

The astounding intelligence roused the solitary rector to action. He hastened to the distant town, while yet half disbelieving the report. It was true, however; his friend and benefactor was dead, his wealth, as it seemed, had died with him, and the son had disappeared from his native place.

That son Mr. Vivian sought and found, depressed indeed by disappointment and grief, yet bravely bearing up against adversity. It was then that the minister of religion felt, more than ever he had felt before, that sorrow and trial have their uses in enabling those who have been exercised thereby to become the consolers and encouragers of others.

The sympathy of the experienced minister was not lost upon the young man, who needed a faithful friend to whom he could confide the story of his griefs; and he could the more readily and unhesitatingly do this, because he was in no need of pecuniary assistance. Notwithstanding his private sorrows, he had begun to carve out for himself a way in the world, which promised, if not a full restoration of his lost fortunes, yet eventual prosperity.

And thus, before they parted, the fatherless mourner had found, in his wise and calm Christian friend, a second father; while the childless Christian pastor had another motive and aim in life added to those which already more than ever exerted their influence—that of watching the course and strengthening the heart of his adopted son. That adopted son was Frank Eveleigh.

EXPERIENCES OF AN AERONAUT.

BY THE AUTHOR OF "CURIOSITIES OF NATURAL HISTORY."

WE wingless bipeds are for the most part painfully ignorant of what is going on in the atmosphere above us. We do not know much about the clouds, and we don't often climb up the rainbow; but as there are persons among us who *do* occasionally ascend into the atmosphere, their experiences of what is to be seen there are always welcome. Not the least celebrated of the balloonists or aeronauts of the present day is Mr. Lythgoe, through whose kindness I am enabled to give the following particulars.

This gentleman has been accustomed to ascend from one of the suburbs of London, where there are at present two balloons, namely, the "Royal Normandy" and the "Prince of Wales." The former is the largest; she requires about 40,000 cubic feet of gas to fill her, at the cost of about £10; she cannot be properly filled under four hours. The "Prince of Wales" holds about 20,000 cubic feet of gas, costing from £5 to £6, and can be filled in about one hour and a quarter. The balloons are made of the best and toughest silk, woven at Spitalfields, and known as "lute-string," costing 10s. per yard. This silk is carefully covered with an elastic varnish, formed of a mixture of boiled oil and india-rubber. The balloon is confined in a network made of thick cord, of the best Italian hemp; and underneath it is attached the car, made of wicker-work, interwoven with eight strong three-quarter-inch ropes.

When filling the balloon, great care is required,

as, if the sun shines upon the balloon, it expands the gas too suddenly, and it may burst in a moment. When the spectator looks upwards into a balloon filled with gas, it is of a beautiful pinkish red colour, and is an exceedingly pretty sight. Mr. Lythgoe reports that when the balloon gets high up in the air, she appears to be full of a dense smoke; when he is descending, this smoke clears off; and when about three or four hundred yards from the earth, it gets quite clear again. When the aeronaut gets high, this gas is a great nuisance, as it comes rushing out, down into the car, and gets into the throats of the passengers, causing their clothes to smell strongly of it for many days. If a bladder be filled with common air, and taken up, it will burst with a loud report at a certain height; and if a bladder be filled with air at about two miles high, and be brought down again, it will collapse, and become quite flaccid.

Besides the passengers, the balloon carries one five-pronged iron grapnel, made similar to those used by the Royal Humane Society for fishing drowned people out of the water, and which catches hold of trees, hedges, etc., when the descent is about to take place. The grapnel weighs from 13 lbs. to 45 lbs., and it is attached to a line 160 feet long. There is great art in bringing up the balloon without a jerk. Mr. Lythgoe boasts that he can bring up his balloon so gently as "not to break an egg in the bottom of the car." Ballast-bags are also taken up; these are made of canvas, and contain sand as fine as flour; it must be very fine, for a stone, even as large as a pea, would do damage to glass, etc., when falling from the height of two miles or more. The total weight of ballast is about one cwt. The sand must be shaken out gradually; but on one occasion, a nervous passenger having been told to shake it out, he let the whole bag go down bodily. Luckily, it fell in a plantation, and so did no harm. The nervous time for passengers is just when they are off the ground; the car then makes a terrible creaking noise, and the test of courage is to "stand up in the car"—a feat which but few can accomplish. Mr. Lythgoe has been "up above" so many times, that he cares no more about it than getting up into bed.

In order to vary the height of flight, there is a circular valve at the top of the balloon; it is double, and arranged on the principle of a common rat-trap. To this valve a hand-line is attached, which runs down the inside of the balloon, and the aeronaut therefore commands the valve in a moment. It is very important to have ballast in the car when descending, as it may be necessary to rise again suddenly.

