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The Record of an Aeronaut



^{9/11} Sincerely,
John W. Bacon.

The Record of an Aeronaut

Being the Life of John M. Bacon

By his Daughter
Gertrude Bacon

With Photogravure Portrait and Sixty-two Illustrations



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PREFACE

IT was the intention of my father, during the last years of his life, to write and publish his own personal reminiscences of a varied and eventful career, in which he had met many noteworthy people, accomplished many things, and taken part in unusual, often perilous and exciting, experiences such as fall to the lot of comparatively few.

This plan he put so far into execution as to commit to paper the first portion of the book he contemplated, that which dealt, in anecdotal fashion, with his boyhood scenes and recollections. The present volume perforce is largely my own attempt—perhaps an over-bold one—to finish that which my father began. The original matter by his own pen is contained in Chapters II, III, and IV.

It is no easy task to complete what another has commenced, and, as in this case, to tell the tale which the hero himself would have unfolded. More especially is this the case with those events which occurred before my own personal recollection. For the many shortcomings thence arising I would beg the reader's lenient judgment.

In relating the story of my father's brave life I have laid no undue stress upon his aeronautical experiences, by which his name is most widely known; holding that a man should be judged by his whole existence, not merely by one portion of it, no matter how remarkable that may be.

Preface

Besides recording his aerial adventures, it has also been my endeavour to represent him as the broad-minded, many-sided, lovable personality he was, and paint him as he appeared to those who knew him best.

Neither have I, in this volume, enlarged on Bacon's strictly scientific work, or attempted any epitome or résumé of the results he obtained. For such a task I am not competent, nor if I were is this the place for it.

In conclusion, I would beg to tender my most grateful thanks to the many friends who have helped me in my task by the loan of letters, photographs, etc., among whom must be especially mentioned Mr. Stephen Harding Terry, Mr. Thomas Webb, Mr. E. J. Forster, Dr. R. Lachlan, Mr. G. Dixon, and Mr. T. C. Beynon.

GERTRUDE BACON

LONDON, *July*, 1907

THE RECORD OF AN AERONAUT

I

FAMILY HISTORY

THE origin of the name Bacon is said to be, on highest authority, in this wise.

“Bucon,” corrupted later into “Bacon,” was the ancient name for the beech-mast—the shiny, three-angled seeds of the beech tree, pleasant to sight and taste, which lie thickly in autumn beneath the shade of the beech woods. Upon the “bucon” of the once extensive beech forests of England our ancestors’ herds of swine especially throve and fattened, so much so that a bucon-fed pig (in process of time a “bacon” pig) was most highly esteemed, and as such carefully designated. From “bucon” the beech-mast, then, to “bacon” the hog’s flesh, is but an easy step. Equally simple is the evolution of the family name. Grimbaldu the Norman, kinsman of the Earl of Surrey, from whom and his forefathers the whole Bacon clan claim origin, was granted lands by the Conqueror in the north of Norfolk. Among these lands was Baconthorp, called so, doubtless, on account of its beech trees, and from their estate the family took their sylvan surname, adopting, moreover, a bough of the beech tree by way of cognizance.

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Be this as it may, the family record since those distant days has been such as to leave its descendants small cause for dissatisfaction with their unromantic patronymic. Least of all the subject of these pages, who gloried exceedingly in his illustrious kinsfolk and the family tradition which the punning motto, "ProBa conScientia," beneath his own crest so aptly expressed. Pedigree hunting was at one time a hobby with him, and he laboured long and laboriously to trace the branches of a family tree which bears more than a usual share of famous names. Highest of all among his namesakes he held in reverence and esteem Roger, the "Learned Monk of Ilchester," called by his wondering, if scandalized and persecuting contemporaries, "Doctor Mirabilis"—a mighty mind, hundreds of years ahead of the cramping thirteenth century in which he lived; a light burning brightly amid the densest shadows of the Dark Ages.

Many Bacons, from the days of Lord Verulam onward, had tried vainly to establish Roger's connection with the family, but the mists of obscurity too closely hang about him. No proof is forthcoming, though there is strong inherent probability on several grounds that he holds kinship with men on whom, surely, there fell a portion of his mantle.

With the great Francis the case is different. Here the relationship is well attested, though remote. The Bacon family with whom this book is concerned are an offshoot from the main stem whence sprang the wise Lord Verulam and his famous father, Sir Nicholas the Lord Keeper, and from which comes the present line of baronets—premier baronets of England. The two families, though long distinct, are yet collateral, boasting the same origin, and with remote ancestors in common.

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But many generations ago, probably some time in the sixteenth century, a scion of the old stock left the family home in East Anglia and wandered down into Somerset. Here he settled and prospered, and, his descendants making wealthy marriages, we soon have the Bacons of Somerset well established and in possession of a fair estate, Maunsell, near North Petherton, which they held for generations. But at length, after many years, there came a day when the family seemed on the point of extinction. Only childless female relatives apparently remained. The heir at law was advertised for, but no response was forthcoming, and finally Maunsell was sold and passed from henceforth into other hands.

Yet all this while the rightful heir was in existence, and not so far away. In the first half of the eighteenth century there lived in Southwark a certain Thomas Bacon, a clothworker. He was a man of strictest integrity and religious spirit. Of considerable learning also, for it is related that his Greek and Hebrew Bible lay constantly by his side. But pinching, grinding poverty was always with him. In vain he tried trade after trade in hopes of bettering his fortune. His lack of capital was ever against him, and his lifelong, unremitting labours sufficed with difficulty to keep the wolf from the door.

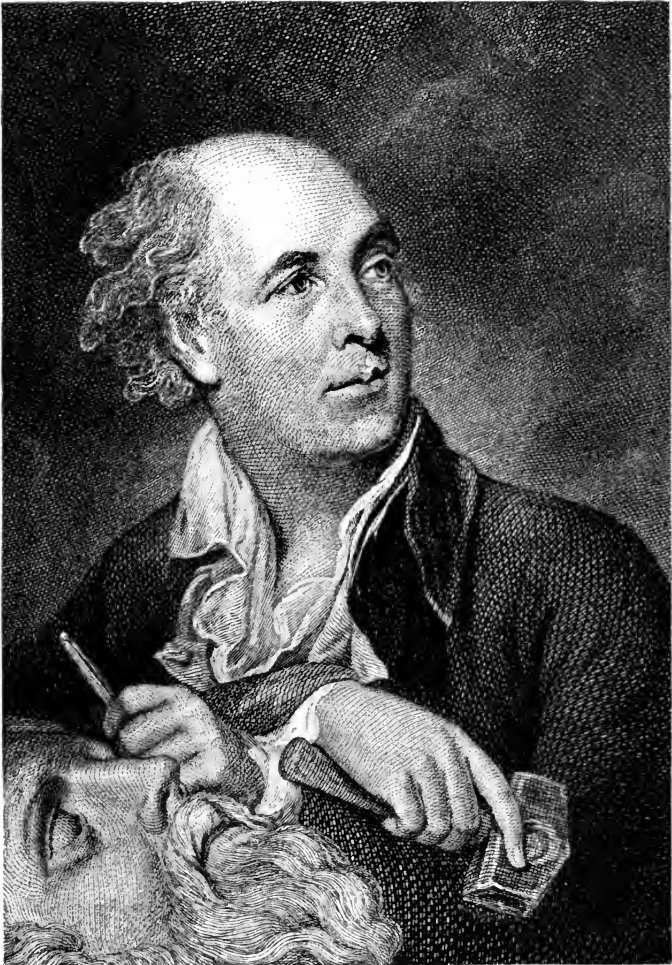
His poverty was the more galling to him because he was convinced of the fact that he was the descendant of a rich and famous family, and (as he believed) direct and legal heir (through a younger son of a bygone generation) to a fine house and estate in Somerset. His lack of means very effectually prevented his making efforts to prove his claim and regain his rights; but he carefully transmitted the family story to his son, and drew for him the family coat of arms; arms which it was left for a

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later generation to discover were those of the Bacons of Maunsell.

But if the loss of his paternal acres was a deeply ranking thorn in the flesh (as we are told it was) to old Thomas Bacon the clothworker, it has long ceased to trouble his disinherited descendants. In truth, they presently found ample reason to congratulate themselves on the fact, for may it not be presumed that if Thomas Bacon had succeeded quietly to his rightful estate, his only son John would not have been compelled to earn his living by his own exertions? Most assuredly he would not have been apprenticed (as he was) at fourteen to a china manufacturer at Lambeth. His special genius might never have been discovered (since why should a country gentleman concern himself with modelling in clay?) and John Bacon, R.A., the Sculptor, would never have raised the drooping family fortunes and shed an additional fame upon the name.

Bacon the sculptor was an untaught genius and a self-made man. His master instructed him in the making of the conventional designs turned out by the factory, and he himself paid careful attention to the clay models which sculptors in those days were accustomed to send to be burned in the factory furnace. This was all; yet at seventeen the Society of Arts awarded the humble apprentice £10 for the first work sent to them, and eight times afterwards in the years that immediately followed gave him other prizes, amounting altogether to over £200. In 1768 the Royal Academy was founded. Bacon entered as a student, and the year after received from the hand of Sir Joshua Reynolds himself the first gold medal awarded for sculpture. For a statue of Mars he obtained the gold medal of the Society of Arts, and also his election, in 1770, as an Associate of the Royal Academy.



Russell, R.A

JOHN BACON, R.A.

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Nor was this all, for a bust of his august Majesty King George the Third being desired for Christ Church College, Oxford, the young and rising artist was fortunate enough to secure the commission to execute it.

Then came his chance. Clad in plain and sober clothes, armed with his best modelling tools, and with a silver syringe which did away with the ungraceful necessity of squirting the water on his model from his mouth, Bacon repaired to the palace to execute his task. The sculptor, as was inevitable with so successful a man, had many detractors as well as admirers of his own and subsequent days ; but on one point they all agreed. He possessed the most perfect tact and manners, especially in his dealings with the mighty. Royalty was pleased, and smiled upon the aspirant. Where Royalty smiled in those days the rest of the world proved mighty agreeable. More copies of the Royal bust were commissioned. Orders poured in on all sides from the great and wealthy ; and the young artist was soon established in Newman Street as a fashionable sculptor, with more work to his skilful hands than he could well accomplish, and a rising fortune which at his death in 1799 amounted to £60,000.

Those were the days when sculpture, of the large and imposing description, was in high demand, and classical allegory ran riot, in white sepulchral marble, over unromantic themes. Benevolence and Commerce, considerably larger than life, wept inconsolably over the quite insignificant medallion of the departed city merchant ; and the Olympian deities did extravagant homage to plain and heavy Hanoverian kings in Roman togas. Had Bacon lived in later times his works would have been judged by other standards. In any case they can afford to stand on their own merits. Most famous

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among them are the large statues of Johnson and Howard in St. Paul's Cathedral, and the great allegorical group in Westminster Abbey where, in the words of his personal friend Cowper the poet—

Bacon there
Gives more than female beauty to a stone,
And Chatham's eloquence to marble lips.

The sculptor has ever been held in high esteem among his descendants, and his own children looked up to him as an altogether superior being. There is a bulky note-book yet in existence, on the title-page of which is written in the handwriting of his eldest son—

“Wise Sayings of my honoured and revered Father.” The bitter irony of the fact that the rest of the book is absolutely blank is wholly unintentional. The starting of note books which are never completed is a family failing which extends even to the present generation. “Reminiscences of my Father and other persons of his Time,” by the same hand, fortunately has advanced further towards (though it never attained) completion, and its pages throw some curious sidelights upon certain celebrities of a hundred and thirty years ago.

First in order, as was fitting, came the sculptor's greatest patron, King George the Third. Most emphatically did Bacon oppose the too prevalent notion that this monarch did not possess superior intellectual qualifications. In support of his eager contention to the exact contrary he quotes Dr. Johnson, and also Lord Erskine, who once remarked to him (Bacon), “The King is a damned clever fellow! He has as much sense in his little finger as is contained in the heads of all his Cabinet put together!”

As to the King's moral qualities and high religious

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principles no doubt ever existed. He was fond of religious discussion, and as Bacon's bent also lay decidedly in this direction it is probable that in the hours they spent together during the progress of the sculpture much edifying argument took place. On one occasion at least His Majesty was put to inconvenience by his love of moral discourse. At Windsor Castle was a certain gardener, with whom the King, somewhat imprudently, in the course of his private walks would sometimes condescend to converse on Bible subjects. As was natural, the man soon began to presume on his privilege, and unduly prolonged the conversations, His Majesty not liking to silence him out of respect for the sacredness of the topic of discourse. The sequel was related to Bacon (who recorded it) by a gentleman who held a position at the Castle. From his window, one morning, he beheld the King strolling quietly enough in the gardens, until, unexpectedly, he caught sight of the gardener, when he immediately turned and hastily walked away—too late, however, for the gardener followed him. The King quickened his pace, the gardener did likewise. The harassed monarch began to run, so did the implacable gardener; and it was with the utmost satisfaction that the interested spectator saw his panting Majesty win the arduous race, arrive first at the steps which led up to his library, and, entering, slam the door in the face of his terrible pursuer.

As indisputable and flattering proof of King George's extraordinary memory, the memoirs cite how, having on one occasion inquired of the sculptor the number and names of his children, he never failed on subsequent occasions to ask after them all separately by name, never making a mistake, though the little Bacons were a numerous progeny.

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Royal affability went even further. It was not only in his professional capacity that the King received his sculptor; and on a certain occasion Bacon went to Court in full dress, with blue satin waistcoat edged with gold lace, ruffles, knee buckles, sword, and powdered wig tied at the end with a black silk ribbon. This unwonted garb was perhaps hastily assumed. Certain it is that the black ribbon aforesaid came undone, and King George, who had an eye for detail, noticed it. "Bacon," he said, "your wig is untied. Here, I'll tie it up for you." With his own august fingers he performed this simple act, and thus it came about that somewhere among the family archives there yet reposes (or did until some time back) a dusty black fragment that once was touched by the sacred hand of the reigning monarch.

More interesting are the sculptor's stories of his brother Royal Academicians, with many of whom he was on terms of great intimacy. At his house, 17 Newman Street, he was in the centre of a perfect little colony of distinguished artists, and nearly a dozen of his most celebrated contemporaries lived within a stone's throw. To his studio would come the great Sir Joshua himself, a small and thin figure with a rubicund face, holding his silver ear-trumpet to his ear, and vexing Bacon's Methodistical heart by his persistence in the evil habit of painting on a Sunday. Sir Joshua (says the gossiping "Reminiscences") was a great snuff taker, and one day at the Council of the Royal Academy offered his snuff-box to his neighbour Cosway the portrait painter. Cosway excused himself on the ground that snuff always made him sneeze. "A single pinch," he repeated dogmatically, "will make me sneeze for an hour." "I'll lay you a guinea that it does no such thing," said the President.

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So the wager was struck, and Cosway, to make sure of his money, snuffed up pinch after pinch. But all to no purpose. Not a single sneeze could he evoke, and the triumphant Sir Joshua pocketed his guinea.

Four doors off in Newman Street lived West, next President after Reynolds, under whose reign the Royal Academicians went by the name of the Tribe of Benjamin. He was a rapid worker, and when Bacon asked him how he contrived to get through his pictures so quickly, replied: "Because I do not, as so many other painters do, enter my study to consider what I shall paint, but to paint what I have considered."

Then there was Thomas Lawrence, young, handsome, and of polished manners; Barry, quarrelsome and penurious, who lived in a house, filthily dirty, without a servant, and, to save himself the trouble of making his bed every day, nailed down the bed-clothes at the sides and wedged himself in and out between them; Banks, whose face wore so grave and solemn a look that when he once began a speech, "Gentlemen, I come to you with a cheerful countenance," his audience shrieked with delighted laughter; Nollekens and Flaxman, Copley, Opie and Stothard; Russell, who painted the sculptor's portrait and the members of his family; Fuseli, who ate raw meat to give him nightmare inspiration for his fantastic works, and because of the fearful nature of his subjects was known as "Painter in Ordinary to the Devil"; Angelica Kaufmann, the lady Academician, who was so lovely that, though twice invited to her house, the prudent Bacon refused to go the second time, lest her dangerous fascinations should prove too many for him. All these and many others were among his friends and associates, and bulk more or less largely in the "Reminiscences" aforesaid.

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John Bacon, R.A., was a man of a deeply religious turn of mind ; and it is small wonder that in days when the Church of England had reached its lowest depths of somnolence and apathy the teachings of the great Methodist Revivalists should have specially appealed to him. He became an ardent follower of Whitefield, and in his Tabernacle in the Tottenham Court Road was buried, on his sudden death in 1799.

Cut short in the midst of full activity, he left behind him a quantity of half-finished works. These were completed by his son John, the compiler of the memoirs, himself a sculptor of scarcely less merit, who at seventeen had gained the silver and gold medals of the Royal Academy, and who proved a worthy successor to his father. Six of his monuments are in Westminster Abbey. In St. Paul's the best-known example of his skill is referred to in the Ingoldsby Legends as—

Where the man and the angel have got Sir John Moore,
And are quietly letting him down through the floor.

In this large group a cherub boy in the background stands holding a flag half furled. When he came to this part of his work the artist found himself suddenly at a loss for a model for his cherub. But not for long. In the nursery above, his infant son was at that moment making his presence known by vociferous yells. The sculptor was quick to take the hint. Sending for his enraged offspring, he waited until his features had subsided again into cherubic beauty, and then immortalized them in marble. This cherub who smiles down upon the dying warrior in St. Paul's Cathedral was the father of the John Mackenzie Bacon of the present pages.

John Bacon the younger sculptor was a gentle, re-

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tiring man of pronounced evangelical views. He lacked ambition, and retired comparatively early from his profession and took up residence at Sidmouth, in Devon, then a rising watering-place. Here he devoted himself entirely to Bible meetings and religious exercises, and to the bringing up of his numerous family. In his later years he suffered pecuniary losses. As was but natural, so guileless an old gentleman proved an easy prey for the unscrupulous. A designing lawyer obtained control over his property and disposed of it to his own advantage. Unknown to his client, he invested it in all sorts of unauthorized ways. Exposure came at last, and Bacon found himself much the loser by the transactions. What vexed his puritanical soul, however, more than the loss of his money, was the agonizing discovery that he was now the owner of all sorts of undesirable securities; of several public-houses in London, and, worst of all, of a *theatre*, to which he could only bring himself, in pious horror, to refer to as "that House of Belial!"

The younger sculptor had many children, all of them clever and all of them handsome. One beautiful but short-lived daughter married John Medley, who became Lord Bishop of Frederickton. (In his youth a great friend of John Keble, with whom the Bacons therefore became acquainted.) The second son, Thomas, in turn a soldier, barrister, and parson, was an artist of considerable talent. Cleverest and best-looking of them all, however, was John, the eldest, erstwhile the cherub. This son, born in 1809, in due course was sent to Corpus Christi College, Cambridge. At Cambridge he was known as the handsomest man of his year. He was a good mathematician, became a Wrangler, and entered the Church; but before the latter event he had met, at Sidmouth, and become engaged to, Mary Luosada,

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whom he married in 1834, the week before his ordination.

It is a fact so well established that to repeat it is only to state a truism, that remarkable men are bred of remarkable mothers. John Mackenzie Bacon was no exception to the rule. His mother was, and still is (for at the moment of writing she yet survives at an extremely advanced age but in fullest possession of all her powers), an exceedingly clever woman. Her singularly handsome features, her keen bright eyes, her lively, nervous temperament, she passed on to her fourth son, together with her quick intelligence, her love of learning, her strength of will. She gave him more than this also. A certain famous modern writer, drawing the portrait of the hero of one of his novels, describes him as possessing Jewish blood: "Just a tinge of that strong, sturdy, irrepressible blood which is of such priceless value in diluted homœopathic doses—like the famous bulldog strain which is not beautiful in itself, and yet just for lacking a little of the same no greyhound can ever hope to be a champion." From his mother the subject of these pages inherited some small portion of this precious fluid, for the remote ancestors of the Lousadas were Spanish or Portuguese Jews, of high rank and proud descent among their people. From this race sprang the D'Israelis, and there is, in fact, some slight connecting link between the two families.*

John Mackenzie Bacon's parents were a strikingly handsome couple. He, tall, fair, blue-eyed, and in later

* Mary Lousada's great-grandfather was a certain Baron D'Aguilar, a man of great wealth, financier, and confidant of the Empress Maria Theresa, who ennobled him. Coming to England, he married a Da Costa, and had two daughters. One became a Lousada, and the other, who married a Mr. Stewart, was great-grandmother to the present Lady St. Helier.

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life with a magnificent beard and noble forehead. She, small, dark, dainty and vivacious, with the brightest of eyes, the keenest of wits, and the most infectious rippling laugh. In talents and attainments also they were well matched. My grandfather was one of those rarely favoured mortals, sometimes to be met with, to whom all things come easily. In whatsoever he set himself to do he could, at once and without apparent effort, excel. He possessed moreover to the full that irresistible charm of manner which was his by inheritance. As artist, scholar, mechanic, sportsman, he was rarely gifted, but he lacked ambition, his means were limited, and his calling, as country parson in remote districts, afforded him little scope for his splendid talents. Under different circumstances and with more congenial surroundings he would surely have achieved renown.

As it was, after a few years spent in different curacies in the West of England he was, in 1837, appointed first Vicar of Lambourn Woodlands, in the Diocese of Oxford, a scattered village of some three hundred inhabitants, on the edge of the lonely Berkshire downs; and here, for twenty-five years, he lived, and his children were born and spent their early years.

Woodlands at the time the Bacons came to it was but newly separated from the parish of Lambourn, of which it had until then been an outlying hamlet. Some charitable ladies of the neighbourhood, struck by the forlorn and utterly neglected condition of a spot three miles from the nearest church and school, had endowed a living there, and built a vicarage and church, the latter a small and barn-like structure which happily before many years collapsed, and was entirely replaced by an infinitely superior edifice. The wildness and remoteness of this place can now, in these latter days, be scarcely pic-

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tured. In 1837, of course, railways were scarcely in existence. The Great Western was not opened until years later, and even then a long while elapsed before Swindon, fourteen miles across the bleak downs, became the nearest station; and a longer period yet before the line reached Hungerford, five miles distant—the nearest place with even a pretence (and that of the very slightest) to the dignity of a town. Newbury was nine miles away and Reading twenty-five. Letters from London cost elevenpence. The nearest doctor was three miles distant, the nearest tradesman five. All around stretched the dreary desolation of the empty downs. The place was high and windswept, bleak, upland common, and in the severe winters the snow would lie in the unfrequented lanes to the very tops of the hedges, and the mail-van be buried for a week and more in the drift.

As was but natural in so isolated a spot, the people of the soil were utterly uncouth and uncivilized. Even at the present day the Berkshire peasant, especially in the more remote country districts, is not a particularly bright or intelligent member of society. Seventy years ago the neglected natives of Lambourn Woodlands were totally without education, without knowledge, without manners, without law or order. The farmers were but little more enlightened than their hinds. The few gentlemen's houses of the neighbourhood were, with scarcely an exception, remote and widely scattered. It was to such a place, with such surroundings, that the polished scholar came and brought with him his pretty and accomplished young wife, whose youth had been spent largely in London, and in the enjoyment of highly cultivated and congenial society. The change to both of them must have proved terrific, especially to my

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grandmother ; but she quickly and pluckily adapted herself to the new conditions, and set herself energetically to aid her husband in the Herculean task of amelioration. Soon there was a Sunday school established, a church choir, and other village institutions. Mary Bacon proved herself a model parson's wife, and before long other cares and interests were added to her busy existence. Her eldest son, Maunsell (named after the long-lost family estate), was born in 1839 ; Francis, her second, two years later ; Harry Vivian in 1844 ; and on June 19th, 1846, John Mackenzie (the second name from his godparent, Sir James Mackenzie, a college friend of his father's), fourth and youngest son ; for a fifth boy born eleven months after survived but a few weeks.

Thus appears on the scene—his entry perhaps unduly delayed—the hero of these pages. If it be urged (as it well may be) that too much space has been devoted to the description of his parentage and ancestry, the writer would plead in extenuation that, since a man's disposition and natural bent are largely settled for him before ever he comes into the world, a study of the causes which predispose them is necessary to the true understanding of his character. Moreover my father himself took a most lively interest in the story of his forefathers. As has been stated, pedigree hunting and the tracing of his intricate family tree to very remote forbears, was at one time an especial hobby with him. In pursuit of it he mastered the mysteries of "Court Hand," and spent long hours among the dusty archives of the Record Office and British Museum. Partly through his own efforts, therefore, there is probably a larger mass of material to hand concerning his family history than is usually available.

Early scenes and associations have ever the strongest influence upon our minds, nor can later years and widen-

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ing knowledge ever wholly efface the stamp of first impressions. It is fortunate that my father has left behind him his own record of his early childhood days, a record it would otherwise have been impossible to supply. The following three chapters are in his own words, and were written during the last couple of years of his life.

II

CHILDHOOD MEMORIES

WITH a small effort of memory there will come into my mind the far-off recollection of the evening of a long warm summer day, the sun already set, and a vaguely oppressive stillness in the air, broken only by the dull drone of insect life. I had strayed alone to the limit of our home grounds, thinking proudly for the fiftieth time of how I had that day attained the dignified age of five years ; and I stood listening for the sound of wheels which tarried. With the exception of a few sparse homesteads there was nothing but wild, wide country, largely woodland, all around, and I recall how with ears intent, and with a certain uneasy wonder, I now and again caught the wholly unwonted sound of some soft music floating in the air as if from a vast distance. It was impossible to locate or explain the sound, the source of which remains to this day a mystery, but on returning to the house and conferring with a brother two years my senior, it was agreed between us that these subtle strains might somehow be connected with the Great Exhibition, an explanation which, preposterous enough, considering that London was sixty miles away, was not beyond the stretch of my own imagination, while it doubtless had its origin in the fact that our parents and others of the family were absent that day on an excursion to the world's wonder in Hyde Park.

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We ourselves were eagerly waiting to hear of the marvels they had seen, and they were already more than an hour late.

Whether childish excitement and fatigue had had some unwonted effect upon the nerves I know not, but my brain must have been set a-thinking in a way that has through all my subsequent life fastened that day with a strange vividness upon my memory, and what may be better worth recounting, often in the years but lately past, when, engaged in physical investigation, I have been listening at night for far or faint sounds, I have irresistibly been carried back fifty years to the night of which I have spoken.

Yet earlier recollections of course have some disconnected abiding-places in my memory; but from this period onwards the more striking incidents and events that made up the years of childhood seem to be recorded in my mind in something like a well-ordered sequence. I can never forget my distress, short-lived but intense, when fifteen months later I was made to know the occasion of England's national sorrow. The Great Duke was dead, and I was under the impression—to be gathered that day from all lips—that the land could never know his like again. But in the meantime a matter of extraordinary moment and interest had occurred in our uneventful and unimaginative little parish. The church, a masterpiece of jerry-building, which had been erected for my father, the first incumbent, just thirteen years before, began to tumble down, and this beyond all power of restoration. So big balks of timber were planted against the walls to prevent their falling outwards, and a new church of Gothic design and fair proportions was forthwith commenced on a neighbouring site. This through many months converted the parsonage grounds

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into a busy scene, and gathered workmen of various crafts from all the district round.

To watch the feats of handicraft and engineering skill that come within the builder's task was a source of unending delight to me, and doubtless also had its instructive side. Moreover among the hands themselves there were many strange and maybe a few lawless characters, with whom, partly in awe and partly in childish admiration, I sought occasional intercourse, not without gaining impressions which, whether for good or ill, were at least abiding. And let it be confessed that ours was but a semi-civilized neighbourhood at best, where poaching and theft were rife and where the policeman as yet was undreamed of. In the hour off work, as, leaning against a shed, clasp knife in hand, he demolished his dinner, it was not difficult to coax some one among the men to tell some tales of adventure in the woods or on the downs, and though these may have been largely drawn from the imagination they doubtless possessed a substratum of truth and reality.

Not more than two or three parishes intervened between our neighbourhood and that of which Richard Jefferies wrote, and the ruder element as well as the more untutored and superstitious which he has portrayed were not far to seek. Away on the heath was surely the very fortune-teller whom he described. The self-same gipsies encamped in the hollow. I could point to the very cross-road trysting-place where loafers congregated when "there was any mischief in the wind." There was the uncanny spot where the ground sounded hollow, and more than one other place haunted by apparitions beyond all possibility of doubt, if there was any sort of reliance on tradition.

The Wise Woman of our parts was wise too in that

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matter of curative herbs of which Jefferies tells. I remember a carter who had a "tur'ble bad eye" which no treatment could mend till he applied to the old hag, who for a shilling banished "the evil" with a charm or incantation. But besides this resident enchantress there was an itinerant quack practitioner, who was a very august person indeed, locally known as Doctor Compo; venerable in appearance, deliberate in speech, and possessing as a principal part of his stock-in-trade a certain sagacious shake of the head which irresistibly forced conviction on anybody. Everywhere the country folk paid him homage—and on occasions halfpence—and for his greatness my own respect—how could it be otherwise?—was profound. I regarded him much as I should a genie of the "Arabian Nights," and whenever I saw a chance of getting an extemporized story out of my father my special request invariably was "Tell about Tompo!"

The gipsies, as may be supposed, were in no way attached to the place; living a nomad life, coming for a short sojourn, and again without warning striking their tents and moving on unmolested where they listed throughout a wide district. They were wholly exclusive, keeping to their own race, among which alone they married, and of which they boasted long descent. In some cases they possessed plate or other heirlooms which would go to prove their tradition; and their strongly distinguishing complexion and cast of feature marked them as quite apart from the people of the soil. In general they were particular about religious observances, and brought their children to the clergyman for baptism. On one occasion my father was requested to christen twins, which in lieu of better garments were brought simply wrapped up in a cloth. The names chosen and afterwards entered in the register were *Angelina* and

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Delarifie. I myself in after years was called upon to christen a gipsy child in another parish church, and, the parents being absent, the name had been carefully taken down by the clerk as *Lemontinie*, and this unconscionable name I duly gave and entered ; and it was not till later that I learned its true interpretation. The name of the Vicar, then absent from home, was Clements, and the gipsy mother apparently desired that her babe, born in passing through his parish, should be called in compliment *Clementina*. It is a pity that I was not better informed at the time.

For certain superstitions about the place there was perhaps no insufficient excuse. As an example : The one public-house stood in a lonesome spot where the main road, little frequented, crossed a mere narrow lane, which same lane running through the parish for a couple of miles did duty for a village street, though nowhere were there more than occasional isolated houses along it. Two or three hundred yards from the public-house towards what only by courtesy could be called the village, stood a holly bush just where the lane was narrowest and darkest withal, by reason of high banks and tall hedgerows. This bush, or rather tree, with bare stem and spreading top, marked a spot of ill repute, for beneath its boughs now and again on dark nights a spectre of some sort was to be seen. Accounts varied as to its precise form and appearance, but as to the reality of the apparition there was no dispute, and the terrors it inspired would suffice to cause the villager, who we presume had just left the inn, to hurry back again and fortify himself with another glass.

But the day came when the tales of that haunted spot assumed a new significance. Years after, when we had all left that part of the country, tidings reached us that

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a labourer employed in mending the bank had come upon human bones under the identical holly tree. Here is splendid material certainly for those who would pursue psychical research with the hope of finding evidence of supernormal manifestations. Or if the reader be more prosaic and would prefer a more rational explanation, let me suggest the following : In days forgotten there had been presumably a foul deed committed at that spot, and somehow a whisper of the story had got abroad. It would be quite sufficient in that superstitious age and country that an evil tale should attach itself to any locality, to invest the place with ghostly but imaginary terrors. In the particular instance the story chanced to be true.

Five miles away along the main road another and not very dissimilar tale was located, which was also divulged in the days I seek to recall. It was another wayside public-house, and cronies would tell of the way in which the landlord and his son would often be at high words, when if sufficiently exasperated the young man would retaliate by bidding his father be careful, as he could tell that against him which would assuredly hang him. Years after, when the inn had changed hands and while alterations were being made in an outhouse, the skeleton of a full-grown man was found beneath the floor. Then it was that a story of bygone days was recalled. A drover stopping the night at that house had incautiously boasted of the large sum of money he carried. Mysteriously, and no one at the time could tell how, the drover disappeared that same night. In this case no unquiet spirit, that I ever heard, haunted the spot.

The drovers and their cattle, be it told, were an occasional and very striking feature in our village. The long lane I have spoken of was really part of a main byway

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leading across downs and open agricultural country from London far down into the West, in fact away into Wales, and along that unfrequented and fairly direct road, well suited for the purpose, would come at certain seasons enormous droves of Welsh cattle; fine black beasts with gigantic horns, in the charge of raw-boned, stalwart Welsh drovers, shouting in their barbarous tongue; all making their way slowly and laboriously up to the London market. Each single drove would often be half a mile long, filling up the highway from hedge to hedge, and as many of these would follow in succession the road would be fairly blocked till the enormous train had passed by. As a boy of twelve, it was part of my daily routine to walk or run half a mile to a private tutor's along this road, and I well remember the slow rate of progression which one had to make if involved in one of these formidable droves and walking with them. On the other hand, if you met them and were afoot the drovers would in no way help you, and progress was absolutely so difficult that the schoolboy found it far the quicker mode to force his way to the other side of the hedge, or make a long detour and reach home that way.

I shall always retain the impression, irresistibly formed, that among the worthies of our little place there were remarkable characters whose equal shall be found nowhere. My love for many long since passed by is yet green. It nearly broke my heart when Eli left for the Australian gold-diggings. Eli was the factotum among our household. I was allowed to go and see Eli for five minutes every evening in the kitchen before I went to bed, and maybe he imposed somewhat upon my youthful imagination. But then he could do such wonders. He could put the big ladder up single-handed. He also

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could put a lighted tallow candle down his throat without injury. It was quite certain in my mind that if any one made a fortune at the "diggings" it would be he.

But Eli went, and in his place came Henry, a burly, powerful man in robust manhood, and a true hero, if prowess in encounters with a gang of desperate poachers would give him a right to such a title. I think I have never known a man of more dogged courage, of which during his years of service we had many proofs, but I will content myself here with one; which it must be allowed hardly came in his legitimate way of business. The new church was fast approaching completion, and the time had arrived for throwing down the scaffolding which had long done service on the outside of the spire, and which was thought to be no longer needed. But ere the crazy structure was actually demolished a violent storm one night caught the weathercock, standing too tall and not sufficiently lubricated, broadside on, and the next morning the big brazen fowl was found no longer erect and defiant but lying over on his side, stone finial and all, held only by the lightning rod. It was necessary that some one should go up and, bodily lifting off the heavy stone and vane, carry them down the condemned scaffold. But the builders knew that scaffold too well, and one and all declined for any sum of money to attempt the task. Whether the job was actually offered to Henry I cannot remember, but bribe or reward of any kind did not come into the question. Pure love of adventure solely actuated him; and promptly climbing alone and unassisted to the top of the spire he brought down the heavy mass before all hands assembled.

I have told of the poaching in the district, which was practised in a regular businesslike way with method and daring. But there was a worse crime yet, the committal

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of which had not been infrequent. This was burglary, perpetrated beyond a doubt by practised adepts. Many large country houses were in the neighbourhood, a neighbourhood which, as we have shown, was singularly quiet and unprotected. Small wonder if it were regarded as the happy hunting-ground of London house-breakers. They were never caught, nor do I remember that they were ever frustrated in any determined attempt. Impunity made them daring to the verge of recklessness. Sometimes too their methods were not without a touch of humour.

On one occasion, having effected entrance into the house of a wealthy neighbour, a clergyman, they relieved him of as much of his "portable property" as they desired; after which they amused themselves by locking the proprietor into his bedroom. They also, for mere sport clearly, took away his will—but not far. Six months afterwards the gardener found it at the foot of a spreading cedar into which they had evidently tossed it, and where it remained until some rough storm dislodged it. But they had also left a seasonable word of advice with their unwitting clerical benefactor. On his study table they had found his watch, which of course they removed, but left in its place a slip of paper with the words, designed to catch his eye, "Watch and Pray."

In another large house hard by, the master, a wealthy country squire and magistrate, was fully expecting their visit. Indeed it could hardly be otherwise, for the gang were evidently billeted somewhere in the neighbourhood and were making a clean sweep of it. Apparently, too, the squire had got some credible information of the gang's intended movements, and to be fully prepared for them collected his staff of trusty menservants together, gave them such weapons as he thought fit, and further provided

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for their welfare and his own by repairing to the coach-house at nightfall with the means of making good cheer, and by a warm fire sat the night out happily enough. Then, their vigil over, they with a good conscience returned to the house to find it broken into, the thieves gone, and everything in the larder gone also.

In the same old countryside since there has been more than one daring burglary even in recent years, but methods have changed. The cart driven up silently on the roadside grass is no longer considered safe, and highways generally are shunned. All that is most valuable is reduced to the smallest compass, concealed about the person, and then the rogues will walk through the night towards London along the nearest line of rail.

