raised above our heads, and the cords from the balloon netting were connected with pegs attached to the hoop, which in its turn is permanently fastened to the car by cords. Those who were holding the cords from the balloon were directed to let it up while a few men took hold of the car, to test the lifting power of the machine. In this final moment of uncertainty my breath came short, and it was hard to resist a wild impulse to separate the cords, which

seemed to me like prison bars, and make my escape through the crowd.

It was quickly ascertained that the balloon had sufficient lifting power, the word was given to let go, and with a gasp I caught one deep breath, as though in preparation for a plunge into water, as with a dizzying whirl the car swung to its position under the great gas-bag, and we were off!

I had looked forward with indescribable fears to the time when I should feel myself torn from the earth and lifted rapidly into the sky; but now that the time was come, how unlike was the reality to my anticipations! Instead of seeming to be carried rapidly upward, we felt as though standing at ease upon a secure support, while the crowd from the midst of which we had just started sank quickly below us, and was soon out of sight and hearing.

Many things combine to make this my first ascension more impressive and more vividly remembered than any other, though they should be counted by the hundred. On the occasion of my first ascension my emotions before starting formed a strong contrast with the experiences directly following, which did not occur in so great a degree again, as before my second ascension the distressing fears previously experienced were almost wholly absent. To complete the inflation of the balloon, and attend to the smaller details in the arrangement of the various apparatus, all of which are important when we consider that our lives are to hang literally by a thread, consume much time; so that our ascension was not begun before five P. M., when the sun had set behind the hills and the chill of gathering darkness was felt.

We were soon lifted from the gloom of deepening twilight into the full glow of light and warmth from the sun, which, as we were carried up, presented the singular effect of a sudden sunrise in the west.

This change in our physical condition was paralleled, in my own case at least, by an equal change in my feelings; as we rose from darkness to light my spirits rose from a sickening fear to a wonderful sense of relief from danger. At last, turning my attention from the town we had left, and looking around, I was amazed at the wonderful widening of the horizon. From the point of our departure the view was shut in on all sides by the near hills; at the next glance the Highlands and Catskills of the Hudson were in sight, while the view to the east was without limit, the eye ranging at will over stretches of hill and valley, as one might look out over the ocean.

Any person who makes a balloon ascension is sure to hear from his friends one question,

many times repeated: "How did it feel?" After an earnest attempt to answer this question, I have been driven to the conclusion that the sensations of an ascension take the form of a tremendous mental impression, instead of producing any noticeable physical manifestations. In my own experience the paralyzing fear felt at starting was entirely lost before we had risen one hundred feet, being followed by the emotions of surprise and wonder, growing into a strong feeling of awe and joy, which continued through the whole time we remained in the air. All fear and dread were lost so suddenly that before we had been ten minutes from the earth I found myself wondering at the change, and trying to recall my former feelings for comparison with those of the present. As the balloon rises gradually, the many sounds of earth, striking the ear at first with confusing variety and force, grow quickly faint and distant. Soon only the loudest sound reaches us, and at last we attain an altitude which no earthly sound can reach.

The only physical sensations noticed by me at any time are the ringing in the ears caused by the unbalanced pressure behind the tympanum, which may be relieved by swallowing, only to return again as the balloon is rising or falling; and, at the greater heights, a curious feeling of lightness and inclination to breathe fuller and more frequently in the rarefied air.

After our departure from the earth, and my recovery from the first impression of surprise, the rustling of the doves, our unwilling companions, attracted our attention. One of them was quickly set free, and, after circling about the car a few times, decided on the proper course, and soon disappeared in the direction of Winsted. It was at about this time that our attention was attracted to the peculiar appearance of Long Lake near Winsted. From the altitude at which we were sailing, the whole surface of the lake was in sight far below, giving us an excellent idea of the comparative size of its three bays and of the outline of its very irregular shores. The rays from the sun, still high in the west, were reflected directly to us from the surface of Third Bay, causing so bright a spot upon the rippling water that it could only be glanced at for an instant; nor was the camera's eye less dazzled than ours, for a spot of white appears upon the picture of this scene, a photographic record of the phenomenon. The race-track east of the lake, so far below that the buildings were hardly visible, was apparently of about the circumference of a one-cent piece, and perfectly elliptical in shape.

Another dove was now thrown out, its

actions giving us sufficient proof, were all other means lacking, of the increasing rarity of the air, as it exhibited much hesitation at leaving us. At first its wings beat the air rapidly for a short flight; then it returned to the balloon, perching upon the hoop near our heads; seeming at last to gather courage for its plunge, it spread its wings, and, describing a series of ever-widening circles, was soon out of sight far beneath us. Now as never before could I realize the great variety of lake scenery in Litchfield county. One hundred bodies of water are indicated upon a map of this county, and it seemed to us that a large proportion of them were in sight at once, either sparkling brightly, as they reflected the setting sun, or lying, dark and cool, in the shadow of the hills.

While passing directly over Shepherd's Pond, in New Hartford, Mr. Moore referred to the statements made by former aeronauts as to the ease with which the bottom of lakes and rivers might be seen; it was apparent to us that such statements should be made with caution, or some explanation should accompany them. There would seem to be only one position from which, under the proper conditions, it is possible to see objects at a considerable depth under water: the observer must be at not too great an angle with the vertical, and the water must be quite smooth. It is also necessary that the sun should be low down, so that there shall be no direct reflection of light from the surface of the water; and though in the case of a *shallow* pond the whole of the bottom might be seen, yet, when the body of water is of much depth, the bottom is only visible near the shore, except when the water is quite clear and the bottom has a light hue, reflecting the light which has reached it through the water.

Having at length gained an altitude of over six thousand feet, it was decided to part with our last dove, which was accordingly dropped from the bag in which it had been confined. The singular actions and evident fear of the creature excited at once our interest and pity. Three times, after as many attempted flights, the dove returned to perch on the hoop attached to the car, breathing rapidly, and evidently exhausted by the violence of its efforts to sustain itself in the rarefied air. At last, as we persisted in driving it away, it made another attempt at flight, which proving ineffectual, it was seen to turn and plunge directly downward with a velocity which soon carried it beyond our sight.