When once up, the panorama is magnificent. The great metropolis looks like a cluster of houses that might be inclosed in an eighteen-feet circle. At about two miles high, St. Paul's Cathedral looks so small that it "might be covered by a gill glass;" the Crystal Palace looks "like a small writing-desk," and the two towers by the side of it like "doctors' phial bottles set on end;" the Thames appears to be a very small brook, and can be seen winding away to a great distance, like "a bent stick of silver;" the steamers look like black chips

floating along, and the bridges like logs of wood thrown across the brook. Hyde Park is always a conspicuous object, on account of the Serpentine in it, as well as from its being cut up in all directions with white twisting lines, that is, the walks and roadways. Human beings look about the size of the head of a small pin, and not so large as ants. They are difficult to see, except when several persons are standing together, or when they are on a white surface, such as a dusty road. The cabs and omnibuses look like Barcelona nuts of various sizes; the horses not so big as bees. The turnpike roads make a pretty pattern all over the country; the railways are much straighter, and if there is a long goods train underneath the balloon, it looks like a huge black slug crawling slowly along. Mr. Lythgoe once kept up for some distance with a passenger train; the drivers of the railway engines have found out that they can make their whistles utter a noise like crowing, and they use this as a private means of intercommunication. The driver of the passenger train above mentioned saw the balloon above him, and "crowed up to it," Mr. Lythgoe waving the flag in return for the salute. Noises can be heard at an immense height; the cheering of the people at an ascent can be heard a very long way up, and the sound which ascends from London is like low distant thunder.

The clouds present a curious appearance to the aeronaut; they are like dense volumes of steam. When in among them, it is impossible to see two yards a-head. There is often a breeze in a cloud when there is none outside; some clouds feel cold, and some warm. When up above a dense bank of clouds, the sun is seen shining on them; and as you are looking from above, they appear like many thousand bales of the purest white cotton wool, pulled out quite fine. On one occasion, twelve small balloons were let off at the same moment as the large one, for an aerial race; the large one went fastest, and as she got above a bank of clouds, it was very remarkable to see the little balloons coming popping through one by one. Some of these small balloons were picked up a good way inland in France. When descending fast, the clouds appear to be rushing up as though they were going to smash the balloon, and present a formidable appearance. At sunset, clouds present a most resplendent and almost unearthly appearance. Mr. Lythgoe has ascended on a dark rainy day, and in five minutes has gone through a layer of clouds half a mile thick, and has found the sun shining up above these clouds, and all bright and beautiful. The setting sun can be seen long after the earth is in darkness.

Mr. Lythgoe was once up in a thunder-storm, when the balloon got alongside a dense black thunder cloud. After a terrible silence, there came an awful flash of blinding lightning, followed by a terrific crash of thunder, which made the car and balloon tremble. There was great danger, as there was an iron grapnel and several articles of steel about the balloon; but the passengers providentially escaped without injury. The spectators below saw the balloon as a black object against an illuminated ground, and looked upon the voyagers,

when descending, as something more than mortal. An accident to a balloon from lightning has never yet been known. Three years ago, our aeronaut came again near a thunder cloud; the balloon began to rotate violently, but by stopping her progress in ascent, a current took her away. Soon afterwards there was a terrible thunder-storm all over London, which did much serious mischief. Many of these currents are found in high altitudes, and as many as three currents, all going in different directions, have been passed through.

The highest ascent Mr. Lythgoe ever made was two miles and a half. At this height the gas rushes out with great force on to the faces of the passengers in the car. When at this altitude, too, great pressure is felt in the ears, and a crackling noise is experienced. Some people cannot hear till the pocket handkerchief is used. The best way to get rid of the crackling is to give the opening of the ear a good shaking with the finger, as this makes it open again. In order to ascertain the velocity with which the balloon is flying, and whether ascending or descending, a very small bit of paper, the size of a pea, is thrown from the car, and by this device the progress of the balloon is at once seen. Advertisements, in the form of handbills, printed on very light paper, and about four inches square, are sometimes let go at a great height; and quite recently, ten thousand bills of a certain weekly journal were let go, a thousand at a time, and it was very curious to see them go fluttering downwards, like flocks of butterflies. Such bills descend very slowly, and are sometimes in view for half an hour or more. Mr. Lythgoe once overtook a flock of them, still on their downward journey, which he had let go full twenty minutes previously. He has known some bills take three hours to reach the earth.

It is curious to remark the effect which a very great height has upon birds. Some seven or eight pigeons were once turned loose over Millbank Penitentiary, at about a mile and three-quarters high. Finding themselves on the wing, they were greatly perplexed, and instead of going away, flew about near the car, as if for company's sake; at last, they one and all perched up on the hoop of the balloon, and would not be frightened off, until Mr. L. got up into the hoop, and positively drove them away. They then flew about for a few minutes, and at last, closing their wings, descended like lumps of stone down again to the earth.

And now for one of the practical applications of balloons. During the last war, it was suggested that they might be very useful to a general in ascertaining the movements of an enemy, particularly in a mountainous country. Mr. Coxwell, of great celebrity as an aeronaut, has accordingly developed this idea in the "Aërostatic Magazine," published at Tottenham. We find Mr. Coxwell there gives his ideas on the subject, and has engraved a picture of his War Balloon. He says: "It is obvious that from the altitude of the balloon, be it more or less according to the weather, that by the aid of glasses, a vast distance around may be subjected to the minutest scrutiny, and a

constant communication kept up with the authorities in the fortress. Of course, by a preconcerted arrangement, each signal will convey any sentence previously agreed upon, and the number of signals may be increased *ad libitum* by variety in their shape and colour."