One desperately sad termination to a home burglary story I cannot omit. An elder brother conceived an inordinate fancy for poultry-keeping. Indeed this fancy is as keen with him to-day as it was fifty years ago, though the incident I relate nearly broke his heart. Of all his stock he loved one cherished Dorking hen beyond words. I know not why, but he called her "Poozles." And then there came thefts at night among the fowl roosts, and in alarm for his favourite he begged our father to allow his spring gun to be set in the fowl house, where Poozles just then was in a coop covering a dozen chickens. In the morning the well-trusted Henry already mentioned went to see that all was well, as indeed up to that point was the case, except that Poozles had got out of her coop. In this of course there was grave danger—danger to Henry's legs, which with a noble courage and devotion to his young master he paid no heed to. He simply desired and resolved to catch and restore the bird to safety; but alas, herein was the sad mistake. Deftly avoiding the "pounce" made to catch her, Poozles

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in alarm retreated madly with flapping wings. She was strong and she was heavy, and she blundered against one of the gun wires—the wire that had been set with such pains over-night. The clumsy, cruel weapon swung round truly to the strain, and in spite of antique lock and rusty barrel went off like a blunderbuss. Poor Poozles !

III

ANECDOTES AND REMINISCENCES.

SOME notable characters, whose names are yet familiar to all, come into my early home recollections. For though my father's name appears in those days probably only in the clergy list, yet he had been associated with many different parts of the country, and well known throughout a large radius not only as a ripe scholar but as an all-round man who could do things, many and various, off his own bat. Grandson of John Bacon, R.A.—who in early manhood won the first gold medal offered by the Royal Academy, and to his death remained without a rival in the school of English sculpture—my father inherited a large share of high artistic talent, while he excelled in every branch of mechanical skill or scientific study which he took up. Being moreover a gifted speaker, he became in much request as a lecturer, and perhaps the proudest moments of my boyhood were those when I was called upon to act as assistant with the oxy-hydrogen lanterns.

It was partly this same lecturing, and still more, I fancy, the chance of fishing in the neighbouring famous trout stream, the Kennet, that formed the bait which brought us as a guest a connection of my mother's, Charles Kingsley. I must have attained some ten years when I learned that Charles Kingsley was coming to pay us a visit, and at that time he was simply the Rector of Eversley, and "Two Years Ago" was only in the press ;

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but "Westward Ho!" had been before the world for a couple of years, and the author of "Alton Locke" was already distrusted by many, admired by more, and regarded by some with a genuine hero-worship. Of these there was no lack in our home circle, and thus I knew to expect a man whom I must needs revere. But "Westward Ho!" had as yet been denied me, and the only work of Kingsley's that had come my way was the little volume "Glaucus," which always lay on our drawing-room table, and which I confess had at that time failed to interest me at all. Somehow I could not in the least enter into the feelings of paterfamilias at the seaside, a martyr to ennui, and vainly trying to make a sketch or catch a mackerel. Nor did the cure mapped out for him in these pages commend itself to me. Therefore in my own mind I had misgivings that I should not understand the man who was supposed to charm everybody by his talks about natural history and country life.

But when he came, his mind, if I am not mistaken, was running on another theme. One may gather as much from his "Letters and Memories." He was at this time, if ever, the Muscular Christian. The war had deeply stirred him. "It seems so dreadful," he had written, "to hear of those Alma heights being taken and not be there." He had spoken of the "wolf vein" in him, and one can well fancy the combative attitude ascribed to him when the house-breaking ruffians I have already described were about his own home, when "no house was secure. When a neighbouring clergyman was murdered in his own garden by burglars, and the little Rectory at Eversley which had scarcely a strong lock on its doors, was only just armed with bolts and bars before it too was attacked by the same gang."

I had the pleasure of knowing his eldest son, my con-

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temporary at Cambridge, and it was of this son, about the time I am describing, that the Dons of Trinity used to tell a characteristic story. Being asked at the High Table what expectations he entertained about his son, Kingsley is reported to have replied, "I hope he may turn out a healthy fool."

All in keeping with this was the way in which he first accosted myself. It was one of those moments in life branded on one's memory, and is proof to me of how much may hang on a few words which one is sometimes asked to say to those who are young and impressionable. I remember another home incident, when a bishop and old college don who was staying with us was asked to give me word of counsel on the eve of my going to Cambridge. It occurred to his lordship to warn me against ever "acting a lie," and when I asked for an illustration of his meaning he said, "If you see some one coming along the pavement whom you don't want to meet, and cross over the street to avoid him, that is a practical lie." Of the correctness of this there could be no question, yet I know that I doubted the worldly wisdom of taking that advice too literally. But to return to Charles Kingsley. When his attention was called to me, he did not make it the occasion of instilling moral advice; he simply said, "Come and let me feel your arm." Clearly his best wish for me at that time was that I should develop muscle.

Two incidents very characteristic of the man occur to me as happening while he was with us. In the middle of a long day's fishing he repaired to a neighbouring farm-house to beg a glass of milk, and quickly ingratiated himself with the hospitable mistress of the house who supplied his wants. But his attention was drawn to a dog on the chain, and going, as his nature was, to speak to it, he saw that the poor brute had no water in his

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basin. Whereupon he not only went himself to the well for fresh water, but sternly rated his late friend for her negligence.

The other incident occurred in Newbury street, where some loutish individual, clumsily backing into him, trod heavily on his foot. On this Charles Kingsley seized the fellow by both shoulders, and turning him about said with characteristic emphasis, "My good man, if the Almighty had meant you to walk backwards He would have given you eyes at the back of your head, depend upon it!"

I should be wrong if I implied that Kingsley ever omitted to call attention to any noteworthy object in nature, great or small. It was said of him, and I believe with perfect truth, that in a country ramble his keen eye missed nothing, and he loved to point out to others the sounds dear to him which but for his acute ear might escape notice: "The note of the nighthawk; the call of the pheasant; the distant bark of the fox." The charm of this or any other theme he liked to talk on was borne home to me in after years when I heard him lecture at Cambridge. Even those who from indolence or inaptitude disliked lectures from their hearts would crowd to hear Kingsley discourse, and never miss a word. And that he appealed to all equally was best proved in the final scene, where every class, from the peer to the gipsy crowded to see the last. Max-Müller, remarking on this and on the man's many-sidedness, pointed out that among the rest that day were huntsmen in pink, for though as good a clergyman as any, Charles Kingsley had been a good sportsman, and had taken in his life many a fence as bravely as he took the last fence of all.

Kingsley wrote of Bishop Wilberforce, "I am more struck with him than with any man except Bunsen I have seen for a long time." I myself wonder if any one

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could have seen the Bishop without being extraordinarily struck with him. Shovel hat and gaiters, though they must have counted for something, had little to do with the peculiar admiration which he compelled in those who saw him for the first time, and more particularly heard him speak. His nickname of "Soapy Sam" might have arisen simply from his suave soft speech, but whatever his utterance might have been, that thoughtful look and marvellously intellectual brow would ensure everybody's listening to him with entire attention. Probably had he been of less striking presence he might have been less remarked upon, and in any case one may be safe in rejecting a full half of the stories told about him. But one or two (which as far as I know have remained untold) may be worth recounting as having happened while he was our own Bishop in our own neighbourhood, place and circumstance being alike well known to me.

The Bishop was staying the night with a certain fox-hunting squire, who certainly would not fail to entertain his guest with the utmost cordiality and the best of good cheer, and it seems that the visit went off right well till it came to the matter of family prayer, when there appeared some slight lack of organization. Still the host in due compliment and with well-bred politeness asked his lordship to officiate, in which the latter acquiesced. But the Bishop had not failed to note the ill-rehearsed scene, and grasping the situation said quietly, "Will you tell me the last chapter you read at family prayer?" Now the old squire was not ready in such a fix as this, and mutely appealed to a sporting friend beside him, in which however he made sad mistake, for his friend, loving a joke too well, whispered in his ear, "Say the thirtieth chapter of St. Mark."

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In another parish another squire was showing the Bishop the church which stood in his own grounds. And the Bishop having seen and approved, the squire with reckless vanity asked him to come and see his own pew, in which in truth there was much to see ; the luxurious cushions, the handsome carpet with hassocks to match, the whole hedged in and screened from view by the high oak partition. The proud impropiator showed it off, and pointed to the baize-covered table in the middle, on which some handsome church services ostentatiously reposed. " It only wants one thing," the Bishop remarked. " And pray what is that, my Lord ? " " A pack of cards."

When the Bishop came to consecrate the new church there was of course a high function, and hospitality on a large scale at the Vicarage, and to be out of the way I was consigned to a room upstairs, where I was in due course promised my dinner. But all among the household were off their heads, and hour after hour I remained forgotten and famishing, till at last some one in commiseration brought me a dish of Normandy Pippins. Now this was a luxury which after a good plate of meat I loved well, as any healthy boy should, and being hungry beyond words I finished the dish with nothing else to appease my craving. That I should have been wretchedly ill afterwards was, I suppose, natural enough, but I have always regarded it as curious that from that day I have loathed Normandy Pippins with a disgust which I cannot describe.

I must be allowed to tell one or two unusual scenes connected with the new church which I witnessed at an age when I could keenly appreciate them. The corner seat of a prominent pew was invariably occupied by the principal farmer of the place, who was likewise church-

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warden. Immediately behind him sat his brother, a burly, athletic man whom few would have cared to stand up to, still less to be knocked down by. It was surprising, therefore, to say the least, to see this powerful young fellow, one morning's service, just as the congregation rose for a hymn, strike his brother without apparent provocation a heavy blow in the back. The brother did not resent the assault in the least—indeed if his expression indicated any emotion it was rather that of satisfaction and triumph. Of course after service an explanation of the young yeoman's extraordinary conduct was asked for and easily obtained. The victim of the blow put the whole case in a nutshell. "I felt sum'mut crope up my back," he explained. "So I turns my head and says to my brother, 'Jim, d'ye see a lump between my shoulders? That's a mouse. You hit 'un hard as soon as we stand up.' You see I wore this coat at market last Thursday. There was a sample of corn in the pocket, and I suppose there was a mouse in among the corn."

Then there was occasional trouble about the Sunday hats. A certain gruesome story related to the older church, where, in the middle of the unlovely oblong—you couldn't call it a nave—stood a stove round which, summer and winter, sat two ancient parishioners, known as Gog and Magog. The stove did well to put their hats upon in summer, but a day came when Magog, forgetful of the season and of the fact that the stove was alight, placed his hat on the grated cover and forthwith dropped asleep. Now that stove top soon grew hot, near to redness, and that hat dated far back in the century, and presently the congregation were painfully sensible of—

No, I won't go on with that story. Let me tell of a tremendous personage who was squire for a short while,

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and who was the most fastidious, the most proud, as also the most irascible man, I can recall. Insanely particular about everything touching his pride or person, he was perhaps most scrupulous about his Sunday hat, which his footman at morning service was made to deposit with infinite care in the recess of a window—in the new church now—where in the ordinary course of events the vulgar would not approach. Well, to this hour I don't know how it happened, but one Sunday an unkempt rustic of the rougher sort shambled up the aisle, and ventured—in a fit of temporary insanity, I suppose—to throw his greasy cap on to the same window ledge. But he was awkward as he was uncouth, and the odious piece of felt actually pitched right inside that faultless topper, where, for all the lout cared, it was going to remain. My pen is all too feeble to describe the awful exhibition of indignation and wrath which followed.

But to another scene. In due course an organ, supplanting the modest harmonium, was erected at the west end, and then the hat trouble broke out again; for its handsome front was ornamented by a moulding which formed a sort of ledge, and on this ledge the senior members of the choir—young farmers and the like—deposited their hats. Now this had to be remedied, and certainly my father would have been equal to the occasion. But the organ builder, a brilliant performer, was in compliment asked to come down and preside at his instrument at some choral function—the organ-opening probably—and being told of the little trouble about the hats merely said, “Leave that to me!” Then at the commencement of service, the choir being assembled, and the hats in extended line along their high perch, he took his seat at the organ, and as he sat down made with either arm a sweep to right and left. The hats hailed down and

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ricochetted among the stalls ; but there was no disturbance, for the next moment, with a crash on the full organ, out pealed the opening bars of the 'Hailstone Chorus.' Nothing was ever said by any one, neither did any hat thereafter find a place on the organ case.

At this time and for some years after, the Vicar of the mother church was Robert Milman, afterwards Bishop of Madras ; and a man more capable of dealing with the troublous condition of a large and lawless parish could not well be imagined, if force of character counts for anything. An overgrown village without the organization of a town, the place was a hotbed of malice and mischief. Arson was rife, and a dozen farms or houses had been burned down without the misdemeanor being even guessed at. Indeed defiance of all kinds of authority was the common cause of complaint, and the Vicar devoted himself to the reformation of the rising generation, with what result may be gratefully told to-day. It will not be hard to understand that such a man met with considerable personal opposition from sundry bigoted individuals who in the nature of things are to be found in wellnigh every place. And there was a certain exclusive religious sect, presided over by a woman preacher, whose attitude was peculiarly antagonistic and on one occasion ill-advised.

The woman in question, believing in her own superior gift of devotional eloquence, one day designedly asked the Vicar into her cottage ; and there and then called upon him to offer prayer. The request was at least unceremonious, but it was complied with, for Robert Milman was the very last man to be taken unawares, nor was any man readier to turn any opportunity to account. He therefore in fitting and forcible language gave expression to the hope that this misguided

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woman might be brought to a better state of mind, and then he took his leave. I remember his coming up to to tell my father the story with much relish, but the episode did not really end there, for a few days afterwards the same female fanatic ran out into the street as he passed, and shaking her fist at him cried triumphantly, "Ah! We've prayed for thee now!"

In public speaking few men were more happy than Mr. Milman and none more original and entertaining. His voice alone ensured his being listened to, by reason of a certain harshness and inflexibility which made his periods the more incisive. I recall a platform speech of his at a meeting convened for charitable purposes. It was not very long after the extension of railways into our remote district, and they were still more or less an object of wonder in our quiet part of the country. It seemed only by happy thought, therefore, that Milman made allusion in picturesque language to the scene to be witnessed at the railway-station. The harnessed steam monster coming in with its train of coaches, the ensuing bustle controlled by official authority; then there followed a picture of the familiar scenes on the platform; the newspaper boy was not forgotten, nor a certain dirty little man who was always in attendance with his tin of yellow grease oiling the wheels. And then he broke off abruptly, and explained that that dirty little man was himself, whose duty as treasurer it was to grease the wheels that day, which he would do by appealing for a liberal offertory.

It is worthy of remark that both Milman and Wilberforce were keen horsemen, yet both rode a loose, ungainly seat, a fact to which the fatal accident to the latter may be in part attributed. I am told that on one occasion when the two had ridden over together to my father's

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house from Lambourn and were about to take their leave, Robert Milman said, "My lord, let me show you the short way home," which would mean a stiff bit of country such as might satisfy the most ardent cross-country rider.

One of the notable characters of our part of the country in the days I can recall was Tom Hughes, the father of the better known but certainly not more talented Tom Hughes, author of "Tom Brown" and of the "Scouring of the White Horse." The first of these books it will be remembered was one of the most popular publications of the time, and when it first appeared all who knew the older generation said at once, "It must be the father who has really written the book." This was doubtless unjust, but when it was also said that Tom Hughes the elder must have written much of the "Scouring of the White Horse," this indirectly can hardly have been otherwise than true. There was no man who could repeat more country songs than he. There was likewise none who could more cleverly and happily improvise them. It may thus be hard to tell to-day which among the wonderful collection of lays in the volume comprising the "Scouring of the White Horse and the Ashen Faggot" were real ballads of olden time, and which emanated from the fertile brain of the Squire of Kingston Lisle.

Tom Hughes the elder was the life and soul of the famous West Berks Archers. He wrote of their deeds in graceful and sometimes in comic verse. He would tell stories as none else. Among his varied gifts was a marvellous aptitude in imitating the voices of birds and animals to the life. He spent his later years at Donnington Priory, near Newbury, and my eldest brother relates how once, walking with him through the outskirts of

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the town, a dog was yelping noisily behind a tall yard door, which provoked Hughes to play him a trick. Placing his head near the ground on the outside of the door, he imitated the snarling of a rival dog so perfectly as to drive the noisy cur to fury.

A scouring of the famous White Horse—scarcely eight miles off across the downs—occurred in my recollection, and in some degree resembled the scene described by Tom Hughes the younger. But the life had gone out of it, and the former spirit of the old haunts had departed. The same was equally evident when early in the 'sixties the Volunteers encamped in force below the "Manger." The crowd they drew was largely composed of a wholly undesirable rabble, and as for the old sports—the back-sword play and the chase of the pig with a greased tail—the days of such things had clearly gone by, nor can they, it would seem, ever again be revived in the old countryside. The attempt would be as futile and as pure an anachronism as was that of Lord Eglinton when in the last century he tried to reintroduce the ancient tourney.

Three miles westward of my own house, on a wild open common, is an old-time race-course, once the scene of all such rustic merry-making as was held periodically on White Horse Hill. Here some years back there was an attempt made to revive the old revels. All the old games were to be there, and were there, and there was a large gathering. But it was a wretched failure. No one could wield the quarter-staff as of yore. The old trick of wrestling was lost, and it gave no one pleasure to watch a country lout grin through a horse-collar. By and by it was thought that the reason of the change was discovered. In the corner of the grounds, stolid, but with a vague sense of duty, stood a rural policeman. He was inter-

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fering with nobody, yet he clearly had no place in that gathering ; and the repressing effect of the blue uniform spoilt everything.

But one chief cause of the change that was coming over all such meetings lay undoubtedly in the altered and fast altering relation between employer and employed. The true attachment, often life-long, of the labourer to his master was passing away; the hold which parson and squire alike used to have over the masses in every place was on the wane. In the days I recollect in country places the parishioners for the most part were wholly illiterate, and of necessity came to the clergyman for advice or assistance in all sorts of difficulties. And it was the same with the squire or large yeoman farmer, who exercised the strongest influence over those dependent on him, and who though often a strict, not to say stern, disciplinarian, was respected if not loved by all. The harvest home was a great and important annual function, looked forward to through all the year. One gathering of the kind I used to attend, and the devotion of the common folk, who with wives and mothers were all present, to the farmer squire—the village king—was a spectacle one could never forget. Fifteen years afterwards I should not have known where even to find a single harvest home within as many miles. The old retainers had died out, few stayed more than a short time with a master, and as a natural consequence very little true union existed.

One cause of the labourers abandoning their old masters may have been due to their low wages and wretched dwellings. Their fare was of the coarsest and poorest, and for water they had nothing but the stagnant roadside pond befouled by the farmer's cattle, and green with duck-weed. Everywhere was overcrowding, and

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sanitation was unknown. Yet the fact, which can be borne out by every parish register remains, that the death-rate was no higher than to-day, epidemics were at least not more frequent, and the schools were practically never closed. It used to be truthfully and feelingly said by the old people in our parish—certainly a high and healthy spot—"Folks may live here a'maist as long as they'r a mind to't."

But there were higher wages heard of "round London way," especially at hay harvest, and as crops were earlier in that part it was common for mowers to go and cut the grass in Middlesex and return in time for the mowing at home. The far-off pastures were more than fifty miles away, but this did not deter some of the lustier hands from strapping their scythes on their backs and walking the whole distance in a single day.

Shepherding was counted the most important, as it was the most responsible, of farm labour. An old shepherd, who was generally chosen for his ability, was commonly looked up to as a man possessing superior experience and knowledge among his kind. If your dog ailed you went to the shepherd for advice. If you were in doubt about any past local event the shepherd would "mind all about it." His tales too were wonderful and not to be gainsaid. I remember one that used to inspire me with terror. On the downs were many lone and isolated barns placed there to receive any crops that might be gathered around. They were sure to swarm with rats, and in a hard season, when food ran short, these rats were said to leave in a body at night, and cross the down in quest of food elsewhere. The shepherds should know this, for day and night they would be abroad in winter at lambing time, and they would tell you how perchance one might fall in with an army of these

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flying famishing rats, in which case the shepherd, even with his dog beside him, would perish miserably, demolished body and bones on the bleak plain.

The ignorance and wrong-headedness of the folk who admittedly had "had no larning" was past credence. They believed firmly in the "evil eye." They could prove to you that stones grew from year to year, even as cabbages grow, though of course much more slowly; since did they not pick the "big uns" off the field every season for road mending, yet their number never diminished, showing, beyond doubt, that the "little 'uns" had "growed." Some of them went further. An old carpenter, and preacher to boot, was employed to re-hang a field-gate at home, and he left so big a space beneath that I myself could crawl under. On asking him the reason for this he explained to me in all sincerity that all things "growed," and that I should find the earth would grow up to the gate. This apparent fact he had learned from experience, failing however to see that it was the gate which settled towards the ground.

Any one of our people was fully prepared to see an apparition any day of his or her life. And not a few were satisfied that they had done so. But it was almost too much for a neighbouring clergyman when a woman parishioner came and begged him in great distress to "Come and lay our Will'um." The woman and her husband were an aged couple, who had been summoned by the master of the workhouse to attend their pauper son William's funeral. This summons they had obeyed, and had looked their last on the plain coffin with William's name upon it. But a week had gone by, and their son had overnight returned to earth and home. Wherefore they besought the parson's aid to "lay" him. So the parson went, and truly enough found William; but very

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much in the flesh, and hungry to boot. Of course the workhouse authorities had got wrong with the names, and some other pauper unknown had been the passive principal at William's supposed funeral. But the old people could not reason all this out, and were hard to convince that their son was yet alive.

As I have referred to the neighbouring parish of Lambourn, I should certainly not omit to make mention of a boy two years my senior whose home was there. We have sung together as trebles in the same choir. Subsequently he became organist, and then—well, the story is long as it is brilliant. He is known to all the world now as Sir George Martin, of St. Paul's Cathedral.

Three miles beyond Lambourn on the open rolling downs stands a remarkable house, once more often seen by strangers than it is to-day. It dates from the time of the Plague, when in dire alarm my Lord Craven fled to this wild lone spot, where in good truth he might hope to escape the pursuit of any human scourge. A nephew of Inigo Jones built him his house to order, and it may be seen to this day how the servants' apartments, including the kitchen, are removed from the main dwelling by a passage two hundred feet in length. This might have minimised the danger of contagion, but one wonders on looking at this strange domestic arrangement whether the people of that time were particular about having their dishes hot when brought to table.

But I would talk not of Ashdown House but of Ashdown Coursing in its palmy days. It may be a grave lament that hares are scarce, and that the glory of those old sporting meetings has disappeared. But I would appeal to all who can see another side to the matter. Granted all the recreation; the physical training and the fascination of fair sport; the improving of a noble

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breed of dogs ; the picturesqueness of the scene ; the artistic beauty of that struggle of nature's most graceful creatures. Yet if you have ever regarded that struggle at close quarters, as the hare with eyes straining backwards, and with not a ghost of a chance given her, doubles for the last time beside you, can you be callous to the poor beast's agony ? Sport is glorious, but in its votaries it seems to me to lead to inconsistencies. In Kingsley's life there are two incidents that read something like this : He was going to the altar rails at one morning service, when his congregation suddenly missed him. The fact was that he had stooped behind a high pew to pick up a poor maimed butterfly which he proceeded tenderly to place outside the chancel door. Suffering life appealed to him so strongly.

But, say, a week after he is writing from on a holiday visit somewhat thus : " I played a fine trout to-day for an hour and killed it in the end." How about the suffering life here ? Such prolonged torture is inseparable from such sport as his. On the other hand, I know that some people argue—as if they really knew—that a fish doesn't feel ; in which case perhaps they suppose that it is no torture to a creature to know that it is hopelessly caught. Have such ever taken note of a live mouse in a trap ?

I have given examples of the quondam ignorance and credulity of the humbler people of the soil. Maybe, however, there was not much more to be said for those whose chances in life had been better and brighter. Eight miles westward of White Horse Hill, or Uffington Camp, as it is called, measured in a straight line (or say along a Roman road), stands another noble hill crowned in like manner by earthworks and forming one of the ancient line of fortified positions running, in Roman times at least, across the country. It was to this hill in

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the days of which I am writing that a certain learned (?) archæological society proposed to pay a flying visit on a day appointed for their annual—I was going to have written holiday, but field day will sound better. At that time I was domiciled with a tutor living hard by; one of those enviable men who ride their hobbies with perfect confidence in their own ability and excel in everything they take up. At seventeen, self-taught, he became Champion Archer of All England, and held the belt for many years. As an artist, a shot, a fisherman, a mechanic, he was equally successful, and when I add that he was reckoned no less distinguished as a classical scholar, it will be believed that he was held in his own district at least in high estimation.

Perhaps it was not unnatural that such a man should have held a somewhat poor opinion of the average erudition of his neighbours. Anyway, it was a fact that he misdoubted the technical knowledge of the members of the archæological society aforesaid, and, as dearly loving a practical joke, determined to put it to the test. Who shall blame him? Others had done the like before. He collected an assortment of Roman relics, quite as genuine as the relics you shall find on Waterloo. A collection of New Zealand arrow-heads and other implements, sent him by a brother, served well for ancient weapons. A discarded chimney-pot in fragments did duty for Roman pottery, portions of hoofs and the accoutrements of horses were easily improvised, and so on. These he carefully buried on the heights at suitable and easily recognised spots, and then when the field day, as also the archæological troop, arrived, he went with them to the earthworks and volunteered his ideas as a classical authority on the probable military arrangement of the ancient camp, suggesting that they might break ground

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and explore. He pointed out the likely site of the *Ferrarium*, and the navvies went to work, and surely enough found relics of the ancient smithy. Then he indicated the *Armamentarium*, and there they found traces of the armoury. His guess as to the position of the old *Culina*, or kitchen, was verified by quite half a bushel of broken earthenware. By this time enthusiasm among the onlookers was at its height, and the moment had come for the *dénouement*. He gave learned reasons for a certain spot having probably been the *Sanatorium*, and thought they might find something there. And they did. Under the top sod lay a number of bottles and pill boxes bearing the name of the popular doctor of Marlborough! I believe that archæological society became defunct.

IV

A BERKSHIRE VILLAGE FIFTY YEARS AGO.

WAR was virtually declared with Russia, as all the world knows, in February, 1854, and before the end of that month our first transports had put to sea with troops for the Crimea, while a week or two later the Baltic fleet had left our shores.

The men of Berks should remember this well. The seat of Admiral Dundas, commanding the Black Sea fleet, was but seven miles from our home, and many a sailor before the mast hailed from our near villages. But it was mainly as soldiers that our young men went to the war. Among others went a family of three strapping sons, all in the Guards. I remember their leaving, how proud they were, how brave they looked in the portentous bear-skin of that day; how their friends at home, chiefly in jealousy, spoke of them and their comrades as "feather-bed soldiers"; and how few the months before all the world had to admire their splendid endurance and heroism. A few more weeks, and all three sons had laid down their lives in battle or as victims to worse fate begotten of the muddle of those awful months. How the tidings were received in their humble home will be told presently.

In England the rigours of that first Crimean winter will never be forgotten by any of those whose memories can travel back so far. For myself, I remember it best by a snow man of colossal proportions built with infinite

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labour on our lawn, a work of many days which endured as a monument through many weeks. As a stupendous work of art I do not think the Ice Palace of Montreal impressed me more. The tremendous accumulation of snow around the house was more than the labour available could well deal with. Great limbs of trees came down, and all avenues, save a few of the most indispensable, remained blocked.

But outside the grounds the scene beat all description, surpassing anything that had been witnessed by any villager living. On the main highway, one of the highest and most exposed in the country, the snow had swept up in a mighty ridge, drifting across from the valleys, and piling itself till it hid the hedge-rows ; a wild, wide plain of desolation. Traffic, including that of the mail carts, was stopped, sheep were buried, and human lives too were lost out on the downs. The actual cold may have been—probably was—intense, but in cases like this it is not the dwellers on the high ground who suffer most. Cold bracing air is a heritage, and its greater dryness makes it harmless. Whereas in the valleys through which cold winds sweep relentlessly, and where the air in day hours as well as night lies damp and clammy, you shall find that vegetation suffers far more ; all life is at a lower ebb, and maladies are more frequent and linger longer.

I am aware that in speaking of exceptional times in one's early recollection one is apt to overestimate. The tendency in after life is to regard all that impressed one most in early days as unparalleled in its way. The veteran of to-day would declare that no one ever sang like Jenny Lind, no one ever played cricket like Alfred Mynn. Moreover bitter weather would specially appeal to a child, and even a short spell would affect his imagina-

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tion as much and more than a long-continued winter would in after years. Thus I am prepared to admit that my childish estimate of the great winters that occurred while I was yet in my teens is subject to discount.

Cold winters frequently come in batches, more particularly in pairs. It was in the winter previous, i.e. in January, 1854, that the temperature in London reached a minimum of 8° below zero. In that month the N.W. railway line was rendered impassable, and a mail train was imbedded for many hours near Tring; while on the G.N.R. main line matters were yet worse; more particularly between Peterborough and Newark, where both rail and road were barred. Lastly the Thames itself was blocked, collier vessels were stopped back down the river, and as a dire consequence gas companies could not fulfil their contracts and the city was threatened with darkness. It was then that bread riots arose, one of the first, I fancy, being at Exeter, where my grandfather had been living, and where the mob broke into the bakers' shops, the cause being the rise of the fourpenny loaf to ninepence.

These facts read to all of us to-day altogether exceptional. Yet they were by no means unprecedented. They were even exceeded in the first year of the century, when it is stated that "street lamps could not be lighted on account of the oil being frozen . . . while none of the carriers arrived from the country nor any sheep or cattle, and the town was without water except what was got by melting down ice and snow." It may have been the depressing effect of the hard winter, or it may have been the influence which the war had on men's minds, the cholera fiend which stalked the land, or the general distrust of that authority which just then was causing shameful mismanagement alike at home and at

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the seat of war. Some, or all these causes may have accounted for a spirit of superstitious fear that had gone abroad. This infatuation, strongly marked in our untutored part of the country, may be traced in many ways and many places.

Take one example, which, commented on by our common folk, took strong though not abiding hold upon my boyish imagination. The winter was wearing on and it was now mid-February, when tidings came from Devon that footprints of a mysterious and, as it was hinted, supernatural appearance, had traced themselves in the snow round about Exmouth, Dawlish, Torquay, and many other principal towns. These footprints were said to resemble those of a donkey, but the mystifying and alarming fact about them was that, instead of proceeding in a rational manner with treads right and left, the impressions showed that foot followed foot in a single line, while the uncanny visitor passed only once by each house that he visited, sometimes choosing the ground, sometimes the roof, and sometimes the top of a high wall, but never, even on the narrowest ledge, disturbing the snow to right or left. More staggering than all was the statement that this nameless being had traversed more than a hundred miles of a most devious and irregular route in a single night.

The story once abroad, the mystery and marvel grew apace, and this in spite of all that could be done to restore public equanimity. Professor Owen, with a carefully executed drawing of the footprints before him, assured the public that the traces were those of a badger; that badgers were nocturnal, and would become stealthy prowlers in a hard winter; and that the hundred-mile track was made not by one creature but by many. A clergyman, ministering in the midst of the alarmed

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districts, alive also to the mental mischief which was being wrought, and solemnly reminded by a member of his community that "Satan should be unchained for a thousand years when the latter days were at hand," thought it well to utter a word in due season to his hearers; and justified his doing so by a picture of "the state of the public mind, of the villages, the labourers, their wives and children, old crones and trembling old men not daring to stir out after sunset or to go out half a mile into lanes or byways on a call or message, under the conviction that this was the Devil's walk and none other, and that it was wicked to trifle with such a manifest proof of the Great Enemy's immediate presence."

I cannot find that the mystery was ever satisfactorily cleared up, but the correspondence relating to it, which was continued for several weeks—in fact until the winter left us—in one of the leading London papers, ends with a letter from a resident at Heidelberg stating, on the authority of a Polish doctor, that the identical footprints in a single line were commonly seen in Russian Poland and were universally attributed to supernatural influence. It is little wonder that the same strange portent was reputed to have been seen in our own near neighbourhood; and it was during this period that late one winter's afternoon a woodman brought an alarming story into our own village to the effect that in one of the neighbouring woods he had just encountered a "tar'ble wild beast, seemin'ly like a bear." If truth be told, the man was a sad drinker, and there was no evidence to prove that he was particularly sober on this afternoon; but his tale was enough to scare many of our country folk out of their wits. The man refused to resume work in the wood, and some trouble might have ensued. It happened, however, that a parishioner who had lost his donkey

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succeeded in tracing it to this same wood, where it had strayed. By a process of reasoning which it will be easy to arrive at, this simple circumstance restored the public peace of mind.

I have spoken of the general sense of mismanagement in high quarters which prevailed, but I may have failed to convey an idea of the real exasperation that was openly expressed. The fearless, outspoken denunciations of Mr. (after Sir) W. H. Russell, the correspondent of "The Times" were in everybody's mouth, and warmly commented on, and became, I think, in my own case a valuable piece of early education. The sort of things which, listening open-mouthed, I heard uttered nearly half a century ago seemed to have found an echo in time not long gone by. I turn back to a "Times" of this old date and find columns of editorial comments written in the strain of the following extracts made almost at haphazard :—

"The year has overturned our faith in many things, shaken many convictions, and dissipated many illusions. . . . The public time would have been best employed in a searching inquiry into the working of our War Departments, yet . . . the nation is at a loss on whom to fix the responsibility of numerous mortifying failures and neglects. . . . Together with misgivings as to generalship we were beginning to entertain other doubts. Together with the letters of our Correspondent thick and fast came the news of neglect, disorder and incapacity. Day by day the truth became better known till we awoke to the conviction that . . . Balaklava was a cemetery and Scutari a pest house."

It is, to say the least, instructive to read some of these utterances of long ago in the light of recent history, but having referred to the attitude of the public mind towards

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sorrow and loss of brave lives due to official blundering, I may illustrate by an example how this mismanagement was borne by the simple country folk among whom I lived.

The tidings of the death of the three Guardsmen were communicated to my father, whose duty it became to break the news to the parents, both of whom were living, and both of whom too, according to the custom of those days, laboured in the field—the man at a wage of not more than nine shillings a week, the woman at little more than half that pittance. My father found the couple at work in the same field, at some little distance asunder, and considered that he would do wisely in addressing himself to the wife alone, leaving it to her to tell her husband of their terrible bereavement. The good woman stopped her work, listened attentively but silently till the bare truth was told, then resumed her hoeing with the simple remark, “They ought to have been sar’d better.” Then my father withdrew, but, watching from a distance, noticed that the woman never left her work to go and tell her husband. Yet this was not apathy. Far from it. It was only an example of the patient enduring among the common people of what they saw no cure for.

As a proof that these good folks were in no measure lacking in warm parental feeling, I may mention the following true and touching incident. Adjoining the Vicarage grounds lived an old widow and her son, of whom the latter, now well on in middle life, had formerly been in the Royal Marines and at this time subsisted on his pension, aided only by such modest pay as he could earn by light work chiefly in my father’s employ; for his service smartness had died out of him, and he was now slow and shrivelled, and somewhat crippled withal. The mother was no more demonstrative than any other

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of her class, and perhaps the depth of her attachment to her son might never have been manifested had not an order come from head-quarters, consequent upon the war, requiring all old service pensioners of all descriptions whatsoever to repair to a neighbouring town to be examined with a view to their being re-enlisted. There was no evading the order, and the widow became terrified beyond words at the bare thought that her elderly and decidedly incapable son might be torn from her home. That her maternal alarm, though wholly irrational, was entirely sincere, was abundantly proved the next day, when with genuine tears of joy and satisfaction she came to tell us that Will'um had not only come back again, but—the best of all possible news—they had told him “he wasn't no good for nothing.”

Will'um, be it said, was a highly esteemed friend of my boyhood, and much respected by reason of his power of spinning yarns. He was also long-suffering under persecution. He was always fair game, and never resented any pranks played upon him. I may give an instance. Chief among my earliest home pursuits, always of a mechanical nature, was the manufacture of crossbows. A crossbow is a somewhat formidable weapon to entrust to a boy, but as I was allowed no projectiles save such as I could procure from the hedgerow, it was considered sufficiently safe in my hands. A green stick is not fitted for a serviceable arrow, being too weak and heavy, and withal too soft to preserve its point. Experience, however, came to my aid; baking the sticks made them light and hard. A triangle of parchment inserted in a cleft in the upper end made a tolerable feather, while the other end, tapered and terminating in a nail cunningly tied in, became a point quite capable of doing mischief.