As we continue rising, the scene becomes every moment more impressive in its grandeur; the earth, with its network of streams and roads spread out below us, resembles a mar-

velously perfect map, with every variety of color and shading. The silence is absolute, unless broken by our own actions; and the experience of being carried along without effort or consciousness of motion, over this wonderful picture, can never be forgotten. While sailing through this Desert of Silence, the least sound proceeding from the balloon or its occupants is startling in effect; the blood is plainly heard as it pulses through the brain; while in moments of extra excitement the beating of the heart sounds so loud as almost to constitute an interruption to our thoughts. The sound caused by a slight shifting of the gas-bag inside the netting occasions frequent starts of alarm; and the cracking of the willows of which the car is woven causes an involuntary grasp at the hoop or ropes. The sensation produced by a little gust of wind, often felt upon the face while the balloon is passing from one air-current to another, is weird and unearthly, and has caused me to glance in the direction from which it came, with the idea that I felt the breath of some invisible being.

At last our barometer indicated an altitude of seven thousand two hundred feet, after which we began to descend slowly. From this height we enjoyed a magnificently extended view over an area much larger than the State of Connecticut. To the north, Mount Tom and other mountains of Massachusetts were in sight, as small points above the dead level of the horizon; to the east, beyond the Connecticut River, no prominent objects arrested the attention, but the landscape gradually rose up to the horizon, at the level, apparently, of the eye, showing many miles of country beyond the river; to the south lay Long Island, beyond the narrow line of light which we knew to be the Sound; while in the west, after ranging over the hills and valleys of Litchfield county, the eye rested upon the Catskills and the mountains forming the Highlands of the Hudson.

The maplike effect of the landscape is very striking. The course of streams, with the different railroads and highways, may be traced for many miles, dividing the country into irregular plots, which are again subdivided by the farms. I was pleased to see the large area of forest which still remains, notwithstanding the great amount cut for lumber and the land annually cleared by the iron manufacturers.

As our highest point had been reached, after which the balloon began to descend, we were compelled to resort to our ballast in order to remain longer at a considerable altitude. The frame mentioned as having been intended to hold my camera was first thrown out, as it was found to be unnecessary in our work; we

watched it as it fell, whirling round and round until nearly out of sight.

The sunset scene was one of the most beautiful I have ever witnessed. From clear, dark blue overhead, the sky gradually shaded down into deep red in the west; and in this glorious setting of color, the sun, seeming slightly flattened, as when seen sinking at sea, blazed out a deep orange color.

Suddenly our attention was caught by the blowing of a number of whistles; we were again within hearing distance of the earth. My first thought was, "We are getting a salute"; but we soon found that the whistling was from the factories in the many towns below us. In our position the sound of whistles from many places could reach us at once, as all were blown at the time for stopping work. At this time the trains on several railroads were in sight, and we could hear their rumbling faintly, while a surprisingly long time elapsed between our sight of a puff of steam from a locomotive and the hearing of the whistle. The balloon continued to descend, and soon we could distinguish human voices; some remarks were exchanged with the inhabitants of the farm-houses we were passing.

An interesting phenomenon observed by us, and to which I have seen no reference by other aeronauts, is the distinctness of the echo returned from the earth. When within easy shouting distance quite long sentences are returned with startling clearness; many times I was deceived into thinking that those below were mocking us by a repetition of our questions.

The order to pack the instruments caused me a feeling of deep regret that my voyage should end so quickly. Having left the ground with the greatest reluctance, I was about equally unwilling to return to it! As the balloon descended, we were rapidly nearing a hill the western side of which was a precipice two or three hundred feet high, while its flat top was thickly wooded.

Well knowing the inconvenience of a landing in the woods, Mr. Moore at once threw out the last of our ballast in the hope of clearing the trees; but the balloon sunk rapidly, and soon we could hear the rustling of the wind through the tree-tops, and then the chirping of crickets.

One or two sand-bags were sacrificed, and Mr. Moore was stooping to remove his shoes, when I saw that we should clear the woods, and we turned to see where the balloon would land. Not until then did we see that the land beyond the trees was on a lower level; in fact, that the east face of the hill was higher and more abrupt than the west.

Our balloon cleared the trees by only a few feet, and we were then directly over the precipice; all consciousness of support from the balloon was for a moment lost; we seemed to be falling, and I was aware of gasping for breath as we sank over the edge. This impression was of short duration, yet I learned in that moment how it feels to fall from a great height.

Our confidence restored, we glanced back at the gray, lichen-covered rocks, and then down to the pasture towards which we were gently sinking; we narrowly escaped the top of a large tree, and descended to the ground so slowly that we might have gathered leaves from the tree in passing. We struck the ground so lightly that I hardly felt the shock, and then, standing in the car while the gas was escaping, I could feel the relaxation following a period of intense excitement.

Soon the sound of hurrying feet was heard, and quickly a party gathered about us, all eager to help and ask questions.

MY SECOND ASCENSION.

As we were compelled to wait until five P. M. before beginning our ascension on September 2d, I had very little confidence of success in my attempt at photographing; and the results obtained proved that there was reason for my apprehensions. At that time of year the light is very weak, so that the taking of instantaneous views is difficult, even under the most favorable conditions. When we remember that in addition to this the light also grows rapidly weaker as the sun approaches the west, it is easy to understand that the conditions were very unfavorable to balloon photography.

When the result was known, Mr. Moore offered to make another ascension solely for the purpose of photographing. As my first ascension had quite overcome my fears and had left me with an earnest desire to again experience the pleasures of an aerial voyage, I gladly agreed.

My first ascension enabled me fully to understand what I had suspected before, that it was a much more difficult matter to get instantaneous views from a balloon than from some more secure support.

After much time spent in altering apparatus, constructing some new parts, and in further experiments, it was decided to make an ascension on October 16th, if the weather should be favorable.

The day was all that we could wish, with the exception of considerable haze in the atmosphere; the wind was very gentle, blowing from the south-west, and high in air we could

see by the motion of the clouds that there was an upper current, also moving slowly, toward the south-east.

As the inflation progressed, and it was evident that we might soon be off, I found it impossible to ignore a rapid increase of nervousness at the prospect. Those who have made many ascensions assure me that this dread felt at the moment of starting is rarely outgrown by any amount of experience. We went up much more slowly than before, and were for some time within hearing distance of our friends. This was because our ascensional force was more nearly balanced by the greater weight of sand carried.

