

W. F. Barrett

A C C O U N T

OF THE LATE

ÆRONAUTICAL EXPEDITION

FROM

LONDON TO WEILBURG,

ACCOMPLISHED BY

ROBERT HOLLOND, Esq. ⁺ MONCK MASON, Esq.

AND

⁺ CHARLES GREEN, ÆRONAUT.

"PENNIS NON HOMINI DATIS."

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STADTBIBLIOTHEK
FRANKFURT A. M.

TO

ROBERT HOLLOND, ESQ.

TO WHOSE LIBERAL AND ENTERPRISING SPIRIT THE LATE
EXPEDITION OWES ITS ORIGIN AND SUCCESS,

THE FOLLOWING SKETCH

IS INSCRIBED,

AS A SLIGHT TESTIMONY OF THE REGARD AND RESPECT IN WHICH HE IS HELD

BY HIS SINCERE FRIEND AND FAITHFUL SERVANT,

M. M.

PARIS, DEC. 1836.

ACCOUNT, &c.

The interest with which the public at all times appear to have regarded the progress of *Ærostation*, and especially the very flattering concern which they have deigned so unequivocally to express for the successful issue of our late undertaking, have concurred in inducing me to abandon the usual path of communication hitherto adopted upon such occasions, and confirm me in the opinion that some account, more accurate and detailed than is generally to be found in the columns of the public press might not prove unacceptable to those for whose sympathy and consideration we can never acknowledge ourselves sufficiently grateful. In this belief, which I hope may not be deemed fallacious, I have seized the first vacant moment since our descent to embody in the present form all those incidents and observations to which a voyage so singular is so amply calculated to give rise. It is true that many of these have already reached the public ear through the medium of the public press, while at the same time no doubt much of the interest which

owes its origin to the uncertainty and supposed peril of such exploits must have already subsided in the knowledge of the result, and of the leading features, which our duty to the public made it imperative upon us immediately to divulge. It is not, however, in the mere issue, successful or unsuccessful, that the chief merit or importance of such an enterprise can alone be said to consist. Designed with a view to special ends, and undertaken for the sole purpose of ascertaining and establishing the efficacy of certain improvements in the art, from which most beneficial results *were*, and I am now happy to add *are*, most likely to accrue, it becomes no less an obligation to ourselves than to the world in general, to make them partakers in the knowledge of whatever interesting or important circumstances either accompanied the progress of our expedition, or may justly be expected to attend the adoption of those improvements, the merits of which it was our sole object in the present instance to confirm.

From the time of the first discovery of the properties and power of the balloon,* up to a late period, (already a

* It may not be uninteresting to those concerned in the annals of ærostation, to mention that the widow of the celebrated Montgolfier, the first inventor of the balloon, to which his name continues to be attached, is at this present moment living in Paris; and, though in her eighty-second year, in the perfect enjoyment of all her faculties, ardent in the advance-

lapse of more than half a century), a variety of obstacles apparently insurmountable continued to obstruct the progress, and paralyze the efforts of all who sought to render it obedient to the sway of human will, and subservient to the purposes of human life. The chief of these impediments consisted in the uncertainty and expense attending the process of inflation from the employment of hydrogen gas; the dangers considered inseparable from the practice of the art; the difficulties which hitherto have baffled all attempts to give a direction to the ungovernable mass, and the impossibility which all previous aeronauts have experienced of remaining in the air a sufficient time to ensure the attainment of a sufficient distance.

To remove these obstacles and reduce the ærial vehicle to a more certain issue, a vast extent of actual experience, united to an intellect capable of turning it to a proper account was absolutely required; and it would be an act of much injustice were I not to declare, that it is to the combination of both these in the person of Mr. Charles Green, that we are indebted for the entire results

ment of the art, and hospitable in the reception of those who cultivate it. I had the pleasure of dining at her table, since our arrival, and of hearing from her own lips many of those curious anecdotes illustrative of its origin and progress, which, indeed, appear at all times to have accompanied the first dawning of great and important discoveries.

of all that is beneficial in the practice, or novel in the theory of this, the most delightful and sublime of all sublunary enjoyments.

It was to him, and to his discovery of the applicability of coal gas to the purposes of inflation, that we owe the removal of the first of those impediments in practice, which till then had continued to weigh down with a leaden hand the efforts of the most indefatigable and expert, and had, in fact, bid fair to quench the incipient science in its very onset.

Up to the period of that discovery, the process of inflation was one, the expense of which was only to be equalled by its uncertainty: two, and sometimes even three days of watchful anxiety have been expended in the vain endeavours to procure a sufficiency of hydrogen to fill a balloon, from which, on account of its peculiar affinities, it continued to escape almost as fast as it was generated; during all which time the various casualties of wind and weather, the inevitable imperfections of a vast and cumbrous apparatus, and above all the enormous expense attending this operation were to be incurred and endured, for the sole purpose, and with the sole object of remaining for a few hours helplessly suspended in the air. Under such disadvantages all prospect of advancement in the art had speedily disappeared; and it was only by the timely intervention of Mr. Green's ingenious application that the art itself was saved from a

premature extinction—Ærostation had gone to sleep, when, roused by this discovery she awoke to redoubled efforts, and rendered that, in the hands of the *skilful*, a profession and a profit, which before had ever been a matter of doubt, difficulty and distress.*

With respect to the next of those impediments, which in the opinion of mankind might have continued to oppose the adoption of ærostation as an organ of general utility—I mean the danger usually considered as consequent upon the exercise of the art, much is not required to prove the fallacy of such fears: two hundred and twenty-six ascents,† undertaken at all periods of the year, without one disappointment to the public, and without one solitary instance of fatal consequences, or even of an accident of disagreeable results, (except from the inter-

* Independent of the diminution of expense and risk, from the employment of coal-gas, in preference to hydrogen, for the purpose of inflation, there are other advantages of great importance, one of which merits special notice. I allude to the superior facility with which the latter is retained in the balloon, owing to the greater subtlety of the particles of hydrogen, and the strong affinity which they exhibit for those of the surrounding atmosphere. In a balloon, sufficiently perfect to retain its contents of coal-gas unaltered in quality or amount for the space of six months, an equal quantity of hydrogen could not be maintained in equal purity for an equal number of weeks.

† The amount of Mr. Green's public ascents, up to the present period.

vention of malice),* ought to be a sufficient proof of how little danger is to be apprehended in the practice of aërostation, when, under the management of a skilful leader, and with the aid of those improvements to which his experience has given rise. It is not from the bungling efforts of unqualified persons that any judgment should be formed on this or other matters of practical detail; and where that skill is present, without which no one has a right to expect success, and those precautions have been observed which experience has shewn to be requisite, I do not hesitate to say, that the practice of aërostation is as devoid of extraordinary danger as that of any other mode of conveyance hitherto adopted.†

*In an ascent from Cheltenham, a few years ago, in which Mr. Green was accompanied by Mr. Griffiths, some malicious scoundrel contrived to sever the ropes of the car in such a manner as not to be perceived before the balloon had reached a considerable elevation, whereby the parties were precipitated to the ground, and very narrowly escaped destruction. Neither the author of this premeditated villainy, nor the design it was intended to answer, have ever yet been discovered, although a reward of one hundred guineas was immediately offered for his detection.