Grown expert with this weapon, I soon learned that it

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was unsportsmanlike to practise on the poultry or the cat ; therefore with a sense of proper pride I went in quest of blackbirds and the like, and no harm would ever have ensued had it not been for William, who one day ventured to ridicule my "toy," which he declared "wouldn't hurt a fly." Now it chanced that this taunt was overheard by Joseph the gardener, who, always ready to be my champion, now stepped forward and dared William as a man and a soldier to stand a shot across the length of the yard. I really hardly know how it all came about, but William's honour was now at stake, and eventually he was bantered into offering himself as an unwilling target, on condition that he might use a stick to ward the arrow off ; and then what followed is too ludicrous for words. First he measured out twenty yards, the stipulated distance, making them as long as he could. Next, buttoning his coat, he huddled himself together so as to offer the smallest possible front to the enemy ; and lastly, taking a broken paling, proceeded to wave it vigorously to and fro in front of his face, thinking thereby to intercept the arrow, if Joseph—for the game had grown too serious for me to take a part in—might happen to make a true shot at him. Joseph, rejoicing at the wretched suspense of his victim, took long aim, and the moment after he released the arrow William's hat flew off, and the old man, white as a sheet, rising hastily, picked it up with the arrow which had pierced both sides still sticking in it. William, despite his years of service, had never been under fire before, but had he been in a score of actions he could never have had a nearer escape from injury. Need it be said that he preserved that hat with much pride.

I have defended our people from a charge of apathy, and I do not think that there should be brought against

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them any imputation of selfish indifference or want of friendly feeling, but the following fact is typical. William had an old comrade living just four miles away, one who had shared with him a considerable portion of the voyage of life, and of whom he liked to speak and would have been pleased to meet. Each knew fully of the other's whereabouts and circumstances, and each had abundant leisure to renew old acquaintanceship; yet both lived out the residue of their lives—many years—and never met nor sought to meet.

The conclusion of the Crimean War brought home a modest proportion of the young men who, full of ardour and exuberant spirits, had "gone to fight the Roosians" two years before. They were proud of their share of glory, but their keenness for soldiering was gone, and they were sadly sobered withal. They mostly went back to farm life or to copse work as woodmen, and for a while you would know them by their upright carriage and a certain conscious superiority—but not for long. Toil soon bent the back and rounded the shoulders, and they became the country labourers once again.

But throughout the land, and more particularly in towns, there were a large and hopeless number who had no work to turn to, and philanthropic associations were formed to get these men employment. It happened that the post of gardener was vacant at home at this time, and my father, making application to one of the above associations, was given the names of two men who were available. One of these men, however, being told of the chance open to him, promptly died, owing, as the officials said, to sheer excitement. The other man, lank and middle-aged, known as Robert, was duly enstalled as gardener, and of all who ever filled that post became by a very long way the most remarkable.

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Of the theory and practice of gardening he knew absolutely nothing ; and indeed he was entirely destitute of ideas beyond those which soldiering had given him. Thus his methods of going about his work were found to be peculiar. If he essayed to weed a patch of turnips he would give himself the word of command and then march to the bed, shouldering his hoe precisely as he would his bayonet on parade. Again, scorning a tool house, he used to "pile arms" with the various garden implements, an exceedingly difficult operation, for the spade was too short, with a slippery handle, and the rake was too long and top-heavy to boot, when, as he insisted, it was reared prongs uppermost. One of his peculiarities was that he would constantly come "for orders," a demand which was not always easy to satisfy ; and on one such occasion, to keep him quiet, my mother bade him weed her much prized rock-work, enjoining on him that he must be very careful about the work. In half an hour Robert was back, radiant with self-satisfaction, and insisted that he had made a very clean job. In terror my mother hastened to the spot, to find every plant uprooted and the labour of months destroyed.

But quarter-day brought us relief from Robert. He had to walk four miles into the town to receive his pension, and having been absent the entire day returned at night in a condition which greatly alarmed the maidservants. Interrogated in the kitchen as to what account he could give of himself, he curiously pleaded the same malady as his deceased comrade, declaring that he had suffered from excitement.

Robert was many pegs below the intellectual standard of our average countryman of those illiterate days, who in spite of much crass stupidity, possessed a certain shrewdness and a gift of rude but pointed repartee, and

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above all a great idea of not being "bested" by anybody. Boors as they were, I do not think they would have been readily taken in by the confidence trick or any ruse of that nature. I may give an example.

A certain pestilent sect, claiming supernatural powers and making gain where they could by their impostures, visited our neighbourhood, and three of them took up their quarters one evening at a public-house in a neighbouring village, where they simulated prayer with loud voices far into the night. The next morning two of them, creeping downstairs on tiptoe, with long faces and bated breath informed the landlord that one of their party had died during the night, but that he, the landlord, should have no uneasiness, as they were going to fetch one of their brethren from hard by who was possessed of powers whereby he could raise the dead man to life again. And with this they departed.

Now the landlord was a typical Berkshireman, and by the light of his reason argued thus—"If they fellers can rise 'un, maybe I can!"—and with this he fetched a hurdle stake and, going upstairs, began to belabour the corpse with right good will. Needless to say the resurrection trick was readily accomplished, and the rascally gang were heard of no more in our side of the country.

Were I asked what books appealed to me most at about the time I have been describing, I should be inclined to mention first Mitchell's "Orbs of Heaven," the production of an American author, but probably fairly well known in England among the comparatively few readable volumes of that date dealing with popular science. I may at the same time be permitted to mention that both Sir Robert Ball and Dr. Downing have made similar remarks with regard to this work. The style, which is decidedly grandiloquent, is at least pardonable

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in such an enthusiast as the author, but sometimes his vivid imagination fairly runs away with him. He sees our great ancestor sitting under a tree gazing for the first time and with bewildered mind upon the going down of the sun ; and on this a gloom greater than that of nature settles on him till the moon gets up and completes his astonishment. In this attitude he sits out the night, and is struck completely dumb when the sun gets up again. Here is quite enough to set any boy thinking, and he presently begins to wonder what he is coming to next, when looking on he reads how " East and west and north and south from the watch towers of the four quarters of the globe peals the solemn mandate, Onward." No one will fail to understand that this was a book in a thousand half a century ago.

But another book of a lighter nature, though not devoid of teaching, was " The Seasons," by Thomas Miller. For really good and wholesome anecdotes, appropriately introduced and racily told, I venture to think that there was no book of that date like it that ever came my way. Yet I never saw more than that one copy in my life, nor have I ever chanced to hear any one else refer to that book. And this makes me wonder what becomes of all the old but really good books which do not get out of date. Are they simply torn up as soon as the backs are shabby, and so pass not only out of print but out of all existence ?

Certain old-time histories, of which I had knowledge by tradition only, took strong possession of my mind at this time. A walk of only three miles, though across the boundary of the county, took you to Littlecote, one of the noblest Early Tudor houses in the kingdom. There was and is a peculiar spell and fascination about the solemn secluded old mansion not to be excelled elsewhere,

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chiefly by reason of its history, which, not more strange than true, was spoken of with bated breath by story-loving cronies of our place. Scott has told the ancient story, which he was at pains to verify, yet it appears not widely known. It related to Elizabethan times—a dark and rainy November night, when an old nurse was summoned by a horseman who told her that her services were needed by a person of rank, and that she should be handsomely rewarded; a condition of the bargain being, however, that she must be blindfolded for reasons of secrecy. To this the old woman consenting, she was placed on a pillion and conducted many miles through rough and dirty lanes to a large house, where, her sight being restored, “she found herself in a bed-chamber in which were the lady on whose account she had been sent for and a man of a haughty and ferocious aspect.” A shocking scene ensued, a child being presently born and immediately cast on the fire by the man already mentioned; after which the nurse, being allowed for a period to pay attention to the lady, was given a large sum of money and conducted home again in the same manner in which she had been brought. But the horrified woman had attempted to take measures which might serve to discover the house. She had cut a piece out of the bed-curtain and sewn it in again. She also had counted the number of the steps which led from the bed-chamber.

The shameful story with this bare clue was laid before a magistrate, with the result that the crime was brought home to the proprietor of Littlecote Hall, known commonly by the name of Wild Dayrell. According to Aubrey, “the Judge, Sir John Popham, gave sentence according to Lawe, but being a great person and a favourite he procured a *noli prosequi* and it is stated as a

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significant fact that the property passed then and there into the hands of the judge.”

A few months later, Wild Dayrell, out hunting, encounters sitting on a stile a witch, who utters a curse upon him. The horse taking fright throws its rider, breaking his neck, and needless to say that stile became a haunted spot. Nor does the story end here, for legend has it that in her curse the old crone vowed that “to Littlecote House there should ne’er be an heir,” and subsequent history has somewhat justified the supposed imprecation.

The name of Wild Dayrell occurred again in a happier connection during the years now being referred to. In May, 1855, a horse owned by Mr. F. L. Popham won the Derby. The horse, which became famous in equine pedigrees, was a dark brown standing sixteen hands one inch, and was bred by its owner. It was reared moreover in the stables of Littlecote Hall. More than this, it was trained in the home park and ridden in the great race by the owner’s private jockey; and by winning under these exceptional circumstances not only created a great sensation but dispelled some traditional delusions of the turf. Mr. Popham gave the horse the name of Wild Dayrell.

But a certain later history laid hold of my imagination as perhaps none other—a history that seemed to transcend all else, a drama whose plot was laid not on the earth but in the skies. I know not how to account for its extraordinary fascination in my case. Idiosyncrasies are puzzling, but mine perhaps may be regarded as mania. My own constant dream was of flying, or rather floating in the air. This I know is common enough, so common as to have acquired the special name of “levitation.” I believe Ruskin constantly fancied, as a child, that he had the power of flying down stairs. My own experience

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was similar, only I should describe it as a delicious dream of floating rather than flying. It was a delicious dream, and in my case goes back as far as memory.

But to return. Mixed up with this early imagination of soaring at will in the free air was the reality of the grandest balloon venture on record, as narrated by my own father, who was intimate with the leading spirit of the great enterprise, Mr. Robert Hollond. This heroic explorer—I prefer to style him thus rather than as the modest M.P. which he subsequently became—was at Cambridge with my father about the year 1831 or earlier; and ere the autumn of '36 was over all Europe was ringing with his splendid daring and achievement. Of this we have no written record save that of Mr. Monck Mason, a fellow-voyager, whose turgid style much mars an otherwise most fascinating narrative.

Mr. Hollond, having caught the true fascination of ballooning, and having made the acquaintance of the famous Charles Green, determined on a voyage of discovery through the heavens which should eclipse all records. How the “Immortal Three,” as they have been well styled, fared through the night of their adventure, a night full of incident, not unmixed with alarm, and how the next morning’s light found them in the far forests of Germany, has been told too often to be repeated here. But in my youth I never could hear the brave story too often, nor would I then believe that any feat of the kind could ever surpass it. Possibly until another Immortal Three, Andrée and his two companions, sailed away into the unknown north, bound on their heroic but hopeless voyage, no grander enterprise is to be found in all the history of aeronautics. There was a strange coincidence in connection with the “Nassau Voyage,” as this exploit was termed, which is little known, but which deserves



THE NASSAU BALLOON PARTY

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to be recorded whenever the tale is told. The spot where the balloon touched earth was Weilburg, in the Duchy of Nassau. Now to this same spot had once come another balloon, famous in its day by reason of its belonging to M. Blanchard, earliest among professional aeronauts. This Blanchard, ascending from Frankfort only two years after balloons had been invented, made his descent close by Weilburg aforesaid; and in commemoration of the event the flag he bore was deposited among the archives in the ducal palace of that town. Fifty-one years passed by when, outside the same city, the yet more famous balloon effected its landing, and with due ceremony its flag was presently laid beside that of Blanchard in the same ducal palace.

Now it may seem almost past credence that balloons, which follow no beaten tracks and are wafted far and wide simply by the wayward winds, should ever be found to single out the same spots of earth to fall in. Yet such has been the case on other occasions besides that just cited. The following example is equally authentic and remarkable. Some time in the 'twenties an aeronaut, by name Sadler, of whom these pages will have to make further mention, descended in a field near Milngavie, where a young man hurrying up rendered him assistance. It was a part of the country where balloons were unknown, and were scarcely likely ever to be seen again. However, a whole generation elapsed, when the famous Mr. Coxwell, ascending from Glasgow, descended in the self-same field, and a man well on in middle life caught the rope of his balloon—the identical man who rendered the same service to Mr. Sadler thirty years before!

“THE CHILD IS FATHER OF THE MAN.”

NOT much remains to be added to this personal record of Bacon's early days. A few loose threads may be gathered up, a few additional incidents recorded. Three events in particular, which belong to this time, merit reference, because they appealed, each in different fashion, strongly to the boyish mind, and were often alluded to in later years.

One was the digging of the Great Well. Lambourn Woodlands stands high and exposed upon the confines of the wide chalk downs of North Berkshire, and, as was inevitable in such a spot, the water-supply was poor and insufficient. In summer time the streams were always dry, and quite a short spell of drought sufficed to drain the shallow springs and wells. At the Vicarage the nuisance grew insupportable, and it was resolved, at whatever cost, to dig down through the chalk until the deep waters were reached, even though this would entail a well of depth quite unknown in that part of the world.

My grandfather had come recently from a curacy in the West Country, where, among the miners, the sinking of deep shafts was well understood. He did not realize when he entrusted the digging of his well to local workmen that he was giving them a task in which they would find themselves, very literally, beyond their depth. The result was nearly a tragedy. As they burrowed deeper and deeper into the ground a spot was reached where

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the air was no longer safe to breathe, and the order was given that fresh air must be pumped from above. But this instruction conveyed little meaning to rustic diggers, with whom such an expedient had never before been necessary. Elaborate apparatus was not at all to their liking or comprehension. No, they knew a trick worth two of that. “We’ll take the bell’us down with us,” said they—and with an ordinary kitchen pair of bellows they descended the shaft and energetically blew the bad air into each other’s lungs, with results that proved well-nigh fatal.

After this little difficulty was got over the well grew deeper and deeper until it became the talk of the whole country-side. The Vicar himself descended one morning, sitting astride a stick like a workman, and not being used to the vitiated atmosphere below was drawn up again much the worse for his plucky adventure. At three hundred and fifteen feet abundant water-supply was found, pure and never-failing; so that in dry summer months many beside the household had reason to bless the Vicarage well. Heavy gear was necessary to draw the buckets from so great a depth. Occasionally the chain would break, and then much ingenuity was needed to rescue it from the bottom where it had fallen. One of Bacon’s earliest recollections was of such an occurrence, and of watching his father stand, hour after hour, with specially invented grappling iron at the end of a rope, patiently and skilfully fishing for the bucket. Much excitement would ensue at anything like a “bite.” “Henry” the daring would lean over the black gulf to quite an alarming extent in his efforts to peer below. Not unnaturally his extremely ancient and greasy hat fell down the well, and being of strong and tough material, impregnated the water-supply for many months to come.

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Another unforgettable incident was the great thunder-storm, which occurred when Bacon was but a tiny boy. Mere baby as he was at the time, he remembered well that night of terror when, for hours, the thunder boomed on in one continuous rattle, and every second the landscape leaped into view illumined by the vivid lightning. At last came one blinding, stupefying flash, coincident with a roar as if the heavens were falling. The Vicar thought of the spire of his new church, and was relieved indeed when the next flash revealed it yet standing. None of the neighbouring trees either seemed to have suffered, yet all were convinced the lightning had fallen in the immediate vicinity. Morning light revealed the mystery. In the field adjoining the Vicarage grounds a flock of fifty-two sheep had been feeding. When the storm arose they had huddled together in a corner, their wet fleeces all in close contact. There they yet lay when morning dawned, in easy lifelike postures, but strangely still and motionless. A shattered hurdle-stake was in their midst. The lightning had blasted it and passed from it through the entire flock. No wound or mark was visible upon any one of them, and yet not one was left alive.

The third event, or rather events, of those early years, marked with a white stone for lifelong remembrance, were the three famous cricket matches of 1852 and two following years, when Hungerford, the tiny country town of some two thousand inhabitants which stood as the metropolis of that remote and primitive district, challenged the All England eleven and beat them gloriously. At one of these matches at least, if not at more, the young Bacon was present. He wondered at the players, dignified and resplendent in white top hats with black bands—at the great Alfred Mynn, a veritable giant

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among his colleagues ; at Box, faultless behind the wicket ; Clarke, the celebrated slow bowler ; the two Parrs ; Caffyn, Felix, and the rest of their illustrious compeers. Names to conjure with in those days, and still dear to many a heart that warms again over the echoes of long past victories.

Oh ! the rapturous, delirious thrill of joy and triumph, almost painful in its extreme intensity, when these mighty heroes, demigods almost to the boyish mind, were overthrown by the home team, by men of his own country-side, men of his actual acquaintance. It was probably at the last match that the youthful Bacon was present, and saw All England make 85 and 70, while Hungerford Park marked 162 and 185, really beating their adversaries in the first innings. Or it might have been the second match of the three, when All England made 54 in the first innings and the same number in the second, while Hungerford Park scored 78 and in the second innings 32 with seven wickets to fall. He would have been too young probably to take to a cricket match in 1852, though this was the year when Hungerford achieved their wildest triumph. The astonished spectators could scarcely believe their senses when, due in part to a violent thunder-storm which soaked the ground and made the ball hang, but more to the extremely good fielding of the home team, the great All England eleven were dismissed the first innings with eleven runs and one “wide.” “It was a famous victory.”

And now what of the boy himself, the budding mind that looked out through wondering eyes on all this marvellous life, that garnered in all these crowding impressions and moulded them and was moulded by them, as the years unfolded and the world grew ever wider and wider ? There is a picture of him at about five years old,

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drawn in soft pencil outline by his uncle—a beautiful child face, solemn and intelligent, with parted cupid-bow lips and long eyelashes and curly hair. He was indeed a lovely child, and grew into a handsome boy; the kind of boy that elder women rave over and pet and spoil—only there were no women beside his mother to spoil Johnny, for he had no sisters and few friends, so that he saw little enough of ladies, and in consequence was shy and abashed in their presence. Another attraction he possessed was a boy's voice of most unusual sweetness and purity. Once, as quite a little fellow, he accompanied his father on a rare visit to some friends at a distance, and on Sunday morning, in Romsey Abbey, he stood and sang, all unconsciously, beside another guest sharing the same pew—Sir Frederick Ouseley. After the service was over the great man took the father aside, and then and there begged that he might have the boy who sang so sweetly to bring up and educate in his famous college of St. Michael, Tenbury, then just starting, and train him for the musical career for which he considered him so specially fitted.

But his father had other plans for him, and so Johnny stayed at home and was educated, first by his clever mother, then by successive curates who now assisted the Vicar of Woodlands in his parochial duties; until at the age of twelve he was sent to the preparatory school of the Rev. Edwin Meyrick, Vicar of Chisledon, near Swindon—the tutor already referred to in his own narrative, who played the practical joke upon the archæological society. Two of his brothers, Maunsell and Harry, were then being educated at Marlborough. Perhaps the family finances did not allow of a third son being sent there, perhaps there were other reasons, but certain it is that the youngest boy was not allowed to follow their example. He



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never afterwards lamented the fact. That his opinion of the value of public-school education was not excessive is evidenced by his never having considered it necessary for his own son. Personally he did not hold he had lost much by being taught privately. It is probable that in some ways at least he gained a good deal. Edwin Meyrick instructed him in more than the “humanities.” As has been related, Meyrick was a splendid “all-round” man, and next to his archery he was specially great in scientific and mechanical pursuits. In Johnny he found a pupil after his own heart—deft-fingered, quick to learn, and eager to be instructed. Like a wise man, he allowed and encouraged the boy to share his hobbies; and certain it is that the early lessons thus received in astronomy, carpentry, chemistry, firework making, bell-ringing, and what not, stood Bacon in greater stead all his life through than the merely scholastic education he was sent to Chisledon to acquire.

One of his favourite pastimes at this epoch, reverted to in after years, was kite-flying. Many a time had he listened to his father’s story of the man who, in his recollection, made a journey from London to Bath along the great high road, in a light vehicle propelled solely by kites, cunningly contrived and skilfully handled. This was no impossible feat, for down the valleys through which the Bath road runs for much of its way the east winds of spring blow with pitiless strength and persistency, as many a cyclist and motorist knows to his cost. Neither in those days were there the telegraph wires to negotiate, which would now form an insuperable bar to such a mode of locomotion. The only obstacle was at Hungerford, where the sign of the “Bear Inn” hung on a beam that stretched right across the road. Here the enterprising driver was forced to cut his cable, but uniting

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it again on the other side went merrily on his way without further let or hindrance.

Johnny of course could not hope to emulate such a triumph, but he made the most of the small means at his command. Tailless kites were not then known to English boys, only the unscientific toys of childhood, overweighted with clumsy laths and long fantastic tails. But after many experiments the lad, whose dreams were ever of sky-sailing, arrived at a form of small and very light craft, which when let up with some half-mile of tailor's pack thread would vanish out of sight against the sky. And then with what joy would he stand and hold the end of the string which disappeared into the blue, and feel his unseen kite strain and tug at its moorings, and dream long delicious dreams of the glorious realms of upper air where it was sporting—dreams that another day were to be realized.

Meyrick's tuition being outgrown, and the age of fifteen or so attained, there came the momentous question of a career in life. Bacon's second brother, Frank, whom he specially looked up to and emulated, had recently gone into the Marine Artillery. It seemed to him that a soldier's life was what he most desired, and in view of his mechanical bent, the Engineers or Royal Artillery for preference. Consequently, by the advice of friends, on leaving Chisledon he was sent, about the year 1860, to the Rev. W. H. Pritchett, an Army crammer at Old Charlton, near Woolwich. Pritchett (he subsequently became Rector of St. Paul's, Charlton, and gave up scholastic work) was at this time a highly successful "coach," and had some fifty or more youths under his charge. He was a very clever man, a high Wrangler and Fellow of Corpus, Cambridge—a fellowship he resigned to marry a beautiful and attractive wife. He was a great dis-

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ciplinarian and a perfect martinet in his way, but he carried his Spartan principles almost too far. The pupils he had to deal with were of very mixed description. They were at a difficult age for school discipline. The neighbourhood was disorderly. Times were disturbed. A regular mutiny took place about this epoch at “The Shop,” as the Woolwich Academy, where many old pupils then were and many more were bound, was called. Altogether it was a “rough” school, and a “rough” time. Among much that was good there was also not a little that was evil, and perhaps the recollection of this, in later years, served to prejudice Bacon’s mind, possibly unduly, and made him determine that no child of his should be made to pass through a similar ordeal.

The tuition indeed was all that could be desired, and Bacon made rapid progress. For a brief period during his Old Charlton days John Morley was classical master. Several of the teaching staff beside were specially able men. It needed a firm hand indeed to curb those unruly youths, and woe betide the unlucky master who failed to assert his authority. The spirit of mischief was rampant throughout the establishment, and the variety of pranks perpetrated was only equalled by their ingenuity.

Bacon was nothing if not original and ingenious. Anything daring and unusual had the strongest attraction for him all through life, and it was but natural he should become a ringleader of lawless deeds. He had two accomplices. One, a successful soldier, now the sole survivor, looks back with an indulgent smile upon his early misdeeds. The other was a young nobleman, Lord Francis Douglas, brother to the eighth Marquis of Queensberry. It added considerably to the unholy pleasure of these three young scamps that their wicked-

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ness was quite unsuspected, and that they knew themselves especially beloved by Pritchett as the best-behaved boys of his school, a pattern to their companions. This fact did not in the least deter them from climbing down from their bedroom windows night after night to let the pigs loose in the garden. This act not only entailed much damage to the cabbages, but caused the big watchdog, chained on the other side of the house, to bark ceaselessly for hours—a result greatly to be desired. In vain would the Head, whose rest was disturbed, lock and secure the door of the sty. The boys would climb inside and lift the pigs carefully over the fence, until the pigs grew so accustomed to the performance that they would offer no resistance whatever, and not even squeal. The culprits were undiscovered, and the matter remained a mystery to the end of the chapter.

So did the strange behaviour of the schoolroom chimney. At certain intervals during the winter terms a brick would become dislodged from the top, and with infinite noise and disturbance (always at work time) come hurtling down the chimney, scattering the fire about the room, and bringing with it clouds of soot and dust. Of course the class had to be dismissed until order was restored, and then the bricklayer was sent for to make investigation, but, curiously enough, never could find anything wrong. No one, save the accomplices, suspected the innocent-looking Bacon, who had climbed up on the roof in the dusk, balanced the brick with great skill, and then, with the aid of a black thread, completed the disaster.

It was Bacon also, I understand, who discovered that by applying one's mouth to a certain gas-burner on an upper landing and blowing with all one's might, the gas in one of the classrooms could be extinguished, causing much confusion and smell, and an interruption of work,

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which, with a little judicious mislaying of matches and so forth, might be indefinitely prolonged. Certainly it was Bacon who was responsible for the exploding of a “maroon” upon the roof, with consequences so serious that this time exposure and confession were necessary, and the three best boys were humiliated in the eyes of their sorrowfully indignant master.

It is time I related something more to Bacon’s credit. The following letter of his, written from Old Charlton, shows how an early taste was beginning to develop:—

“DEAREST FATHER,

“Without any definite object, and partly for want of anything else to do, I had the cheek and audacity, the other day, to write to a Mr. Ellacombe, a Rector in Devon, about ‘Bell-ringing’! He wrote back to say that he was delighted to hear of any gentleman taking up the science. He referred me to a Mr. Bannister at Woolwich, who he said was about the *finest ringer* in *all England*, and he said it was possible that he might procure me some lessons. I was most delighted at this, and wrote off instanter. I this morning received the kindest note from him, saying that he could easily give me some lessons at some regular practisings, that there were *no* funds needed, and in fact it was evidently a great act of kindness on his part to give me some lessons, I suppose chiefly under his own guidance. But, *worst of all luck*, the hours of practice are 7—9 p.m. on Mondays. It is a great pity, as such another chance could never again be met with. I mean to call upon him and thank him for his great kindness; but I must explain how matters stand. On Monday evenings I do Classics, and tho’ doubtless I might write out the lesson beforehand, yet I am afraid Mr. Pritchett would *never* allow it. It

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seems the most tantalizing thing just to fall short of gratuitous lessons by the best of all ringers so close at hand. I am quite ready and willing to work Monday afternoons or *any amount* of extra hours to make up for the little time I should lose. If I could only impress the matter upon Mr. Pritchett I might hope to turn out a hand that might astonish even the ringers of Wymondham.

“Ever your most affectionate son,

“JOHN M. BACON.”

This letter had the natural and probably not unforeseen result. The father wrote to the great Mr. Pritchett. The matter was arranged, and Bacon began his ringing lessons in Woolwich tower and learned the elements of a craft he turned to good account another day. The Rev. H. T. Ellacombe referred to was a famous antiquary, and the greatest authority on campanology of the day. Bacon kept up his correspondence with him, and some years later paid him a visit and stayed in his house. Ellacombe was then a very old man, and somewhat infirm; but to the very last (he lived to be ninety-five), however feeble under ordinary circumstances, yet take him to a church new to him, and he would scale the crazy belfry ladders that led up to his beloved bells with all the spirit and enthusiasm of a youth.

Meantime a change had come over the family fortunes. My grandfather had now spent a quarter of a century buried in his remote Berkshire parish. In 1863 Lord Westbury, then Lord Chancellor, offered him the greatly superior Chancellor's living of Wymondham, in Leicestershire, which he gladly accepted. Some talk there had been that the parish of Ham might be offered instead. John Bacon always declared that if such had been the case he should have had no alternative but to refuse,

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since the combination of names of parson and parish would have been absolutely insupportable.

The family were now in more affluent circumstances, and the father was at last able to offer to the youngest son a privilege he had himself enjoyed, and knew well the value of—a University education. Of late young Bacon had somewhat repented him of his early choice of a career. The wild life of many of his companions, the disordered state of Woolwich, which had recently been in open mutiny, had cooled his ardour for the Service. His talents and leanings were all academic, and he eagerly embraced the chance held out to him. Cambridge was his destination, of course, and it was at first supposed he would go to his father's old college of Corpus. In the interval a different course of training was necessary, and by the advice of Cambridge friends he went in 1864 (being then nineteen) for a year's coaching to the Rev. Arthur Headlam, Vicar of Whorlton-on-Tees, in the county of Durham.

It was Bacon's first introduction to the North Country. No youth with even a grain of romance or imagination in his nature, who has been born and bred in the south, can fail to be impressed when first he finds himself on northern soil, beneath grey northern skies, amid bleak northern scenery, and amongst the strange-speaking north countrymen, blunt, outspoken, honest, “dark and true and tender,” for all their rough and rugged exterior. Bacon was impressionable and imaginative to the backbone, and the place where he found himself was one of the most lovely and romantic spots in all the north of England. Whorlton is a little village in Teesdale, some fourteen miles west of Darlington. From the high ground above, where runs the high road to Barnard Castle, the view stretches, far as eye can see, over the

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wild Yorkshire moorland. Whorlton itself nestles at the foot of the hill, a few trim cottages, smithy and carpenter's shop, standing around the village green. Then beyond comes the modern-built church, and beside it the roomy, handsome, grey stone Vicarage. Cross a stile and traverse a grass field, bearing ever downhill, and you hear beneath you the roar of waters. Scramble down a steep wooded bank, carpeted with flowers in summer time, full of the song of birds, at every step growing more wildly lovely, until at the bottom the trees break, and Tees, in all his glory, lies sparkling at your feet.

And what a river! Never before, till he came to Whorlton, had Bacon seen a northern stream. The slow, placid watercourses of the south, full to the brim and winding sluggishly through lush pastures, the Thames, the Kennet, and the little Lambourn, these were all his experience of what a river might be. What a revelation was the rushing, hurrying, whirling Tees, the enormously broad bed, the craggy overhanging banks, the rock-strewn course, the shoals of bright shingle, the deep pools, the islets and foamy waterfalls, the ceaseless chattering murmur of the swift pellucid stream. Then again the rapid rising flood, the wild tossing current of brown peaty water, the awful sudden onrush that swept all before it, and in a moment converted the half-dry bed into a dark, swirling, angry sea. How Bacon loved the Tees! Many years afterwards he set his children to learn by heart Scott's description of the famous stream, or would read aloud to them (and no man could read poetry more beautifully or feelingly than he) long cantos of "Rokeby," with every scene of which he was familiar.

In truth it was enchanted ground he trod in those few

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pleasant months in Teesdale: Rokeby, Mortham Towers, and ruined Egleston; grim Raby, haunted with its rustling silken skirts and Heaven knows what ghosts beside; Barnard Castle, with its grand ruin and bridge and memories of long-past fights, now recalled only by the children's shrill taunt—

Coward-a-coward o' Barnie Castle,
Daren't come out and fight a battle!

Wycliffe, whence sprang the great reformer; romantic Deepdale; the heights of Stanmore; the towers of Bowes; while ever—

Brignal banks were wild and fair,
And Greta words were green.

At the Greta Inn, not far distant on the great coach road, Nicholas Nickleby spent the night; and some seven miles off, on Bowes Moor, could be seen the very identical building of “Dotheboys Hall,” of infamous renown. Some of the old inhabitants indeed remembered Squeers himself, and represented him not by any means as black as he was painted; and were half inclined to pity him when, through the influence of Dickens's immortal book, his school came to an untimely end.

The Rev. Arthur Headlam was a Cambridge man, Wrangler and First Class in the Classical Tripos. The care of his three hundred parishioners did not absorb all his leisure or energies, and for many years he took pupils to coach for the University, three or four at a time. The villagers still have lively recollections of the “young gentlemen” whose youthful high spirits enlivened the quiet monotony of the place. Their favourite sport was fishing in the Tees—but Bacon set a new fashion. Fishing was not in his line. Instead he sought out a

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friendly mechanic in Barnard Castle, who initiated him into the mysteries of the lathe and the arts of the mechanical engineer. This was very characteristic of the lad, and it was also natural with him that he infected others with his own enthusiasm. Handicraft became quite the fashion at the Vicarage, and the other pupils left their fishing-rods to try their hands at manufacturing little boxes and wooden rollers and the like, with an ardour generally much in advance of their skill.

Bacon was always a pioneer. The craze for physical training now possessed him. There was much bathing and swimming in the Tees, walking, running and jumping; and he now proposed a course of "roughing it" by way of becoming hardened for manly exercise. In the study at Whorlton Vicarage were many rows of books placed on shelves of quite unusual massiveness and breadth. Bacon proposed to his chief ally, in pursuance of their Spartan training, that they should sleep upon these shelves instead of on their too luxurious beds; and accordingly every night, when the household had retired, they stole downstairs, provided with blankets, and passed the night behind the books; very uncomfortably in truth, but fortified by the conviction that they were doing something unusual and praiseworthy.

My father was acknowledgedly Mr. Headlam's favourite pupil. He possessed more than the usual share of brains and intelligence, and he was moreover a hard worker and inspired with an ardent desire to learn. He planned for himself ambitious schemes for University success, as the following letter shows—and when, throughout life, Bacon's ambitions failed of their attainment it was never through fault of his own.

“The Child is Father of the Man”

“DEAREST FATHER,

“I have spoken to Mr. Headlam at length, and asked his advice as to the choice of a college.

“He says a large college like Trinity possesses a chief advantage over smaller ones in that there are such a number of first class men against one, and consequently more emulation and more encouragement to work. If you fell short of a fellowship at a small college you would not gain half the advantage from your college in after life as you would if you had been to Trinity and read your best.

“All this, of course, you know, and he says it rests with you whether you think it best for me, with a moderate chance of a small fellowship, to risk the getting of it, or to go to Trinity and read for as high a place in Honours as possible. The former course would be the less expensive, and he gives me some hope of gaining a fellowship. In his own case he says that he probably would have gained a fellowship at a small college, but still he is glad he went to Trinity instead. Neither its scholarships nor fellowships require classics more than mathematics; good men in either subject will gain them. Mathematics ought to be made my strongest subject, but I must keep up both.

“I have heard from Mr. Ellacombe, who says he would introduce me to good ringers at Cambridge. I hope you are enjoying your trip to old Berkshire in spite of the weather.

“Ever your affectionate son,

“JOHN M. BACON.”

So Trinity it was settled to be, and Bacon set himself to his work with renewed vigour, and quickly distanced all his companions. That same spring, in vacation

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time, Mr. Headlam took him with him on a holiday to Lakeland—for it was a long journey home to Wymondham, and the tutor had become attached to his promising, lovable pupil. They stayed on Derwentwater, and that glorious scenery made an unforgettable impression upon the youth ; as it does on all who have eyes for the beautiful and poetic, and a heart in tune for a country in which so many of our wisest and best have found—even after long travel amidst earth's fairest spots—their truest solace and delight.



LORD FRANCIS DOUGLAS

VI

ALMA MATER.

BACON went up to Cambridge in October, 1865. Some three months before this an event had occurred which affected him, as was but natural, very deeply. This was the tragic death of the school fellow he had so lately parted with—Lord Francis Douglas, killed on the Alps in the terrible accident which marred the triumph of the first ascent of the Matterhorn.

Lord Francis had been Bacon's closest friend, accomplice, and comrade during the whole time they had spent together at Old Charlton, and the dramatic story of his untimely end came as a tremendous shock.

The fact that of the four victims of the disaster his body alone had never been recovered—nor ever has been—was an additional appeal to the imagination. Some only half-explained details unhappily found their way into the papers, giving rise to all sorts of wild, unfounded notions. Bacon was tortured with the idea of his late companion, caught up on some inaccessible ledge of rock on the face of that awful precipice, alive perhaps, but unable to make his position known; and as he pictured the ghastly thought his mind would revert to his old dream of a balloon; a balloon in which he could explore the rocky steep that by no other mortal means might be attained.

But soon there came Cambridge to distract his thoughts—Cambridge, the goal of his desires, the field of his am-

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bitions, the arena of his labours; Cambridge, which for ten long years was to be all in all to him. Cambridge, which was to be the scene of his proudest triumphs, his bitterest disappointments, his purest joys, his keenest griefs; of love and birth and death, of hope and despair. He loved every stick and stone of the place—he loved the atmosphere, he loved the life. Outside of his passion for the daring, the adventurous, the unusual, his nature was academic to the finger-tips. He was at his happiest and brightest among his University friends, he looked his best in cap and gown; he walked his lightest and freest over the well-worn flags and between the grey walls of College courts. Had fates willed otherwise, and the early promise of his life been fulfilled, he might have spent his years and ended his days as the Cambridge Don he was, in many ways, so well fitted to be. In this walk of life, as in any other, he would have made his name and left his mark and done great work. And yet perhaps there is small reason to regret that such was not his destiny. The academic world has its limitations, and maybe somewhat narrow ones. Its placid, happy life, be it never so useful and dignified, is apt to run in grooves. It may even be doubted whether the elderly professor, for all that his forehead is lofty and his brows are noble, is yet the grandest development of the human race—whether his sympathies are quite so broad, his outlook quite so wide, his share in the pleasures and toils of life quite so large, as if the boundaries of college walls were not so greatly the boundaries of his own existence.