We were soon over the hills east of Winsted, and before turning from it exposed one plate on a part of the town on which the illumination seemed particularly favorable, and which fortunately proves to be one of our best views.

This photograph, taken just as we attained an altitude of 3050 feet, although not so perfectly sharp as some of the others, is nevertheless one of our best, owing to its fine gradation of light and shade, and to the superior delicacy of chemical effect in the negative. The portion of Winsted included in the view is at the northern end of the borough, and at the lowest point within its limits reached by the stream which supplies power to the factories closely set along its banks. Part of our main street passes through the center of the view, and some other streets are included, mostly occupied by dwellings.

Within the limits of the picture are three of the many factories whose business forms the chief support of the place. Many of the garden plots near dwelling-houses are plainly shown; also the woods on a steep hillside at the farther side of the view. The shadow from a passing cloud darkens one corner of the picture, blotting out all definition in that part, and showing how useless it would be to try such work without a good light.

As some may be interested in the details of our photographic equipment, I will give a description of it. We used five-by-eight-inch plates, which size seems best suited to our purpose, as it allows a considerable extent of country to be included in the view, while the apparatus need not be unduly bulky or heavy. The camera was quite light, as all the apparatus used in a balloon must be, but not so fragile as to sacrifice rigidity in keeping the distance at which the plate is set from the lens, as this is of even more importance than lightness. The plates used, which must be of the utmost sensitiveness, were contained in the necessary number of dry-plate holders, which in turn

were carried in two boxes made to pack them securely. In any future ascensions these boxes will be provided with locks, as we have learned to our cost that nothing will so excite the curiosity of the average hotel porter as a photographic apparatus left in his care. The object of packing our plate-holders in boxes was twofold: first, the plates were better protected from light and more convenient to carry, as in ordinary work; second, as we knew that the landing is not always as orderly as could be wished, we hoped, by keeping hold of our holders at such a time, to save our exposed plates, at least, from injury.

A "finder" was attached to one side of the camera, to enable the operator to see just what would be included in the view at the moment of exposure. This instrument is like a smaller camera, except that no provision is made for focusing, and the ground glass is permanently fixed at the proper distance from the lens. The ground glass of the finder was of the same proportion as the larger plates on which the views were secured, and had lines drawn from either side, crossing at right angles in the center. The finder is attached to the camera in such a position that any object appearing on its screen will be sure to occupy the same position on the dry plate.

The lens used was of the rectilinear kind, especially made for groups and instantaneous work. The instantaneous shutter, used to cut off the light and give the plates their very brief exposure, was fastened in front of the lens, and was of the kind called an eclipse, but was considerably changed by me before our second attempt. The springs which caused the sudden motion, and admitted light to the camera for an instant, exerted a force of eleven pounds when the shutter was set for action, and were, of course, adjusted to give a quick rather than a forcible motion.

My manner of operating while in the balloon, when we had determined on "taking" any place we might be approaching, was, after deciding on the correct focus, first to "set" the shutter, then insert the plate-holder and draw the slide; the camera was then taken in the left hand, with the rubber bulb of the "pneumatic release" of the shutter in the right. Then we must wait until the revolution of the balloon had brought the desired place opposite the camera, when it was pointed so that the view was in correct position on the screen of the finder, the rubber bulb was pressed, and the exposure was made; the slide was then inserted in the plate-holder, the holder removed and boxed, and we were ready for another subject. At the same time Mr. Moore recorded the exposure for me, taking down the number of the plate-holder, the sub-



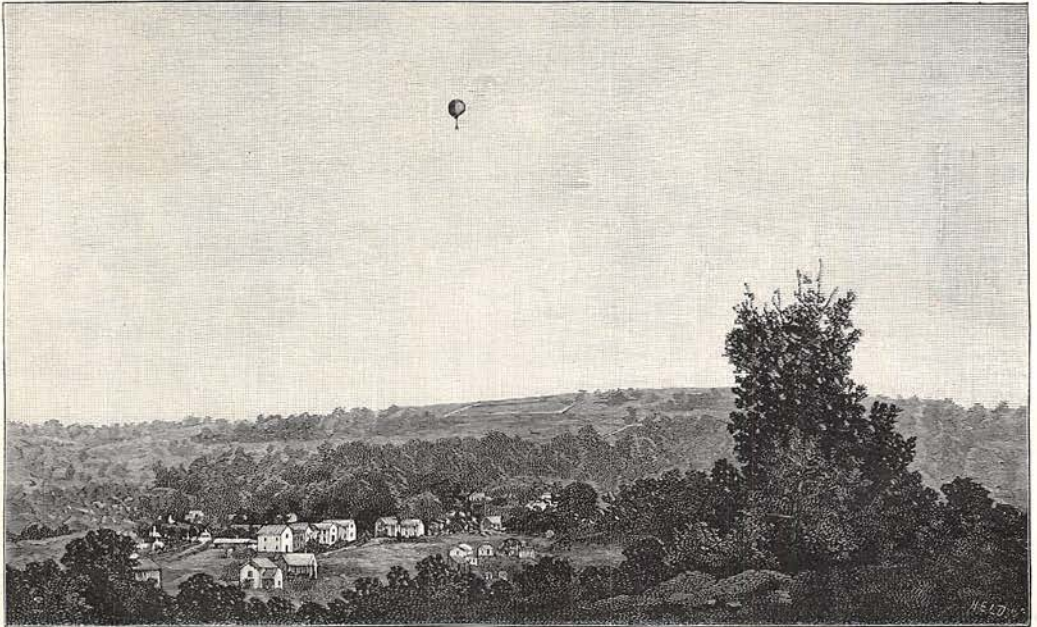
VIEW OF A PORTION OF WINSTED, CONN., TAKEN FROM THE BALLOON 3050 FEET FROM THE EARTH.
THIS ILLUSTRATES HOW THE EARTH LOOKS FROM THE HEIGHT SHOWN ON THE NEXT PAGE.

ject, and the altitude as shown by the barometer. The record was a very necessary guide in developing the plates, and it was kept by Mr. Moore, because in our flight objects of interest were presented in rapid succession, and much time was saved by this division of labor; as it was, the camera was hardly out of my hands during the whole time of our ascension.