† It will be observed, that no reference is here made to the state of the art in respect of the power of guiding the balloon according to a given direction; the want of which, is generally considered as the most effectual obstacle to its further progress and adaptation to the ordinary purposes of human life. As the discussion however of this question would tend to a considerable

Great however as are the merits of Mr. Green's previous discoveries, they may be said to yield in importance to that whereby he has succeeded in enabling the aeronaut to maintain the power of his balloon undiminished during the continuance of the most protracted voyage it could ever be required to perform. In order, fully to comprehend the value of this discovery, which more immediately formed the object of our late enterprise, it is necessary that some idea should be had of the difficulties it was intended to obviate, and of the effects they were calculated to produce upon the further progress of aërostation. When a balloon ascends to navigate the atmosphere, independent of the loss of power occasioned by its own imperfections, an incessant waste of its resources in gas and ballast becomes the inevitable consequence of its situation. No sooner has it quitted the earth than it is immediately subjected to the influence of a variety of circumstances tending to create a difference in its weight; augmenting or diminishing, as the case may be, the power by the means of which it is supported. The deposition or evaporation of humidity to the extent, in proportion to its size, of several hundred-weight; the

digression, and as it likewise formed no part of the project in pursuance of which our late expedition was undertaken, I have thought it preferable to omit all mention of it for the present, reserving for a future opportunity a more elaborate investigation of the case, than would be here either consistent or agreeable.

alternate heating and cooling of its gaseous contents by the remotion or interposition of clouds between the object itself, and the influence of the solar rays, with a variety of other more secret, though not less powerful agencies, all so combine to destroy the equilibrium which it is the main object of the *Aëronaut* to preserve, that scarcely a moment passes without some call for his interposition, either to check the descent of the balloon by the relection of ballast, or to controul its ascent by the proportionate discharge of gas; a process by which, it is unnecessary to observe, the whole power of the balloon, however great its dimensions, must in time be exhausted, and sooner or later terminate its career by succumbing to the laws of terrestrial gravitation. By the simple contrivance of a rope of the requisite magnitude and extent, trailing on the ground beneath, (and if over the sea, with a sufficient quantity of liquid ballast contained in vessels floating on its surface), have all these difficulties been overcome, and all the features of the art completely and effectually reversed. Harnessed to the earth or ocean, by a power too great for her to resist, it is in vain the balloon endeavours to change the level of her onward course; every foot she would have been otherwise compelled to add to her elevation now only adds to her weight, by her endeavours to abstract from the earth a further portion of that rope which is dependent upon its surface; while, on the other hand, every foot she would

have been inclined to descend, had she been at liberty as heretofore, now only abstracts from the weight which draws her downward, by throwing on the earth the labour of supporting an additional portion of the guide-rope, which she would otherwise have had to sustain without relief. Limited to one unalterable plane, all the fluctuations above-mentioned, whereby her irreparable stock of power became subjected to incessant waste, have thus completely been avoided, and not only her ascensive force maintained in its full vigour throughout a period determinable solely by her own imperfections, but at all times, and under all circumstances, over the boundless ocean, without a landmark, in the densest fog, and throughout the darkest night the exact direction of her course, as well as the very rate of her progress, determined with the utmost facility, and most infallible results.*

*The progress of the guide-rope being delayed to a certain extent by its motion over the more solid plane of the earth's surface, while the movement of the balloon is as freely as ever controlled by the propelling action of the wind, it is evident that the direction of the latter when in progress, must ever be in advance of the former; a comparison therefore of the relative positions of these two objects by means of the compass, must at all times indicate the exact direction of her course; while with equal certainty, an estimate can at once be obtained of the velocity with which she is proceeding, by observing the angle formed by the guide-rope, and the vertical axis of the machine. In proportion as this angle enlarges, an increase in

The main feature however in this discovery, is the altered aspect under which it enables the aeronaut to regard the perils of the sea, and the consequent extension it bestows upon the hitherto limited sphere of his relations. The ocean, now no longer the dreaded enemy of the aerial voyager, becomes at once his greatest friend; and instead of opposing his progress, offers him advantages more certain and efficacious than even the earth itself with all its presumed security, is calculated to contribute.

Such then was the actual state of ærostation when Mr. Robert Hollond, a gentleman who had long cultivated a practical acquaintance with the art, resolved to afford an opportunity for a full display, and unequivocal determination of the merits of these discoveries, by undertaking at his own expense to fit out an expedition, under the guidance of Mr. Green, (in which he was so kind as to include me), for the purpose, and with the intention of starting from London and proceeding (in whatever direction the winds at that time prevailing

the rate of the balloon may be infallibly inferred; and, vice versa, its diminution will be found to correspond exactly with the diminished velocity of her advance. When the rope is dependent perpendicularly, no angle of course is formed, and the machine may be considered as perfectly stationary, or at least endowed with a rate of motion too insignificant to be either appreciable or important.

might happen to convey us), to such a distance as would suffice to answer the ends for which the voyage was especially designed. Accordingly the proprietors, Messrs. Gye and Hughes, having kindly conceded the use of the great Vauxhall balloon, and of their premises, for the purpose of the ascent; after several unavoidable delays, occasioned chiefly by the weather, the day of departure was fixed for Monday, November 7, 1836, and the process of inflation having been commenced at an early hour, every thing was got ready for starting by one o'clock in the afternoon of the same day.

The appearance which the balloon exhibited previous to the ascent, was no less interesting than strange. Provisions, which had been calculated for a fortnight's consumption in case of emergency; ballast to the amount of upwards of a ton in weight, disposed in bags of different sizes, duly registered and marked, together with an unusual supply of cordage, implements, and other accessories to an aerial excursion, occupied the bottom of the car; while all around the hoop and elsewhere appended, hung cloaks, carpet-bags, barrels of wood and copper, coffee-warmer,* barometers, telescopes, lamps, wine jars

* A machine had been contrived for the purpose of warming coffee and other liquors, without the intervention of fire, by the means of slaked lime, which answered the purpose sufficiently well, although the danger which it was intended by these precautions to avoid, is really not such as to require the aid of such

and spirit flasks, with many other articles, designed to serve the purposes of a voyage to regions, where once forgotten, nothing could be again supplied.

Among the other matters with which we had taken the precaution to provide ourselves, were passports directed to all parts of the continent, specifying the peculiar nature of our voyage, and entitling us to exemption from the usual formalities of office.