THE TOURIST IN SCOTLAND.

ROSLIN.

THROUGH a green road of a mile long, bordered with hawthorn hedges, gorse, and broom, we walked towards Roslin. The country gained in beauty at every bend of the path. The abundant woods of Hawthornden gathered in a distant opening, clothed with summer's richest leafage; and presently we came on the edge of the glen, where trees darken the rushing Esk. Sometimes a glimpse of the brown river showed its conflict with masses of scattered boulders, which opposed a stolid yet unavailing resistance to the will of the waters; and a mysterious rumbling noise, increasing as we advanced, we attributed to some rapids or cascades yet invisible. Soon we beheld the prosaic cause—a bleachmill in full action, cleansing soiled linen with the poetic waters of Esk, renowned in song! Valuable as the establishment undoubtedly is, we wished that it had utilized any less distinguished stream.

A finger-post, "To Roslin," conducted us down a narrow path close by the boisterous bleachmill—a group of cottages, and fields of dazzling white linen spread in sunlight—to a small plank bridge over the river. Before us rose a steep bank crested with trees, the red tint of the soil on all perpendicular places where vegetation could not cling. On this peninsula, three sides washed by the Esk, stands the castle. It is a fatiguing scramble to the summit, for late rains have made the path slippery, and we are liable to slide back two steps for each one forward; yet we reach the small postern door, which now admits visitors to the stronghold of the St. Clairs. A mighty yew tree, said to be seven hundred years old, makes a midnight under its wide-spread boughs as we enter. This is the courtyard, now turned into a flower-garden, gay with rocket and sweet-pea, and far-famed for strawberries. Esk sends up its gurgling voice from the ravine below. But our next steps are out of the light into the funereal gloom of the subterraneous chambers. A passage seventy feet long, excavated from the solid rock, ends in the huge baronial kitchen; and bed-chambers, which would infallibly give any modern warrior violent rheumatism, also open from it. All these rooms have small circular apertures, through which arrows could be discharged upon assailants. The dungeon is a horrid abyss, into which the prisoner was lowered through a trap-door.

We are glad to get back to upper air and sunbeams; and, sitting awhile in view of the beautiful glen, we try to realize the past history of the place. Its name, Ross-lyn—"a rocky height and a water-fall"—dates back to Gaelic times, before Malcolm

Canmore conferred it upon his Norman ally, William St. Clair, surnamed the Seemly from his pleasing aspect, whose descendants lived here royally, as princes of Orkney. Grose describes the pomp of one of the line in the following terms: "He kept a great court, and was served in vessels of gold and silver; Lord Dirleton being his master of the household, Lord Borthwick his cup-bearer, Lord Fleming his carver; his halls were richly adorned with embroidered hangings. His princess, Elizabeth Douglas, was served by seventy-five gentlewomen, whereof fifty-three were daughters of noblemen, clothed in velvets and silks, with chains of gold. She was attended by two hundred riding gentlemen in all her journeys; and if it happened to be dark when she went into Edinburgh, where her lodgings were at the foot of Blackfriars Wynd, eighty lighted torches were carried before her." Our modern peeresses cannot boast of such attendance. These were the palmiest days of Roslin. It was burned down shortly afterwards, by the carelessness of one of the aforesaid gentlewomen setting fire to her bed; and in the next century the new building shared the same fate, at the orders of Henry VIII's general, the Earl of Hertford. General Monk also besieged it during the Civil Wars; but its death-blow was given by the mob in 1688; and now the triple tier of cavernous apartments above described is all that remains of the ancient castle.

A strife older than any of these has been commemorated in lines so apt, that I must be pardoned for quoting them:—

"Three triumphs in one day! three hosts subdued by one!
Three armies scattered like the spray beneath one summer sun!
Who, pausing 'mid the solitude of rocky streams and leafy trees,
Who, gazing o'er this giant wood, could ever dream of these?
Or think that aught would here intrude save birds and humming
bees?"

Which stanzas refer to the triple battle on the moor of Roslin, one spring day in 1302, when the Scots, under their regent Comyn, defeated three divisions of the English successively, though the latter were almost four times their number. But it is difficult to believe, now, that this haunt of solitude and peace was ever visited by sights and sounds of war. What massy copsewood darkens all the dell! What black shadows lie in the pools below!

As we return through the postern, we come to a door bearing over its lintel the inscription, "S. W. S., 1622"—the date of the modern erection and initials of the founder, Sir William St. Clair. Here a private family reside during the summer time. Remains of ponderous walls and archways, formed of red sandstone blocks, attest the olden strength and extent of the fortress. Presently we come to a ravine, cut down through the rock to considerable depth, thus insulating the castle, except for the arch which spans the space. And here the guide paused. Pointing to a small edifice on the brow of the hill before us, just appearing above the trees, "That's the chapel," quoth he.

What! that insignificant, commonplace-looking building? We were not near enough to discern any of its architectural details, and the distant