The revolution of the balloon referred to is a very curious phenomenon, which was a source of much inconvenience; a free balloon revolves almost constantly, and with varying rapidity. The direction of its motion was in

me to look up; on doing so, I found the balloon was on the point of disappearing in a bank of cloud, which shut out the blue sky for some distance on each side of us. Under this bank of cloud, which appeared level and dark gray in color, the light was much reduced, and the chill felt at its near approach produced a feeling of depression.

The balloon entered the cloud, being gradually cut off from our sight as the mist thickened; at length the cords passing up from our car seemed to melt away into the mist, leaving us "without a visible means of support." Soon we were in the midst of the



VIEW OF BALLOON IN THE AIR OVER WINSTED, CONN., 3050 FEET FROM THE EARTH.

both instances of my observation "with the sun"; that is, the side of the balloon and car towards the south turned towards the west, and its northern side towards the east.* Many times, just as I was about to expose a plate, one of the cords from car to hoop would come in the way, and force me to wait for another open space.

The balloon continued to rise after we had secured the view of Winsted, and the wind carried us towards the north-east, when, at an altitude of 3750 feet, we were nearly south of Riverton, of which we caught a good view.

We continued rising, and soon Moore told

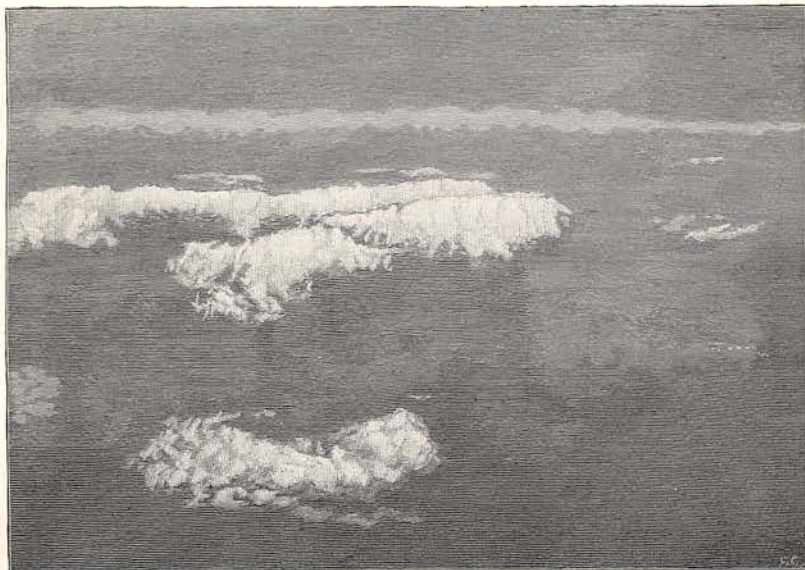
cloud, and could feel the dampness; it seemed like moving through a thick fog.

As we emerged from the upper surface of the cloud, a most wonderful picture was presented to us. In the south a line of the same stratum of cloud we had just left stretched across the sky. This line was at such a distance that we could see both the upper and under sides at once, the dark lower side forming a fine contrast with the upper, glowing in the sunlight.

The sun's rays, streaming across the edge of the clouds, projected a series of long beams of light and shadow to the earth, as is sometimes seen at sunset. In the distance the eye

* A high scientific authority says that the revolution of a balloon one way or the other is purely accidental, and depends on the unbalancing of the re-

sistance of the balloon in the air on its different sides; the term *sides* being used in reference to the vertical drawn through the center of gravity.—EDITOR.



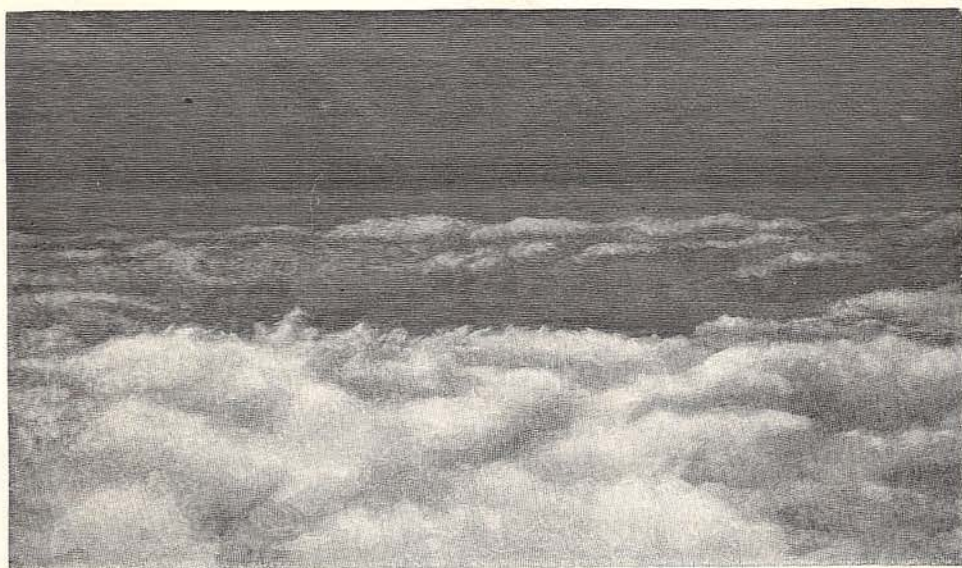
CLOUDS TOWARDS SPRINGFIELD.

caught a reflection of light from Bantam Lake at Litchfield and from Lake Waramaug farther west, while the many lakes of Winchester and New Hartford seemed directly beneath us. Our barometer told us that the clouds which formed so beautiful an object, and of which we secured a fine picture, were floating at a height of fifty-five hundred feet from the earth.