In addition to these, we were also charged with a letter to His Majesty the King of Holland, from Mr. May, His Majesty's Consul-General in London; which was put into the post-office at Coblenz, on the evening of the day succeeding our departure.*

appliances; with that degree of prudence and attention which can at all times be commanded, no real peril is to be apprehended from the use of actual fire. During the whole night we had a lamp constantly burning, nor did we at any time suffer anxiety on account of its presence, or perceive any occasion, even temporarily to wish for its extinction.

* Of the due arrival of this letter, and his Majesty's gracious reception of it, we received the following testimony in a letter from Mr. May, shortly after we reached Paris.

London, November, 28, 1836.

SIR,

Perceiving from the accounts in the Newspapers that you and your friends have arrived at Paris, I lose no time in having the satisfaction of thanking you very sincerely, for

Thus prepared, and duly accoutred, at half-past one o'clock the balloon was dismissed from the ground, and rising gently under the influence of a moderate breeze bore speedily away towards the south-east, traversing in her course the cultivated plains of Kent, and passing in succession nearly over the towns of Eltham, Bromley, Footscray, and others, whose variegated outlines beautifully diversified the rich landscape that lay beneath us. The weather was uncommonly fine for the time of year; a few light clouds alone floated in the sky, and at least as useful as ornamental, served to indicate the existence of different currents at different altitudes; an information of which, it will be seen hereafter, we were enabled to avail ourselves with much effect.

the care taken of the letter I took the liberty of entrusting to your kindness, for the purpose of having it forwarded to the King, at the Hague; it reached its destination on the 12th of November, through the post-office at Coblenz, and his Majesty was very much gratified at receiving a letter from England, by so novel a mode of conveyance as a balloon. The King has written a memorandum on the letter "*to be carefully preserved*;" wishing to keep it as a remembrance of this, as yet, extraordinary occurrence. I congratulate you and your companions on the success of your enterprize, and remain with great regard,

SIR,

Your most obedient humble servant,

J. W. MAY.

Continuing in a south-easterly direction, at forty-eight minutes past two* we crossed the Medway, at the distance of about six miles to the west of Rochester, and in little more than an hour after† were in sight of the city of Canterbury, the lofty towers of its cathedral bearing distant about two miles, in a westerly direction. In honour of the mayor and inhabitants of that city, under whose patronage our celebrated pilot had twice before ascended, we lowered a small parachute containing a letter addressed to the mayor, and couched in such terms as our hurried passage would permit us to indite.‡

In a few minutes after § we obtained our first view of the sea, brightening under the last rays of a setting sun,

*The times and distances, as well as the direction of our course by the compass, during the voyage, being taken from the notes kept by Mr. Hollond on the occasion, will account for the exact correspondence on these points, between the different relations already before the public, which, without this explanation, might perhaps appear to border a little on the extraordinary.

† Five minutes past four.

‡ Of the due receipt of this letter, as well as of one to the same effect, which we subsequently addressed to the Mayor of Dover, we have since been informed; though the others which we discharged by similar means, at different periods of our voyage, we have reason to believe never reached the hands for which they were designed.

§ Fifteen minutes past four.

and occupying the extreme verge of the horizon, in the direction in which we were now rapidly advancing.

During the latter period of this part of our voyage, the balloon, perhaps owing to the condensation occasioned by the approaching shades of evening, had been gradually diminishing her altitude, and for some time past had continued so near the earth as to enable us, without much exertion, to carry on a conversation with such of the inhabitants as happened to be in our immediate vicinity. So close indeed were we, at one time, as to be able distinctly to observe a covey of partridges, which either our approach or some other equally dreaded apparition had dislodged from their resting place, and sent to seek a refuge on the borders of a wood which lay adjacent. A whole colony of rooks, alarmed no doubt by our formidable appearance, rose likewise in dismay, and after rending the air for miles round with their cries, and vainly trying the protection of the neighbouring woods finally dispersed, scattering themselves in every direction over the surface of the earth beneath.

It was at this period of our voyage that the first opportunity occurred of shewing how far it was possible for the skilful and experienced Aeronaut to influence the course of his aerial vessel, by availing himself of the advantages which circumstances frequently place at his disposal. Shortly after we had lost sight of the city of Canterbury a considerable deviation appeared to have

taken place in the direction of our route. Instead of pursuing our former line of south by east, which was that of the upper current, by means of which we had hitherto advanced, it became apparent that we were now rapidly bearing away upon one which tended considerably to the northward, and which, had we continued to remain within the limits of its influence, would have shortly brought us to sea, in the direction of the North Foreland. As it had all along been an object to proceed as near to Paris as circumstances would permit,* we resolved to recover as soon as possible the advantages which a superior current had hitherto afforded us; and accordingly rose to resume a station upon our previous level. Nothing could exceed the beauty of this manoeuvre, or the success with which the balloon acknowledged the influence of her former associate. Scarcely had the superfluous burden been discharged proportioned to the effect required, when slowly she arose, and sweeping majestically round the horizon, obedient to the double impulse of her increasing elevation and the gradual change of current, brought us successively in sight of all those objects which we had shortly before left retiring behind us, and in a

* The proprietors of the balloon having contemplated making an ascent from Paris, and Mr. Hollond having undertaken to transfer the balloon thither, it became a consideration with us, not to increase our distance from that capital, more than was consistent with the main object of the expedition.

few minutes placed us almost vertically over the Castle of Dover, in the exact direction of crossing the straits between that town and Calais, where it is confined within its narrowest limits.*

It was forty-eight minutes past four when the first line of waves breaking on the beach appeared beneath us, and we might be said to have fairly quitted the shores of our native soil, and entered upon the hitherto dreaded regions of the sea.

It would be impossible not to have been struck with the grandeur of the prospect at this particular moment of our voyage; the more especially as the approaching shades of night rendered it a matter of certainty that it would be the last in which earth would form a prominent feature, that we might expect to enjoy for a considerable lapse of time. Behind us, the whole line of English coast, its

* It was undoubtedly at this period of our voyage, while the rapidity of our course appeared to be delayed by the circuitousness of our route, the length of time we consequently remained in sight, and above all, the rectilinear direction of our approach, that originated the observation contained in the newspapers, that the progress of the balloon did not exceed the rate of four or five miles an hour; an assertion which a slight consideration of the time we had left London, and the distance we had accomplished, would have been sufficient to disprove. According to the above method of calculation, the mean rate of our course up to the time referred to, was somewhat more than twenty-five miles an hour.

white cliffs melting into obscurity, appeared sparkling with the scattered lights, which every moment augmented, among which the light-house at Dovor formed a conspicuous feature, and for a long time served as a beacon whereby to calculate the direction of our course. On either side below us the interminable ocean spread its complicated tissue of waves without interruption or curtailment, except what arose from the impending darkness, and the limited extent of our own perceptions; on the opposite side a dense barrier of clouds rising from the ocean like a solid wall fantastically surmounted, throughout its whole length, with a gigantic representation of parapets and turrets, batteries and bastions, and other features of mural fortifications, appeared as if designed to bar our further progress, and completely obstructed all view of the shores, towards which we were now rapidly drawing nigh. In a few minutes after, we had entered within its dusky limits, and for a while became involved in the double obscurity of the surrounding vapours and of the gradual approach of night. Not a sound now reached our ears; the beating of the waves upon the British shores had already died away in silence, and from the ordinary effects of terrestrial agitation our present position had effectually excluded us.*

* I scarcely know whether it is an observation worthy of being committed to paper, that the sea, unless *perhaps* under

In this situation, we prepared to avail ourselves of those contrivances, the merits of which, as I have already stated, it was one of the main objects of our expedition to ascertain; and consequently, to provide against the loss of power by the increase of weight proceeding from the humidity of the atmosphere, naturally to be expected on the approach of night, we commenced lowering the copper vessels which we had provided for the occasion.