When Bacon first went up to Cambridge, Trinity was presided over by that wonderful man, that intellectual giant, that acme, epitome, and highest consummation of academic life, William Whewell. A freshman at Trinity has little enough to do with the august tenant of the

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Master's Lodge—yet Whewell's mighty presence made itself felt even to the meanest servant of the College. Bacon saw the massive form—lately bowed by grief for the loss of his second wife, slowly pace the great court. He saw the noble head above the Master's stall in chapel ; and he felt, as did the whole world, how grandly Whewell sustained the traditions of the stately college ; how fittingly he stood as figurehead of the proud establishment ; how much he owed to Trinity, and how much Trinity owed to him.

Whewell preached his last sermon in Trinity chapel on Quinquagesima Sunday of Bacon's first Lent term. Prophetically enough, he drew his text from Revelations and spoke of the end of the world. Bacon, who had ever the keenest appreciation of choice diction and fine word-painting, must have thrilled as he heard the great scholar, in measured periods, describe the last dread scene, and picture : " No mountains sinking under the decrepitude of years, or weary rivers ceasing to rejoice in their courses. No placid euthanasia silently leading on the desolation of the natural world. But the trumpet shall sound, the struggle shall come ! This godly frame of things shall expire amid the throes and agonies of some fierce and hidden catastrophe. And the same arm that plucked the elements from the dark and troubled slumbers of their chaos shall cast them into their tomb."

There was no trace of failing powers in a mind that could string sounding phrases like these. It was remarked on all hands with pride and delight that the Master was regaining his old vigour, temporarily 'crushed under his late sorrow. Moreover he had become gentler, more approachable, more human, more lovable, since his loss and grief. The whole college warmed to him as never before, and rejoiced to see the cloud lifting and his

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interest in outside things revive. He was but seventy-two. There were surely many useful years yet before him.

And then, all in a few days, the end came. On the afternoon of February 24th, it was rumoured round the college that a serious accident had befallen the Master ; that he had been thrown from his horse, riding on the Gog-Magog hills ; that even now he was being borne, grievously shattered, to the Lodge. There followed a few days of sorrowful suspense, when footfalls went softly upon the flagstones and voices were hushed. A strange awed feeling was upon all that youthful throng which seethed, a tide of young life, about the grey walls of the old college, when it was known that their great Head was passing from them. There was a tightening of heart-strings and a dimming of vision, as the pathetic story was told of how the dying man had asked for the curtains of his window to be drawn aside that he might once more see the sun shining on the Great Court, and the blue sky, which he had ever declared was never so blue as when glimpsed above the pinnacles of Trinity. Then came the peaceful death, and a great shadow seemed to fall across the college, and the blank void of an irreparable loss.

The Sunday after the burial was one never to be forgotten : The scene in the chapel, so familiar and yet so strangely, indefinably, different ; the mellowed light pouring down from lofty windows, the crowded benches of white-surpliced youths, their overflowing spirits for once awed and sobered ; the organ's funeral chords, the empty Master's stall. In a voice vibrant with emotion, Lightfoot, afterwards the great Bishop of Durham, paid his last tribute to the mighty dead : " Our grand old Master—our pride and strength ! Our own always, not

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in his triumphs only, but in his sorrows also. . . . He has gone from us, leaving as a legacy his name and munificence. He has bequeathed to us his bright example. His race is run—his torch has passed into our hands full burning, to keep ablaze or to quench as we will.” And then, by way of peroration, the strong appeal from that great ensample to the young life before him; the impassioned call to follow in the footsteps of him who had gone before—“resolving, as far as in us lies, to make this college a holy temple of His spirit, in all sound learning and all godly living.”

What lad, young, ardent, high-spirited, as Bacon was, could fail to be stirred to the depths of his being by such a scene, and by such words? And then, the service over, he was to hear those sounds, the solemnest, the most heart-thrilling in all the world, the tones of a muffled peal. The twelve beautiful bells of St. Mary’s rang a requiem that day as is rung only when the greatest pass away. First, a brief peal with both sides of the clappers muffled, terminating abruptly with all the bells “upset.” Then the muffling of one side of each clapper is removed, and the ringing recommenced as is described in Bacon’s own words recording the event:—

“First all the twelve bells speaking freely were answered immediately by the ghosts of their own selves—by that indescribable far-off sound, weird and solemn, seemingly coming out of another world. Irresistibly the listener would pause and count out the twelve strokes, alternately full and hushed, and presently he counts but eleven; the treble bell apparently missing; and before he has well assured himself of this the next in order is silent too, and now but ten are speaking in the place of twelve. So one by one the higher bells in order drop out, while those of heavier metal strike on; but more leisurely,

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widening out their intervals so as to count out, with equal strokes, the invariable length of each bar of the solemn music as marked by the stately swing of the tenor ; and in this impressive manner each bell in dying leaves the survivors filling the gap with more and more measured utterance. Presently but two are speaking, answering one another with long resounding beats. Finally the great tenor swings on a few strokes alone, its deep funereal, muffled voice ending the long-drawn cadence."

Our hero knew well all about these same fine bells, and described them as an expert. Mr. Ellacombe had been as good as his word. The introduction to the Cambridge ringers had been given, and Bacon had enrolled himself a member of that famous campanological association "The Ancient Society of College Youths." The written and unwritten lore of the belfry was expounded to him. The mysteries of change ringing had already been acquired ; the intricacies of "Evening Pleasure" and "Triple Bob Major," the cabalistic passwords of "single," "caters," "tittums," and the like, no longer presented any difficulties. To ring up the great tenor of St. Mary's was a favourite exercise of his and a highly esteemed privilege. By way of other recreation he took up rowing, and sported the dark blue blazer of the First Trinity Boat Club. But it was at the gymnasium he chiefly distinguished himself. Under the skilful training of George Jackson—the original, by the way—as he was proud enough himself to testify, of "Mr. George" in Dickens's "Bleak House"—Bacon developed into a first-class gymnast.

His favourite exercises were with the flying trapeze, and he gave exhibitions of his skill in this direction at village entertainments at home until his mother's blood

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ran cold with horror at his daring. He was an adept with the leaping pole, he had won prizes for throwing the cricket ball, he loved swimming and diving, riding and skating, and all physical exercises. In those days he was muscularly of great strength, short of stature, but lithe and active as a cat. The breakdown of his health, which befell him while he was yet in full youth and vigour, put a summary end to all his athletic pursuits; but he felt to his dying day the value of his early training. Handicapped as he became, his activity never forsook him. He could vault a gate, or turn a somersault from one chair to another, at an age when most men have left such youthful frivolities a good fifteen or even twenty years behind them. To the very end of his life he could climb a tree, or scramble up ratlins, or mount a crazy ladder in a way that would put to shame many a youth but a third of his age—and he delighted not a little in doing so. In his aeronautical adventures in particular his active powers stood him especially in good stead.

When my father first went up to Trinity he was, for some time, an "out college" man. At the beginning of his second October term, however, he was most unexpectedly offered a set of rooms in the Old Court. They had been hurriedly vacated by a man of uncertain health and nervous temperament, who had suddenly left them and gone into lodgings, assigning no satisfactory reason for his change. Bacon took the rooms, but not before he had received a solemn warning against them from the bedmaker, who, with an ominous shake of her head, characterized them as "dreadful dismal." This was mysterious, but the reason presently developed. With gloomy November came wild and howling winds, and, sitting up late over his books, Bacon heard the quiet room filled with low, wailing, unearthly moans, as of a haunting

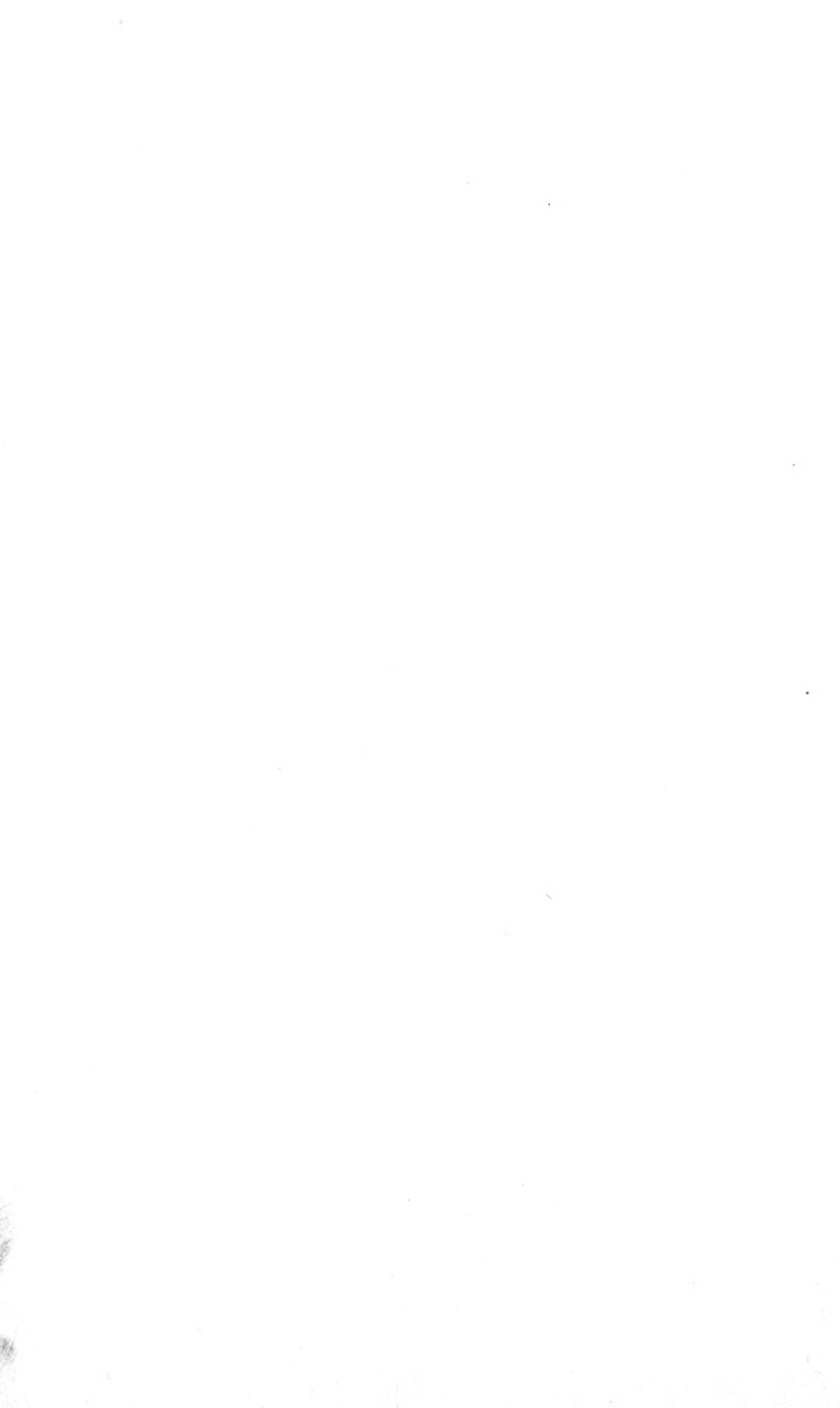
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spirit in agony, or some dark tragedy taking place in the lane outside. This happened night after night, nor was any explanation forthcoming until, after much search, my father, who was not troubled with superstitious fears, discovered it. In the "Gyp room" a piece of wall paper, pasted across a chink, had developed a crack, leaving two jagged edges which, under certain conditions of draught, vibrated together like a reed, and produced the noise described. A touch with the paste-brush speedily silenced the spectre, nor was this the only ghost that Bacon, in later days, was to help to lay.

Bacon's rooms at Trinity were in the south-eastern corner of the Old Court. They were on the ground floor, a fact which has its drawbacks to a reading man, since it renders him more liable to interruption, but which also possesses some advantages of its own, as the following instance illustrates. A few staircases off, on an upper floor, "kept" a studious friend of my father's, who passed long hours there in study, always seated with his feet upon a large footstool. This might appear, at first sight, somewhat curious behaviour on the part of a strong and active youth, known to be keenly averse to all forms of "coddling." His "old-maidish fad" however admitted of quite reasonable explanation. Directly below him were the rooms of a light-hearted friend, keenly addicted to the art of fencing, which he practised at all hours of the day and not a few of the night. Careful experiment had taught this playful youth that he could readily insert the point of his foil through the plaster of the ceiling, and between the wide cracks in the ancient floor above, and thereby prick the toes of the tiresomely conscientious comrade "mugging" aloft. This interesting employment appealed to him very strongly, and so assiduously did he work at it that soon his ceiling was pitted all over



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with holes, and the victim's step across the room above was sufficient signal for the sword-point to come pricking up between the boards like the quick tongue of a serpent. In vain would the student change the position of his reading chair. His tormentor would as surely find him out, and only by the aid of an unusually solid foot-stool was the difficulty obviated and reading rendered possible.

There were troublous times at Cambridge just then. A highly unpopular Vice-Chancellor was in power, and as a consequence something like active rebellion broke forth among the undergraduates. The men grew out of hand, and all sorts of lawless acts were perpetrated. One night the tremendously massive iron-studded gates of Christ's College, of terrific weight, were bodily removed from their hinges and thrown into the river. It was the wonder of all how they could ever have been carried so far. Other outrages were perpetrated, and there came the order that the undergraduates were to be excluded from the gallery of the Senate House on the day of granting degrees. It is their immemorial privilege to be present on this occasion, and to exercise their wit in pertinent (and impertinent) personal remarks on the appearance, character, and so forth of those taking part in the ceremony beneath. A "row" was of course anticipated, and Bacon went to see the fun. Being early, he obtained a coign of vantage at the top of the flight of stone steps which lead up to the side door of the Senate House opening upon King's Parade. A dense mass of men formed up behind him. At the stroke of the hour when admittance is generally given there came a sudden rush. Bacon was next the door, and for a moment it seemed to him as if his ribs would burst and the life be crushed out of him. It would surely have been so, had not the solid

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wooden panels given way like matchwood and precipitated him among the foremost into the building. There followed a wild scene as the infuriated undergraduates surged in. The Chancellor's robes were torn to fragments, the furniture was broken, and degrees were granted amid a scene of noise and uproar unequalled in the annals of the University.

Bacon's home now, the home to which he returned in the vacations, was Wymondham, in Leicestershire, near Melton Mowbray, a place which spells its name the same as, but pronounces it quite differently from, the larger Wymondham in Norfolk. The Rectory there is a roomy comfortable house, built by a former incumbent, one Craig, of whom many stories are told. Although dead many years, he had left many tokens of his presence about the place, for of his ingenious but eccentric fads and crazes there appear to have been no end. One brilliant idea of his was to make one fire warm two rooms. He had a grate constructed, on his own designs, of course, which went on sliding bars through the wall, and when he had been sufficiently long in one room and wished to retire to the next he would simply shoot it through, fire and all, so that it greeted his arrival in the adjoining apartment. Later tenants removed this economical invention, though its traces could still be seen. It was otherwise with another product of his fertile brain, which in Bacon's time still ornamented the back door. This was a dodge for the frightening of tramps and the spying out of undesirable visitors. It took the form of a grotesque and hideous face, let into the wood, with holes where the eyes should have been. In these holes the Rector, stealing noiselessly to the door from within, would suddenly place his own eyes. The result was decidedly terrifying, and the tramps, it is said, would

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beat a hasty retreat with shattered nerves and much bad language.

One Christmas vacation it chanced that Jack was the only son at home. It was seasonable weather and snow lay thick on the ground, when, in the middle of one bitterly cold night, he was awakened by the furious barking of the big dog tied up in the yard. This was no unusual event when the moon shone brightly in a frosty sky, and none of the servants sleeping at the back of the house were disturbed. Something unusual, however, in the note of the dog's bark excited my father. He slipped out of bed, and as he opened the door an unwonted light warned him of what was amiss. The outbuildings and back premises were on fire, and the flames, spreading rapidly, were threatening the house and creeping round to the spot where—at the extreme limit of his chain—the poor dog was giving ceaseless warning of the danger.

The household was instantly roused and a messenger sent up to the village for help, which quickly arrived. Men with buckets swarmed to the rescue, but most of the water had turned to ice. The little stream which ran through the garden was soon exhausted, and it seemed as if the house was doomed. The maidservants were sent upstairs to bring down the objects of most value they could lay their hands on. They went and returned triumphantly, one bearing a hat box and the other a three-railed towel-horse. Nor let them be unduly blamed. All sense of the relative worth of movables seems to disappear in a fire. During the recent burning of a great Scotch house, crammed with priceless treasures, a party of soldiers from the neighbouring barracks were told off to assist in the salving; and while some hurled crockery, wardrobes, and dressing tables from upper windows, others, at great personal risk, rescued a very

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massive cast-iron door-scraper and bore it carefully to a place of safety. Jack performed prodigies of strength in carrying heavy furniture, but in the end the house was spared. When matters looked most desperate, some one suggested the happy expedient of piling snow upon the flames. A maltster's was near at hand ; and the huge wooden shovels used for shifting the malt were commandeered. With these the snow, which lay thick around, was flung up on the top of the burning beams, not otherwise to be reached, and so the fire (which had originated from the incautious throwing of hot cinders into a wooden shed) was extinguished before it reached the house, though the outbuildings were entirely destroyed. "Sambo," by whose agency the household was preserved, wore a medal for the rest of his days.

It was during a certain Long Vacation spent at Cambridge that Bacon witnessed a sight which he never forgot as long as he lived, and which, for many years after, constantly recurred to his memory. This was a balloon ascent, the first he had ever seen.

In truth there is something not a little stirring and impressive about such a spectacle. The shapely, graceful, silken craft, towering up into the sky ; the straining ropes ; the creaking wicker-work as the car is attached ; the struggling crowd ; the sharp words of command while the monster tugs and pulls at her moorings, impatient to be free. Then the last bags of restraining ballast are handed out, the last farewells spoken, the final order given, "Let go all!"—and, amid ringing cheers, the great balloon glides upwards into the air, silently, smoothly, swiftly, with infinite grace and dignity, higher and higher, floating far and farther into the blue until it melts in distance—a drop against the sky. This particular ascent took place from Downing grounds, and

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the balloon fouled a tree to begin with and broke off a great branch of elm entangled in the rigging, through the leafy barrier of which the aeronaut waved a graceful farewell as he rose. "I don't think I ever quite recovered the mental bias that this ascent gave me," wrote Bacon many years afterwards. "I dreamed of balloons in happy nightmares for long days to come, and whenever I allowed myself to speculate on some possible excursion which should be out of the common, somehow the idea of a balloon would always intrude itself."

Henceforward there was ever present at the back of his mind the resolution to make, one day, a balloon ascent himself. But for the present, and for many a year to come, he had other things to think about. Long hours of night reading by the light of an inefficient lamp began to tell upon his sight. Presently his eyes broke down altogether, under the strain, and for months he was tortured by that most dread spectre that can well haunt a man—the fear of blindness. Work had perforce to be abandoned, just at the most critical point, and his time at the University was extended by another year, in the hope that matters might improve before his final examination for the Mathematical Tripos.

Then came other distractions. Almost the first acquaintances he had made upon his arrival at Cambridge were a pair of brothers, sons of the Rev. C. J. Myers, of Flintham Vicarage, Nottingham, then an elderly clergyman passing a quiet life in his college living, or on his own Cumberland estate; but in his younger days a man of great attainments, a scholar of Trinity, and fifth Wrangler the year his friend Airy was Senior. The younger of these two sons, Fred, a brilliant youth whose early death cut short a career of unusual promise, was Bacon's especial and dearly loved companion, and closest of his

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Cambridge friends. The Myers family was a large one, and from time to time one or more of the handsome sisters would come to visit their brothers and share in the gaieties of May Week, or other festivities. Particularly came Gertrude, the youngest, a pretty girl with big, soft, brown eyes, a bright, vivacious manner, and a happy nature, the placid sweetness of which no storms could ever ruffle. Bacon went to stay with his friends at Flintham; Fred Myers in return brought his favourite sister to Wymondham; and she recorded in her school-girl diary (she was but nineteen), that "Mr. John Bacon was most polite during our visit." More meetings ensued, and then the inevitable occurred. In September, 1869, they became engaged, she being then twenty and he three years older.

A long engagement seemed before them. Bacon was destined for the Church—whither the University life then so largely tended. He was also minded to try coaching work as soon as he had taken a degree. Anyway, it might probably be some time before he could support a wife. The lovers were supremely happy in each other, but clouds were on the horizon. They shared one fear in common. Mr. Myers had suffered a paralytic stroke, and was failing visibly; while John Bacon, the dearly loved, indulgent father, to whom his four sons looked up with almost adoring reverence, was attacked by a lingering and most painful malady, the end of which was inevitable. John was ever his father's most tender, devoted and indefatigable nurse, and the father's last months were brightened by his son's successes. In April, 1869, he gained a Trinity Foundation Scholarship. Sundry lesser laurels fell also to his share. He won an essay prize, and his college prize for reading in chapel. But his crowning honour—the place for which he had

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worked so hard and longed so fervently—was denied him. He had hoped for high rank among the Wranglers, and those who saw his work and were best competent to judge had confidently predicted it for him. The results of a tripos can be fairly well foretold by those “in the know,” and a place among the first ten was spoken of on best authority. But the eye trouble was still present, even at the end of the additional year. The oculist peremptorily forbade the reading that would be inevitable, and the deeply disappointed Bacon must perforce be content with an *agrotat* degree. This maimed honour he took in January, 1870, and being, as it were, a class to himself, and going up last for the Chancellor’s “laying on of hands,” at the ceremony in the Senate House, the “gods” in the gallery not unnaturally mistook him for “Wooden Spoon,” and cheered him accordingly.

But if his labours and talents did not receive the hallmark they merited, they were none the less understood and acknowledged by his Cambridge contemporaries. Immediately after taking his degree he posted the usual notice in the “Union” that he was desirous of obtaining University pupils. In response came thirty pupils the first term, an unprecedented success. Elated and encouraged, Bacon now embarked on a bold step. Maunsell, his eldest brother, seven years his senior, had some while before entered the Civil Service and become a clerk in the War Office. He had also married and children were born to him. But promotion in his profession, if sure, was desperately slow. The daily round of trivial time-wasting in that palace of red tape where he worked was growing intolerably irksome to him, and his health was suffering by the confinement of town life. His younger brother wrote to him ardently and affectionately. “Give up the War Office,” he said. “Leave London and come

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up to Cambridge. Enter one of the colleges as a non-resident, take your degree and go into the Church. Meantime, to keep the pot boiling, share my pupils with me. We will go into partnership in coaching. You shall take the classical part and I the mathematical, and together we will make a success of it."

It was a daring move for this youth of twenty-three to take upon himself the responsibility of his brother and his brother's family in this fashion. But the elder man had every confidence in the younger's judgment and energy, and the event proved that he was right. He took a house in Cambridge, entered Sidney-Sussex, read for a "pass" degree, and meanwhile worked hard with the pupils who came every term in increasing numbers.

The partnership proved the most triumphant success. The Bacon brothers were "poll" coaches, that is to say they catered for the "poll" or "pass" men who were content to get through the University with the minimum amount of work, and scrape through a degree with the least margin to spare, rather than read for "honours" and take rank in a tripos. Nor let it be for a moment supposed that the work of their tuition demanded less skill or care than if they had all been budding Senior Wranglers or Double Firsts. Speaking generally (for of course there are many exceptions), the man who is content with a "poll" degree is pretty certain to be lacking either in industry or brains or both—and it is a truism that it requires a wise man to teach a fool. The Bacons soon acquired a reputation for steering even the stupidest and idlest of their pupils (and some were very stupid indeed) through the quicksands of the dread examinations. They had recourse to all sorts of devices to arrest the roving fancy and spur the feeble memory. For example, there was that renowned quagmire, "Paley's

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Evidences," which has engulfed so many a weak-kneed Cambridge pilgrim to his destruction. The elder brother, who was, and is, a talented versifier of the Gilbertian order, sat up all one night condensing the heads of the learned divine's immortal discourse (how the wan spectre of Paley must have shuddered at the sacrilege!) into rhymes that were adapted to the popular tunes of the day then most in vogue in undergraduate circles. John Bacon possessed a lithographic stone and printing apparatus, which were quickly got to work, and before twenty-four hours had elapsed printed sheets of the doggerel, music and all, were distributed broadcast, and soon, all over the town, pianos were tinkling, and lusty young voices chanting these novel but improving ditties. For a long while the immensely popular and much sought after verses were circulated among the Bacon pupils only. Later on a few of them were incorporated in a work published by a friend, and which, under the title of "Paley's Ghost," is still on sale at Cambridge.

John M. Bacon in those days made much use of his lithographic press. He was not without his share of the family artistic skill. He etched most delicately, and his lettering, when he pleased, was a triumph of design and execution. He delighted to produce dainty and fanciful programmes, book-plates, and the like. He photographed also at a time when photography was a real art, demanding much manual skill and beset with difficulties that the dilettante amateurs of the present day, who imagine that because they press a button or turn a handle they can style themselves photographers, could never even realize. He possessed too, by this time, a splendid baritone voice, and took up singing with his customary energy and thoroughness. The multitude and all-embracing variety of Bacon's hobbies, then as in

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later years, may be gathered from a spirited sketch of the time by his brother Maunsell, entitled "The last neat thing in Cantab. Freshmen." A heavily and most miscellaneous laden railway porter inquires of an undergraduate (presumably John) in cap and gown, and carrying a pair of handbells—"Any other luggage, sir?" C.F.: "Yes. You will find in the van an electric machine, a galvanic battery, a lathe, a canister of gunpowder, a photographic apparatus, a horizontal bar, a coil of rope, and two iron rings; and then there is this little pair of dumb-bells behind me. Bring them up to my rooms at once." *Exit* porter for a "Memoria Technica."

His degree taken, Bacon began reading for Ordination. He was ordained Deacon on Trinity Sunday, 1870, in Ely Cathedral, by Bishop Harold Browne, and next day he wrote to his Gertrude: "The Ordination was the most impressive and admirably conducted service you can imagine. The whole ceremony was worthy of being held in that magnificent Cathedral. Perhaps nothing was more impressive than the fine manly voice and delivery of the Bishop I love so much. I am quite unable to describe my admiration for that man. His manner, which is so marvellously winning, is so thoroughly sincere. No one has ever met with greater hospitality or more generous kindness than all of us did at the Palace."

A fortnight later he preached his first sermon in Wymondham church, but his father was too ill to be present. As it was not his intention to leave Cambridge he was licensed as Curate to Harston, a little parish some four miles out of the town—a mere formality, for he received no stipend—and began Sunday duty there during the summer. Beside the pupils he shared with his brother, he coached "honours" men as well by himself, and

Alma Mater

among his earliest were two half-brothers of the late Marquis of Salisbury, Lords Arthur and Lionel Cecil. They were known as the Twins—though not so in reality—but they were inseparable in all things, especially in their pursuits, which were inclined to be of a Spartan nature. They bathed together in the Cam every morning before breakfast, and in winter time sent their “gyp” before them to break the ice. Philip Beresford-Hope, their connection, was also a pupil, and so was another relative, Francis Balfour, brother of Arthur J. of that ilk, and of whom more anon. In addition to his other work, and as an aid to his teaching labours, Bacon brought out this autumn two little books, “Hints on Elementary Statics” and “Notes on the Acts,” followed later by other works of the same description, written either by himself or in conjunction with his brother, some of which are still in print and find sale at Cambridge as singularly clear and lucidly expressed primers for undergraduate needs.

Mr. Myers died in November, 1870, and John Bacon in the March following. His son felt his loss most keenly, but at the time there were other matters to distract his mind. His own marriage was near at hand. On April 11th, 1871, the wedding took place at the parish church of Millom, in Cumberland, and after a short honeymoon spent in Edinburgh (where it rained ceaselessly the whole while) the young pair settled down in the comfortable little Cambridge house 12, Park Side, looking out upon Parker’s Piece, which for the next five years was to be their home.

VII

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AND now it were high time to mention certain of the friends and acquaintances who belong to these Cambridge days, and to recall a few of the great names which cluster around ten years of University life. When Bacon first went up to college in 1865, and for several years later, the venerable, benevolent head of Adam Sedgwick looked out over his stall in Trinity Chapel, and the octogenarian Woodwardian Professor still delivered his courses of lectures—now reaching into the fifties—with unabated power and enthusiasm, and reiterated his solemn warnings against what he maintained to be the mistaken and materialistic doctrines of Darwin's "Descent of Man." Darwin's two sons, George Howard and Francis, by the way, were Bacon's contemporaries at Trinity. One summer day one of the brothers, now the Professor, was cruising slowly up the Backs, sitting in the stern of one of those frail walnut-shell shaped "tubs" which on warm afternoons skim thick as mayfly upon the placid stream, his coat-tail well overlapping the low gunwale. "Hi! Darwin, your tail's in the water!" shouted a quick-witted undergraduate from a passing boat. A roar of laughter rose up from the banks, and the apposite remark went the round of the University.

A. J. Balfour, W. H. M. Christie (the present Astronomer Royal), Arnold Morley and his brothers, A. F. Kirkpatrick (Master of Selwyn), C. V. Stanford; Maurice, son of

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Charles Kingsley ; Hallam, son of Lord Tennyson : these are a few of the names which catch the eye in looking down the long lists of men whose days of undergraduate life coincided more or less with my father's, and with most of whom he came more or less into contact. Among the Dons were two successive Bishops of Durham—Lightfoot, Hulsean Professor of Divinity, and Westcott, Regius Professor. H. Fawcett was the Professor of Political Economy ; Charles Kingsley, of Modern History ; W. Sterndale Bennett, of Music. Adams, discoverer of Neptune, and Challis, who scarcely assisted in that discovery, were the two Astronomical Professors ; Cayley and G. G. Stokes the Mathematical.

But three or four men, who were Bacon's own intimate friends, must receive special notice. First and foremost was that wonderful mind, that splendid genius, quenched by early death in the first brightness of its dawn, William Kingdon Clifford. Clifford was two years Bacon's senior at Trinity (he was Second Wrangler and Second Smith's Prizeman in 1867, and became a Fellow the subsequent year), but it was hardly possible that two men whose tastes and natural bent were so identical should fail to gravitate together. Their hobbies coincided exactly. Clifford was fond of handicraft and mechanical invention. He took up scientific kite-flying. He was keenly interested in aerial research, and even harboured ideas of the construction of a flying machine. He was a magnificent gymnast, and was prouder of his reputation as an athlete than even of his academic distinctions. In comparing the lives of the two men the points of resemblance are so many as to be quite curious. Both went on Eclipse expeditions (Clifford observed in the Mediterranean the total solar eclipse of 1870) ; both were unusually talented at public lecturing ; they were brother enthu-

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siasts even over such minor matters as shorthand and Morse code. These facts, of course, are pure coincidence, yet they serve to explain how readily Bacon fell under the spell of Clifford's influence and wonderful personal attraction, how ardently he admired him, how keenly he valued his friendship. Nothing delighted Clifford so much in his Cambridge days as congenial discussion. His boundless range of sympathy and interest, his extreme openness and candour, his wonderful quickness of perception and lucidness of expression, his keen sense of the ridiculous and his unfailing tact, made him an altogether exceptional conversationalist. He would constantly sit up most of the night, talking with a chosen few—"solving the Universe"—as he expressed it, and every conceivable subject, under every conceivable point of view, would come under discussion. He maintained as one of his most firmly held convictions that metaphysical and theological problems should be discussed with exactly the same freedom and fearlessness as scientific or political questions; and he himself would suffer the yoke of no conventions in formulating his opinions. This was in the days ere yet the narrow bounds of authority had been aught relaxed, and the teachings of Darwin, Spencer, and other pioneers had come upon the world with the added shock of novelty. It was in Clifford's rooms that Bacon first heard the clash of arms in the mighty warfare of Church and Science, became aware in fact that such a warfare was possible, and here again Clifford's influence made itself felt and bore its fruit in due season.

And so Bacon was admitted to the intimacy, and sat at the feet of, the greatest man of all his Cambridge contemporaries. They shared a great friend in common in the person of George Robert Crotch, the naturalist;

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formerly Under Librarian at the University Library, and at the time of his death travelling, at the expense of the University, on an entomological survey of remote parts of the world. As in the case of Clifford, an untimely end cut short a career of unusual promise, and the same may be said of another young scientist who was for a while Bacon's own pupil, being coached by him in Mathematics at one part of his Cambridge course.

This was Francis Balfour, afterwards Professor, a man of altogether exceptional genius and ability. His brother Arthur had preceded him at Trinity and taken his degree four years previously, and in those days it was popularly considered at Cambridge that, brilliant as was the youth who was presently to become Prime Minister of England, the younger brother was by far the cleverer of the two. Huxley, who loved him as his own son, said of him, "He is the only man who can carry out my work," and again later on, when the all too short career was closed, he wrote: "His early death, and W. K. Clifford's, have been the greatest loss to science not only in England, but in the world, in our time. Half a dozen of us old fogies could have been better spared."

Professor Balfour met his death on the Alps in July, 1882, while attempting the ascent of the Aiguille Blanche, then unclimbed. As a testimony to the rare thoughtfulness and courtesy which have ever characterized the Balfour family, it may here be mentioned that nearly twenty years later my father, whose recollection, for some reason, had lately reverted to his old friend and pupil, ventured to write to Mr. Balfour, then Leader of the House of Commons, to ask if he had a photograph of his brother that he could spare him. The reply came immediately that Miss Balfour possessed certain copies of such a photograph, though at the moment she could

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not lay hands upon them, but if they presently were discovered one should certainly be sent. So time went by, and the matter passed completely from my father's mind, as he presumed it surely must have from the mind of a man who was holding the reins that guided a nation. Nevertheless, after a whole year, there came an autograph letter from the statesman, enclosing the photograph, which had just come to light.

One more friend of Cambridge days was Edward Henry Palmer, the Orientalist, equally notable in his own way with those just commemorated, and like them cut short in the full tide of activity and usefulness. The tragedy of his courageous death belongs to the annals of English History.

Bacon's first few months of married life opened auspiciously enough. There was abundance of pupils; friends were kind; the clever, good-looking young parson and his pretty, vivacious wife were very popular. They loved entertaining, and there was much coming and going at 12 Park Side, and all the pleasant social excitement which appertains to youthful Cambridge existence.

Bacon was working very hard—far too hard, in fact; for in addition to the tutorial work which absorbed all his week-day hours, his Sundays were fully occupied with clerical duties. He was ordained Priest at Ely Cathedral in September, 1871, and beside his regular work at Harston he took occasional duty over a wide area. There was scarce a church within a radius of many miles of Cambridge in which he did not, during this time, officiate; driving himself in his dog-cart, or riding his mare, far down into the dreary fenland, or to remote outlying parishes where a few rough coprolite diggers formed his uncouth and occasionally unruly congregation. Sometimes in after years he would tell quaint stories of his

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experiences in these uncivilized, forgotten hamlets; of navvies who threw turnips at him, of interrupted marriages, of gipsy christenings, of eccentric parish clerks; of the church where there was a swarm of bees behind the altar, members of which community would crawl disconcertingly over his surplice; and of that other Cambridge church where a scientific former incumbent, Professor and Rector and Senior Wrangler to boot, had erected a parabolic sounding-board over the pulpit, the focus of which was occupied by the preacher's head. From the congregation's point of view this arrangement was delightful, for the principle was acoustically perfect, and the speaker's voice carried to the farthest seats. The professor parson, however, had overlooked the consequences upon the preacher himself. Before the service began Bacon was warned, as was every new clergyman who came to the place, that he might possibly be disturbed in the pulpit, and before ever he had announced his text he understood the significance of the caution. For if the great parabola had the power of reflecting the preacher's voice, it was also equally efficient in collecting the sounds which came from the congregation. Every rustle, every cough, every footfall, every turning leaf, were gathered together into an overwhelming whole which smote upon the ear in the focus in a continuous buzz, alike unfamiliar and disconcerting. My father was wont to say that he feared his sermon suffered not a little in consequence, but at least the incident served to impress the acoustic principles of the parabola firmly upon his mind—a fact that he found useful in later days.

These clerical journeyings around Cambridge recalled many times to him a story of the past often related by his father, to whose college days it belonged.

In the early years of the century there lived at Cam-

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bridge an old clerical pluralist of the name of Field, who held the livings of Hauxton-cum-Newton-cum-Barrington, three small villages covering a wide area a few miles out of the town. The responsibilities of so large a cure weighed in no wise heavily upon their Vicar. Being of a social disposition, he found it suited his convenience a great deal better to make his home in Cambridge, and all the week to leave his parishes to take care of themselves. He probably argued (if he troubled about the matter at all) that they got on just as well without him, which was doubtless the case. On Sundays, however, something in the nature of duty had perforce to be gone through. Accordingly in the morning he would mount his old pony and ride out along the Trumpington road towards Newton. Before reaching it he would pass the corner of the road which led to Hauxton, and here he would pause a moment and look anxiously down it. If a Hauxton congregation had been inconsiderate enough to assemble for service, the parish clerk would be standing in the distance, waving his hat on a stick by way of signal. If, however, the road was vacant, the Vicar understood that no service was expected of him, and with a sigh of relief would amble on to Newton.