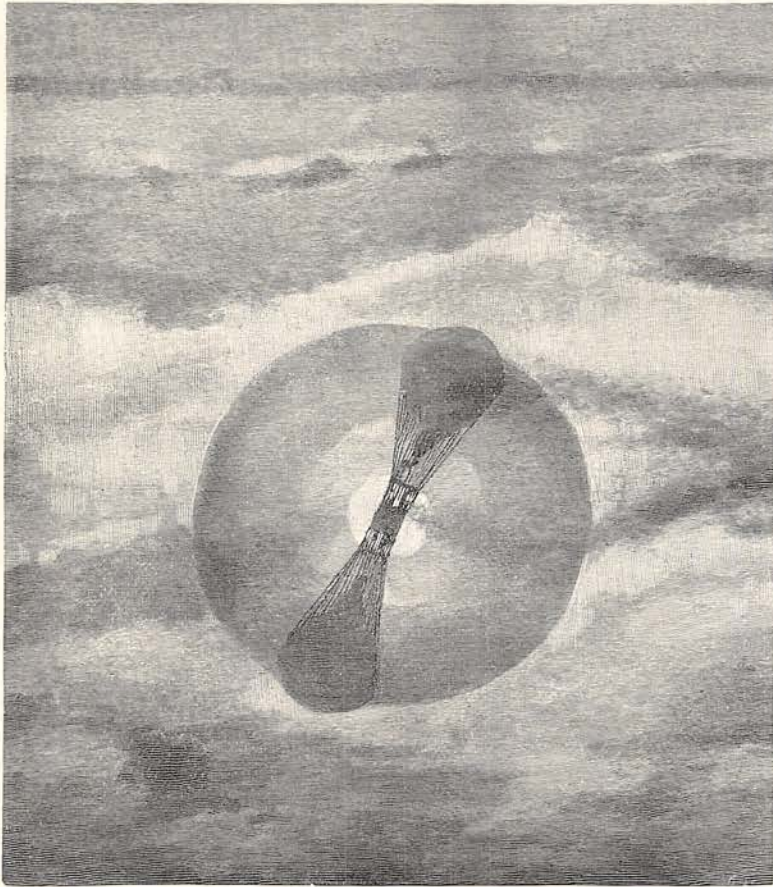
While sailing above a large extent of cloud, one's sense of isolation from the world is oppressive. My view from above the clouds was

no disappointment. The appearance of the clouds, seen from above, has been compared by some to the ocean, and by others to an expanse of snow. It is all and more than this, for the continual change, clouds breaking up to form other masses, surging and rolling, with their wonderfully silent, steady, slow motion, impressed me with a deep sense of grandeur and awe.

While passing over a large detached cloud, it was our good fortune to observe a phenom-



VIEW ABOVE THE CLOUDS, TAKEN AT AN ALTITUDE OF A LITTLE MORE THAN A MILE.



DOUBLE SHADOW OF BALLOON UPON CLOUDS WITH RAINBOW ENCIRCLING IT, SEEN AT THE HEIGHT OF 6000 FEET.

enon rarely seen by man. We had been watching the shadow of the balloon as it slid along the ground, or as it was occasionally projected on an intervening cloud, being then surrounded by a brilliant circular rainbow. We were much surprised on passing over such a cloud to see the shadow as before, but with the addition of another balloon!

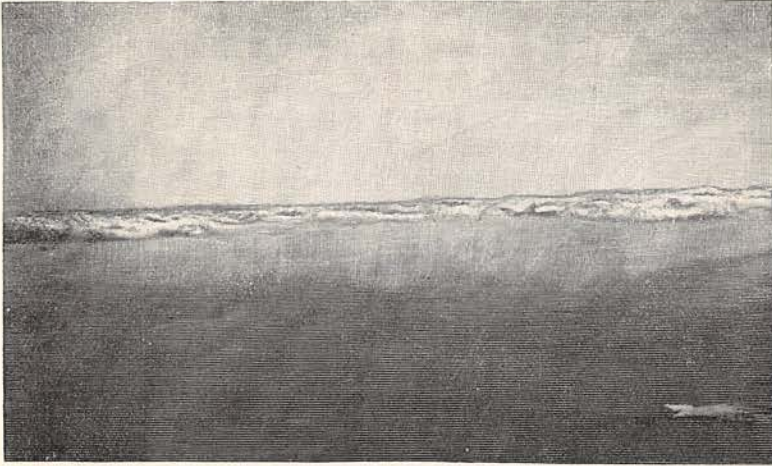
The second balloon-shadow was directly opposite the first or upright one, and inverted, so that one shadow of our car served for both, while there were two perfect shadows of passengers, netting, and gas-bag; the rainbow which inclosed the whole was at this time of exceptional brilliancy.

We are entirely at a loss in attempting any explanation of the double balloon-shadow; it is certain that we saw it, an object of wonderful brilliancy and distinctness, for about thirty seconds, while we passed over one large cloud; then it was gone, and we hardly hope to see it again.

In connection with this picture we met with a most vexatious piece of misfortune. I made an exposure on that shadow as we were passing quickly over it, and naturally wished most earnestly that I might develop the image successfully, but fate was against us; for in Hartford some one, out of curiosity to see the picture, opened the plate-holder, exposing the plate to gaslight, and the invisible spirit of my most valuable negative was gone beyond recall.

As the subject was of so much interest scientifically as well as for its rarity, we had a drawing prepared from which our illustration is taken, and which is a correct representation of the phenomenon as we saw it.

After gaining a considerable altitude the gas, which does not at first entirely fill the balloon, expands by the diminished outside pressure of the rarefied air and quite fills the envelope; then the neck of the balloon hangs wide open, giving a fine view of the interior, which seems as



A VIEW TAKEN AT THE LEVEL OF THE CLOUDS, 5500 FEET HIGH.

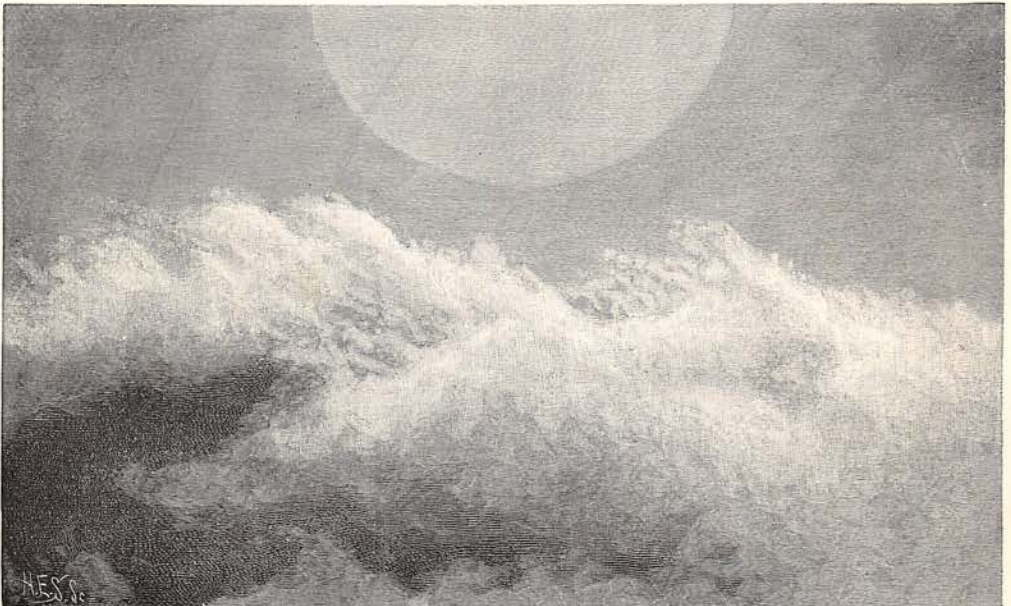
though filled with air; for the gas is usually quite transparent. This view, the cords of the netting plainly outlined through the cloth, gave us a keen sense of the frailty of our support; there really seemed to be nothing to keep the whole affair from falling down upon us.