Scarcely, however, had we completed our design, and were patiently awaiting the descent we had anticipated, when the faint sound of the waves beating against the shore again returned upon our ears, and awakened our attention. The first impression which this event was calculated to convey, was that the wind had changed, and that we were in the act of returning to the shores we had

circumstances of the most extraordinary agitation, does not in itself appear to be the parent of the slightest sound; unopposed by any material obstacle, an awful stillness seems to reign over its motions. Nor do I think that even under *any* circumstances, no matter how violent, can any considerable disturbance arise from the conflict of its own opposing members. The impossibility of ever having been placed in a situation to bring this fact under the cognizance of our senses, is no doubt the reason why it has never before been noticed. On the shore or in the sea, no one has ever been present, independent of that material support, the absence of which is necessary to the success of the experiment; it is in the balloon alone, suspended in elastic æther, that such a phenomenon could either have been verified or observed.

so shortly before abandoned. A glance or two, however, served to show us the fallacy of this impression; the well-known lights of Calais and of the neighbouring shores were already glittering beneath us; the barrier of clouds which I have before mentioned as starting up so abruptly in our path, as abruptly terminated; and the whole adjacent coast of France, variegated with lights, and ripe with all the nocturnal signs of population, burst at once upon our view. We had, in fact, crossed the sea; and in the short space of about one hour, from the time we had quitted the shores of England, were floating tranquilly, though rapidly, above those of our Gallic neighbours.

It was exactly fifty minutes past five when we had thoroughly completed this *trajet*; the point at which we first crossed the French shore bearing distant about two miles to the westward of the main body of the lights of Calais, our altitude at the time being somewhat about three thousand feet above the level of the ocean. As it was now perfectly dark we lowered a Bengal light, at the end of a long cord, in order to signify our presence to the inhabitants below; shortly after, we had the satisfaction to hear the beating of drums, but whether on our account, or merely in performance of the usual routine of military duty, we were not at the time exactly able to determine.

Before dismissing the sea, a word or two seems required to counteract a vague and incorrect impression regarding its peculiar influence upon the buoyancy of the balloon, arising from the difficulties experienced by Messrs. Blanchard and Jeffries in their passage of the same straits in the year 1785, and the apparently unaccountable removal of their difficulties as soon as they had reached the opposite coast. So many, however, are the circumstances within the range of aeronautical experience to which, without intruding upon the marvellous, or calling new affinities into existence, these effects can be satisfactorily attributed, that the actual difficulty lies in ascertaining to which of them they are most likely to have owed their origin: of these the increase of weight by the deposition of humidity on the surface of the balloon, occasioned by the colder atmosphere through which the first part of their journey had to be pursued, and the subsequent evaporation of the same by the rise of temperature to which they necessarily became subjected as soon as they came within the calorific influence of the land, is in itself quite sufficient to explain the difference that existed in the buoyancy of the balloon, during the different stages of its progress. Even in the absence of any humidity whereby the actual weight of the balloon could have been increased, the mere diminution of temperature, by condensing its gaseous contents; and their subsequent rarefaction by the altered temperature they

were sure to encounter when they reached the opposite coast, is more than enough to account for much greater effects than even those to which it is here intended to apply. As far as we were concerned certainly no such uncommon impression was observable, nor did we experience any diminution of ascensive power in our transit across the sea, beyond what we should have expected under similar circumstances over a similar extent of land.

The night having now completely closed in, and no prospect of any assistance from the moon to facilitate our researches, it was only by means of the lights which either singly or in masses, appeared spreading in every direction, that we could hope to take any account of the nature of the country we were traversing, or form any opinion of the towns or villages which were continually becoming subjected to our view.

The scene itself was one which exceeds description. The whole plane of the earth's surface, for many and many a league around, as far and farther than the eye distinctly could embrace, seemed absolutely teeming with the scattered fires of a watchful population, and exhibited a starry spectacle below that almost rivalled in brilliancy the remoter lustre of the concave firmament above. Incessantly during the earlier portion of the night, ere the vigilant inhabitants had finally retired to rest, large sources of light, betokening the presence of some more extensive community, would appear just looming above

the distant horizon in the direction in which we were advancing, bearing at first no faint resemblance to the effect produced by some vast conflagration; when seen from such a distance as to preclude the minute investigation of its details. By degrees, as we drew nigh, this confused mass of illumination would appear to increase in intensity, extending itself over a larger portion of the earth, and assuming a distincter form and a more imposing appearance, until at length, having attained a position from whence we could more immediately direct our view, it would gradually resolve itself into its parts, and shooting out into streets, or spreading into squares, present us with the most perfect model of a town, diminished only in size, according to the elevation from which we happened at the time to observe it.

It would be very difficult, if not impossible, to convey to the minds of the uninitiated any adequate idea of the stupendous effect which such an exhibition, under all its concomitant peculiarities, was calculated to create. That we were, by such a mode of conveyance, amid the vast solitude of the skies, in the dead of night, unknown and unnoticed, secretly and silently reviewing kingdoms, exploring territories, and surveying cities, in such rapid succession as scarcely to afford time for criticism or conjecture, was in itself a consideration sufficient to give sublimity to far less interesting scenes than those which formed the subject of our present contemplations. If to

this be added the uncertainty that from henceforward began to pervade the whole of our course—an uncertainty that every moment increased as we proceeded deeper into the shades of night, and became further removed from those landmarks to which we might have referred in aid of our conjectures, clothing every thing with the dark mantle of mystery, and leaving us in doubt more perplexing even than ignorance as to where we were, whither we were proceeding, and what were the objects that so much attracted our attention—some faint idea may be formed of the peculiarity of our situation and of the impressions to which it naturally gave rise.

In this manner, and under the influence of these sentiments did we traverse with rapid strides a large and interesting portion of the European continent; embracing within our horizon an immense succession of towns and villages, whereof those which occurred during the earlier part of the night, the presence of their artificial illumination alone enabled us to distinguish.