Here he knew that service must be taken, since the ladies who lived in the Manor House were regular in their attendance at church and would infallibly be present. It behoved him, however, in view of his long ride, to be expeditious, and he had his own peculiar method of saving time. He dismounted at the church and turned his pony loose in the churchyard to browse among the graves, but as he entered the gate of the hallowed precincts he began to recite the office of Morning Prayer, beginning with "Dearly beloved brethren," and continuing, so that by the time he had entered the building, donned his

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surplice and reached the chancel, he had got almost as far as the First Lesson.

This was a great saving of time and breath, yet nevertheless by the time he had reached Barrington in the afternoon his clerical labours had begun to tell upon him. Perhaps a few coprolite diggers were lounging about the churchyard waiting for service. To them he would say: "Now, my men, you are doing no good here! Here's sixpence apiece for you. Go off and drink my health!" Perhaps, however, it was a handful of bashful school-children who greeted his arrival. Them he would regard with a stern and reproving countenance: "Girls! girls! What do you mean by being out without your mothers? Go home immediately!" Having thus disposed of his congregation he would jog back to Cambridge, wearied indeed, but with the serene content of a man who has done his duty.

This was the story as my grandfather would tell it to his sons in their young days. Many years afterwards, curiously enough, Maunsell, the eldest, became himself Vicar of Newton-cum-Hauxton (Barrington had long been separated from the triple alliance). At Hauxton Church was still the original surplice that was in use in the days of Field, and his successor was quick to note how the back of it hung in curious curves where the linen had been torn by the spurs of the late divine, and the hem had been turned up time and again to repair the damage.

It is oftentimes difficult for the young, strong, and enthusiastic to realize, before it is too late, that there are limits even to *their* endurance, and that they run the danger of drawing overdrafts upon their store of strength and energy that may never be recovered. Troubles and anxieties came all too soon upon the happy pair. Fred

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Myers, the dearly loved friend and brother, sank into a rapid decline, and his life, which had opened most brilliantly, closed at only twenty-three at Mentone, in December, 1871. Less than a week before, Mrs. Myers, the mother, had died with great suddenness. This double shock naturally made Bacon anxious for his wife, then shortly to become a mother. On the 23rd of January was born their first child, Francis, to whom Beresford Hope stood sponsor at the christening. The young wife was long and seriously ill after this event. The young husband felt that the added responsibilities and expenses of fatherhood entailed upon him yet harder work and more strenuous efforts. One drenching, bitter day of April he took Sunday duty far down in the country, got wet through, and for many hours remained in his damp clothes. This was the finishing straw to a constitution already far overtaxed by anxiety and work. A violent chill was the result, which in its early stages was neglected and wrongly treated, until it developed into congestion of the lungs, and this in turn into more serious trouble yet. For six long weeks of bright spring weather he lay in bed, and when he rose at length he was but the shadow of his former self. He did not perhaps at first realize the full significance of the calamity which had befallen him, but in truth the mischief of a lifetime had been done, and the seeds of a fatal malady implanted. Already his bright career was nipped in the bud. Ere yet he had reached six-and-twenty he had received a handicap more completely and cruelly crippling than the loss of a hand or foot or eye.

The brief fragmentary diaries, half a dozen words to a day, which he kept during this and subsequent years, read inexpressibly sad to one who realizes the full meaning underlying the bald, terse statements. To his child, at

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least, they seem all the more pathetic by reason of their very brevity and simplicity, and above all, because there breathes through these records of dark days—and some of the times then and to come were dark indeed—the same spirit of patient courage, of brave endeavour under crushing burdens, of noble endurance, which all through his chequered life was the man's grandest characteristic. Even during the time spent in bed, when the journal of weary days is inscribed in faint, wavering pencil, the active brain is busily seeking distraction and ever finding fresh interests to occupy it. He takes up shorthand; he tries, when allowed to sit up in bed, to paint lantern slides; he becomes (by proxy) an enthusiastic gardener. The entries, "Pot *mimulus* and *verbena* cuttings," "Bed *calceolarias* and *petunias* and *asters*," "Start creepers in greenhouse," have so little suggestion of the sick-room about them that it comes as quite a shock to find, a full fortnight later, the record of his sitting up an hour or two in his bedroom for the first time. How radically different the treatment of pulmonary disease is in these days from what it was only thirty years ago, may be gathered from the fact that Bacon makes note of the window being opened in the fifth week of his illness, and this was in June weather. Yet his doctor and dearly loved personal friend was none other than George, afterwards Sir George, Paget, head of Addenbrooke's Hospital, as great a physician as his brother James was a surgeon. My father has told me in later years how specially trying to him, while he was ill, was this fetich of the closed window—he to whom from earliest boyhood fresh air and the cold morning tub were a veritable cult. He amused himself in bed with planning all sorts of methods by which free ventilation without dangerous draught might be ensured, and recommended them to his doctors, who

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laughed them to scorn. Nevertheless he lived to see his theories vindicated and not a few of the devices he had once conceived in universal operation.

During the summer he recovered somewhat and resumed his work, but his former strength had departed from him, never to return. He had lost the use of one lung completely and beyond all recovery. His gymnastic and athletic pursuits were entirely at an end. Henceforward he could not run, or even walk fast, or exert himself quickly in any way. In later years, when Anno Domini had worked its ravages upon his contemporaries and his own life of rigid simplicity and self-denial had preserved intact the active powers so often lost beyond forty, he regained somewhat the bodily pre-eminence he once held, so that men of his own years marvelled to see how much he could do and endure, and would scarce believe he was in truth so crippled as was the case. But in the days of his full activity and youth, with all his life yet before him, to be converted by one fell stroke from an unusually strong man to a semi-invalid—a thing of respirators and chest protectors—was a cruel blow indeed, and when the months passed by and brought no renewed strength, but in place ever recurring attacks of pulmonary hemorrhage, even blacker shadows lurked about the little Cambridge home where life had opened so brightly but a year ago.

What the poor devoted young wife must have gone through in these months of bitter trial is pitiful to dwell on, and yet even worse troubles were before her. In the winter of this ill-fated year a favourite sister died suddenly, and in the following summer the baby, their first-born, then a beautiful boy of eighteen months, was seized with convulsions. Again the brief diary record brings a lump to the throat of the reader who can feel the heart-

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break beneath the enumeration of doctor's visits, three and four a day, until "Babe at rest" closes the brief chapter of a tiny life.

Bacon's health still did not improve. The hemorrhages continued. Change of air was tried—Cambridge work abandoned, and visits paid among friends and relations. They went to Bognor, to Berkshire, to the Wye Valley, and the whole of the winter of 1873-4 from November to April was spent in lodgings at Torquay. Too often it seemed as if they were fighting a losing battle, but Bacon fought hard. Never for a moment did he allow himself to sink into the listless apathy of prolonged invalidism. His powers were sadly limited, but he made the most of them, nor ever lacked for interest or employment. He became a proficient in shorthand, and felt the value of it all his life. He resumed his interest in astronomy and bought and read many books, especially those of R. A. Proctor, then just coming out. He took up botany, and made carefully pressed collections of the flowers he could find in the short walks his feeble strength allowed him. At Torquay he joined the Art School and took lessons in water-colour painting. While there he also tried to test ocean currents by means of corked bottles thrown into the sea with stamped addressed messages within, and obtained a few curious results. How greatly his bid for health was assisted by his own pluck and spirit and the power he ever cultivated of throwing himself into outside occupation, it needs no physician to point out.

And he had need of all his strength and courage and patience, for a new trial, the severest yet, was upon him. The pair returned to Cambridge early in April, 1874, and on the 19th of that month their second child, a daughter, the present writer, was born to them. This was before

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the time of the highly trained nurses and watchful medical care of the present day. Some neglect occurred, something went wrong. Many months of deep anxiety and trouble and one shock upon another, had doubtless had their effect upon the sorely tried young wife, for all her placid sweetness and brave endurance. However that may be, immediately after my birth my mother was taken violently ill, her illness being all the more terrible and affecting in that it was of the mind and not of the body. There followed dark days indeed. The poor baby—innocent cause of the mischief—was packed off to its grandmother's care, while doctors and nurses held sway over the distracted Cambridge home. Chief nurse of all, most tender, devoted, patient, and unremitting in his care, was the deeply stricken husband. Despite his own broken health, he watched by his wife's side day and night until the acute stage of the malady at length was past. But his Gertrude was not yet restored to him. After many weeks and months the brain was still clouded, and it was felt at last that from time alone could be hoped the possible ultimate recovery.

Bacon felt that he had come, though all too soon, to a parting of the ways. Another winter had been spent at Torquay, yet still his health showed no signs of improvement. He went to the doctors with a definite inquiry. They shook their heads, talked vaguely, and recommended Madeira or the south of France. Bacon interpreted their meaning only too clearly. He was but twenty-eight, had been married scarce four years, but already his work was done, his golden dreams shattered, his bright career at an end. He who might have accomplished so much must meekly put his aspirations aside. His beloved Cambridge life, and with it all the high hopes and ambitions for which it stood, must be abandoned. Henceforward

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he must leave to others the sun-flecked upward path of honourable toil and well-earned success, and he himself must find some quiet backwater where, with his invalid wife and baby daughter, he might turn aside and—die.

Nothing now remained to keep him at Cambridge. His elder brother's University career was finished. He had taken his degree, had been ordained, and had been appointed to the living of Newton, where, with his family, he had removed. Cambridge life and climate were good neither for Bacon's health nor his wife's condition. Early in June, 1875, after ten years spent at the University, he left it for good, and by so doing closed—with what bitter pangs—a chapter of his life.

VIII

THE HOME AT COLDASH

BACON'S first move was to North Stoke, a little village on the Oxfordshire side of the Thames, not far from Moulsoford. He chose this spot in order to be near his second brother, Frank, who by this time had left the Service, had married, and lately had been distinguishing himself by the invention of a gun of special, and most ingenious, breech-loading mechanism. At North Stoke, Bacon spent one winter. But neither the house nor the climate proving desirable, he was soon seeking for a new home. Berkshire, his native county, had the strongest attraction for him, and he searched for a spot as near as might be to the scenes of his earliest recollections. At length he found it. Some four miles north-east of Newbury, about a mile and a half north of the great Bath Road, lies the little village of Coldash, perched picturesquely about the slopes and summit of a ridge of high upland known locally as "The Rudge." The church is reputed to stand the highest of any church in Berkshire, and this may well be the case, since it is 500 feet above sea-level. All the winds of heaven may, and do, blow clear about that lofty spot. From the road which runs along the top of the ridge are said to be visible the proverbial seven counties; that mystical number claimed for every lofty elevation in Great Britain, except the higher mountains,





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which demand belief in fourteen. Bacon, who studied the matter carefully, could never satisfy himself about the visibility of the seventh county, though of six there is no doubt whatever. It was his great delight to take strangers up to the high ground behind our house, and point out to the north the tree-clad Oxfordshire hills rising over the Berkshire downland, with the high ground of Nettlebed and High Wycombe in Buckinghamshire on the far horizon ; while to the west and south could be seen Wiltshire and Hampshire, with a distant blue glimpse of the Surrey Hog's Back above the woods to the extreme left.

Within the memory of not very aged inhabitants, Coldash was an unenclosed, uncultivated upland common, surrounded by long stretches of woodland, with a few humble, remote cottages scattered haphazard about it. Some fifty years ago the church was built, but for long there was no Vicarage, and the first Vicar occupied a house, almost the only one of any pretensions whatever in the village, which he himself enlarged to accommodate his increasing family. It was this dwelling which Bacon happened on. "Sunnyside" was an unpicturesque, irregularly built, yet roomy house with a blue-tiled roof, standing just below the summit of the hill. Some nine acres of most picturesque grounds surrounded it, all sloping and undulating, so that there was not a level square yard in the whole estate, all the more beautiful on that very account. A broad green lawn led down to a pond overhung with willows, where white waterlilies grew and where a couple of swans used to float. A deep gully was crossed by a long rustic bridge, trailed over with roses ; fine trees surrounded the house, and the meadows were rich and fertile. It was a delightful spot, and Bacon fell in love with it at once. Its beauty and health-

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ful situation appealed irresistibly to him ; its remoteness and loneliness (for in those days at any rate it certainly deserved such qualification) he considered no drawback under the circumstances. He removed there with his family in the early part of 1876, and there for all the rest of his life, wellnigh thirty years, he made his home.

Bacon was the type of man who loves his own nest and clings to old associations. He delighted and revelled in his beautiful Berkshire home from the first, and the years only made him more passionately attached to it. He had every reason indeed to love it, for to begin with at least it brought him renewed health and happiness. From the time of arrival his wife's health began rapidly to improve, so that in a very few months she was entirely herself again ; and the consumptive semi-invalid, her husband, who imagined his days were numbered, found soon that the pure breezes and bracing, if rigorous, climate of the upland village were bringing with them slowly, but surely, returning health and vigour.

Coldash has become a popular health resort in these days. Its special properties and attractions are known to the multitude, and are becoming more and more exploited year by year. It is hard enough to realize the place as it was thirty years ago, an unknown, unvisited, remote, neglected hamlet, with not even a village carrier to keep it in touch with the outside world ; its inhabitants a rough, uncouth population, ignorant and superstitious, whose sole interest and pastime was poaching. They gave (and still give) the hair of a stray dog in butter to cure their children of whooping cough. They saw ghosts and occasionally the Old Gentleman himself. The school being of recent origin, comparatively few of the middle-aged, and scarcely any of the old men and women, could read or write, and in all respects outside their very

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limited agricultural experience their ignorance was colossal. They ascribed their first Vicar's untimely death to the "overlooking" of a woman in the village, whose dark brows bespoke gipsy origin. They held strongest views upon the poisonous properties of blindworms and "efts" (pronounced "effuts"), as they called newts. They were ready with numerous instances of people who had lost limbs or life through meddling with these creatures, and if pressed hard with scientific argument and illustration would merely qualify their statements by the guarded reply that "Some says 'tis one way and some t'other, but if they things beant all'us venomous they'd maybe turn so at any time."

Such were the people and such was the home where Bacon found himself in his thirtieth year. He was now a man of leisure. His health at that time did not allow of his earning his own livelihood, nor was there any necessity for him to do so. But he was the last man in the whole world to remain idle. He read largely on all scientific, but especially astronomical subjects, and began to form the very extensive library which presently, every year adding fresh shelves, lined the walls of his own particular sanctum. He took up all manner of hobbies and pursuits, chemistry, gardening, rose-growing, music, what not. He was skilful at every form of handiwork, and loved to learn the "tricks of the trade" from every workman he came across, so that there was soon no kind of domestic craft with which he was not familiar, and no household emergency, from a leaky kettle to a stopped clock, from a broken window to an incapacitated pump, with which he could not cope.

But his principal work lay in other directions. It was not for himself or his own interests that he chiefly laboured. He had ever the strongest sense of the duties

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he owed his fellow-mortals. Charles Kingsley was his manhood's as he had been his boyhood's idol, and the clarion call to be up and doing for the good of humanity, as sounded in his stirring sermons and such books as "Two Years Ago," rang always in Bacon's ears. He quickly busied himself among his new neighbours. He began at once to help in clerical duty at Coldash and elsewhere, to establish and assist in parochial institutions, and, by concerts, lantern entertainments, and the like, enliven the long winter evenings in a manner quite unwonted in that secluded spot. He was specially anxious to provide some interest for the male population of the place which should prove a rival attraction to the public-house and illicit snaring of game, till then the sole masculine relaxations. The happy idea struck him of inaugurating a Cottage Show, exclusively for the villagers of Coldash, when substantial prizes should be offered for the best garden produce, and the stimulus of competition should prove an incentive to the cultivation of cottage gardens and allotments, with results alike profitable to mind, body, and pocket.

It may seem, nowadays, when such institutions are as common all over the country as daisies on a lawn, that there was nothing specially original or important about such a scheme ; nevertheless, in this, as in many other movements, Bacon was a true pioneer. Thirty years ago, in South Berkshire at any rate, cottage shows were practically unknown. The towns had their horticultural societies, and certain large neighbourhoods would unite together for an annual exhibition, but for the smaller villages there was no provision, nor was such deemed possible. Since Coldash triumphantly led the way and demonstrated the practicability of such an enterprise, cottage shows have sprung up on every side, and now

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there is scarce a village within a twenty-mile radius of Newbury which has not its own annual horticultural fête. In thirty years the origin of popular institutions may well become obscured and forgotten. All the same, it was Bacon who set the fashion and who showed the way.

Of the real importance of such a movement among the rural population and of its widespread beneficent consequences, it boots not to speak. Suffice it to say that in Coldash, at any rate, the improvement was soon apparent. The inauguration and carrying on of such a scheme in those days, when all was new, meant no little thought and labour. Bacon formed a small committee of the neighbouring farmers, though he wisely kept the real control in his own hands. He interested the landowners and gentry in the matter, and obtained their subscriptions. He personally visited each cottage of the place, walked round the garden, discussed learnedly of "turmutts" and "'taters," and coaxed and cajoled the rustics, bashful and diffident to begin with, to exhibit their produce and compete for the prizes. He invited the neighbourhood and his own personal friends to be present and give countenance to the venture, and his brother Maunsell to help him and to make the humorous speech so absolutely necessary on such an occasion. He lithographed the small bills on his own stone, he gave his meadow for the show, he erected the tents and tabling with his own hands, he arranged everything personally, to the smallest detail. The day came and with it the cottagers (some wore smock-frocks still in those days) trundling their wheelbarrows full of produce. There were cheery greetings with "Dan'l" and "Will'um," and pleasant banter with "'Liza" and Mary, in their big sun-bonnets, carrying apples and pot plants, and the children with their gay bunches of wild flowers closely

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compacted. There was the bustle of staging, the solemn mystery of judging, followed by much refreshing of the inner man for the willing helpers. Then, the midday siesta over, the village echoed to the stirring drum-thumps of the advancing band—the tune they played a little vague, but the time the drummer kept beyond all praise—and with the band arrived the people, all in their best and cleanest clothes, and there was the pleasant smell of flowers and trampled grass and fresh vegetables, the keen excitement over the awarding of the prizes, the speeches, the cheering, kiss-in-the-ring, and the returning band storming “Auld Lang Syne” through the village in the warm summer twilight. It all reads trivial and archaic enough in these times, to be sure, scarce worthy of mention, but to the unsophisticated rustic dwellers of that remote, neglected spot it was a red-letter day indeed, and fraught with overwhelming interest. The first Coldash Show was voted on all hands a tremendous success, and thus was happily inaugurated an institution which Bacon continued for twenty years, and the influence of which is yet fresh and still extending over a large and ever-increasing area.

In these and similar labours, in all manner of in- and outdoor pursuits, in visiting and entertaining friends, and all the while to Bacon in winning back health and strength, passed four pleasant, peaceful years. In the autumn of the year after they came to Coldash he took his wife abroad to Paris and Switzerland, and they both regarded this little trip as their real and long-deferred honeymoon, which was to inaugurate a new and, they hoped, happier life. Alas! sore trouble was yet before them.

Under date December 28th, 1880, the laconic diary before mentioned contains the simple entry, “Third

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child born, Pigs killed"—a record the callous brevity of which was a source of much amusement and banter in later days. The child referred to was a son, Frederic, named after the favourite brother. The winter that he was born was long remembered—in fact, is not yet forgotten—in the south of England by reason of the great snow storm. Unusually mild weather before Christmas had given place to bright frosty days at the beginning of the new year, which continued with ever-increasing rigour until the 17th of January. That night the snow began. Next morning the village woke to a white world covered with snow so deep that no postman could make his way through the choked lanes to the upland heights. Still the snow fell, sweeping down in volleying gusts from the dark sky and piled by the fierce wind in mountain drifts that reached the tops of the hedges. Coldash was in a state of siege, and not only Coldash but every outlying village throughout the country. Trains were snowed up all over England, nearly one hundred barges were sunk at the mouth of the Thames; the pier at Woolwich was carried away by ice, and the Post Office announced that communication between London and the provinces was almost altogether stopped.

All that day it snowed, and far into the night. Bacon at that time possessed a beautiful St. Bernard dog of unusual size and great intelligence. Big as a small calf, with tawny coat and grand waving tail, he inspired terror in the juvenile breast as he walked abroad, almost upset his master when in playful gambols he placed huge fore-paws upon his chest, and many times bowled over the little girl who threw sticks in the pond for his delectation and got wet through when he shook himself over her after his swim. That night, the second night of the storm, Lion, tied up in the yard, barked wildly and ceaselessly,

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apparently for no reason, for, true to his instincts, he loved the snow and preferred to sleep on it rather than inside his kennel. Morning came, and still no postman reached the beleaguered village, but soon tidings got about of a piteous tragedy which had occurred in our very midst. In an outstanding and solitary cottage on the hill, visible from our windows, lived a labourer—a carter, a steady, middle-aged man. On that terrible day he had gone with his wagon and team to a place some miles distant. The roads were awful, and for many hours, during which he was without food, he had battled desperately with the snow and storm. But at length he could get his wagon no further, and leaving it in a place of safety for the night, he unharnessed the horses and started by himself to lead them homewards. The short, dark winter day drew quickly to a close, darkness fell, and along the heights of the Rudge which he had to traverse, the wind, thick with whirling flakes, swept fierce and ever fiercer about him. He reached the gate of the field across which lay his house. Only some hundred and fifty yards separated him from his own doorstep, but his sorely tried strength was failing at last. The fatal stupor of intense cold was creeping over him. Overpowered at length, he sank down under a hedge where the wind had blown a space clear of snow, and here his own son found him next morning, frozen to death, with the patient horses standing unharmed beside him. Bacon was terribly upset at this pitiful event which had occurred almost at our very doors, just at the top of our own meadows in fact, and he never ceased reproaching himself that he had lacked the power to interpret the meaning of his wise dog's warning.

But all too soon his own cares engrossed his attention. At first, after the birth of her son, it appeared as if all was

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going well with the mother, and the shadow of a great dread, which could not fail to oppress them both, seemed lifting, when signs of the old trouble began to reappear. In vain change of scene was tried. A complete breakdown ensued, and although the acute stage passed quicker than on the previous occasion, yet never afterwards, during the whole of the rest of her life, did she ever fully recover her mental balance. For fourteen more years she lived among us, loving and beloved, perfectly happy and content, her sweet unselfish nature unchanged, her love for her home and family undiminished ; but henceforward she could no longer be her husband's intellectual companion, enter into his pursuits, or triumph in his success. She could no longer bring up her children or rule her household, or entertain her friends, nor, despite long years of hoping against hope, did the power ever return to her.

To me, the fourteen years which followed seem ever the finest of my father's life. Not till they were over had he opportunity of showing his real power to the world, or of doing the particular work which has made his name and fame. The very circumstances of his trouble compelled him to lead a quiet, retired life, rarely to leave home, to entertain few friends, to abandon intercourse with the world outside his own immediate circle. Yet surely, if our Christian beliefs count for anything, these fourteen years of purest devotion and self-sacrifice, patient hope, brave endeavour, manly fortitude, uncomplaining resignation and noble example, yield place to none in true value and importance, and rank higher than all earthly success and honour in that complex whole which makes the Man. Lacking these years, he had surely lacked much of the wonderful power of sympathy and understanding with high and low which endeared him to all

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with whom he came in contact, and gave him a marvellous attraction and influence, especially over the young. Lacking these years, his best loved, and those few who had his whole heart, would have lacked an ensample which all their lives long will stand to them in highest and holiest recollection.

Not even his own children knew, though they might partly guess, what his trouble meant and entailed upon him. Never had wife a more tender, devoted husband. Hand and foot he tended and cared for her, even to brushing and combing her long hair, which never to the end of her life was streaked with white. Her affliction only endeared her the more to him. He was ever by her side, and all his thoughts were for her pleasure and comfort. To his boy and girl he was henceforward both father and mother, instructor and ruler, playmate, guide, philosopher, and friend. Alone he brought them up, alone he educated them, alone he ordered his house and controlled his servants, Everything, even to the most minor domestic affairs, hung upon his shoulders, and he stood alone.

One thing at once became evident to him after the first few crushing months of his trial, and that was that if he was to preserve health and spirits he must seek outside distraction. Forthwith he threw himself heart and soul into every kind of pursuit possible to him under the circumstances, and particularly he redoubled his efforts on behalf of others. If he had worked hard for his neighbours before, he now worked twice as hard. Tiring of occasional duty, he attached himself as clerical assistant to a neighbouring clergyman and friend, the Hon. and Rev. J. H. Nelson, greatnephew of the mighty seaman, who held the Rectory of Shaw, four miles distant. Curate he could scarcely be considered, since the stipend he

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accepted to make the matter binding was nominal only (Never at any time did he derive any income worthy the name from his clerical profession.) But with two and three services each Sunday, saint's-day and other week-day duties, Sunday-school teaching and visiting, he did a full curate's labour. It was work for which he was naturally well endowed, for he was a particularly good preacher. His sermons (at first written, latterly extempore, but always carefully prepared) were scholarly and finely worded, with the true "grip" of conviction, which riveted the attention even of the most somnolent of Sunday afternoon congregations. Theological hair-splitting and abstruse problems of divinity were not to his taste. He loved best to choose his text from the burning pages of Isaiah, and send his hearers home with the stirring message or the stern warning ringing in their ears. He was the lucky possessor of a splendid and most sympathetic voice which he knew how to use to best advantage. He ingratiated himself immediately with all with whom he came into contact. Had his tastes and inclination really lay, as he once thought they did, towards the life of a parish priest, there is no doubt he would have made a highly popular and successful one.

For seven years he held his position at Shaw, driving the four intervening miles in summer and riding them in winter, always with such regularity that the cottagers whose houses he passed set their clocks on Sunday mornings by his appearance. He allowed himself no holiday, save the usual "parson's fortnight" every autumn when he took his family to the seaside. In all those years he never once missed a service, or, save once when on a frosty day his mare came down under him, was even a minute behind time. To this riding and driving in the open, through all weathers, he attributed his recovered

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health, and the fact that never during all that while did he once suffer cold or indisposition.

But he had plenty of other vent for his activity, and scope for his enterprise. The great event of the year to his village was of course the flower show, and he now set to work to add more attractions to the programme and render it more specially unique every season. A cat show was the first and very popular addition, and village matrons brought their favourites in baskets, and children staggered under their unwilling burdens, who frequently escaped at the last moment; and rows of sleek pussies with ribbons round their necks, with and without their families, labelled with fanciful names and prices, as "Angelina, 1000 guineas," "Cleopatra, £500," and so forth, sat on red cushions behind restraining wire netting, and regarded the spectators with sulky indifference or smug and purring self-satisfaction.

A donkey show was the next addition, and then all manner of side-shows and exhibitions. One year a skilful *chef* in white cap and apron, with portable cooking stove, gave illustration to the villagers of the making of wholesome and inexpensive soups and stews. Another year a fountain (reputed to be of marvellous healing power) spouted home-made lemonade. A display of every kind of domestic handicraft was succeeded by a bee tent, and practical illustration of the various means by which enterprising cottagers might add to their earnings. The Coldash Show was becoming a very popular and widely known institution, and the fact that there were practically no outside expenses connected with it, that there were no paid assistants, and that Bacon did the work with his own hands and devoted his time without limit, enabled the enterprise to be almost self-supporting, and to distribute substantial prizes with a list of sub-

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scriptions far smaller than that needed by even the most modest village institutions. Year by year Bacon added to the attractions and at the same time lessened the expenditure. He and his wife between them produced not only all the flags and streamers which made the field on show day a rainbow of colour, but they actually set to work to manufacture the very tents which housed the exhibits; she sewing the long seams, he planning and cutting out the material, arranging the gores, turning the finials, planing the poles, and working the ropes. The sewing and arranging were all done in the garden in summer time, the material spread out on the grass, and in a few years they made some dozen and more tents, several of considerable size, and equal to any professionally turned out articles.

The next economy was to set up a printing press and outfit. An upper room of the house was given over for the purpose, and here Bacon spent happy hours turning out handbills, prize cards, programmes, church notices, leaflets, and so forth, not only for himself but for numerous friends and acquaintances. In this, as in all his other pursuits, he trained his children to help him, and it was their keenest delight to pull the printed sheets deftly from the press, to pick the type out of the cases, and later, when their spelling powers were equal to the task, to "compose" it in the "stick." It was a delightful way of simplifying the art of learning to read. It put ordinary information in a fresh light, and added details of new and absorbing interest, so that the difference between an "em" and an "en" quad, and the position of the letters in a type case, were learned along with the alphabet and as deeply impressed on the mind.

Desire to add to the attraction and usefulness of the cottage show led constantly to new developments. The

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first and most important was handbell ringing. Bacon had never lost his old love of campanology, though it had now been long since he had taken his place in the ringing chamber. He might never hope to do so again, but much pleasure could be derived from handbells, and he conceived the design of forming and training a handbell team, ostensibly as an attraction at the show and other village functions, but very largely with a view to providing a healthful interest among a certain class of men, whose needs are apt to go uncatered for in village circles. He chose his team of eight with great care. There was the village baker, a local joiner and his brother, four farmers or sons of farmers, and himself. Later, to fill the gaps which occurred, a retired police officer, a young schoolmaster, the village carpenter, and others, were added to the ranks. Between these men and their leader there soon arose a bond of almost brotherly union. They one and all looked up to their teacher with wellnigh reverential love and admiration, and he in turn regarded them as his own chosen disciples. They were at his beck and call for every manner of enterprise; no tasks were too hazardous, or arduous, or ridiculous for them. They followed him blindly wherever he led, and never had man more faithful, devoted colleagues. Chief among them in point of age, size, and strength was an old Scotchman, once head-gardener in large estates, now a small and not very prosperous farmer, of unusual bodily powers, of iron nerve, of inconceivable rashness, with the strongest sense of humour, the broadest Scotch dialect, the wickedest love of mischief, and withal the tenderest and kindest heart that ever beat. Like so many of his class, he had his weakness, the difficulty of saying "No" to the promptings of so-called good fellowship, and it was for this very reason that Bacon enrolled him a member of

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the ringing team and specially shared with him all his subsequent pursuits and hobbies ; thereby occupying the old man happily and harmlessly many evenings that might otherwise have been spent to less advantage. For very many years, long after the ringing days were over, the old farmer, by tacit consent, would come up two and three nights a week, one being invariably Saturday, to play billiards, drink his single glass of whisky, and discourse with great shrewdness on every conceivable topic. Between him and my father there existed the truest bond of friendship and mutual esteem. There was nothing that either would not do for the other, but it fell to Bacon's lot to perform the last office for his old comrade. One bitter cold winter afternoon he was summoned hastily by tidings of an accident, and, hurrying to the farm, found that the old man, chilled by a long drive from market, had fallen on his head from the cart he was descending from on to the iron-hard ground of his own yard. It was Bacon who lifted the poor grey head and tried vainly to force stimulant down the lifeless throat. It was Bacon who broke the tidings to the widow. It was Bacon who wrote the obituary notice for the local press and followed to the grave the old friend he loved well and mourned deeply.

Another specially loved member of the band was a tall, good-looking young farmer, stout and strong enough apparently, but who, as the result of a neglected cold, caught in the bitter nights of lambing season, sank presently into a decline—a common enough story, unfortunately, among his class. Bacon did everything he could for his assistance. He took him to town to see a specialist, and afterwards, at his own expense, to the seaside, where, I recollect, the visitor (it was his first sight of the coast) remarked that the sea went uphill, and displayed

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an inordinate fear of being caught by the tide. But in despite of all the disease ran its fell course, and there was a touching scene when the two friends bade each other a last farewell. For the young schoolmaster, who displayed musical talent, Bacon provided organ lessons, which were turned to good account. For a fourth, it may perhaps be mentioned (whose head measure was the same as his own), Bacon dedicated one of his top-hats, which was borrowed indiscriminately for weddings and funerals. Not one of the party still living (for quite half have joined the majority) but still gratefully remembers their leader for many happy hours spent together, for many little deeds of kindness, and a helping hand held out in the hour of need.

The ringing team were as true-hearted a set of men as could be desired, but it cannot be conceded that they were musical geniuses. Scarce one of them could read a note of music, and the task of teaching them was laborious in the extreme. One method employed for aiding their memories and sharpening their wits, was to compel the defaulter to take a specially strong shock from a galvanic battery, while his comrades stood round and jeered; but no shock was too strong for the old Scotchman, who therefore remained incorrigible to the end of the chapter. Nevertheless, by dint of much patience and by specially invented and extraordinarily simplified "scores," most successful results were attained. The Coldash Ringers became famous throughout the whole neighbourhood, and were greatly sought after for all manner of entertainments, often going many miles to exhibit their skill and add to the pleasure of their neighbours. Bacon's bells were of specially soft tone, and in later years he almost doubled their number with his own hands, making the moulds from which the metal was cast in a local

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foundry, and then turning these rough castings in his lathe, tuning them carefully (by no means an easy task), making the handles and clappers, and completing them in every particular. The long range of handbells was quite a feature of the Coldash home, and afforded no little amusement to visitors and friends long after the old team was scattered and gone.

Out of the interest excited by this new venture grew a handbell competition, which for several summers was a famous annual institution at Coldash. Campanological experts, from St. Paul's and elsewhere, were the judges, and competing teams came from all the countryside, the whole neighbourhood flocking to hear them. The success of these institutions encouraged Bacon to add to them. The good old country competition—once widely popular—of a ploughing match had died out in South Berkshire, and Bacon set himself the task of reviving it. Various meetings took place under his guidance. The movement was very popular, and, due to his exertions and with the addition of his own original attractions, "caught on" immediately. As in the case of the cottage show, others took the enthusiasm and followed suit, and ploughing matches are once more common functions in the neighbourhood.

The next hobby was bee culture. In those days, twenty years ago, interest was first being aroused in local and specially village industries, and in the means by which the labourer might be taught to add to his earnings and to the limited interests of his life. Bacon became bitten with the idea. He started bees himself, made his own hives and appliances, went long distances to consult authorities (for in those days the science of bee-keeping was in its infancy), read up every book on the subject, and adopted every latest improvement. Whatever

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work he undertook he gave his whole soul to, with the result that he always achieved success, and with bee-keeping he was very successful indeed.

Where he succeeded others must share too. He thirsted to impart his new-found knowledge. The outcome of his desires was "The Newbury District Bee Association. President, The Queen (bee). Hon. Sec., J. M. Bacon. Expert, S. Knight, Jr." Not much in the way of subscription was needed to float and work the new enterprise, for there were no salaries, Bacon did the printing, and he and his wife made the bee tent with their own hands. The "expert" was another true and trusty friend, who can to this day recall merry memories of long drives to outlying parishes, the secretary driving his mare in a tax-cart laden with tent poles and canvas and apparatus, a "skep" of bees between their legs, which probably came unsecured before the end of the journey, with exciting results; or of bee-driving experiences when the bees got "nasty," and the two men behind the black gauze curtains had to appear serenely unconscious of bees up their sleeves, and bees down their necks, and stings which, despite their immunity due to the frequency of the occurrence, made it hard at times to smile and look happy. The Bee Association did good work, but it was sometimes uphill labour. The ignorance of the peasantry was only equalled by their determination to remain unenlightened. One summer Bacon thought he had made some progress in his own home. It was the custom of the village bee-keepers, of course, to take their honey every autumn by the primitive method of killing the bees. Bacon persuaded them to let him save the bees' lives by driving them instead, giving the owners the honey and taking the stocks himself. At first the villagers were delighted enough with this plan, which

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saved them all trouble in the matter ; but the following winter was a specially bad season, and as a consequence many hives died. The cottagers saw in this only the direct result of the new-fangled notions, and reverted promptly to their ancient barbarity.

Bacon taught his children to help him a little in this work, but beyond their feeble aid he could get no assistance from the Coldash yokels. The old Scotchman was altogether too reckless ; the rest of the ringing team would have followed him through fire and water, but they drew the line at bees. His own gardener was the biggest coward of the lot. He used to complain loudly that the row of hives interfered with his work in the kitchen garden, and tell endless stories of the way in which he had been attacked. " But they never sting you, do they, Alfred ? " asked my father one day after one of the periodical growls. " No, sir, I can't exactly say as they *stings*, but they *pricks* a bit sometimes," was the startling reply. It was the same trusty servant who came to consult his master one morning about the " harmonium " in the stable, and Bacon was much exercised as to this strange position of a musical instrument, until it dawned upon him that " ammonia " was probably intended. It was a friend of the gardener's, so he said, who died (not inappropriately) of " begonia," and it was one of the elders of the ringing team who one night, discussing " ritualism," said he understood it was the custom in certain places to burn " insects " in the churches—surely not a bad plan where ancient cushions and hassocks do abound.