While passing over a brook in a rough piece of country, we decided to try the effect of a view directly down through the hole in the bottom of the car, which was left for that purpose; we had found it of little use, for the reason that the balloon so seldom passes

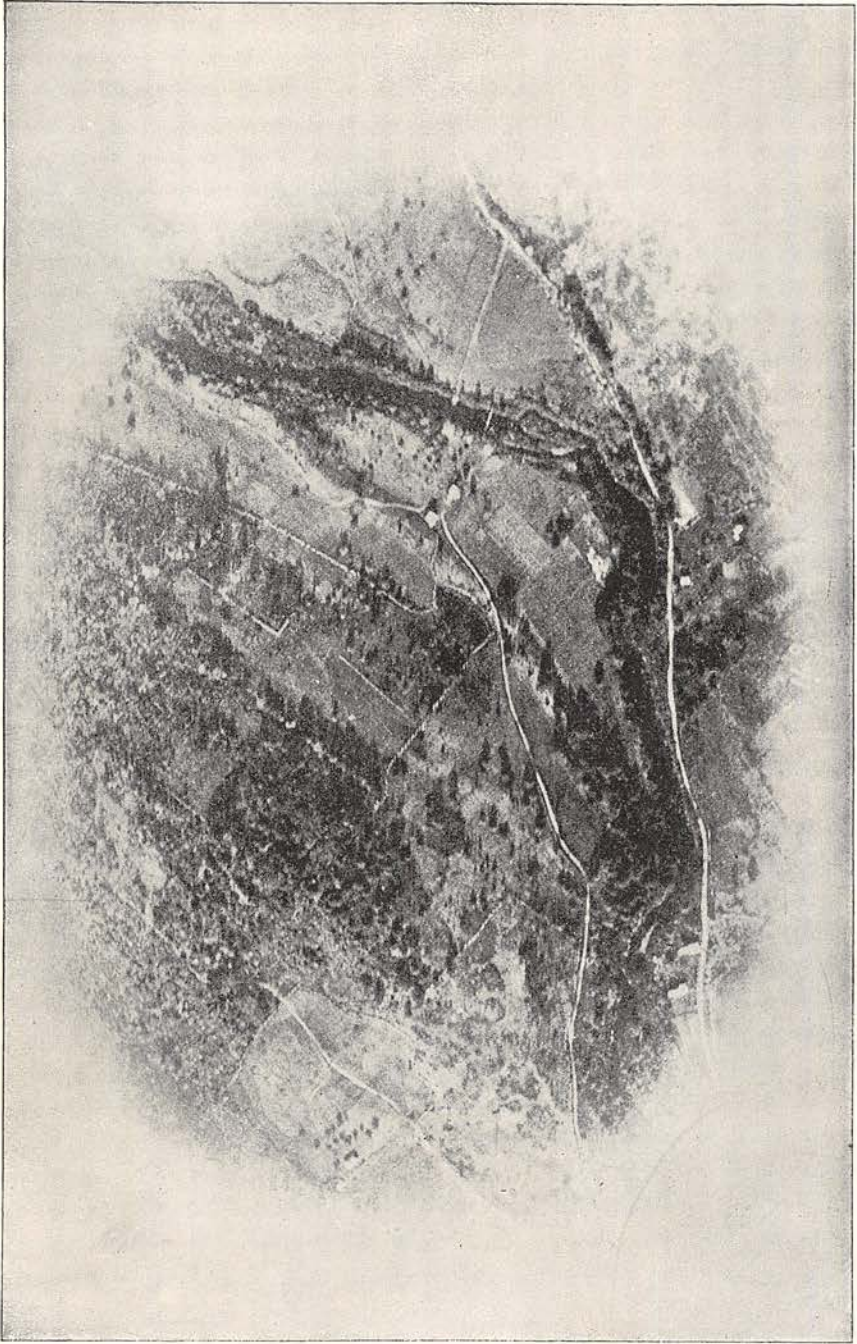
directly over the most interesting objects. The hole had been left open, and was at first a source of considerable annoyance, as it took us a long while to overcome the impression that, as one or two towns might be seen through it, we were in danger of falling through ourselves.*

The picture obtained by looking directly down through this hole is one of the best for

* I asked Mr. Moore why he lifted his foot so high in crossing from one side of the car to the other. He said, "But look down there, and you'll see I'm stepping over two towns."



NEAR VIEW OF LARGE CUMULUS CLOUD.



VIEW AT A DISTANCE OF ONE MILE AND A QUARTER; TAKEN THROUGH A HOLE IN THE BOTTOM OF THE CAR.