Among these latter, one in particular, both from its own superior attractions, the length of time it continued within our view, and the uninterrupted prospect which our position directly above it, enabled us to command, captivated our attention and elicited constant expressions of mingled admiration and surprise. Situated in the centre of a district which actually appeared to blaze with the innumerable fires wherewith it was studded in every

direction to the full extent of all our visible horizon, it seemed to offer in itself, and at one glance, an epitome of all those charms which we had been previously observing in detail. The perfect correctness with which every line of street was marked out by its particular line of fires; the forms and positions of the more important features of the city, the theatres and squares, the markets and public buildings, indicated by the presence of the larger and more irregular accumulation of lights, added to the faint murmur of a busy population still actively engaged in the pursuits of pleasure or the avocations of gain, all together combined to form a picture which for singularity and effect certainly could never have been before conceived. This was the city of Liege, remarkable from the extensive iron-works which, abounding in its neighbourhood, occasioned the peculiar appearance already described, and at the time led to that conjecture, concerning its identity, the truth of which a subsequent enquiry enabled us to confirm.

This was the last spectacle of the kind which we were destined to enjoy. Scarcely had we completely cleared the town and the fiery region in which it was embosomed, ere an unbroken obscurity more profound than any we had yet experienced, involved us in its folds, and effectually excluded every terrestrial object from our view.

It was now past midnight, and the world and its inhabitants had finally committed themselves to repose.

Every light was extinguished, and every sound hushed into silence; even the cheerful tones of the vigilant watch-dog, which had frequently contributed to enliven our course during the previous portion of the night, had now ceased; and darkness and tranquillity reigned paramount over the whole adjacent surface of the globe.

From this period of our voyage until the dawning of the following day, the record of our adventures becomes tinged with the obscurity of night. The face of nature completely excluded from our view, except when circumstances occasionally brought us into nearer contact with the earth, all our observations during the above period are necessarily confined to a register of incidents and sensations mingled with vague conjectures, and clouded with the mystery wherewith darkness and uncertainty were destined to involve so large a portion of the remainder of our expedition. The moon, to which we might have looked up for companionship and assistance, had she been present, was no where to be seen. The sky, at all times darker when viewed from an elevation than it appears to those inhabiting the lower regions of the earth, seemed almost black with the intensity of night; while by contrast no doubt, and the remotion of intervening vapours, the stars, redoubled in their lustre, shone like sparks of the whitest silver scattered upon the jetty dome around us. Occasionally faint flashes of lightning, proceeding chiefly from the northern hemisphere, would

for an instant illuminate the horizon, and after disclosing a transient prospect of the adjacent country, suddenly subside, leaving us involved in more than our original obscurity. Nothing in fact could exceed the density of night which prevailed during this particular period of the voyage. Not a single object of terrestrial nature could any where be distinguished; an unfathomable abyss of "darkness visible" seemed to encompass us on every side; and as we looked forward into its black obscurity in the direction in which we were proceeding, we could scarcely avoid the impression that we were cleaving our way through an interminable mass of black marble in which we were imbedded, and which, solid a few inches before us, seemed to soften as we approached, in order to admit us still farther within the precincts of its cold and dusky enclosure. Even the lights which at times we lowered from the car, instead of dispelling, only tended to augment the intensity of the surrounding darkness, and as they descended deeper into its frozen bosom, appeared absolutely to melt their way onward by means of the heat which they generated in their course.

The cold, during this part of the night especially, was certainly intense, as could be perceived not less from the indications of the thermometer, (ranging variously from within a few degrees below, to the point of congelation,) than from the effects which it produced upon the different liquors wherewith we were provided. The water, coffee,

and, of course, the oil in our several vessels were completely frozen; and it was only by the actual application of the heat of the lamp that we were enabled to procure a sufficiency of the latter to supply our wants, during the long term of darkness to which we were about to be subjected.

Strange, however, as it may appear, while all around bore such unequivocal testimony to the severity of the cold, the effects produced upon our persons, undefended as they were by any extraordinary precautions, were by no means commensurate to the cause, nor such as even under ordinary circumstances we might fairly have expected to encounter. The reason to which may be attributed this unusual exemption from the consequences of a low temperature, is the absence of all current of air, the natural result of our situation, and one of the peculiar characteristics of aerial navigation.*

To this intensity of cold, preceded by a long subjection to the action of a humid atmosphere, while floating at a lower elevation, is likewise to be attributed the occurrence of an incident, which, for the impression it is calculated

* After what has been stated respecting the temperature to which we were subjected, it will be unnecessary to offer any further disproof of the absurd reports which were circulated concerning its severity, and the serious consequences which we were supposed to have suffered from our exposure to it during the night.

to produce upon the minds of those who experience it for the first time, and in ignorance of its cause, merits particularly to be noticed.

It was about half-past three in the morning, when the balloon, having gained a sudden accession of power, owing to a discharge of ballast, which had taken place a few minutes before, while navigating too near the earth to be considered perfectly safe in a country, with the main features of which we were totally unacquainted, began to rise with considerable rapidity, and ere we had taken the customary means to check her ascent, had already attained an elevation of upwards of twelve thousand feet. At this moment, while all around is impenetrable darkness and stillness, and darkness most profound, an unusual explosion issues from the machine above, followed instantaneously by a violent rustling of the silk, and all the signs which may be supposed to accompany the bursting of the balloon, in a region where nothing but itself exists to give occasion to such awful and unnatural disturbance. In the same instant, the car, as if suddenly detached from its hold, becomes subjected to a violent concussion, and appears at once to be in the act of sinking with all its contents, into the dark abyss below. A second and a third explosion follow in quick succession, accompanied by a recurrence of the same astounding effects; leaving not a doubt upon the mind of the unconscious voyager of the fate which nothing now appears capable of averting. In a moment after all is

tranquil and secure; the balloon has recovered her usual form and stillness, and nothing appears to designate the unnatural agitation to which she has been so lately and unaccountably subjected. The occurrence of this phenomenon, however strange it may appear, is, nevertheless, susceptible of the simplest resolution, and consists in the tendency to enlargement from remotion of pressure which the balloon experiences in rising from a low to a higher position in the atmosphere, and the resistance to this enlargement occasioned by the net-work previously saturated with moisture, and subsequently congealed into the elliptical form which the dependant weight of the car obliges it to assume, whenever the shrunken capacity of the sphere it encompasses will admit of its longitudinal distension. As this resistance is occasioned by the intervention of a *non-elastic* medium (the ice) which has bound the meshes of the net-work in their contracted form, it is evident that the liberation occasioned by their disrapture will not take place until the internal pressure of the balloon has reached a certain amount; when *suddenly* that liberation is accomplished, attended by those collateral effects which we have already attempted to describe. The impression of the descent of the car in the above representation is evidently a false one; the car, so far from sinking, actually springs up; it is the unexpectedness of such a movement, and its apparent inconsistency with the laws of gravitation that occasions the delusion, the reality of which the concomitant circumstances essentially tend to confirm.