IX

A FIRST BALLOON ASCENT

FLOWER shows, bee-driving, and handbell contests were summer occupations, but there were plenty of winter diversions as well. First and foremost, and most keenly enjoyed of all, came firework making. I suppose it was the boy instinct in Bacon, an instinct he never outgrew, but it may be doubted whether even ballooning afforded him truer pleasure than the making and letting off of his own fireworks. In the many years covered by the diaries aforementioned there stands one entry, and one only, written in red ink. This is the record of the firing of his first rocket—a red-letter day in very truth. As usual, he went into the art very thoroughly, made his own apparatus, and bought his own experience.

His skill increased rapidly, and proportionately his rockets grew in size until they culminated with a leviathan of twelve pounds or more, the case strengthened by lashings of cord, and secured to a regular pole by way of stick. Making fireworks was a capital diversion for bad weather, and the whole family, with the outdoor servants to boot, all with large aprons and blackened faces, would find employment in the barn which did duty as an outdoor workshop, cutting brown paper, rolling the cases, “choking” the rockets, moulding stars, and loading Roman candles. The outcome of several weeks’ labour would be a grand “display” one calm moonless night,

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when the whole village would assemble on the lawn or in the meadows, and gaze with open-mouthed and gasping appreciation at flights of rockets, bursting shells, twirling tourbillions, bombardments of coloured stars, gerbes, catherine wheels, and the like. Great was the excitement afforded by these entertainments. The old Scotchman, who must necessarily be chief assistant in the firing, kept his leader in agonies by the tremendous and quite unnecessary risks he insisted on running. One night a "pigeon" escaped from its restraining cord, and after ploughing an alarming course among the crowd, made a neat little hole through the glass of a bedroom window and burnt up part of a carpet and the towels on a towel-horse, before its location was discovered. Winter by winter the displays became more elaborate and ambitious, while novel features were continually being introduced. One time the home-printed programmes, illustrated with spirited woodcuts (also Bacon's handiwork) announced the promised arrival of distinguished visitors—to wit, King Hokie Pokie and certain of his loyal subjects from their Cannibal Archipelago. In the midst of the fireworks these dusky warriors, wild and ferocious of aspect, suddenly appeared, dancing around a coloured watch-fire to the strains of their national anthem; while the indulgent, but slightly scandalized, Rector of Shaw beheld his clerical assistant, the dining-room woolly hearth-rug about his waist, his blackened head stuck with white goose feathers, wedged half in and half out of a paraffin barrel, carried in triumph on the shoulders of his comrades (the ringing team), similarly attired.

The fame of Bacon's fireworks spread abroad. He widened his field of action and gave exhibitions in surrounding villages to help on local institutions, Primrose

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League entertainments, and the like. His winters were soon completely filled, for he became the recognized popular entertainer of the neighbourhood. Generally the handbells formed part of the répertoire, sometimes fireworks, or both. Hokie Pokie occasionally showed himself, and so did Ching-Fo, the great Chinese giant, 8 ft. 5¼ in. in height (but rather short in the arm), who was very splendid in appearance but not very firm in gait, since the Scotch legs would indulge in such vagaries and fits of chuckling that the little baker above, who wore the great green hat and portentous pigtail, was hard put to, to preserve his dignity and balance.

On less ambitious occasions it was "Al-a-Humbug, the Eastern Magician," who provided the entertainment. Sufficiently disguised in spectacles, lofty cap, and long white beard, and clothed in scarlet robes thickly embroidered with cabalistic signs, Bacon would mystify rustic audiences by incomprehensible conjuring tricks of the scientific order; take their photographs through a marvellous camera on sheets of paper which, when damped, would display lineaments declared to be exact likenesses; and compound chemical smells of such terrific intensity that the company have been known to rise to their feet and fly, until open windows had somewhat cleared the atmosphere.

One specially severe winter, when a good deal of distress prevailed, Bacon went into the subject of cheap and nourishing food for the masses, and read all that Count Rumford and other experts have had to say on the matter. The result was the institution of soup evenings in our barn at Coldash, when the villagers brought their basins and consumed generous helpings of strong and tasty vegetable soup, thickened with oatmeal and suet dumplings, which was universally voted excellent, and the recipe of

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which (in part arrived at by Bacon's own experiments in a pipkin over the study fire, for he liked to experimentalize in cooking as in all other things) was widely disseminated. An hour or two's entertainment followed the soup-eating, and the natural sequence of these social evenings was the establishment of a young men's club in that same invaluable barn, duly decorated and arranged for the purpose.

The Coldash Club, while it lasted, was an unqualified success, which is more than can be said for many similar institutions. Again and again, at clerical meetings and the like, Bacon heard his brother clergy acknowledge and deplore the impossibility of preserving interest in village clubs, started with considerable outlay and much flourish of trumpets, but after the first few months, when the novelty had worn off, deserted and inoperative. He drew his own conclusions, and later, at the end of some four or five years, looked back upon his own venture with pardonable self-congratulation; for until the day when, through pressure of other work, he decided not to reopen the club another winter, the muster roll was as large as ever, the interest as keen, and, while the expenses were practically *nil*, the loafing, idling element of the village had most sensibly diminished.

For all this his own hard work and personal influence were entirely to thank. He had his ringing team to help him, but he himself was always present on club nights to keep the ball rolling, and he spent his time in devising fresh amusements and developments. The barn was enlarged to twice its original dimensions; a stage was erected, a cowshed adapted as "green room," Bacon added scene-painting to his other accomplishments, and soon theatrical entertainments were the order of the day. It was hard work to unearth much histrionic power in

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such a neighbourhood, but talent was discovered in unlikely quarters, and not the most finished and elaborate performances at the Lyceum or His Majesty's were ever received with more whole-hearted and rapturous applause.

The barn came in useful also for other kinds of meetings. At the close of 1885 was fought the first General Election after the extension of the franchise. For the first time the unsophisticated Berkshire yokel found himself the proud but somewhat puzzled possessor of a vote, and discovered that he had thereby become a person of importance ; while the further fact that he was also likely to become the dupe and tool of the unscrupulous had not yet dawned upon him. Bacon was no politician. He prided himself that newspaper reading occupied (or as he styled it "wasted") no part of his time. He was no respecter of institutions whose antiquity was their sole excuse. But at the same time he was no iconoclast, and the doctrines of Disestablishment, Home Rule and the like, were entirely distasteful to him. The Conservative candidate for South Berks was a personal friend, the model landlord of a large property. Bacon espoused his cause heart and soul, and for the first and only time in his life took an active part in an election. Conservative meetings were held in the barn, specially enlarged and decorated for the purpose. A small fountain played in front of the stage, and above the speaker's head a large Japanese umbrella, actuated by a bottle-jack, clicked slowly and ceaselessly round, displaying in turn the heads of various statesmen, one crowned by a big fool's cap. I don't know whether this ocular demonstration may have affected the issue, but the Conservatives won the day amid wild excitement which culminated, as far as Coldash was concerned, when Bacon brought the news from Newbury (there was no telegraph in those days)

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on horseback, with the blue ribbon of victory fluttering from his whip.

My father was Ruling Councillor for a while of the local Habitation of the newly founded Primrose League. A far more important position was that of Poor Law Guardian, which he held for several years. To the enumeration of all these labours, responsibilities, and pursuits, must needs be added the entire education of his boy and girl. No governess or tutor was suffered to invade the sanctity of the home circle, no school terms apportioned out the year. Friends and relations looked with apprehension on this unconventional upbringing, and were minded to remonstrate at what they considered so momentous and drastic an experiment. But Bacon had the strength of his convictions, and, as ever, he went his own way. His methods of teaching were unique but extremely effective; his curriculum also was distinctly out of the ordinary. French and Latin, and later (for the sake of the Cambridge "Little Go") Greek, were included in it, though no great stress was laid upon them. History, geography, and grammar were left very much to look after themselves, but mathematics with both his children was carried much further than usual at their age, and natural sciences, elementary astronomy, chemistry, botany, and physics, formed a considerable part of the day's work. His specially avowed aim was to teach his children to think for themselves, and to implant in their young minds the desire for knowledge as more important than the knowledge itself. To this end he assisted and encouraged them without stint in any pursuit for which they showed inclination, and placed at their entire disposal a splendid library, the contents of which were varied enough to suit the most catholic of tastes, and to throw light upon every conceivable topic

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that came to hand. One peculiar method of education he adopted was to set various subjects on which, after due interval for preparation, we children had to deliver, without notes, and in the presence of a small audience, something that we proudly termed a "lecture." This proceeding possessed special advantages of its own. My father held that many men (though perhaps scarcely as many women!) are much handicapped in later life by fright at the sound of their own voices, as witness many a painful exhibition at after-dinner speeches and the like. I think both of his children have lived to prove the wisdom of the early training that taught us to assimilate facts with a view to imparting them to others, and rid us of nervousness and hesitation in so doing.

Thus passed several peaceful, useful years. They were happy years too, on the whole, I believe. The shadow of one great trouble never lifted, but Bacon had learned the solace of hard work, and his children, with whom he shared every interest and occupation, were growing more and more into his companions. So far his labour had been all for others, but there came a day, at last, when he felt he had fairly earned a "treat" for himself, and of the form which this indulgence was to take there could be no doubt. The story of his brief holiday experience, fraught as it was with unforeseen but all-important consequences, was written by my father, some short while afterwards, for a manuscript magazine circulating among a few friends and relations. It has never, to my knowledge, been printed before, and may therefore be here reproduced. It bears the, at first sight, ambiguous title of "In Memoriam," and it must be borne in mind that it was penned almost twenty years ago, when ballooning was a very different matter from what it is at the present day.

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I left this world about 5.15 on August 20th, 1888.

The above announcement, in that it reads only too like an incident that must come into every life, needs further explanation, for my departure from earth differed from that of most in the fact that I came back again.

The event I proceed to relate was one that I had fondly looked forward to for many years. Indeed, I may say it was the realization of the earnest wish of half a lifetime. Never more eager than I did sailor-boy "whistle to the morning star." And not even Kingsley himself among the primeval forests could cry with truer enthusiasm "At last!" than did I on a summer evening as I floated at a vast height over the heart of mighty London, the roar up from ten thousand streets ringing in my ears, and the feeling that ten times ten thousand eyes were centred on the little craft that bore me.

A balloon voyage worthy of the name is not altogether an easy matter to arrange. It is easy enough to pay your footing and secure a seat in an ordinary ascent at any gala gathering, where the aeronaut has based his estimate on getting to earth again as soon as he is fairly out of sight, and so you find your trip terminate somewhere the other side of the next parish. But this was not a voyage, in my eyes. So I sought the assistance of perhaps the best man then before the public, Captain Dale, the aeronaut of the Crystal Palace Company, and a distinguished pupil of the great Coxwell himself. He readily entered into the spirit of my proposed enterprise.

He was making ordinary ascents from the Crystal Palace every week, and we soon arranged that we should wait for a full moon and, if conditions favoured, stay aloft and pursue our voyage through the night

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until, as we agreed, we sighted the sea somewhere. On the day decided on his engagement required him to make his ascent at 5 p.m., and I therefore repaired to the Palace gardens early in the afternoon to witness the process of filling and other preparations; for the balloon set apart for us had a capacity of 80,000 cubic feet and would require four hours for inflation.

If any one looked like business that day I rather fancy I did: clad in a mackintosh, though the day was lovely, and straw hat, and wearing a satchel over my shoulder containing a good square meal, in case of emergency. However, on attempting to step over the balloon enclosure a policeman obstinately interfered, with a large amount of customary bluster, and would nohow be convinced that I meant going up. Bobby took some talking to, and when I had presently won his confidence I took him to task for his behaviour. "Well," he pleaded, "we have to speak sharp. When it comes to the start you'll see there'll be twenty of us here, and then we shan't keep the crowd back." But when it did come to the start the balloon herself kept her own ground clear, as I shall show.

At the time of my arrival a large portion of the space within the enclosure was spread with a tumbled heap of silk and netting, in the centre of which an excrescence was rising, in shape like a mushroom. It was not a little difficult to conceive that that inert and shapeless mass would presently grow into a monster that would carry five men, and all their baggage, away into the skies. But the filling was really going on apace. The skipper himself soon made his appearance, dressed like a naval warrant officer.

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Captain Dale was a short, powerfully built man of thirty or so, full of life and energy, with a keen grey eye and jovial manner. He was full of spirits about our venture, for he had made some two hundred ascents, but never one that promised better luck. The upper currents, if they kept steady for two hours more, would carry us over the very heart of London, a piece of good fortune which had never happened before in his experience. "And what do you think of the weather, Captain?" I asked. His manner of answering the question struck me. Craning his neck backwards and shading his eyes, he bent his gaze steadily on the light drifting haze far, far up. That was the point of the sky that most concerned *him*. "All is clear for 6,000 feet, if the clouds don't come up." That was the great question, and none could answer it, for that was the exceptionally wet summer we all remember, and no day was to be trusted.

Meanwhile the mushroom grew on and began to gather its skirts into shapely proportions. Presently there was a smell of gas and the Captain put his nose down and sniffed the gale, and all his little pack likewise put down their noses, and following the scent we soon found a small rent in the silk through which gas was escaping. This was a mishap, and I watched with something more than curiosity how it was to be met. Apparently it was nothing new or unexpected, for Mrs. Dale (who I believe generally attended her husband's ascents) promptly appeared from somewhere and sticking on a patch proceeded to execute a makeshift job with needle and thread. The reason of my mentioning this incident will be apparent in due course.

But the mushroom was growing into a pear, and

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already it had lifted from the ground and was holding higher yet and higher some gigantic letters which now spelt out the word "Victoria." Moreover it—no *she*—was growing wayward, and the Palace men began to swarm round her and hook on bags of ballast which she would tug at and drop and then tug up again.

And now there came on the scene another member of the Dale family, Tommy, a merry, mischievous little boy of six, who busied himself in energetically poking in the silk with his fingers to see it puff out again. Then it did occur to me that Tommy's finger nails were very likely sharp, while the silk had been shown already to be somewhat rotten. So I tried to engage Tommy in conversation. I started such topics as should stimulate the interest of a boy of his years; but they seemed beneath Tommy's notice. At last, trying to edge him away from the balloon, I asked with affected animation, "How would you like to go in a balloon yourself another day?" "I've been up three times!" he replied, and with that took to poking away at the silk more vigorously than before.

It was now within an hour of the start, and we began more anxiously than ever to scan the sky. The only certain indication was that the wind which had been for some time rising would soon blow stiffly, and worse than that, in gusts. Then our little party began to muster. A train had just come in, bringing down from his house in town a young Berkshire squire whom I had induced to make the voyage with me. He was one of those sporting characters who are always ready for any new enterprise, one who had shot big game of all kinds in jungle and backwoods, and had had many an adventure both afloat

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and ashore. He was greatly bitten with my proposed voyage through the skies, but having lately taken one of his own farms in hand declared he could not afford it. However, I, his tempter was constantly by his side and ever whispered wicked words. "Hang it!" he said at last with emphasis, "I'll see if I can't sell a pig and come." And so there he was, and he looked a happy man. There was also another semi-professional, who was taking this opportunity of gaining experience and at the same time of rendering valuable assistance.

And now I bethought me of anxious friends. Were many dear hearts palpitating on my account? I couldn't be sure. Could I afford them one grain of consolation? Very likely. So I wrote a hurried post card to a favourite brother. I appealed to the tender feelings of my now friendly Bobby. Into his massive palm, that had so often succoured his fellow-man! I dropped my post card, likewise a shilling. He put the latter into his pocket, while I besought him in faltering accents to put the former in a Palace pillar box "when I was gone." He stoutly promised that he would; perhaps he did. If so, it must be there still, for it has never reached.

Hitherto I have said nothing of any other folks there that day. There were, however, 20,000 of them. It was a great temperance demonstration, the most noteworthy feature of which seemed to me to be the very large number of intoxicated people taking part in it. They were moving our way now, and began buzzing round us like a swarm of flies; there were the bluebottles too. You could see dozens of them edging their way forward to keep the crowd back from the balloon.

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But who was going near it? Restive and impatient of the gusts that battled with it, it was lurching and swooping and sweeping the ground around us, and even the score of old hands who were in charge had to put out all they knew. Then the car, which had been at some distance, was brought up and cleverly run into the spot where a perfect tangle of ropes, moored to a pile of sandbags, still kept the giant in check. A heap of these bags were tumbled into the car, and then the Captain shouted, "If you mean going, stand ready; watch your chance and run in between the ropes."

A moment later the chance came. There were only twenty yards to clear, and the walls of the car were but four feet high, but the risk lay in the sawing, straining cordage. In a trice my companion and I had sprung inside, when a dozen voices yelled, "Lie down"—and not without cause. To have raised one's head just then would have involved decapitation.

And so for many minutes the scion of an ancient family and a quiet country parson lay huddled together at the bottom of a sort of old clothes basket in a manner as little dignified as can well be imagined. "Eyre," I said quietly, "I should rather like some of our Berkshire friends to see you just now." I could feel him shaking with suppressed laughter, but his only answer was a groan, for his legs were far too long for such cramped quarters, and besides, those sandbags were cruelly hard against our ribs.

Of what was going on around us we could only guess. We were being rudely shaken about, while outside we heard only the shuffling of many feet and the laboured lugging and tugging of men as they struggled with the straining gear. Through it all

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the Captain's voice was heard ordering, encouraging, occasionally denouncing; always in earnest, particularly so as, with a "Look out, there," he and two others jumped in pell-mell upon us.

That was our release, for we could now raise our heads, as the ropes were all taut and in place. Then there was no more delay, for bag after bag was handed out, till the huge craft seemed but a feather-weight. "Out with one more!" and so we were free and away.

Now I will solemnly aver that from this moment till we came to ground again, we, in our little world, never stirred or swayed. Down and away fell the earth to a vast depth, and then began revolving beneath, but we never moved, nor, for us, did even the faintest breeze blow. People may assert the contrary, but I was there, and must know best. It was now that the crowd got their chance, and used it in a lusty cheer. It was un-English not to respond, so the voyagers stood up and cheered back. One, however, did not rise, but kicked and struggled, and what he shouted was not "Hurrah."

This individual was myself. In the confusion the anchor had slipped behind my back and now had penetrated my leather wallet, riddling its contents and harpooning me like a whale, until I was rescued by my companions. It was now apparent why the man of so many voyages was so jubilant over this one. It was impossible to tell till we were actually away where our true course would lie. In fact, there had appeared some risk of our fouling the great water tank on our left. But there was no longer a shadow of a doubt. Our line was straight for London, probably somewhere over the City.

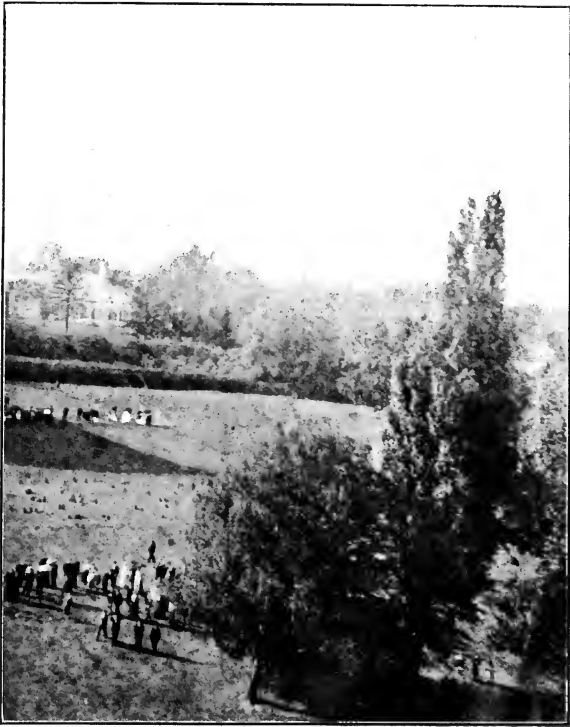
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Southward the grounds we had just quitted were closing up in narrowing perspective, the 20,000 had frittered away into a handful of stragglers. And the Surrey suburbs, looking their freshest and fairest in the mellow evening light, were opening up below us, while right ahead, and looming large and larger, pile on pile, the vast grey masses of the Capital of the World.

And nearer fast and nearer,
Do the red brick walls come.
And louder still and yet more loud,
From underneath yon rolling cloud,
Is heard the City's rumbling proud,
The trampling and the hum.
And plainly and more plainly
Now through the gloom transpires,
Far to left, and far to right,
In broken gleams of yellow light,
The long array of chimneys bright,
The long array of spires.

Then out spoke our bold Captain—

“This won't do,” he said. “The Palace balloon must go a lot higher over London.” “Luff,” he cries, and puts the helm hard a-port. This is what you would suppose he would have done. What he really did was to empty half a bag into empty space. As he did so we saw to our dismay a stone go plunging down. What billet that stone found it is vain to inquire, but a few weeks afterwards there was an indignant letter in the “Standard” from some suburban householder, complaining that he had had his roof smashed by a stone from Captain Dale's balloon. But blame did not really attach to him. According to the contract, it was the Palace Company that had to supply the ballast and were answerable for what was in it.



RISING ABOVE THE CRYSTAL PALACE GROUNDS

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CRICKET FROM ALOFT

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Soon we came up with familiar features. Kennington Oval was one of the first of these. There were tiny lambs gambolling about on it, and so some one remarked. But Eyre knew better. "That's a cricket match," he said, and he was right. Presently we saw the field change over and a couple of runs made. Then the play stopped. What was up? A glance through a field-glass settled the point. By general consent the match had been suspended, and it was we who were the observed of all observers. Then a cheer came ringing up. It was meant for us, and we waved our acknowledgments and passed on.

The next notable feature of course was the river. A truly noble sight. Yes, to us Father Thames was in truth a noble river. What was it to us if his banks were unsavoury and his flood were mud? From our point of view his surface mirrored only the sunlit sky, and up and down, to us, his stream was all pure silver, and innocent of cats. Low-lying Lambeth looked almost lovely, her Palace part of Paradise—let us hope it is. Westminster, of course, was very conspicuous, so also was the huge unlovely roof at Charing Cross. But it was downstream, below the Docks, below where the Tower stands proudly, that Thames stretched out his grandest reach. Sweep away the bricks and mortar, and where in all England would you find so fair a valley?

We were eager to see the point where we should cross the river, nor had we long to wait. Just westward of Blackfriars Bridge we shot across, and sailed above the chimney-pots of Ludgate Hill close under (I mean over) St. Paul's, whose cross was dwarfed to the humble level of the streets. There was no

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haze nor a trace of smoke that lovely summer evening, and every detail of the great capital lay mapped out below us as sharply as Bacon himself would trace it. What a sight, and what a rare chance was ours ! Yet it was the sound that was the more impressive. We had long heard the roar from the streets, but now the big diapasons were all open and the swell full on. The only epithet I can use is "indescribable."

In two respects the appearance of the streets was remarkable. They were not nearly so closely crowded as to passengers they seem to be, and the traffic, what there was, seemed scarcely moving. But one could grasp as never before what were the lungs of London and what her arteries. For Oxford Street had lost its title to the name ; it was the Oxford highway now. The Northern tramways were the ways towards York and Cambridge, and Piccadilly was the Bath Road. And there were those greater arteries that carry England's life-blood to and from her heart. We struck them now, three at once, over Euston, St. Pancras, and King's Cross, along which latter line one of the company's splendid trains, going north, was trumpeting.

At length we were out over the open country, the first time since the start ; the last trace of cockneyism being the Alexandra Palace, into the grounds of which we could have thrown a stone, provided there had been another to throw. We were traversing Hertfordshire, and here in its own way the northern side of London has as many beauties as the Surrey side. Rich pastures everywhere, chequered with the last of a late hay harvest ; on all sides country houses with extensive parks. We could trace the plan of their lawns and gardens as we passed over. From one

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of these the barking of a dog came up with strange distinctness. Presently my ears were filled with a sighing murmur as of the distant sea. Then it ceased; after a little while it came again, clearer and fuller. Then I discovered the cause. Down below lay a large wood, and the leaves stirred by a now boisterous wind were whispering up at us. They had a message which they were telling but too truly. At first our little party had been chatty, not to say jovial. But of late our spirits had flagged considerably, and there was a reason why. We could see nothing of the sky overhead. Above us was our own stately ship, apparently so motionless; through the open mouth we could look up into the great cavern where the misty gas lay slumbering. We could see the graceful outline of silk and rigging sharp against a now dark background, and we had misgivings that it hid from view what we should far less like to see; for the whole horizon had been growing dark with cloud, darkest where we were drifting. We had long lost our bearings, nor could we tell to a county where we might be.

Presently "rattle, rattle" against the silk overhead told that a sharp shower was falling. We looked in one another's faces, for we knew what showers meant that summer. Some one hazarded a remark, "We're under shelter here, anyhow." But the Captain smiled grimly as he replied, "Every drop that falls on the balloon will reach us here presently." Of course it would. Then another relapse into silence, which I think was next broken by "Whoop, whoop," on our right, and a wreath of white smoke was seen wriggling through the valley, caterpillar-like. The region we were over was too thickly wooded to allow

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of our recognizing any certain landmarks, and all we knew was that we were about to cross a line of rail. Shortly two or three houses came in sight. "We had better learn where we are," said the Captain, and gave a hard tug at the valve-rope. Up surged the great earth till within two or three hundred yards, when it approached no nearer. The skipper had manipulated his craft most deftly, but straight-way his reason seemed to forsake him. There was not one solitary human being to be seen. What we did see were flocks of sheep and herds of cattle that bolted as we swooped down. Never have I seen cattle bolt like that, positively bursting through thick hedges in excess of terror; but no herdsman was there, nor a living soul. No doubt when cattle are frightened you should speak to them, and Dale did speak to them—in the form of a question. Leaning over the car and putting his hand to his mouth, in clear ringing tones he asked, "Where are we?" We chid him for his folly, but instantly a score of human voices shouted back in lusty chorus "Hatfield!" The old aeronaut knew his business. It was raining smartly, so smartly that even the yokels were under cover, but we ought to have known that the eyes of the whole countryside were on us.

Now Hatfield is a principal station on a great main line. In an hour later we might be out over the fens, where we could not find so much as shelter through a drenching night. "Gentlemen," said our Captain gravely, "I'm afraid the game is up. I never saw so bad a sky. We'd better land where we can, and try again a better night." His logic was unanswerable, and we sadly gave assent.

Then followed an exhibition of skilful manœuvring

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it was a treat to witness. We could read in the old voyager's face that he felt he had his work cut out, and in real truth he had. We were on the outskirts of Lord Salisbury's park, which are not only thickly wooded but consist for the most part of small meadows surrounded by forest trees; while our balloon was flying faster than a horse could trot. "Keep cool," cried our pilot, "and do just what I tell you." Then he made us all rise and hold each a bag of ballast with its mouth open and ready for prompt use.

A further discharge of gas brought us down to the level of the trees, and we should have infallibly fouled a big elm but for a couple of hatfuls of sand smartly dropped by one of us. Clearing the topmost boughs, we got a view of the next field, a meadow of about two acres with tall trees at the further end. In a moment Dale decided to try his luck, and opened the valve to the full, which brought us down with a swoop. Quick as thought, but cool as ever, he laid his hand on my shoulder, emphasising his one word "Now!" I dropped my allotted portion something like a hot potato and in a moment we righted and shot up again. The next moment I was caught by the arm and drawn against the rigging with a sharp wrench. The anchor had been thrown out while I was busied with the ballast, and I was entangled in the cable. Dale had scarce time to liberate me when he shouted, "Look out, all! Sit down!" Never did I sit down like that! With a jolt that tested every joint of one's backbone we plumped down on the turf, and instantly bounded up again to the full length of the cable. This was repeated again, and a third time the car bumped down, and then lay still. The monster that had carried us lay writhing

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its length along the grass, trying to rise, but unable to do so so long as we kept our seats.

Then shouts were heard, and in a moment several rustics burst through the hedge and made for us, some in their shirt sleeves, one with a pitchfork, all intensely excited. Their leader, a man of upwards of sixty, was simply beside himself. He had run as fast as the youngest, and was out of breath to the point of collapse. Still with his hand to his chest he rattled on in broken sobs, "Who ever knowed a thing like this! To think of my living to see this happen on my farm! Lor, what a sight you was, to be sure!" But our Captain had an eye for business, and cut in, "Look here; you've a horse and cart somewhere, and I must have it. What will you want?" "Ah! you may well ask. I'm broken-winded now for life, and you'll have to pay for that; then there's my hayrick getting wet, that'll be another five shillings"; and so on. Dale put some money in his hand and bade him be quick with his cart, while quickly and cleverly, with the assistance of the rest, the silk was emptied, folded, and packed in its car. Then our little party broke up, and I think the "good-byes" were spoken by each with the feeling that we had been comrades for an hour or two in a little venture that would not quickly drop out of mind.

When I got home, and for days after, I was evidently fair game for everybody. One's friends said something smart and strangers passed me with a smile, and little boys at street-corners in groups pointed over their shoulders as I passed and said, "That's he as went up in a b'loon."

The foregoing simple narrative is a tribute, as its

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title testifies, to the memory of the chief actor in our little enterprise. On the 29th of June, 1892, Captain Dale, in company with three others, including his son (not Tommy), embarked on an ascent from the Crystal Palace in a craft utterly unfit for service. After rising a few hundred feet a rent occurred low down in the envelope, which quickly split up its whole length. In that fatal emergency Dale did all that lay in man's power to do. He threw out every thing in the car down to his own coat, and so far successfully that his son and one other, though badly hurt, survived. But he lost his own brave life in that terrific descent. His wife was witness of the tragedy.

Lightly lie the turf above him !
Earth will restrain him never more.

AN UNCONVENTIONAL CLERIC.

THE fact of Bacon's balloon ascent did indeed, as he has said, enhance his importance in local circles, for it must be remembered that in those days the present fashion for ballooning, which he himself certainly started, was a thing of the distant future ; and no one (with very rare exception) ever even dreamed of making a voyage in cloudland. But soon there arose other and widely different cause for attention to be directed to him, so that before six months were out his name was in every mouth, and his latest achievement was the one topic of the entire neighbourhood.

To understand rightly the next important episode in my father's life it is necessary to recall the times in which it occurred, and to reconstruct (no easy task) the mental atmosphere of eighteen years ago. Thought has moved apace in these latter times, and to read to-day of the battles that then raged under the banners of "Science" and "Faith," the fiery theological onslaughts, the answering heavy artillery of Huxley's "Nineteenth Century" articles and the like, is to marvel that so much breath and acrimony (and ink) should have been expended over the slaying of the already slain, and frequently to wonder vaguely what all the fighting was about : so many an outwork, wildly contested on both sides as the key to the whole position, is now wholly abandoned as of no importance whatever ; so many a so-called bulwark over which the wordy battle has surged to and fro is now

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tacitly conceded with scarce a thought. Perhaps it is tolerance, perhaps indifference, perhaps greater wisdom, that is to thank. Be that as it may, the noise of warfare has faded into distance, the weapons have been laid aside, and Peace spreads her wings once more over the deserted battlefield.

It was far otherwise half a generation ago. The fight was then at its fiercest, and it was altogether impossible that a man of Bacon's nature and temperament should fail to find himself in the thick of it. As has been already stated, my father in his college days had been a personal friend of Clifford, and the influence of that fearless thinker had effect upon him which later years but served to ripen and develop. The love of science was born and bred in him, and though, until now, his tutorial work, his own troubles and ill-health, and his voluntary labours for others, had in turn prevented him from actual research, he read largely and widely and kept himself abreast of current scientific discovery and thought. In 1888 he became a Fellow of the Royal Astronomical Society, and about this time he exchanged the small telescope he had long possessed for a serviceable $4\frac{1}{16}$ refractor, which he mounted equatorially in an observatory on high ground above the house. The observatory, from its brick foundation to its ingeniously sliding roof, was entirely his own construction, as was the equatorial mounting of the telescope and the mechanism which drove it. Later he added a reflector to his equipment, and then he took to speculum grinding. With the aid of a home-designed and home-made machine he ground and polished, all through one winter, a twelve-inch mirror which he subsequently silvered and mounted in a second and larger observatory added (with a dark room) to the first.

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These observatories, I recall, were put to many other than their original purposes. They were connected with the house by a home-made telephone, and in warm weather we turned them into a sort of glorified summer house. We children learned our lessons in them, my father made them his study, and once, when the house was crowded, he and his little son passed the night there in hammocks slung from the roof. This, however, by the way. They served their legitimate use on many a frosty winter evening and clear summer night when Bacon spent long and happy hours with his telescopes, making stellar observations, but more especially sketching lunar detail, a work for which his equipment seemed best fitted, with results that he published from time to time in scientific journals. They were also the scene of frequent impromptu astronomical lessons to friends and neighbours, who came to have their first glimpse of the heavenly bodies through a telescope, and were duly impressed or disappointed according to the expectations they had formed. "It only looks like a lot of old mortar!" was the rather disgusted comment of one of the ringing team on the scarified countenance of our satellite.

Through astronomical work and meetings, as well as by wide reading, Bacon was growing ever more in actual touch with the scientific world, their methods of thought and labour; and infallibly there began to arise in his mind comparisons between them and the clerical world with which he had, up till now, been so much thrown in contact. The difference in those days appeared to him sufficiently striking.

In sharp contrast to the spirit of patient, humble inquiry and cautious utterance on the one hand, he heard not seldom the dogmatic assertion of ecclesiasticism hurled with anathemas at the so-called unbeliever. In

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place of the prudent statements, delivered only after laborious investigation and thought, was too often the rash dogmatism of ignorance. Bacon's blood boiled when, at a certain meeting of the Clerical Club to which he then belonged, the assembled parsons discussed the position of Hell, and fixed it comfortably to their own satisfaction, and in accordance, so they said, with latest scientific discovery, in the centre of the earth. Be it remembered always that this was in the "eighties," that Bacon lived in a sleepy part of the southern counties where change was slow to penetrate and old traditions lingered. Be it conceded that there were, even then, and in high places also, splendid examples in the way of church dignitaries who had really conformed to altered conditions and placed themselves in line with modern thought and tendency. Nevertheless it has to be owned, on the other hand, that these pioneers were greatly in the minority and regarded askance by their own side; that instead of trying to understand and adapt themselves to the change which increased knowledge was bringing in conditions of thought, clerics too often made the fatal mistake of merely ignoring or, worse, fiercely denouncing such change; that a spirit of intolerance was abroad, and that, above all, the spell of a rigid conventionalism was upon the whole Church, paralysing any effort that might be made to move forward, be it never so little, with the times.

Under such restraint Bacon began to grow restive, and grew ever more so as time went on. He believed himself in a false position, and the thought was intolerable to him. Narrow clerical trammels, and they were narrow indeed in those days, were growing very irksome, and the day came at length when he felt he was right to cast them aside. But there should be no mistake as to the

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reason for his action. He wished to vindicate his attitude to the world, and he chose his own method of doing so. One day the Clerical Club aforementioned met at his own house, and my father took the opportunity of reading them a paper of an unwonted and unwelcome description. Putting, by way of conceit, the words in the mouth of his famous namesake Roger, and speaking as the ghost of that much persecuted scientist yet among them, he pointed out how the same spirit of intolerance to new truths of which he must accuse them was the same which had betrayed the clerical world into much grievous error in the past, even to the torture of a Galileo and the burning of a Bruno, and would surely do so again, did they not realize, before it was too late, that certain of the teachings of the Church, unless they were to become a mere dead letter, must, as all other teaching, move with the times. As was but natural, so daring a statement, daring at least for those days, emanating from one of their own cloth, caused some little fluttering of the clerical dovecote, and Bacon was branded as a dangerous man who was carrying his eccentricities over far. But worse was to follow.

At the beginning of the year 1889, Bacon, after seven years' work there, definitely severed his connection with Shaw, and by so doing closed the chapter of his pastoral labours. Simultaneously there appeared, under the title of "The Curse of Conventionalism : A Remonstrance, by a Priest of the Church of England," a pamphlet from his pen, in which he expounded his position and the reasons which had led him, after long consideration, to his present course. It was a trenchant, possibly a too trenchant, indictment of the attitude of the Church towards scientific knowledge and thought, written with the fire of righteous indignation, almost with the enthusiasm of a rebuking

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prophet. It was addressed to "My Brothers," and started with the three postulates or "ominous signs" that:—

"Our flocks have grown thinner.

"That our hold upon them is less and ever lessening, and

"That the old faith is being boldly challenged.

And went on to enforce and expound as the causes, that

"The world has progressed, while we have not.

"That being out of date, we are also out of touch.

"That neither what we practise nor even what we preach bears any true resemblance to what Christ taught."

For the rest a couple of quotations shall suffice:—

"And why all this sad blunder on our part? Why do we fall back on that marvellous special pleading, which a Ballantine might envy, in order to hold our position? Few things distress me more. Beyond measure I wonder at the elasticity that divines discover in their text, and the surpassing ingenuity with which they can make white read like black, but most profoundly do I distrust both. And in Heaven's name why are we in this false position? We are taunted with being 'literal but illiterate,' and is not this true? And in consequence, are we not doing untold mischief to our high cause? Is it not we, and not the Book, that has been in error? Would not this error be avoided if only we were a little more modest and humble minded, a little less bigoted and dogmatic?"