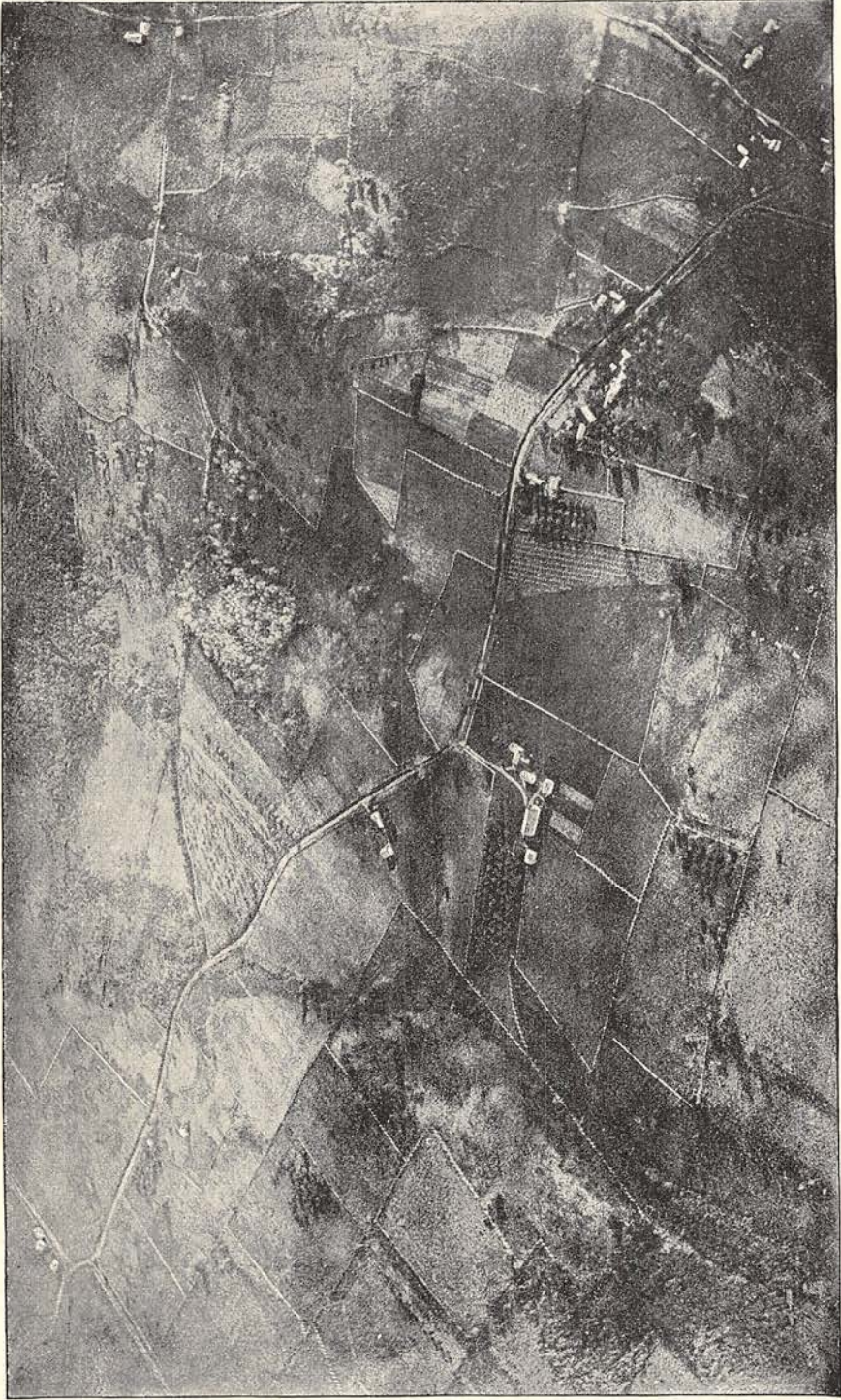
HARTFORD FROM THREE-QUARTERS OF A MILE HIGH, LOOKING SOUTH.

conveying an idea of the height from which it was taken—over six thousand feet. It should be examined from a considerable distance, and the effect of height will be better produced if the observer will look *directly down* upon it. Three wagon-roads are included in the extent of the view, with several dwelling-houses and barns, some cultivated fields, and considerable pasture-land and forest. The shadows cast by the trees, and by the irregularities in the land, give the picture some resemblance to the telescopic views of the moon. The bed of Cherry brook may be seen in the view, lying diagonally across the picture, and between two roads. Later two views were taken near Simsbury.

At one time, when near the upper surface of the cloud and at a height of five thousand seven hundred feet, my attention was called to an immense cloud which we were rapidly approaching. I would state here that while the clouds were moving east, the current of air above the clouds was going in the same direction, but much faster, so that the large cloud mentioned *seemed* to be coming rapidly

towards us. The camera was quickly made ready, and when the cloud was about one hundred feet from us, I fired; the next moment the car swung through the top of the cloud, and a wave of cold air, like a blast from an ice-house, passed over us. During the few moments from our first notice of the cloud to our plunge into it, we gave it our undivided attention; in its swift and silent approach, with the huge mass slowly unfolding, and fleecy particles tearing off in the wind, with the outer surface white in the sunlight, and with clefts in the mass dark as night, it seemed as though about to swallow us up forever.

We passed over the mountains north of Talcott Mountain, and enjoyed the same prospect which is spread before those who climb the tower, but *our* view must have been much more extensive in its grandeur. The tower, always a prominent object to travelers upon the roads in the Farmington Valley, we had difficulty in finding, as it is of a neutral color, and from our position above was not at all conspicuous.



VII
VIEW OF THE EARTH FROM AN ALTITUDE OF ONE MILE.

When directly over the mountain we looked down at the forest and roads beneath us, endeavoring to discover some sign of human occupation or activity. To all appearance the country might never have been visited by man; the forest was thick, except when broken by some bare ledge or precipice, and, almost upon the highest part, a lake nestled among the trees, which grew quite to the water's edge. This little lake, almost circular in form, closely surrounded by the unbroken forest, the surface without a ripple, and its waters lying dark and apparently unfathomable, presented a picture of silence and solitude which held our attention while it remained in sight.

The mountains crossed in this delightfully easy manner, we were over the town of Bloomfield; and an exposure was made on what seemed to us a fine type of the better class of New England homestead, which, with its large fields, trim fences, and ample buildings, was directly below us. This view, taken at the height of one mile, is wonderfully distinct, when we consider the distance of the objects from the camera, the conditions necessary to the taking of an instantaneous picture, and our very unsteady support. The stone and rail fences, bounding the fields of all sizes and shapes, are shown with great sharpness. The pasture, meadow, and cultivated land are plainly indicated; also the curiously regular arrangement of the crops. The trim and regular appearance of the orchards is well contrasted with the variety and freedom of growth in the woodland; and the photographic effect of the autumnal colors is indicated by the foliage of a group of white birches near the center of the view, as contrasted with the dark, unchanged green of the orchards.