Several times during the latter part of the night we had approached so near to the earth, as to be enabled to observe, imperfectly, it is true, some of its most prominent features, and to obtain some faint idea of the nature of the ground beneath us. At these times we appeared to be traversing large tracts of country partially covered with snow, diversified with forests, and intersected occasionally with rivers, of which the Meuse, in the earlier part of the night, and the Rhine, towards the conclusion, formed, as we afterwards learned, the principal objects, both of our admiration and of our conjectures.

Large masses of fleecy clouds would at times likewise occupy the lower regions of the atmosphere, intercepting our view as we descended, and for a while leaving us in doubt, whether they were not a continuation of those snowy districts which we so frequently had occasion to remark.

From out of this mass of vapours, more than once during the night our ears became assailed with sounds bearing so strong a resemblance to the rushing of waters in enormous volumes, or the beating of the waves upon some extensive line of coast, that it required all our powers of reasoning, aided by the certain knowledge we had of the direction we were pursuing, to remove the conviction that we were approaching the precincts of the sea, and transported by the winds, were either thrown back

upon the shores of the German ocean, or about to enter upon the remoter limits of the Baltic.

It would be endless to enumerate all the conjectures to which this phenomenon gave rise, or the various manners by which we endeavoured to explain its occurrence. Among them those which seemed to obtain the greatest credit, were that the sound proceeded from some vast forest, agitated by the winds; some rapid river rushing impetuously over a broken and precipitous channel; or finally, that the misty vapours themselves, by the mutual action of their watery particles, or their precipitated deposition upon the irregular surface of the earth beneath, had occasioned the murmurs which multiplied throughout so large a space, came to our ears, in the formidable accents to which we have above alluded. According as the day drew nigh these appearances vanished, with much of the doubts to which they had given rise. Instead of the unbroken outline of the sea, an irregular surface of cultivated country began gradually to display itself; in the midst of which the majestic river we had noticed for some time back, appeared dividing the prospect, and losing itself in opposite directions amid the vapours that still clung to the summits of the hills, or settled in the valleys that lay between them. Across this river we now directed our course, and shortly after lost sight of it entirely, behind the gently swelling eminences by which it was bordered on both sides.

It was about six o'clock,* during an ascent which occurred shortly after we had crossed this river, that the balloon having reached a considerable elevation, shewed us our first view of the sun, and gladdened us with the prospect of a speedy approach of day. Powerful, indeed, must be the pen which could hope to do justice to a scene like that which here presented itself to our view. The enormous extent of the prospect†—the boundless variety it embraced—the unequalled grandeur of the objects it displayed—the singular novelty of the manner under

* The time referred to here and elsewhere throughout this narrative, is that of Greenwich.—Upon the completion of the voyage, a difference, amounting to about thirty-four minutes, was found to exist between the times indicated at its two extremes; the chronometers of Weilberg, being so much in advance of those of London. This difference was occasioned by the easterly direction of our course, and the difference in latitude to the extent of eight degrees, twenty minutes between the two places.

† If we only reflect, that our position when at this altitude, could enable us to behold objects at a distance of above one hundred and fifty miles on every side of us; had these objects been sufficiently great or sufficiently striking to fix the attention, some idea may be had of the vast extent of our prospect at this particular moment of our voyage. We shall then be seen occupying the centre of a circle, whose diameter extending to above three hundred miles in length, afforded us a horizon, the circumference of which, extending an equal number of leagues, comprised within its circuit, an extent of visible surface, little short of eighty thousand square miles.

which they were beheld—and the striking contrast they afforded to that situation and those scenes, to which we had so long and so lately been confined, are effects and circumstances which no description is capable of representing in the light in which they ought to be placed, in order to be duly appreciated. Better by far to leave it to a fertile imagination to fill in the faint outlines of a rough and unfinished sketch, than by a lame and imperfect colouring, run the risk of marring a prospect, which, for grandeur and magnificence has certainly no parallel in all the vast and inexhaustible treasures of nature.

This splendid spectacle, however, we were not long destined to enjoy; a rapid descent, which shortly after ensued, for a while concealed it from our view, and once more consigning us to the shades of night, which still continued to reign unbroken throughout the lower region of the air.

Again we rose within the reach of this delightful prospect; and again did we lose sight of it, amid the vapours and obscurity that accompanied our descent; nor was it till we had three times made the sun rise, and twice beheld it set, that we could fairly consider it established above the horizon, and daylight complete upon the plane of the earth beneath us.

From this time forward all our observation was principally directed to the nature of the country, and its adaptation to the descent which we had now resolved to effect,

the first fitting opportunity. To this step, the uncertainty in which we necessarily were, with respect to the exact position we occupied, owing to our ignorance of the *distance* we had come, especially determined us. For a long time past, the appearance of the country, so unlike any with which we were acquainted, had led us to entertain serious doubts as to whether we had not already passed the limits of that part of Europe where we might expect to find the accommodation and conveniencies which our own comfort, and the safety of the balloon, imperatively demanded. This opinion, the large tracts of snow over which we had passed, during the latter part of the night, bearing a strong resemblance to all we had hitherto pictured to ourselves of the boundless plains of Poland, or the barren and inhospitable Steppes of Russia, considerably tended to confirm; and as the region we were immediately approaching, seemed to offer advantages which, under these circumstances, we could not always hope to command, we resolved not to lose the occasion it so opportunely appeared to have afforded us. As soon as we had come to this determination, all preparations were speedily commenced for the descent; the guide-rope was hauled in, (an operation of much labour, owing to the bad construction and imperfect action of the windlass;) the grapnel and cable lowered, and every thing got ready that we might be able to avail ourselves of the first and fittest opportunity that might occur. To this intent, likewise,

we quitted our exalted station, and sought a more humble and appropriate level, along which we continued to range for some time; and to a considerable distance; the yet early hour of the day deterring us from completing the descent, in the fear of not obtaining that ready assistance from the inhabitants which it is always the main object of the *Æronaut*, if possible, to secure. As the mists of the night began to clear away from the surface of the soil, we were delighted to perceive a country intersected with road, dotted with villages, and enlivened with all the signs of an abundant and industrious population. One or two towns, likewise, of superior pretensions, were distinctly to be seen; giving promise of accommodation and advantages, which in our present emergencies, and under our present convictions, were not to be neglected. Accordingly, having pitched upon the spot most proper for the purpose, the valve was opened, and we commenced our descent. The place so selected was a small grassy vale, of about a quarter of a mile in breadth, embosomed in hills, whose sides and summits were completely enveloped with trees. Beyond this, on the opposite side, lay another valley of the same description; the only one visible for many miles, where we could conveniently effect our landing; an endless succession of forest scenery completing the landscape in the direction in which we should have to proceed. Into the former of these we now precipitated our descent, with the design of alighting, if pos-