And again, further on:—

"But what of our general attitude? Is a desperate attempt at reconciliation so imperative that it should be made at any risk to truth? Is it wise that our teachers of religion should try to cover a bad position by reckless statements on points of which, as a body, they are pro-

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foundly ignorant? Can it be well, for instance, that they should go about with the ready falsehood that 'Darwinism has broken down,' when it was never more firmly established? Or the old platitude that 'all men, savages included, naturally believe in a future life,' when recent authorities tell us, on the contrary, 'that whole nations, constituting from first to last the immense majority of the human race, have had none of these ideas.' Ignorance will not excuse the perversion of fact. . . . But I am wellnigh out of patience. As matters stand I see I am not properly one of you and will not pretend to be. I will admit no compromise, for I must be wholly loyal or withdraw. For the present at least I must stand out, and if only my doing so be properly understood I shall not regret the wrench."

The publication of this pamphlet was as the bursting of a bombshell in that quiet neighbourhood. Bacon had foreseen that it would be so. Sympathetic friends, knowing of his purpose beforehand, had warned him that social ostracism would be the result, and even urged upon him the expediency of leaving a place where he would infallibly incur great unpopularity. It was indeed a daring and fearless step to take, but Bacon had the strength of his convictions, with a holy horror of all insincerity and humbug, and it seemed to him that nothing short of such public expression would satisfy his conscience and make clear his standpoint. A perfect tornado of anger, horror, indignation, and pained surprise uprose and for a time engulfed him. One brother cleric wrote begging that he might be allowed to buy up the whole edition of this dangerous work and destroy it; others attempted more or less feeble replies. Grave elders strove to overawe him by the weight of years and experience, and self-confident youths to silence him with

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specious argument and invective. So keen was the feeling excited that Bacon felt constrained to explain himself yet further, and did so fearlessly in a crowded public lecture in Newbury town hall. Socially he was for a while under a cloud. His name was struck off certain visiting lists, sundry acquaintances ceased to patronize his annual garden-party, a few eyes became short-sighted when he passed. But he cared not a scrap. The few friends he lost (and those only for the time) were more than atoned for by the very many he gained. From all over the country came letters of sympathy and appreciation, and thanks for his outspoken courage, which had voiced the silent opinions of earnest thinkers; and on the strength of the little pamphlet more than one lasting friendship was made.

Henceforward Bacon gave up his clerical work, and with it the conventional coat and collar of his calling. Nevertheless, although he never resumed the latter outward signs of his profession, he did not wholly abandon duty. True, he scarcely ever preached again. "I am waiting for the time when I can have a lantern screen stretched across the chancel arch, and a photograph of the Orion Nebula, or some other glory of the heavens, to talk about," he would declare. But brother clerics in distress could ever rely upon his ready services, and special friends count on his help at Church festivals and the like. Bacon was always a Churchman, in the highest sense of the word, all his life. If his beliefs and aspirations had been less real to him than they were he would not have striven so hard to free them from the fettering bonds of conventionalism and insincerity.

Now that Bacon's work at Shaw was at an end he had more time to spend on other things, to start new interests and to improve on old ones. A good portion

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of each summer was still devoted to the Cottage Show, which year by year developed fresh features until it became an absolutely unique function, as popular as it was unusual. As the best way of illustrating Bacon's originality and fertile fancy in this direction, let us briefly recall the scene at one of these alfresco village entertainments, held about this time.

The bills advertising the Coldash Show of 1892 contained, in addition to the usual notices, the startling announcement of an important archæological discovery. Experts, it was stated, had lately determined the site, in the grounds of Sunnyside, of an ancient battlefield, probably of Plantagenet date. The occasion of the Cottage Show, held on the very spot, would be taken advantage of for the opening of the barrow, when important discoveries might be anticipated.

So interesting and mysterious a statement naturally excited much local curiosity, which combined with a fine afternoon to draw a record concourse of visitors, who duly inspected the flowers, vegetables, cats, donkeys, and other exhibits, found pleasure (not being over-critical) in the performance of the rustic band, and regarded with half-incredulous anticipation the barrow, represented by a carefully roped-off space of perfectly clear ground in front of the observatories.

The hour arrived, and the expectant crowd, grouped round the ropes, made the acquaintance of the great archæologist, Professor Bosch, introduced to them by Bacon as the authority on whose advice the tumulus was to be explored. The professor, a venerable gentleman with long white beard and loose flowing coat, explained at some length, and speaking with a strong German accent, the various circumstances which had led him to his present opinion regarding the existence of

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the ancient battlefield, and finally indicated the precise spot where the excavations should be commenced.

Bacon, who had been listening indulgently, yet half incredulously, to the expert's tirade, thereupon gave the signal to a couple of navvies with mattock and shovel, standing by, to fall to work. It was obvious to every one that the portion of grass meadow before them was absolutely unbroken and had never been tampered with before; yet the removal of the first sod revealed the presence of a number of implements, bones, etc., which the professor excitedly declared to be of the twelfth century, and exactly confirming his deductions. The crowd was now growing interested, and watched the digging operations eagerly. The navvies worked with a will, and soon achieved a hole of respectable size and depth, when one of them, shrieking aloud in terror and dropping the shovel from his paralysed hands, suddenly collapsed in a dead faint. In a moment Bacon was at his side, administering restoratives, striving to calm him, and endeavouring to elicit the cause of his fright. Utterly unnerved, the poor workman could only stammer out, "There be Summat alive down there!" and relapse into fresh convulsions. In vain Bacon assured him that such a thing was absolutely impossible. Even as he spoke there was a sudden convulsion at the bottom of the hole, and there struggled forth, blinking, into the daylight the bulky form of a burly monk, rope girdle, rosary, and all complete, the earth still hanging about the folds of his brown cassock and hood. "Donner und Blitzen! Friar Tuck!" gasped the professor, falling back in amazement before this apparition, and the Friar, responding to his name, but still half dazed after his seven hundred years incarceration, put his identity beyond doubt by inquiring thickly for a mug of ale.

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This unexpected appearance of a historical character half prepared the delighted but much mystified crowd for what was coming, and when a tall figure, clad in Lincoln green, bow in hand, with horn and baldrick, reared himself from the hole, they hailed him with one accord as Robin Hood!

The greeting between the two outlaws who found themselves once more upon their native soil was hearty but brief, for the Friar was engaged with his ale, and Robin was seized with the keenest desire to go forth immediately and shoot red deer. In vain Bacon represented to him that red deer were now extinct in that part of the world, and he might get himself into trouble with the local authorities. There was no staying him, and he wandered forth into the field.

The next person to emerge from the excavation was a tall, slight youth, in the garb of a wandering minstrel, his "wild harp" (it bore much resemblance to a modern banjo) "slung behind him." To the crowd (who had failed to recognize him) he explained that his name was Blondel, the same who had rescued the Lion-hearted King from his enemies, discovering his place of imprisonment by playing his favourite tune outside the castle walls, when the captive answered him from within. "Ah! would that my dear master were with me now," lamented the faithful servant. "If he were but near he would yet answer to my song." Upon his banjo (beg pardon, harp) he struck the familiar notes that to the crowd seemed singularly like "Ta-ra-ra-boom-de-aye," but this can only have been curious coincidence, for on the instant there came from the depths of the earth an answering bellow, and the barrow was stirred by a perfect earthquake. It has been mentioned before that the old Scotch farmer was a man of large propor-

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tions. Encased in sheet-iron and leather, crowned by a massive helmet, and encumbered with a sword and shield that suggested a tea-tray which had seen better days, it was a work of tremendous effort to hoist him through the hole. But it was done at last, and Cœur-de-Lion himself stood revealed, brandishing right and left, and entirely forgetting his part in his excitement.

A little prompting, however, recalled him to the knowledge that he had important business connected with Saracens yet to see to in the Holy Land, which it appeared he had already over-long delayed. So eager was he to be off that, as the best way of appeasing him, one of the prize donkeys was requisitioned, on which he was mounted and rode off through the crowd under guidance of a policeman, who was charged to show him the quickest road to Palestine. But suddenly there came the sound of advancing music and trampling feet. The local band, playing lustily, "What shall he have who killed the deer?" accompanied by a troop of excited rustics, were escorting back in triumph Robin Hood, who had slain, not a red deer, but the nearest modern equivalent he could find—a tabby cat. This animal (stuffed) he carried with him, and all would have gone well had not the Sheriff of Nottingham inopportunately appeared with a warrant for Robin's apprehension on the charge of shooting game on the royal preserves. It boots not further to enlarge upon the subsequent proceedings, when the fun waxed fast and furious, nor to relate how Robin was sentenced to be hung, but on winding a last blast on his horn was rescued by a band of green-clad foresters; how the tables were turned, and the Sheriff came under sentence of death, and was forced to plead piteously for his life; how King Richard grew bloodthirsty, and wanted personally to behead everybody, down to Friar

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Tuck, now sleeping peacefully in a wheelbarrow, his empty mug clasped close to his chest. As a temporary measure the cat had just been slung up on the gallows, hastily erected, when all too quickly the end came. A sudden explosion rent the air, and startled the group happily engaged in hanging the cat. A cloud of fire and smoke issued from the hole, and this had scarce cleared away when there emerged an awesome and grizzly figure of coal-black hue; horns surmounted his terrible head, a pitchfork was in his hand, and he trailed behind him a long black tail. Certain austere clerics among the onlookers affected to look shocked, but the crowd shrieked with delight as His Satanic Majesty claimed the truants. "Enough of this! Back you go!" thundered his dread command, and with his fork he drove them shrieking down the hole, himself last of all seizing the wheelbarrow in which the unconscious Tuck still slumbered, and trundling it off the field.

Only a very few among the onlookers that afternoon knew the secret of the mystery by which a dozen men had emerged from an unbroken patch of ground in the middle of the meadow. These few recalled how, a year before, Bacon and a nephew had spent some while in digging out an elaborate excavation in the soft sandy soil close to the observatories, which hole had grown into a veritable cavern, with chambers capable of holding several people at a time. Over the entrance the larger observatory had subsequently been built, so that the opening was entirely concealed from the outside. All that was needed, therefore, for the illusion, was to further excavate a long sloping passage from the cave to within a foot or two of the surface, taking care not to disturb the turf, which remained unbroken until the occasion itself. The cave, by the way, long remained

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a source of much amusement at Coldash. A visitor, after inspecting the observatories, would be startled by the pulling open of a trap-door in one corner, revealing a black, gaping hole with the top steps of a decaying ladder, the end of which was lost in darkness. With a little persuasion he might be induced to explore its earthy depths, Bacon accompanying him with a lighted candle, which somehow, at the end of the tunnel, would get extinguished. In the pitch darkness which ensued Bacon would take the opportunity of relating how he had for some while suspected that the cavern was haunted ; and, as if in confirmation of his words, there would begin to be audible long low wails and moans, echoing round the vault, and coming apparently from another world. Somewhat startled, the stranger would turn to find himself alone, and by the time he had groped his way painfully to the daylight, and found his host, and his host's children (who had been blowing down a small lead pipe in the outer observatory), laughingly awaiting him at the top, he probably desired no further experiences. If he did, however, he was set to climb an awkward and rickety home-made ladder, leading to a tiny platform thirty feet up the flag-pole, from which there hung a gigantic speaking-trumpet. The platform was very difficult of access, there being little to hold on to, and though Bacon to his last days would scale it with the utmost ease, the majority of his guests found it a much more nerve-shaking experience than the cave, and generally cried off before they reached the summit.

To the writer of these memoirs, writing now of days of which she has the vividest recollection, the passing years at this period of Bacon's life seem designated and characterized by the pursuits and hobbies which filled them. This was the winter when he bought the micro-

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scope, learned how to prepare and mount specimens, and fished the upland ponds for their minute denizens. This was the summer when photography, now simplified by the introduction of the dry plate, was reinstalled in favour, and carried to a high pitch of proficiency, ever afterwards maintained. That was the spring when he learned to bicycle, that the autumn when the billiard-table was erected in the old club-room. One year the practical study of electricity occupied every spare moment. Bacon's son was now growing to an age when the strong mechanical bent he inherited began to indicate in which direction his future career should lie. True to his acknowledged principles, his father laboured to assist him to the utmost of his power; and as the best possible practice and object-lesson, resolved to establish electric light throughout his house at Coldash, he and his boy being sole engineers and mechanics. This they most successfully accomplished. The engine was built at local works under their personal supervision, the boiler erected by their own hands. Together and alone they wound the dynamo, set up the cells and wired the house, and when all was ready a "thirty-hour run"—test of twelve-year-old endurance—triumphantly inaugurated the installation, which for years was maintained by the two amateur electricians in completest efficiency.

Perhaps it was the study of electrical matters necessary for such a work that first directed Bacon's attention to earth currents; or possibly the realizing that in his underground cavern up the field, far away from any disturbing influence, he had an ideal observatory for their investigation. Certain it is that about this time he began to engage himself very busily in gathering together all the information available concerning terres-

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trial magnetism, and in conducting experiments on his own behalf with the means at his command. A galvanometer, with specially sensitive needle, was placed in the cave aforementioned, and in adjacent meadows copper earth-plates, duly connected, were sunk in the soil. Most careful watch and record was kept of the results obtained, and presently we find Bacon writing enthusiastically to a brother :—

“ I met with a little triumph yesterday in the work I have been engaged in for several months. Airy and other experimenters have never succeeded in tracing earth currents through much less length of line than three miles, telegraphic wires being always needed ; but having just completed a very delicate instrument, I got a deflection of nearly 80 minutes through only 110 yards ! This is probably important, and will fit in with my St. Paul’s experiments. I must peg away.”

The St. Paul’s experiments referred to, and which Bacon had recently conducted, arose in this way :—

Delicate instruments for recording the variations of the earth’s magnetism, consisting essentially of a magnet slung by a double thread, and carrying a tiny mirror, which reflects a spot of light on to a ribbon of photographic paper driven forward by clockwork, thus registering every minutest tremor which influences the needle, are maintained at the observatories of Kew and Greenwich. Nowadays, alas, they waste much of their valuable time in recording such banalities as the daily workings of the local electric railways and tram lines ; but in the year 1890, which is the date of which we are now speaking, the L.C.C. influences had not attained their present wellnigh overwhelming supremacy, and the curious differences in the records traced out in the same twenty-four hours by identical instruments, stationed only

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twelve miles apart, was one of the most interesting and important results arrived at.

It occurred to Bacon that records both instructive and valuable for comparison might be made at some point midway between Greenwich and Kew, and furthermore it struck him that St. Paul's Cathedral was an ideal spot for the purpose. For there in one huge building, standing nearly on a straight line between the two observatories, five miles from one and eight from the other, could be found an admirable subterranean chamber in the crypt; while, with little trouble, another observing station might be utilized in the golden Ball, nearly four hundred feet vertically above. The more he thought of it the more convinced did he become that the great cathedral was the place above all others in which to conduct his experiments; and at last he boldly, if somewhat doubtfully, approached the late Dean Church, who then held sway over St. Paul's, with the request that he might be allowed the necessary facilities for his observations during a whole summer night, since from all considerations it was evident that night hours were best suited for his particular purpose. Most courteously the Dean granted ready permission, with no further restriction imposed than the presence of his own head verger; and accordingly it followed that, late one June evening, Bacon, and a young electrical engineer nephew, who acted as coadjutor, carrying each their precisely similar instruments, constructed on the lines of those already described, were admitted by a small side door into the vast, silent pile, dark save for one solitary gas jet in the dim, far-away choir; totally deserted but for the night-watchman, whose muffled footsteps echoed ever and anon from distant gallery or aisle.

Having settled his companion to his work in the crypt

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—surely ghost-haunted at that hour !—Bacon laboriously conveyed his instruments up the many hundred steps that lead, through intricate ways, to the tiny eyrie at the very summit of the building which goes by the ambiguous title of “the Ball Room.” There was a touch of the romantic and adventurous about the whole proceeding which specially appealed to him, so that he often afterwards referred to that night as a delightful and enjoyable experience, quite apart from its scientific value. Perched aloft, a solitary sentinel, far above the heads of the sleeping city stretched beneath, he kept his pleasant vigil, and by way of passing the hours in the intervals of taking ten-minute readings, jotted down notes in the form of a letter, which may here be allowed to tell its own tale :—

“The hour is near midnight, and I am sitting alone on the topmost ladder of St. Paul’s Cathedral, my nearest companion being Arthur Bacon, who is keeping a like solitary watch four hundred feet below me. In a niche in the wall beside me I have an instrument comprising a delicately suspended compound magnet, whose sensitive behaviour has been my constant care for some weeks past. It is now from minute to minute telling a tale which will, I trust, be of real value to the scientific world. Meanwhile I have other things to note. A grated window eighteen inches square, half-way up my ladder, affords me a view of the great world outside, which becomes a complete panorama whenever I mount into the narrow stone platform under the great Ball, a feat which I perform as often as I feel disposed to meet the rude buffeting of a tremendous high-pressure blast of cold but most refreshing air. The roar and rattle up from the streets below which was so striking two hours ago,

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now only reaches me as a distant murmur, scarcely more noticeable than I heard it two years ago from a balloon three thousand feet almost directly above my present station. The frequent railway-whistles, however, are borne in from all quarters, and apparently from great distances, and every now and then there is the unmistakable horn of a passing bicycle. But the great charm is in the fading light and the comparative repose that gradually settles down upon the restless city. The rows of lamps still map out the well-known thoroughfares and trace the bridges, and even here and there show by reflected light the flow of Father Thames; but these are but night-lights while London herself has gone to bed, and it is my concern to watch till she awaken once again."

Elsewhere, and in picturesque phrases, Bacon has described the striking of midnight as heard that night from his lofty coign of vantage: "It was some neighbouring upstart tower far below me that led off in hasty, fussy fashion, rattling through its part alone. This was by way of recitative. But St. Paul's broke in reprov-ingly, the chimes thundering out of the north-west tower as never heard before, followed after a dignified silence by the deep full stroke on the tenor, which sent a tremble through the air. By this time there was mad frenzy everywhere. From every quarter the strike of iron tongues mingled in babel indescribable. It was quite a long while before all was over and peace restored, and even then one or two feebler voices contested querulously who should have the last word."

This was the signal when, according to arrangement, the observers were to change over, the colleague below leaving the crypt at twelve precisely, and allowing fifteen minutes climbing to reach the ball. Almost im-

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mediately after the clocks had finished striking, however, Bacon heard his ascending footsteps apparently on the flight below, and called out to him, "You are before your time!" To his surprise, no answer was returned to this or to another shout some minutes later when the footfalls were apparently just at hand. Only after another ten minutes, spent by the nephew in steady climbing, came the answering "Hallo!" even then from some floors beneath; for in the quiet of that deserted spot, and among the weird echoes of the mighty dome, a strange acoustical phenomenon had manifested itself, and magnified the sounds from the foot of the stairs, despite intervening doors and passages, until they seemed actually beside the listener perched at the very summit. After this the letter continues:—

"It is now two o'clock, and I have changed places with my colleague and taken my turn below among the vaults, and a couple of hours have passed pleasantly enough in hunting up my old historical friends with the aid of a dark lantern. I am sorry to say that I found my own ancestor, Sir Nicholas, in a very sorry plight, broken and dismembered; it would seem that he has found our national Cathedral anything but a sanctuary in days gone by. But there go the chimes again, and I am due aloft once more to see the sun rise and to compare our notes of the night. I find my partner has got a brave record of the last two hours, and the result of our joint observations, when properly reduced, will have to be sent to Greenwich and elsewhere. We have now the task of packing up our delicate as well as bulky apparatus, and getting it down the first awkwardly cramped and perpendicular ladders; but it is safely accomplished, and presently we are standing on the stone parapet watching

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the first streak of returning dawn far away over the G.P.O., which is still one blaze of gas-light from base to roof. The freshness of the air and our elevation is most refreshing, but we have a long descent to make, and we mean to accomplish a photograph in the crypt before daylight is upon us. . . . Writing the rest of this letter from home, I can add that the above-mentioned photograph taken in the vault is not yet developed, and, knowing well the remarkable property of the camera to record appearances that are invisible to the naked eye, I am of course prepared to find the picture reveal something besides ourselves, and I shall at once understand it if I see there, say, a military gentleman with a classical nose and a one-armed companion. The last hour of our sojourn in the Cathedral was devoted to an exploring excursion through some of the unknown regions of the vast building in company with the watchman of the night, who at the outset explained that having only been five years nightly on duty he, as yet, knew comparatively little of the endless intricacies of the place. This sounded somewhat strangely, but the sober significance of the remark was soon manifest, for a rabbit warren would be a mere joke to that stone labyrinth. The entire walls seem to be hollow with passage-ways running simply everywhere, downwards and upwards, crossing and recrossing in all directions, while every niche almost is a trap-door and every column a staircase. Chambers and recesses seem without end, and often on a lavish scale; workshops, a mason's yard, lead foundries, engine-rooms, museums, libraries, store-rooms without number, all included in that stupendous pile. The Dean's verger assured us that after thirty years he did not know the whole of the building, nor probably did any man living. He only knew that it

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would be a week's work to visit every part. Another day (or night) I must try again."

Just a year later, by the way, Bacon passed another summer-night vigil under quite different circumstances. With an old Newbury friend he made a pilgrimage on Midsummer night to Stonehenge, to test photographically the story that on the 21st of June an observer, standing on the Altar Stone of that mysterious temple of forgotten rites, sees the sun rise exactly over the summit of the outstanding monolith, some distance from the rest, which goes by the name of the Friar's Heel. The result of course but confirmed this well-attested fact, but at the same time convinced Bacon of the futility of attempts, which have from time to time been made, to arrive at the date of Stonehenge by astronomical calculations, using exact deductions, based on the very small change which has taken place in the tilt of the sun's path since the time when the stones were first set up. The mere fact that the altar-stone has no mathematical centre is enough to render any such task impossible, let alone the certainty that the stones have shifted their position in the intervening centuries. In Bacon's own words :—

"That the peak of the misshapen and unsupported pointed stone, some sixteen feet high, should still with any accuracy lie in the same line of sight as it originally did, would be the greatest marvel of all relating to Stonehenge."

In the autumn of 1892 came a happy enough little reminder of past times in the shape of a visit to Cambridge, where Bacon had not now been for over sixteen years. It is the pleasant custom of Trinity College at intervals to invite, during vacation, its former members, yet on the books, selecting them in groups at a time,

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according to the years in which they took their degrees, to spend a day and night amid the scenes of their youthful days. Great pains are taken on these occasions to render the reunion as complete and delightful as possible. Special service is held in the chapel, a feast given in Hall, and when, after long prolonged converse, old friends who have not met since college days part at last for the night, they go back to sleep in the very rooms they occupied as light-hearted, light-limbed undergraduates perhaps a generation before.

It is a pleasant but withal a most pathetic reassembling, fraught to even the least emotional with how many recollections, reflections, and self-examinings. The rows of bald and silvered heads are bent low in chapel ; tremulous voices chant "Auld Lang Syne" as hands are gripped round the festive board at the end of the feast. All is so changed and yet so unchanged, and the grey college walls look down almost mockingly upon the old and middle-aged men, bowed with the years that have left no trace upon their hallowed stones.

Bacon took all his family to Cambridge on this occasion, and lovingly pointed out to his children each well-remembered haunt of bygone days. The gathering itself was a particularly brilliant one, since among the guests was the Archbishop of Canterbury (Benson), representing an older generation, while A. J. Balfour held place of honour among the men who were Bacon's own contemporaries. To my father it was a noteworthy event, recalling as it did, and under pleasantest circumstances, a chapter of his life long since closed.

And yet another page was shortly to be turned. In the autumn of the following year my mother's health showed signs of failing, and by the time that winter came her family had begun to dread the worst. The end was

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mercifully brief. After but three days spent in bed, she died, on the 19th of January, 1894, peacefully in her sleep, in the arms of the husband who had so tenderly loved her and so devotedly cared for her through the twenty-three chequered years of their married life. Never was wife more truly or more deeply mourned. That beautiful law of life which endears the invalid child to its mother more fondly than those strong ones who have less need of her care, caused my mother's very deprivation to bind her but closer to her husband's heart. Most sadly he felt her loss, and when at last the long strain of fourteen years was relaxed and the object of his watchful care removed from him, he seemed to lack the power to rally from the blow ; and though he never for a moment relaxed his work or activities, it was many months before he regained his accustomed energy and spirits.

XI

IN SEARCH OF THE CORONA.

IN the summer of 1893 Bacon was asked to accept the presidency of a large young men's club in Newbury which he himself had had some share in founding. Years before, in days when he yet took clerical duty at Shaw, his Rector's son, Mr. J. E. Nelson, was busy evolving from the chaos of small beginnings a social institution for the youths of the neighbouring town which eventually assumed concrete form as the "Newbury Guildhall Club," carefully specified as "non-political, and non-sectarian."

This club grew and flourished exceedingly, mainly due to the efforts of the members themselves. Among their number was one, Mr. E. J. Forster, whose splendid talent for organization, quick enthusiasm, and boundless energy, singled him out at once as Honorary Secretary for the venture, as it has since then for many more onerous positions. Bacon was ever keen to recognize talent in others, and in this keen and gifted young man he found not a few answering chords to his own ardent nature. Infallibly the two became fast friends, and their friendship but strengthened and deepened with the years that passed over their heads.

From the first my father had given the Guildhall Club his whole-hearted support, for it was a movement with which he was altogether in sympathy. No one

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recognized better than he did the need there is for wholesome influence in the lives of the young men of our towns—tradesmen's sons, shop assistants, mechanics, and the like—in whose path lie many temptations, and whose wants are apt to be overlooked by philanthropists labouring for the amelioration of a lower rank of society. He saw that the importance of an institution, healthy, high-principled, attractive, free from bias, run by the young men themselves for their mutual benefit, could not be overestimated, and to it he gave all the help in his power. After he was unanimously elected president, on the resignation of the founder, his efforts were redoubled, until the welfare of his club became one of his dearest aims. There was full scope for his enterprise. In the Senior Secretary he had a fellow-worker after his own heart, and in almost weekly meetings and constant correspondence the two laid their heads together for the improvement and aggrandizement of an institution, for which it is not claiming too much to say that it was soon without its rival, for a town the size of Newbury, in the whole south of England.

This is not a place in which to relate the tale of the Guildhall Club's triumphant progress; of how it secured the patronage and interest of the great and influential, until even Royalty itself smiled upon it; of how it ran seasons of winter lectures and addresses by the most famous men of the time, such as no other institution could boast; of how it carried through large photographic exhibitions, said by experts to be the best outside London, to which the Queen lent her name and the Royal Family contributed their own snap-shots; of how it broadened its interests and widened its boundaries, extending always new branches in every form of sport, amusement, and occupation dear to the youthful male mind. Never,

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surely, was a more flourishing institution in those days, and certainly never a more popular President.

“Ideal” was the word invariably used in describing the relationship between Bacon and the members of his beloved club. His winning personality attracted the young men to him in a quite extraordinary degree. In their presence he became as one of themselves, so that differences in age and circumstance seemed completely to vanish, leaving him merely their friend and comrade, capable of participating in their pleasures, of entering into their lives, of rendering ready help in their difficulties. He delighted to be among them, and some of his happiest, albeit his busiest, hours were passed on the frequent occasions when he invited the members to his home at Coldash, and for a long afternoon and evening entertained them after his own most original fashion.

Among the club's most influential supporters—and it boasted very many—three stood pre-eminent. Two of these were those untiring philanthropists, Lord and Lady St. Helier, then Sir Francis and Lady Jeune, whose country house, Arlington Manor, favourite resort of the most distinguished men and women of the day, was some three miles from the town. The third was Mr. J. N. Maskelyne, the Modern Magician, in those days not yet forced to leave the scene of early triumphs, ever inseparably connected with his name, the Egyptian Hall. The most noteworthy event of that period of Bacon's life immediately following the death of my mother, was his becoming acquainted with this famous man. Mr. Maskelyne at this time had lately become possessed of a cottage delightfully situated on the borders of Bucklebury Common, one of the healthiest and most beautiful spots in the neighbourhood, within a walk of Coldash. Here, with his charming wife, he spent his

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week-ends and brief vacations, and here Bacon first met him personally—professionally he had long been his ardent, though deeply puzzled admirer. From the very first the two men became fast friends, drawn together as they were by mutual esteem, similarity of tastes, and concurrence of opinions. Some one has said that the power of entering into close friendship belongs to youth alone, and that no man over forty ever becomes as truly attached to another as he does in the former half of his life. Bacon was a witness to the exact contrary. The very fact that circumstances had severed him from his early friendships, and for long years hindered him in making others, perhaps preserved his friendly instincts all the keener. Certain it is that the friends of the last dozen years of his life were among his best loved of all, and at the head of the list, or very near it, stood Mr. Maskelyne.

In the first months of his widowerhood Bacon wisely sought the distraction of travel, and in the summer of 1894 took his two children abroad for the first time, on a cycle tour in Belgium. This was a few months before cycling for ladies came into general vogue, and also before pneumatic tyres had fully asserted their pre-eminence. The sufferings of the party in endeavouring to propel antiquated solid-tyred machines over the execrable Belgian *chaussées* are better imagined than described. But they managed to extract no little amusement from the experience, as the following letter of Bacon's can testify :--

“So long as we were anywhere within the outskirts of Ostend every one we spoke to replied in fluent French. Half a dozen miles out in the country it was very different. On our road to Bruges, after about an hour's hard jolting

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alongside one of those endless canals which evidently go on for ever, we were overtaken by a thunderstorm, and took refuge in the outbuildings of a small farm. The farmer came to us, and we explained our plight in French, then in English, then we invented words in all languages, but it was no use. Then he brought his wife, and then all his family, and then his carter; but they only spoke Flemish, and so we stood there for an hour gesticulating in dumb show, each party highly amused with the other, but wholly devoid of language. Then a bright idea struck us that we would take their photograph, so we unpacked our camera, made them all stand out in the rain, and took a snap-shot. In the end I brought out a piece of paper, folded it like an envelope, drew a rough representation of a postage-stamp in the corner, and handed it with a pencil so that they might write their address, but to no purpose. They passed it round, examined my drawing minutely, upside down and all ways, and eventually handed it back with a hopeless shake of the head. But we had won their hearts. They followed us to the road and waved their adieux as long as we were in sight."

The following summer Bacon fulfilled a long-made promise to his fourteen-year-old son, and took him his first voyage in the skies. The occasion was a race from the Crystal Palace, and Bacon was not a little impressed to find that the aeronaut of the rival craft was one of the two survivors of the terrible accident which terminated the lives of Dale and a passenger over those very grounds three years before. Not even that awful experience, or the severe injuries he had himself received, had power to wean him from his hobby. From his own lips my father learned the consoling fact that, although every detail of those dread moments of peril and terrific fall

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were indelibly impressed on his memory, he had no recollection whatever of actually reaching the earth—showing that Nature in such cases proves more merciful than we often venture to hope.

The ascent itself was an ordinary afternoon's voyage, undertaken for no sterner purpose than as a pleasant experience. Even in those days, however, Bacon was on the look-out for acoustical phenomena, and the strange spasmodic "yelping" noise, "suggesting a dog just underneath the car," of artillery practice on Plumstead Marshes a mile below, a sound that on earth is heard as a resounding boom, came in for special comment. The incidents of the race, skilfully contested on each side, afforded valuable object-lessons in the relative speed of upper and lower air-currents, the poise of a balloon, which never for a single second is in absolute quiescence in space, and the tremendous art which lies in such an apparently simple act as the discharge of a small quantity of ballast. By careful attention to all these details alone their craft was enabled to win the race, which terminated, after three happy hours, near Rainham Creek, in Essex. It was on this occasion that Bacon first made the acquaintance of that unrivalled aeronaut, Mr. Percival Spencer, his companion and friend in so many subsequent aerial adventures.

In the summer of 1896 there occurred an all-important event. On the 9th of August of that year a total eclipse of the sun took place, visible along a narrow tract of earth which ran, for part of its course, across the upper portion of Norway. This was the first time for many years that the elusive shadow had fallen so near our shores, and the newly founded and enterprising British Astronomical Association early seized upon the opportunity and organized a party of its members to observe

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the phenomenon. Bacon, who had been interested in the Association from its commencement, was one of the first to give in his name, with that of his two children, for the expedition; and on the 25th of July the party started on a delightful cruise, which to Bacon, for one, was fraught with all-important consequences.

Our vessel, the "Norse King," since under other management rechristened the "Argonaut," carried a distinguished party. All the astronomical world was represented: Greenwich Observatory by Mr. E. W. Maunder and Mr. Andrew Crommelin; the Nautical Almanac Office by its chief, Dr. Downing. Sir Robert Ball was there, and Dr. Common, in charge of a branch of the party sent out by the Joint Permanent Eclipse Committee of the Royal and Royal Astronomical Societies to every available eclipse. Half a dozen distinguished foreign professors hailed from Italy, France, and Greece; and one dark-skinned *savant* from India; while such famous lady astronomers as Miss E. Brown and Mrs. Maunder were among the number, in proof of the well-attested scientific attainments of the fairer sex.

It was a unique shipload of clever people, albeit leavened by a large admixture of sightseers who laid no special claim to such an adjective. But let not the unscientific reader hastily assume that it was the more dull or heavy on that account. Your scientist, when he unbends, is the lightest-hearted of beings and most delightful of companions. The astronomers had come not only for an eclipse expedition but for a holiday as well; and united as all were by a common interest and a common aim, insular reserve was broken down in a manner quite unprecedented, and the passengers formed as it were

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a huge family party, in which cordiality, merriment, and right good will reigned supreme.

This fact is attested in the following letter written by Bacon to his faithful Club Secretary in the early days of the cruise:—

“Stavanger. 27.7.96.

“DEAR FORSTER,

“I can give some account of our start, a very fair start so far, though a little bit rough for some of our party. Yesterday broke foul with a baffling wind which brought up a stormy night and a nasty roll, and our table, which started with thirteen, fell to five; so with all the rest. I have not been a sufferer, and Fred, when others look doubtfully at their food, will order roast beef and horse-radish sauce and send for a second allowance of pudding. We are one hundred and sixty-four passengers, and we are very proud of our company; indeed I question if such a select party has left an English port for many a day. Besides our own leading astronomers we have a score of professors of all countries, also a Scotch Bishop. He has been very bad, poor man, but has revived to-day. We also have a Parsee, who seemed at his last gasp yesterday. Then some of his friends came and asked him what sort of funeral ceremony would be proper in his case, others told him they thought they had seen vultures in the distance, and the like. The Bishop was unequal to attend service yesterday, so the Captain officiated.

“Will it astonish you to hear that our destination is on the same longitude as Cairo, and the latitude of Baffin’s Bay? We shall go three hundred miles within the Arctic circle and pitch our tent on Lapland territory, close to the Russian frontier. We are, if arrangements hold, to have our heavy equipment of instruments

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hauled up a couple of miles to where a military guard is posted, and at sea will be a veritable fleet, every country sending private excursions on pleasure or business, while half a dozen British men-of-war, training-ships, will also lie off. I have had a talk with Sir R. Ball about his visit to us, and am to discuss the matter further. I may be able to judge after hearing his three lectures on board which would best suit ourselves. I have had many opportunities of interesting new friends in the Club, and have little doubt I could induce some of them to lecture; but all being astronomers, they should, I think, be kept in reserve for another season. It is an understood thing on board that we are to regard ourselves as a family party and every one is to know every one else. This is very un-English and very delightful, and should lead to many friendships. We sit down our entire party to dinner, and being put at the head of one of the tables the task of making various guests acquainted falls partly on myself.

“Our baggage room is a sight, with all the bulky instruments stowed there, and my next letter ought to tell how the important preparations are proceeding. So far the sky has been uncertain and some heavy rain has fallen. We are fast getting northward, snow on the mountains, and we have sighted our first whale. Remember me to all, and with our kindest regards.

“Yours ever sincerely,

“JOHN M. BACON.”

Our destination was Vadso, a quaint little township of Norwegian Lapland, at the mouth of the Varanger Fjord, some half-day's sail past the North Cape. Vadso is far beyond the range of the ordinary tourist, to whom it offers no attraction—nay, rather presents one pungent

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reason for keeping away! It is the local centre for the extensive fish-drying trade of that district, and in the miles of open wooden sheds that surround the town cod and salmon are hung to "cure." Cod-liver-oil and guano are also manufactured there, and a whale-boiling factory is in the vicinity. Let it be recorded to the credit of the astronomers that for a whole week they bore, uncomplainingly, the mingled odours that one of the party declared positively woke him up at night. "I had no idea until now," plaintively remarked a Greenwich observer, "that a total eclipse could smell so strong."