Our view towards Hartford at this time was very interesting, though the smoky atmosphere in that direction was a great obstacle to photographing. The Capitol reflected the sunlight from its dome, and many of the prominent buildings of the city could be distinguished. A line of clouds hung over the country south of Hartford, cutting off the light, and producing the singular effect of a view under a shelf or table. The Connecticut River was in sight for many miles above Hartford, until the thickening haze cut off the light far to the south. We were astonished at the number of abrupt turns in the river between the city and Wethersfield.

As we were so nearly there, and sailing in exactly the right direction, we were anxious to remain in the upper air-current, and land in Hartford; in order to do so, we threw out all our remaining ballast; the balloon still descended, and soon we saw that our hope

must be abandoned, as the lower current began to take us away from the city and in the direction of Windsor.

When we had secured a view of Windsor and the junction of the Farmington and Connecticut rivers, Mr. Moore decided to land before going farther from the railroads; and, opening the valve to let the gas escape, we descended rapidly.

The point selected for our landing was an open field near a large tract of woods; but such calculations are very liable to failure, owing to the difficulty of estimating distance and rate of motion of the balloon, and it was soon evident that the wind would take us over the woods before we could reach the ground. As we had already thrown out all the ballast, and did not wish to sacrifice the photographic apparatus, we could only let things take their course; but we wished for a few pounds of sand, by the loss of which we might have cleared the woods and found a better landing-place.

The balloon sunk rapidly, and soon, as before, we heard the sound of the wind in the trees; we looked anxiously to see where we should strike, but were not long left in doubt as we passed quickly down beside a large chestnut-tree, and the netting of the balloon, which curves far out on each side, caught in the upper branches, when our fall was suddenly checked. At first the weight of the balloon and load, descending with such force, bent the top of the tree far over; then, as our momentum was gradually checked, there was a recoil which lifted us again about fifteen feet, where we hung, planning how we should get the balloon down. We could not climb out, for then the balloon, relieved of our weight, would rise and leave us; but, after much hauling and jerking, the netting was detached from the tree, and we were on the ground again. Even then we were but little better off, as no one appeared to help us, and if one left the car the other would surely go up again.

Considerable gas was allowed to escape, and then, while I held fast to a bush, Mr. Moore climbed out and secured our anchor-rope to a tree; then I made my escape, and, leaving the balloon pulling at its moorings, we started to find help. After walking nearly a mile we met two men and a little boy, who asked if we "had seen anything of a balloon around there."

The balloon had fallen near a road cut through the woods, and we determined to get it to the road if possible. To do this, we persuaded the boy to get into the basket, in order to overcome part of the buoyancy, and let the balloon up the length of the anchor-

rope. We were then able to work the rope through the trees, and so led the balloon out to the road. But when we tried to tow it along to the clearing we quickly found it impossible, and the balloon was hauled down and ripped to let the gas escape, as the trees were too near together to admit of the usual practice.

A man was found to carry the balloon to the railroad and us to Hartford; and during the ride there I busied myself trying to recall the experiences of the ascension. As on the former occasion, I observed a singular loss of memory. Immediately after the excitement

of landing it was hardly possible to recall a single incident of the ascension. I seemed to have just awakened from a wonderful dream, and the startling experiences so recently passed through appeared to have left only the faintest traces upon the mind. It was not until I had retired for the night, and *would* have slept, that memory revived, and I was treated (unwillingly) to a complete review of every incident connected with our trip. I am told that this has often been the experience of the soldier after passing through the dangers and excitements of the battle-field.

John G. Doughty.

A PISTOL-SHOT.

A GREAT window opening upon a lawn in front of a country house on a sweet May day, and inside the broad sill a mother stands holding her year-old boy carefully in her arms. In all her movements and looks, in all her play with him, there is a deep watchfulness, a certain pathos of tenderness, more than is usually bestowed even upon blossoms as rosy and handsome as this. It was the time of orioles; and in the wide bends and sweeps of a great apple-tree which overshadowed and occasionally dropped a blossom upon them, the gay bird sat uttering now and then one or two rich, full notes. At every repetition of them the mother bent a tender glance upon the boy, in which there was not any lively expectancy, but a lingering, loving hope—a wistful look from the depths of her soul as if she wished for him some great good. The child paid no attention to the melodious notes, although he was full of fun and reached for the falling petals and laughed when he could not catch the shadows of the leaves; but when the bird flitted from one twig to another he noticed its gay orange sides with an infantine approval of bright colors, and stretched out a hand where four dimples stood for knuckles, with the palm pink like the apple-blossoms themselves. So they played at bopeep with the bird, and then suddenly the child became silent, looked eagerly out of the window, and an expectant look came upon his face. The mother noted it, and her own earnest expression increased tenfold, and she also assumed a listening attitude. There was the sound of the wind in the tree above them, and the squeals of a cat-bird were heard from a greater distance as if it were in a bad temper and were telling somebody disagreeable truths; but

otherwise nothing broke the country stillness of the air. The door behind them opened, and two men entered. One, the father of the boy, advanced with the confidence of affection; but the mother held up her finger and said, "Wait—watch him."

Both gentlemen stood so that they saw the child's face in profile. His little soul seemed completely absorbed in listening to some distant sound; he did not hear them enter; he paid no heed to them. So for a period of two or three minutes the mother stood amid unbroken silence; then the child's face gradually lost its attentive look, he turned his head, saw his father, and broke forth into lively manifestations of joy with feet and hands and little inarticulate cries and baby smiles. The father took him, and another little scene began between them, and his face wore the same look of hope that was not expectancy and pathetic longing.

As they played, the other gentleman watched them, after having greeted the mother with the air of an old friend.

"Wait still a moment," said Mrs. Richmond as the doctor offered to take the baby. He paused, and a bagpipe man came down the drive squeaking and droning a martial tune upon his instrument, and a train of boys and girls followed. His pipes were noisy and so were the children, but the baby, held with his back toward the window, paid no attention to the disturbance—did not seem to hear it at all.

"Doctor Laurens," said the mother, "there might be ten bagpipes behind him now and he would not know it."

"But when we came in he seemed to be absorbed in listening to something," said the doctor surprisedly.