sible, in the centre, clear of the woods that enclosed it on all sides. In these hopes, we were, however, disappointed; the wind suddenly increasing as we approached the ground, so much accelerated the onward progress of the balloon, that before the grapnel could take effectual hold of the soil, we had passed the middle of the valley, and sweeping rapidly over the ground, were borne close against the wooded declivity that flanked its eastern termination. To discharge a sufficiency of ballast to raise the balloon, and carry her clear of the impending danger, was the natural remedy. An unexpected obstacle to this operation here again presented itself: the sand which forms the ballast, frozen during the night into a solid block of stone, refused to quit the bag in the proportion required; and no time remained to search for one more suited to the occasion. Not a moment, was, in fact, to be lost; the valley was passed, and the branches of the trees that clotted the opposing precipice, were already within a few feet of the balloon; the grapnel continued to drag, and no chance appeared of arresting her progress onward. In this emergency one alternative alone remained, and the sack itself, with all its contents, to the amount of fifty-six pounds in weight, were at once consigned to the earth. In a moment, the balloon, lightened of so large a portion of her burden, had sprung up above one thousand feet, and clearing the mountain at a bound, was soon in rapid progress to the realms above. To coun-

teract the consequence of this sudden accession of power, and avoid being carried beyond the reach of the second valley, which we have already described as the only other available spot for our descent, the valve was again opened, and issue given to a large quantity of gas; sufficient, as was calculated, to check the course of the balloon in time to enable us to attain the point to which all our views were now directed. A second time, however, were we doomed to be disappointed. No sooner had we completed this manoeuvre, than by another caprice of nature, the wind suddenly abating, we found ourselves at once becalmed, and rapidly descending into the bosom of the woods that capped the summit, and clothed the sides of the intervening eminences. From this dilemma we were only relieved by the timely discharge of a further portion of our weight; not, however, before the accelerated descent of the balloon had brought us within a cable's length of the ground,* and almost in contact with the upper surface of the wood. Here, for a few moments, we continued to hover; the grapnel struggling with the top-most branches of the trees, and grasping and relinquishing its hold according to the varying impulse of the slight wind that prevailed at our elevation. While in this situation, we perceived, standing in the path of the wood, two females,

* The length of the cable to which the grapnel is attached, is about one hundred and twenty feet.

the first inhabitants we had noticed, lost in astonishment, and absolutely petrified with gazing upon so astounding an apparition. It was in vain we addressed them with a speaking-trumpet, in the hopes of procuring the assistance of some of the male population, which we conjectured could not be far off; the sound of our voices, proceeding from such an altitude, and invested with such an unearthly character, only augmented their astonishment, and added to their fears; they fled incontinently and without waiting farther parley, sought the shelter of the neighbouring coverts.

After continuing for a few minutes longer in these straits, we at length reached the confines of the wood; when, resolving not to be again baffled in our designs by the treacherous inconstancy of the wind, the valve was opened to its fullest dimensions, and the grapnel taking hold shortly after, we came to the ground with considerable, though by no means, disagreeable rapidity.*

* Too much praise cannot be given to Mr. Green, for his excellent conduct throughout the whole of this intricate pilotage. It is not by reading a mere description of the difficulties encountered, and the manner by which they were counteracted, that a correct judgement can be formed upon the proper merits of such a case as this; a further consideration is necessary; the knowledge that these difficulties did not proceed from the same source as the remedies by which they were defeated. In this light it is, that the conduct of our celebrated captain, has a right to be criticised; the impediments were

As soon as the descent was completed, and the power of the balloon sufficiently crippled to permit one of the party to quit the car;* the inhabitants, who had hitherto stood aloof, regarding our manœuvres from behind the trees, began to flock in from all quarters; eying, at first, our movements with considerable suspicion, and not seldom looking up in the direction from which we had just alighted, in the expectation, no doubt, of witnessing a repetition of this, to them, inexplicable phenomenon.

A few words in German, however, served to dissipate their fears, and secure their services; when, as if eager by present assiduity to make amends for former backwardness, they absolutely seemed to contend with each other in their exertions to afford us assistance, and execute our several behests, To this kindly feeling we endeavoured to contribute by every means in our power. Our stock of biscuits, wine, and brandy, quickly disappeared; with a relish which the novelty of the journey they had so lately performed, tended, no doubt, considerably to augment. The brandy, in particular, so much stronger than any they had ever before essayed, attracted their special

those of uncontrollable nature—the victory, and the means employed to secure it, were all his own.

* It was half-past seven o'clock when this occurrence took place, and our descent could be fairly said to be completed. The duration of our voyage may therefore be calculated at exactly eighteen hours.

admiration; and as they, each in succession, drank off their allowance, seemed by the exclamation of "Himm-lischer Schnapps,"* which accompanied every draught, as well as by the upward directions of their eyes, to denote the quarter from which they now became fully convinced, a beverage so delicious could alone have proceeded. From them we now also learned where it was that we really had alighted, and, for the first time, became aware that we were in the Grand Duchy of Nassau, and about two leagues from the town of Weilburg, the nearest where we could expect to meet with the accommodation which the circumstances of the case rendered desirable.† Thither, therefore, we determined to proceed, and having procured a cart and horses for the transportation of the balloon, we quitted this, to us, ever memorable spot, and attended by an amazing concourse of persons of every rank, age, and sex, set out for Weilburg, which a few hours enabled us to attain.

* The literal interpretation of the above expression is—"Celestial dram."

† The exact spot where the event took place was in a field adjacent to a mill, known by the name of Dillhausen, situated in the valley of Elbern, in the commune of Niederhausen, about two leagues from the town of Weilburg; already, by a curious coincidence, noted in the annals of ærostation as the place where the celebrated M. Blanchard effected his landing after an ascent which he made at Francfort in the year 1785.

The fame of our adventure had, however, already preceded us. On our approach we found ourselves greeted with acclamations, and a ready welcome and honourable attentions awaited our arrival. All the resources of the town were immediately placed at our disposal; the use of the archducal manège was tendered for the occupation of the balloon; and sentries, more indeed as a guard of honour than protection, stationed at the doors and avenues leading to the place of its reception.

Here then we resolved to remain until our future movements should be determined by the return of the letters we had dispatched to Paris immediately upon our descent. In the mean time we took advantage of this delay to open and inflate the balloon, as well for the purpose of drying and examining it, as to make some return for the obligations we were under, by contributing to gratify the curiosity of our hospitable entertainers. It would be scarcely credible were I to relate the interest wherewith the inhabitants seemed to regard this, to them, novel exhibition; the numbers that poured in to witness it from all quarters, for many a league around, or the grateful acknowledgments with which they never ceased to overwhelm us during the fortnight it continued open to public inspection.

Nothing in fact could surpass the courtesy and attention that we experienced from this simple-hearted and hospitable community, during the whole period of our residence

at Weilburg. Every one seemed to vie with each other in conferring favour, and contributing to our entertainment. Balls, dinners, concerts, and other amusements, in honour of our adventure, were given without intermission, and the congratulations of the city were presented to us by a deputation of the principal citizens, headed by their chief civil officer, in the form of a document duly signed and sealed by the competent authorities. Among the festive recreations to which our unexpected arrival at Weilburg gave rise, we must not omit to mention the ceremony of christening the balloon, which took place the day previous to our departure: The Baron de Bibra, Grand Maître des Eaux et Forêts, and the Colonel, Baron de Preen, being the godfathers; the Baroness de Bibra and the Baroness de Dungen, the godmothers, on the occasion. The balloon having been inflated to the greatest size the dimensions of the place would admit, eight young ladies, in company with Mr. Green, entered within the gigantic sphere, and the name of "The Great Balloon of Nassau" having been bestowed by one of their number, Mdle. Theresa, the lovely and amiable daughter of the Baron de Bibra, accompanied by a copious libation of wine, the ceremony was concluded with a collation, consisting of the remains of our stock of provisions, which had been unconsumed at the time of our descent.

From such an universal display of hospitality and kind-

ness it would be difficult to single out any to whom in particular our thanks are due: among those, however, whose station and circumstances entitle them to especial notice, were the Baron de Bibra, Grand Maître des Eaux et Forêts; the Baron de Dungern, Grand Ecuyer de son Altesse, pensionné; the Colonel, Baron de Preen, and their respective ladies; M. Hutschsteiner, Premier Conseiller de Médecine; M. Giesse, Premier Conseiller de Justice; M. Freydemann, Superior of the University, and M. Barbieux, likewise attached to the same establishment, together with a variety of others, the mere repetition of whose names would prove but a little recompence for the kindness we received at their hands. Through the Baron de Bibra, likewise, we took the opportunity to present to His Highness the Archduke of Nassau the flags * which accompanied the expedition, as a slight token of the hospitable reception we had experienced in his territories, with a request that they should

* Besides the usual national insignia, these flags presented a series of allegorical representations descriptive of the rise and progress of ærostation. Independent, however, of any merit which they might possess from their execution or design, there was one circumstance in their history which rendered them invaluable in the eyes of the æronaut: they had already performed two hundred and twenty-one voyages in the air; having been the constant companions of Mr. Green's excursions ever since his fifth ascent, wherein he had the misfortune to lose his balloon and all it contained in the sea off Beech Head.

be preserved in commemoration of the occurrence, among the archives of the Ducal Palace at Weilburg, where they now lie alongside of that which half a century before M. Blanchard deposited in like manner, to perpetuate the remembrance of a like event.

Thus ended an expedition which, whether we regard the extent of country it passed over, the time wherein it was performed, or the result of the experiment for the sake of which it was undertaken, may fairly claim to be considered among the most interesting and important which have hitherto proceeded from the same source. Starting from London, and traversing the sea, which mere accident alone prevented from forming a more important feature in our route, in the short space of eighteen hours, we performed a voyage which, including only those deviations we have since been enabled to ascertain, rather exceed than falls short of an extent of five hundred British miles.

It would be endless as well as useless, to enumerate all the places of name or notoriety, which a subsequent examination of the map, aided by the reports of our appearance at different stations by the way, shewed us to have either passed over or approached at some period or other during this extraordinary peregrination. A considerable portion of five kingdoms, England, France, Belgium, Prussian Germany, and the Archduchy of Nassau; a long succession of cities, including London,

Rochester, Canterbury, Dover, Calais, Cassel, Ypres, Courtray, Lille, Audenaerde, Ath, Brussels, with the renowned fields of Waterloo and Genappe, Namur, Liege, Spa, Malmedy, Coblenz, and a whole host of intermediary villages of minor note, were all brought within the compass of our horizon, which our superior elevation* and various aberrations enabled us to extend

* The propriety of economising our resources during the commencement of a voyage, the duration of which was a matter of uncertainty, occasioned our mean altitude to be rather under than over the extreme of aeronautical adventure. In the morning, however, as these necessities became less urgent, and we could afford to devote something to mere amusement, we frequently rose to an elevation of about twelve thousand feet, occasionally higher. At no time, however, did we experience the *slightest* effect upon our bodies, proceeding from the diminished pressure of the atmosphere. Nor, from what my own observations, and still more those of Mr. Green, (whose experience in such matters, far outweighs that of all the aeronautical world together), would lead me to assert, do I believe that any such effects as are currently attributed to this diminished pressure have any existence at all; at least, at any elevation to which any person has hitherto been enabled to arrive. The impressions experienced in the ascent of high mountains, which have, no doubt, led to the adoption of such opinions, and induced aeronauts with more regard to fame than veracity, to anticipate and assert effects they thought they would have experienced had they reached the elevation they vainly would have the credit for, owe their existence to another cause, and proceed from the inordinate muscular exertion and its consequences upon the circulating system, developed in the attempt.

far beyond what might be expected from a mere consideration of the line connecting the two extremities of our route.

To all this there was but one drawback, in the time of year in which the experiment was conducted, and which, by curtailing our daylight, devoted to the obscurity of night so large and interesting a portion of the expedition. Over this, however, we had no controul; the constant occupation of the balloon for the purposes of public exhibition during the summer months, left no chance of its being procurable at a better season of the year, especially for a project such as ours, the determination of which as to time and distance was a matter of complete uncertainty. The excursion must therefore have been undertaken as it was, or altogether abandoned; of these alternatives Mr. Hollond unhesitatingly preferred the former.

Ere, concluding this hasty narrative, a word or two is required concerning the success of that experiment which

I am aware that great names appear in array against such an opinion; and likewise that nothing but the having arrived at the same altitude, without experiencing the same results, can authorise the flat denial of another's experience. If, however, at an altitude of three miles and three quarters *no* symptom whatever is to be felt of those effects, which, at a *quarter of a mile* further evince themselves by such terrific consequences, the world is at least at liberty to exercise its own judgment upon the case.

formed the main feature, as well as the chief object of the expedition. This success, I feel no hesitation in now declaring to be complete; and the discovery itself one, the entire result of which, on the future progress of the art, it would be impossible at present to anticipate. With such an instrument as this there now seems to be no limit to the powers of ærostation; no bounds to its sphere of action. All the theoretical objections which a hasty consideration of the means might otherwise have suggested, experiment has now proved to be erroneous; and perhaps the best answer that can be given to those who might be inclined to question the practicability of its employment, or cavil at its effects, is, that by such means alone have we been enabled, without let or hindrance, danger or difficulty, to traverse so large a portion of the European continent; descending at a distance of above five hundred miles from the place of our departure, with power enough to have enabled us, had we been so intencioned, to have continued, our course throughout the whole circumference of the globe.

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