For the use of the members of the British Astronomical Association a small uninhabited island, opposite the town, was assigned, and here we toiled all day erecting our instruments, while certain self-sacrificing volunteers, Bacon and his son of course among them, shared the task of watching them by night. (There were reindeer on the island, and the numerous Lapp population proved themselves both inquisitive and drunken.) Bacon's astronomical equipment was sufficiently complete and workmanlike. With his four-inch refractor, conveniently mounted and adapted, he and his son were to photograph the Corona, while a smaller instrument was under charge of the writer. The two were carefully erected in a good position on the top of the cliffs overlooking the fjord, and in the centre of the camp of valuable and elaborate apparatus there assembled.

As the day of the eclipse drew near the harbour of Vadso presented an animated scene. The British Training Squadron arrived, with ships of the Danish and Norwegian navies, as also passenger steamers and private yachts of all nations. The many-coloured signal flags flashed all day about the yards of the men-of-war in international courtesies; boat-loads of blue-jackets darted

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over the water, and the rocks around the fjord re-echoed to the unwonted sounds of saluting guns, bands, and bugle-calls. The sad and deeply impressive ceremony of the naval funeral of an English "Middy," killed in an accident, the first Englishman to rest in that remote little Lapland cemetery, was the one sorrowful episode in a delightful week. The ceremony itself was sufficiently touching and picturesque. Kindly Norwegian women strewed the road before the coffin with sweet-smelling heather, two Lutheran clergy, with Geneva gowns and stiff white ruffs, stood with the English Chaplain over the grave; and between the sharp volleys of the firing party rang out the shrill bugle notes of the "réveillé," symbol of the joyful Resurrection.

Elaborate rehearsals filled up every spare moment of the astronomers' time until the great day arrived. The eclipse was to commence at 5 a.m., and half-past two that morning saw us all astir and rowing across to the island in boats—a rather uncomfortably early start, but rendered less apparent from the fact that at that time and latitude we were enjoying a twenty-four hours' day. During the night hours it had been raining, and the sky was yet thick with cloud; but there was just that appearance which seemed to herald a general clearance later; patches of blue could be traced here and there, and for the time, at least, there seemed small reason to despond. But with the rising sun came sinking hopes, for he rose only behind ever more thickly gathering gloom. After "first contact," the exact moment when the dark body of the satellite begins its insidious advance over the sun's bright face, hope gave place to despair. It grew darker and darker, and, with the oncoming shadow, colder and colder too. Once for one brief second, through a rift in the passing vapour, a pale, thin, watery crescent peeped wanly

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down upon us. One young lady present called it the moon—a fact long remembered against her. Then deeper blackness shut down on the desolate scene.

As the actual moment of totality drew near, the astronomers, with one accord, left their instruments, to which, until then, they had clung desperately, and prepared to enjoy, as best might be, what was to follow. Perfect silence fell upon the camp, broken only by Bacon himself, who, seeing his daughter, in the rapidly increasing darkness, approaching, as he thought, too near the edge of the cliff, shouted lustily, "Come back, you silly child!" a remark for which we both subsequently received our share of banter. Then followed the bugle-call heralding the immediate advent of totality, and a moment later the pall fell.

The 106 seconds which followed, during which the sun behind the clouds was totally eclipsed, were always declared by Bacon to be the most wonderful of his life, not to be equalled even by the two solar eclipses he subsequently witnessed. It would be hard indeed to paint a more impressive scene. Huge clouds of the deepest, richest purple enveloped the sky, and through their interstices on the horizon flashed golden gleams as of a stormy autumn sunset. A curious green shade was over all, through which the dimly distinguished faces around showed of a pallor almost corpse-like. The darkness itself was never intense, for even at mid-totality it was possible to trace the hands of a watch; but surely never before had fallen a more strange, weird, unearthly darkness, a darkness that poured down upon us with the greatest rapidity, a darkness that could positively be felt. Every nerve of the trembling body seemed to cry out against so unnatural a nightfall, presaging, as it seemed, some dire and awful cataclysm. The spell of the dread gloom was

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almost hypnotic in its uncanny influence ; and when, with breathless rapidity, it suddenly lifted, the light came flashing back over the landscape, the green and golden gleams faded away, and in place came an early sunrise effect with a pink blush on the fjord, there remained a gasping and speechless crowd, tongue-tied by the mystery they had just beheld, filled with blended emotions, in which wonder, relief, and awe found place ; and disappointment, and pity for the disappointment of others, only subsequently gained sway.

Almost before the astronomers had recovered their senses, and long before the unused instruments were packed up again and the big cairn built on the site of the dismantled camp, plans were being laid for the next total eclipse, which, seventeen months later, was to be visible in India. Names were already being given in for the B.A.A. expedition, and Bacon's was again among the first. Thus it came about that Christmas Eve, 1897, saw another smaller, but not less enthusiastic, band set forth in pursuit of a shadow, this time with Bacon himself as their leader.

The Norwegian eclipse cruise had done much for my father. Not only had it gained him a score of new friendships, some the closest of the rest of his days, but it had roused him from the long lethargy into which my mother's death and his former troubles had plunged him. It had thrown him into contact with men of his own calibre, it had quickened his energy and fired his ambition. During the rest of the happy homeward voyage he became more identified with the leaders of the expedition, and on their councils afterwards his energy and organizing skill soon won him leading place. The arranging of the Indian Eclipse Expedition proved a far more difficult and onerous task than the Norwegian. For the latter there were a

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large party of observers, all of one mind, bound for one spot, not very remote, in the season of summer holiday. Few indeed were the astronomers who would face the trouble and expense of a winter voyage to India, with the added discouragements, as it so chanced at the time, of plague, famine, and war. The last Border campaign was not yet terminated, the country had just passed through the throes of a terrible famine, and plague was raging at Bombay. Small wonder the number of volunteers was small, and the task of securing special terms and facilities for them proportionately greater. The labour entailed on the leaders was extreme, and then, at the last moment, the little party further divided itself, one portion, under Mr. Maunder, sailing a week previously for a post in the centre of India where a camp was already arranged for them; while the larger party, under Bacon's charge, were to proceed a thousand miles inland from Bombay to Buxar, in the Central Provinces, with no very definite ideas concerning what was there to become of them, and eight days only in which to prepare for the eclipse.

In the summer intervening between the two eclipses came the Diamond Jubilee. Through his friendship with Mr. Maskelyne, Bacon became a participator, to a small extent, in the former's ambitious scheme whereby a site in St. Paul's Churchyard, now occupied by Messrs. Spence's premises, was secured, the existing buildings pulled down, and in their place erected the largest stand for spectators, in the finest situation, on the whole route of the procession. Bacon and his son were night-watchmen on the Maskelyne stand the eve of the great ceremony, which they subsequently beheld from the same coign of vantage. Mr. Maskelyne and his talented eldest son, Mr. Nevil Maskelyne, F.R.A.S., were now Bacon's stanch allies, as keenly interested in his doings as he was in

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theirs, and by their suggestion and help he was enabled to include in his instrumental outfit for the Indian Eclipse an apparatus never before employed for the purpose, but from which valuable results might well be anticipated.

It had long been a question of importance to astronomers whether the Solar Corona, which changes so completely in form from one eclipse to the next, alters appreciably within the short period of totality. Satisfactorily to test this point with the photographic means until then employed in eclipse work was practically impossible, but Mr. Nevil Maskelyne suggested that the then newly invented animatograph might be enlisted to settle the matter ; and he now set to work to adapt such a machine to imprint, on one long film, hundreds of exposures, five or six per second, which should form an animated photograph of the whole length of totality. With this apparatus, capable of taking four hundred photographs of the Corona during the minute and a half the total phase would last, Bacon specially charged himself ; hoping with good fortune thus to secure a unique record.

Densest fog enveloped London on the 23rd of December, which rendered futile the heroic efforts of friends and relations who had undertaken long journeys for the purpose of seeing us off. Others, however, were more fortunate, and we did not lack for hearty good wishes as the boat train steamed out of Liverpool Street. At Tilbury our little party of sixteen boarded the P. & O. vessel " Egypt " lying in midstream ; but the fog never lifted, and not until noon next day did our boat quit her moorings in the muddy, crowded river. Once started, however, fortune favoured us, and a safe and pleasant voyage brought us to Bombay on the 16th of January. Bundles of letters were awaiting our arrival. Bacon's untiring efforts of past months had not proved in vain. A govern-

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ment, vast and powerful enough to control its 996,000 square miles of territory, and two hundred and thirty millions of souls, and yet able to stoop to the needs of sixteen helpless English astronomers stranded in its midst, had responded to our prayers, and provided us with camping ground, tents, furniture, and servants even then awaiting our pleasure at Buxar. This was good hearing indeed, and with light hearts we started on our thousand-mile train journey, and cheerfully endured the heat, the dust, and midnight uprousings for "medical inspection" that the plague regulations entailed on all coming from infected Bombay.

Benares was our first halting-place—that nightmare city of dark and dreadful rites, painted, flower-decked idols, putrid holy wells, loathsome fakirs, filthy temples, and corpses smouldering on the banks of the muddy Ganges. After two nights spent here we pushed on to our camping ground. Buxar is only sixty miles from Benares on the direct line of the G.I.P., yet it took us three-quarters of a long day to cover the distance. This was not so much through lack of trains as excess of passengers. The forthcoming eclipse, which would be visible at Benares, brought with it, to the native mind, an unrivalled chance of salvation; for every pious Hindu believed that could he but contrive to enter the Holy River at the moment that the shadow struck the water, his sins would be washed away from him and heaven be sure. Therefore from every corner of that vast country came the pilgrims, hundreds, thousands, nay, millions of them; blocking the roads, choking the trains, congesting the stations. Dusty and footsore, weary and wayworn, dropping out by the way, lying down to die by the roadside; of all ranks, ages, and positions, but each with staff and "lota" in hand, and the light of eager faith in their

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dark, patient eyes. When the eclipse actually came, harassed, all-suffering English officials had untold labour in passing this dense mass of humanity safely through the limited extent of available Ganges water, and in frustrating the pious design of many to drown themselves therein. It was a wonderful and intensely impressive spectacle, but it interfered not a little with our progress to Buxar.

Arrived there, we had another proof of the boundless resource, and equally boundless kindness, of the Anglo-Indian official. Buxar is but a tiny station with very limited facilities, and it was proving a second Benares in the matter of pilgrims. Only here the pilgrims were of another class, fewer in numbers but with more requirements. From all over the country, headed by the Viceroy himself, not to mention the Lieutenant-Governor of Bengal, came the dignitaries and big-wigs, both English and native, to observe the eclipse. They wanted special trains, they wanted camps, they wanted servants, they wanted provisions—what was it they did not want?—and yet an overworked but ever-courteous District Commissioner, and a ditto ditto Local Magistrate, found time to attend to every detail of the encampment we discovered waiting for us, and to call upon us themselves and offer yet further assistance.

The next few days were an experience alike unusual and delightful, as Bacon's own enthusiastic description testifies :—

“Ours was indeed an ideal encampment, possessing every charm that life under canvas is capable of. Half a dozen luxurious sleeping tents were picturesquely grouped in the shady recesses of a mango grove, shielded at the far end by our mess tent, a “Swiss Cottage” of noble proportions. All had been most expeditiously and

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liberally provided for us, and it only added to the enjoyment and novelty of all, if arrangements were as yet somewhat incomplete. Who cared about a bedstead, if there were clean straw on which to spread our rugs? Who would complain of scant furniture, if there was a telescope tripod on which to hang one's clothes and an empty packing-case doing duty equally well for wardrobe and writing-table? It is true that a single wash-hand basin had, in strict rotation, to go the round of the entire party. What matter, when a delicious stream ran within twenty yards of our outposts? Astronomers take a philosophical view of things, and if, as happened a score of times, a lawless tribe of poultry had to be hunted out of our tents, there was the consoling feeling that at any rate the commissariat department was sufficiently provided for. There was other evidence of this. From the boughs of a shady tree hard by hung various joints of sheep and buffalo, watched jealously by half a dozen crows above and as many natives below. This was our larder. Underneath it a convenient hole had been scooped out of the ground, and round it were ranged a few vessels of metal and earthenware. This was the kitchen, and it is needless to add that the impromptu cooking was always alike excellent and varied. It was this very primitive and unconventional state of things that gave the charm to all. Our sojourn here was one long picnic, and life was all romance."

The Eclipse day at last! and one glimpse at the pale blue sky in the early dawn of that morning was sufficient assurance that this time we need fear no disappointment. On a clear space of ground before the tents stood the instruments. Bacon had entrusted to his children the apparatus used—or rather, not used—in Norway, and he himself was to work the precious animatograph, with

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which he had been practising diligently for weeks. In this he needed an assistant, and for the purpose had carefully trained and instructed our chief native servant, "Dabie" by name, white-turbanned, inscrutable, apparently limited in intelligence, still more limited in his knowledge of English, who performed his duties faithfully enough, but watched the uncanny, clicking, whirring machine with inquisitive, possibly too inquisitive, eyes. The rest of our party had their own telescopes and cameras to attend to, or employed themselves in naked-eye sketching and similar observations.

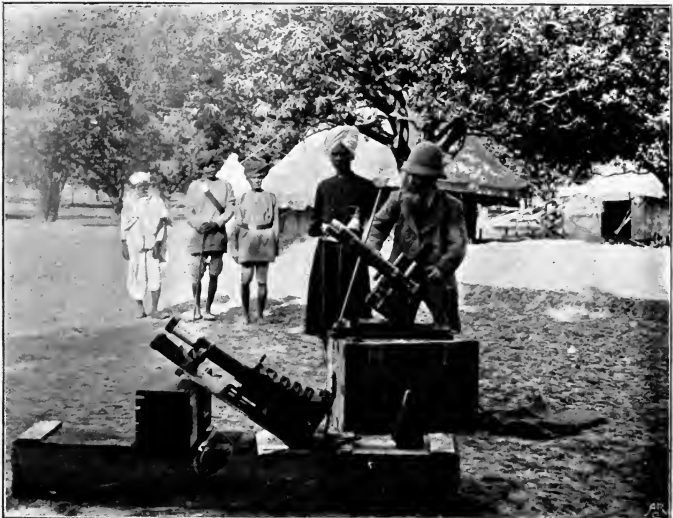
As the morning advanced the scene grew animated in the extreme. The Viceroy arrived and was conducted with much pomp to the huge camp, covering several acres, and specially raised platform erected for him. Train after train rolled in, depositing its hundreds of sightseers. To clear the rapidly growing concourse away from the station, where they would otherwise have impeded the traffic, one gifted official had hit upon a singularly happy idea. He had erected a sign-post, with pointer pointing down the road, bearing the legend, "This way to the Eclipse." Seriously meant or not, his notice at least had the desired effect.

Then followed the deeply impressive hour during which the light of heaven is slowly blotted from the sky, and there falls on the trembling earth the strange, weird darkness that is like nothing else in the world in its awful menace. Verily Nature is the greatest of stage-managers, and works up to her climax in a way that no writer or actor of melodrama can ever hope to approach for real awesomeness and scenic effect. The gathering of a mighty thunderstorm, the mustering of the typhoon, are terrible and impressive indeed. But the hour in which the ghostly shadow falls thick and thicker upon the shudder-



BACON AT THE NORWAY ECLIPSE

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BACON AT THE INDIAN ECLIPSE

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ing earth is the most solemn and fearful in the history of life. It is as if annihilation threatened to the very source of our being itself, and creation stood aghast at the ruin to come.

As the daylight waned, frightened birds, uttering strange calls of protest, fluttered trembling to their roosts. The camp was quiet with the hush of suspense, though now and again a quick exclamation or a nervous laugh jarred upon the ear, for the strain of the excitement was growing intense. Only the narrowest crescent, narrowing every moment, of the sun's veiled face was left in the sky, and behold close beside it in the fading blue there flashed forth Venus, Mercury, and the brighter stars, gleaming bright and brighter. The light was going now by leaps and bounds, with, as it seemed, almost visible pulsations. Over the ground sped the dark ripples of the "shadow bands." The last gleam of sunlight trembled on the verge and then went out. Simultaneously came Bacon's warning voice, "Now!" and totality commenced.

Then in the pale blue sky above sprang forth a vision of purest beauty, such as the gross eye of man may almost fear to gaze upon, so wellnigh divine it seems in its heavenly loveliness; glorious, mysterious, and indescribable! A great dark ball of inky blackness hung in the heavens, an awful dead sun, bereft of light and life. But round the corpse there played a lambent rosy flame, and a bright brilliant ring of silver light like the halo with which medieval painters surround the heads of saints in bliss. While far out towards the twinkling stars there stretched rays and streamers of pearly light, many times the diameter of the sun in length, sharply defined and clear, yet of a fineness ethereal and unearthly; filmy wisps of ghostly substance, of a delicate beauty past all words. It was like nothing we could have seen or imagined, even

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in dreams. Surely the gates of the unseen world had swung ajar, and once more, as in days of yore, to longing mortals was vouchsafed a single fleeting glimpse of the glory of the land beyond the veil!

Then as we gazed spellbound there came on the limb of the sun a blazing star of light, before whose increasing brilliance the ghostly vision began to pale and fade, yet all reluctantly, as if loath to go. The long streamers went first, and then the Inner Corona narrowed up on the side furthest from the light and finally disappeared altogether, though not for ten or fifteen seconds after totality was past. The light came flooding back, the stars and planets faded in the blue, and on the banks of the river the natives raised a long, weird cry. A sigh whispered through the camp, a deep breath of wonder, regret, almost of relief. The great eclipse was past and over, and the shadow fleeing at lightning speed over land and sea to realms of space unknown.

The little party of astronomers had made good use of their ninety-six seconds. Valuable photographs and notes had been secured, and one novel result in the shape of a set of light tests that seemed to show that the rapid return of the light, apparently much more rapid than its withdrawal, is an objective and not merely a subjective phenomenon. The animatograph had worked admirably, and that night the precious film was removed from the machine and carefully stowed away to await development in England. Telegrams, of course, had to be despatched, and the Guildhall Club that evening was gladdened by the receipt of a single unbeautiful word—"Abcess"—which, however, by the aid of a carefully prepared code, they were able to expand as follows: "Weather perfect. Observations successful all round. All well. Large party collected. No disturbance of any kind. Smooth pas-

In Search of the Corona

sage." Later on, Bacon, writing to the Senior Secretary, added a few more details :—

“Ludlow Castle Hotel,

“Delhi.

“Jan. 26, '98.

“DEAR FORSTER,

“You will have had my telegram and learned the splendid success that attended astronomers along their whole line across India. We ourselves are triumphant, and feel that we have enjoyed such an experience as can never come into our lives again.

“The Viceroy's enormous encampment adjoined ours, and to furnish it the resources of the country had been taxed to the utmost. In spite of this, however, Government supplied us with a camp of our own on quite a princely scale, and posted a guard of some thirty police over us night and day. Nor was this unnecessary. The concourse was unparalleled. Elephants, camels, bullock-carts, and every conceivable species of conveyance, passed us, and the natives, gathered from all India, trooped by incessantly in countless thousands to their strange rites in their holy river. Those days and nights spent under canvas were certainly the most novel and most delightful in my life, and we fear that all else in India will by comparison seem commonplace.

“My own work has been heavy but well rewarded. Everything has gone through my hands. I was called on by every one, and enjoyed the special compliment of being asked to lunch with His Excellency the Viceroy after the eclipse was over. This I did, and turned the occasion to account afterwards by taking an animatograph of his brilliant gathering.

“Remember us to all. Ever yours very sincerely,

“JOHN M. BACON.”

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Then after the work was done and the camp broken up came a four-weeks' scamper over some of the wonder spots of India, which left a crowd of vivid mental pictures, indelibly imprinted on the brain. The Taj Mahal by moonlight was perhaps the loveliest of these, or the Alpine flush at dawn on Kinchinjunga as seen from the heights of Darjeeling. But most of all was Bacon stirred by the deathless story of the Great Mutiny, and on the Ridge at Delhi, before the Cashmere Gate, in the ruin-strewn gardens of the Lucknow Residency, and by the little white temple that overlooks the awful Massacre Ghaut at Cawnpore, he traced the well-remembered details of a glorious history that from boyhood had quickened his pulses and stirred his imagination. The homeward journey was begun from Calcutta on the 18th of February, and from Port Said Bacon posted the following. (Mr. Maskelyne, it should be mentioned, had provided a few spare animatograph films to be exposed on any effective Indian scenes that might lend themselves to a living picture.)

“ S.S. Palawan. Red Sea.

“ *March 6, '98.*

“ MY DEAR MR. MASKELYNE,

“ I have the chance to scribble half a dozen lines, which should precede us by some few days and tell of our being, at this moment, half-way home again. The date of our arrival is quite uncertain; and as your box is stuffed out with travelling cushions and other personal gear I propose taking it straight home and returning it to you in proper order a day or two later. For safety's sake, I had it consigned to the care of the P. & O.'s Agent at Calcutta immediately our camp was struck and our long forced journeys up country began. I was hoping to get another 'animatograph' picture at Calcutta, but saw

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no opportunity worth the candle. It is a fine city, but far too English and commonplace. The "Chandni Chouk," the centre of the native quarter at Delhi, would have made a novel and effective moving scene, but with this exception I had no chance of working up a picture, so that, of necessity, I bring back the main of your films unused.

"Our good fortune has continued with us on our homeward voyage, the passage so far having been exceptionally fine, with no very extreme heat. The one single little mishap that has occurred to any of our party fell to my lot a few days ago. We were coaling all one night at Colombo, and the cabins being stuffy with closed ports, I slept in a chair on deck, Fred on one side of me. and a ship's officer (off duty) on the other. Naturally a light sleeper, I must through that noisy night have been exceptionally wakeful, yet one of those thieves for which the island is famous succeeded in detaching my gold watch as I slept and making off. It was an old favourite. They tell me on the ship that such robberies are constant, and the villains never hesitate to use their knives freely to make good their escape. I am looking forward with growing eagerness now to seeing yourself and all again. I earnestly hope and trust that Mrs. Maskelyne and all your circle are well. Pray remember us most kindly and believe me

"Ever yours most sincerely,

"JOHN M. BACON."

My father of course never heard any more of his watch—a valuable one—but a more serious loss was before him. Tilbury was reached, and Mr. Nevil Maskelyne himself met the boat and received the precious packing-case in which the eclipse film had been stowed. "Wel-

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come back, our President!" was the cheery shout that greeted us in the darkness when our little family party stepped out of the train that evening. Some thirty men of the Guildhall Club were there to receive us, and by their escort rendered the drive home quite a triumphal progress. Our home-coming was delightful enough, but next morning brought frantic telegrams from the Egyptian Hall, consternation, and endless questioning. Mr. Maskelyne had discovered the small box which held the film in the packing-case where it was packed, but the box itself was empty and the film had disappeared!

Who was the thief and when and where the theft was committed, has never been cleared up. The fact that the case had clearly been tampered with on its way from the docks seemed to point to the possibility, incredible as it seemed, of a robbery at home, and Mr. Maskelyne offered a reward of £50 for information, which elicited no reply. More plausible appeared the theory that one of our native servants in camp—Dabie himself, perchance—actuated perhaps by superstitious fanaticism, or hope of gain, or mere curiosity, had obtained access, as he quite possibly might, to the box and abstracted its contents. Many theories were promulgated in the press and elsewhere, nor were there wanting ill-natured folk who declared the whole thing a hoax—that there was no film, nor ever had been! It was all very annoying and extremely disappointing, but there was no more to be done except to hope and arrange that fortune might be retrieved at the next total eclipse, to be visible in May, 1900.



BACON'S FIRST SCIENTIFIC BALLOON ASCENT

Mr. J. N. Maskelyne, Dr. Lachlan, Captain Lynn-Smart, Bacon, Prof. Turner,
Mr. N. Maskelyne

XII

“THE SCIENTIFIC AERONAUT”

ON the 27th of July, 1898, the grounds of Shaw House, Newbury, an historical locality, presented an animated scene. If the ghosts of King Charles (who once spent an unhappy night in the grand old Elizabethan mansion) and of Cromwell (who gave him a good trouncing on the morrow) looked down that afternoon on a spot they had both good reason to recollect, they must have agreed together that times had altered very much since their day. In a field beside the fine elm avenue a large and happy crowd had collected, for the Guildhall Club were holding a gymkhana, and the weather was propitious. All serious interest, however, and there was no lack of it, was concentrated in one corner, where a large balloon reared its shapely form as high as the tree-tops, and a group of scientific gentlemen toyed with as curious a collection of acoustic instruments as had ever been brought together in one meadow.

There was apparatus in plenty for both hearing and making a noise ; giant “ears,” speaking-trumpets, and huge “receivers.” Bandsmen with musical instruments, volunteers with rifles, a stationary engine to which were attached every variety of steam hooter, siren, whistle, and other ear-piercing invention to be obtained ; while ever and anon there broke over the field the terrific report of a cotton-powder fog-signal, such as Trinity House

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uses for its lighthouses and lightships all round the coast. These were fired by the Secretary of the Cotton Powder Company himself, Captain Lynn-Smart, and each stunning explosion, louder than all the artillery of the battle three hundred years ago, was followed by an answering crash from the refreshment tent, where startled customers and waiters had dropped their cups and saucers. There were more noisy possibilities also than met the eye. Three miles off the sexton of Thatcham Church was preparing to ring up the heavy tenor of that steeple ; while thirty miles distant, as the crow flies, artillerymen at Portsmouth, by special favour, were making ready at a given signal to fire the big guns.

There seemed scarcely room for the passengers in the car of the balloon, so packed was it with cameras, telescopes, electrometers, chronometers, thermometers, barometers, speaking-trumpets, ear-trumpets, horns, "dust-counters," and every conceivable variety of portable acoustic and meteorological implement. They managed to wedge themselves in somehow, however, and when the moment of ascent came they were wafted up and away, notebooks, ear-trumpets, and stop-watches in hand, till they disappeared into the sky : while there followed them at preconcerted intervals, singly and together, in unison and in discord, the lustiest hootings, tootlings, screechings, brayings, whistlings, and explosions, that continued long after the balloon, like a drop in the air, had faded into the clouds.

Thus was happily inaugurated, certainly with no little noise, the first of a long, long series of scientific balloon voyages which formed Bacon's chief work for the remaining busy years of his life, and with which his name is inseparably connected.

It began in this wise. From his youth upwards Bacon

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had been deeply interested in the vagaries of sound. The “ghostly” experience in his rooms at Trinity already related, and more than one other occasion when he had assisted in the solving of an acoustic mystery, had drawn his attention closely to the subject. At all times he was quick to notice sound phenomena, and his ear was ever alert to record echoes, the varying travel of distant noises, and the like; never more so than when in night hours, perched aloft in the Golden Ball of St. Paul’s, or hovering in a balloon over the city or country, the sounds of earth had come up to him with a distinctness and import not to be obtained in any other situation. More recently his own voyages had recalled the subject of the travel of sounds at sea, specially emphasized about this time by several terrible shipwrecks where the disaster seemed to have been brought about by failure to hear the recognized coast signals, though uttering their warning messages quite close at hand.

Eagerly he had read all available authorities on acoustics, more especially the works of that famous physicist Professor Tyndall. As scientific adviser to Trinity House, Tyndall had made a very special study of this very matter of sound-signals at sea, with exhaustive experiments lasting over a long period. Bacon followed these experiments with keenest interest, noting carefully points where he opined more conclusive tests might have been instituted, or side-issues which might be profitably followed up. Again and again he went over them, and each time he halted at a sentence where the Professor makes one frank admission. After giving the results of his investigations, results in many points quite at variance with earlier authorities, he records his desire to test his theories from a free balloon, but owns that, on consideration, the risk appeared too great.

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To Bacon this paragraph came in the nature of a direct challenge.

Ever since the day of his first ascent, and indeed before that, his library had, of course, contained all the literature he could lay hands on concerning the history of aeronautics; place of honour being reserved to Glaisher's fascinating "Travels in the Air." Naturally the scientific aspect of ballooning appealed most strongly to Bacon's mind, and in reading of the brilliant results arrived at in the past it struck him again and again as deplorable that of late years the balloon, as a means of scientific research—unrivalled in its way—had completely fallen into disuse. In early days scientists had been quick to recognize its possibilities. As far back as 1802 Gay Lussac and others were learning by its means all sorts of physical facts till then unknown or unproved. Continental *savants* attested its value again and again, and after fifty years the British Association awoke, somewhat tardily, to its possibilities, and organized a series of scientific ascents by Mr. Welsh, of Kew Observatory; the veteran Charles Green, "Father of English Aeronautics," hero of the Nassau voyage, as aeronaut. These ascents proved of much interest and gave high promise to further research, but the illness of Mr. Welsh brought them to an untimely close. A few years later, however, came the record-breaking voyages of Glaisher and Coxwell, the finest series of scientific ascents until then accomplished. Their work and adventures, including the terrific plunge of seven miles into the sky, form a most keenly interesting contribution to scientific research, of an importance not to be overestimated; but since their day, now more than thirty years ago, scientific ballooning seemed, in this country at least, to have completely dropped. The balloon, in fact, had sunk to the level of a show for gala

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gatherings and nothing more. The airship and the flying machine were in earliest experimental stages only. Ballooning as a fashionable pastime—an outcome of the interest which Bacon’s own efforts were to produce—was still years distant, and the British Aeronautical Society, pursuing a quiet existence, had little indeed save American and Continental news to record.

Gradually it was dawning on Bacon that here was his chance. Ballooning research of the past had been mainly of a meteorological nature, but as an observatory for acoustical phenomena also a free balloon possessed, as Tyndall had acknowledged, unique and unrivalled advantages. Possibilities of other upper air observations, astronomical, biological, and chemical, also presented themselves. Bacon was the last man in the world to be deterred by the element of personal risk; ballooning was his keenest pleasure in life, and now at last he saw the opportunity for turning his hobby to real practical use.

Plans began shaping themselves, but preparatory to undertaking the work opening out before him he sought the advice of the leaders of the scientific world on his new project. Lord Kelvin, Lord Rayleigh, Sir W. Huggins, Professor J. J. Thomson, Professor W. Ramsay, Professor H. H. Turner, and Sir Robert Ball, among others, were approached by him, and from one and all he obtained warm encouragement and sympathy, and not a few valuable suggestions. Next he unfolded his plans to his friends the Maskelynes, and here he received practical assistance not to be overestimated. Mr. Maskelyne’s skill as a mechanic needs no insisting on, and his son Nevil, by his more recent work in connection with wireless telegraphy and other matters, has sufficiently demonstrated his genius for applying his inherited talent

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to the invention and perfecting of delicate scientific apparatus. He devised all manner of sensitive instruments for the receiving and recording of sound, specially suited for balloon observations. Moreover he and his father devoted the whole of their summer holidays to helping Bacon in a tentative series of sound experiments on the ground, made in preparation for his aerial researches.

So during the summer of 1898 weird noises began to disturb the day, and frequently the night, echoes of the open stretches of Bucklebury Common. Startled sheep would scatter at the furious braying of horns, gipsies be roused in terror by the thunder of an exploding fog-signal; while rustics wagged incredulous heads at the spectacle of gentlemen with speaking-trumpets listening behind gorse bushes, or endeavouring to locate with astonishing-looking apparatus the position of metronomes and watches hidden among the heather.

One most valuable result of this work was the perfecting of an "ear" of quite marvellous sensitiveness. Recollections of his long-past clerical experience with Professor Farish's parabolic sounding-board at St. Giles's, Cambridge, recurred to Bacon's mind, and led him to the construction of a giant ear-trumpet of special form, with which it was possible to pick up and locate faint noises with the greatest ease. Armed with these instruments the family would issue forth, night after night, to catch the rumble of the G.W.R. expresses in the Swindon valley thirteen miles across the downs, the bells from distant village steeples, or the nine o'clock gun at Portsmouth. We never succeeded satisfactorily in verifying the last, by the way, though the keepers in the neighbouring preserves averred that always at nine o'clock every night startled pheasants would rustle in the branches, proving

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that their sensitive organs detected a sound too faint for human ears.

As far as the actual balloon arrangements for his aerial experiments went Bacon found no difficulty, for Mr. Percival Spencer and his brother Stanley threw themselves heart and soul into the matter, and assisted with all the skill and knowledge that their unrivalled experience as aeronauts lent them. Another trained scientific observer, however, was needed in the car, and here Bacon was lucky enough to enlist the services of Dr. R. Lachlan, late Fellow of Trinity College, Cambridge, a distinguished mathematician, quick in observation, cool in action, than whom no better colleague and helper could be desired.

The inaugural ascent was a triumphant success. A mass of careful observations were recorded, the results of which were naturally instructive rather than conclusive, and further voyages followed in quick succession. In the third of these, ascending from the Crystal Palace, the wind chanced to be blowing from almost precisely the same quarter as in Bacon's first voyage of all, ten years before ; and once again he found himself traversing the heart of London, and looking down on the wilderness of its roofs and chimney-pots. Again the roar of the streets arose to him, but this time with strangely abated force. In Bacon's own phrase, “The same harsh instrument was sounding, but the full organ was wanting and the swell was closed.” Also a thick and very palpable haze, invisible from below but only too apparent when aloft, and sufficient to render aerial photography hopelessly futile, was in the air. Clearly this latter phenomenon was the cause of the first, and further proof of this was to hand in the fact that that mighty sounding board the earth, which from a balloon throws back aerial

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sounds with startling volume, this time refused to answer to the usual signals; and not until a height of under a thousand feet was attained would it reluctantly return the notes of a horn that, on previous days, were readily flung back to twice or four times that elevation.

The circumstances of this particular voyage made it easy to compare the varying sound-reflecting powers of the varieties of country traversed; for, London being passed, the balloon sped low over Hertfordshire and Cambridgeshire fields and woods. Pastures and ploughed land reflected badly, stubble-fields with hard-baked soil were better; but woods in full foliage, or crops of roots with broad expanding leaves, were better still. Best of all for the return of sound, be it mentioned, is still, unruffled water; but the nature of the sound tested makes some difference to the results obtained.

Evening shadows were falling thickly over the wide and peaceful landscape when our balloon (it was the writer's first experience of Cloudland) sank down towards the newly reaped cornfield chosen for our landing-place. The scene, however, was scarcely as peaceful as it looked from a mile's elevation, for a stiff breeze, uncomfortably in evidence when we left the Palace grounds, had by no means abated its vigour. The ground, moreover, was baked iron-hard with weeks of drought, and the prongs of the grapnel refused to enter. A stunning crash announced our arrival on *terra firma*, and then, the wind catching the flapping, half-empty silk, there ensued a very pretty steeplechase over the harvest-fields. Neatly piled corn-sheaves flew in all directions, panting and perspiring labourers in full cry were left far behind. The race was exciting and fatiguing, for the car was dragging all over on its side and it needed much holding on to prevent being jerked out of the basket. There was not



OVER THE TOWN

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DESCENT ON TELEGRAPH WIRES

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much time left for reflection in our hurried progress ; nevertheless the thought was in all our minds that we were speeding towards a deep cutting of the Great Northern Railway, seen from aloft, in which ugly ditch our course would certainly be stayed—and then there would be the frequent express trains to be reckoned with !

Some fifty yards of grass-field now only separated us from the cutting ; but fringing the field ran the North Road, and, luckily, alongside it, a double row of telegraph and telephone wires. Over these wires the mass of the silk plunged and lay, heaving, on the roadway ; but on the further side the car remained suspended, until such time as the shouting harvesters rushed up to our assistance. Those wires had proved our salvation, and it seemed a little ungrateful on our part that when the balloon was cleared away two of them lay broken and twisted upon the ground. Naturally we expected to hear more of this incident ; but the G.P.O. proved itself as generous as it had been helpful, and nothing was said. Our steeplechase terminated, I recall, in close proximity to a donkey. This animal alone of all the occupants of the fields we passed over held his ground. Horses and sheep and cattle bolted wildly at our approach, man himself evinced the maddest excitement, but the donkey stood firm and made no sign or sound. Only after a long half-hour, when the wreckage was at last cleared away and hoisted into a wagon, did the situation seem to dawn upon him, and uplifting voice and tail he brayed and brayed and brayed.

Almost the next voyage that Bacon made he experienced a similar steeplechase at the finish, and, through lack of an anchor, came near ending his days over the lofty “Lover’s Seat” cliff at Hastings. Again he may be left to tell his own tale :—

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“It was desirable to attain a considerable height, and to continue the observations as long as possible. On the eve of starting I appealed to our aeronaut and asked him if, as the day was calm, we might not dispense with the extra weight of heavy anchor and trail-rope.

“‘I think we might,’ was his reply, ‘but you will have to take the chance of what sort of landing we may get.’

“My colleague, Dr. Lachlan, and myself readily agreed to this, and, all being in order, the final directions were promptly given. The next moment we were mounting upwards with abundant buoyant power and eight bags of ballast to the good.

“The afternoon was perfect for our purpose, warm, still, and almost cloudless, with only such summer haze as tones the sky to greyish blue. We took frequent snapshots as we drifted slowly to the S.S.E. at a height of hardly half a mile. From the moment of starting one peculiarity in the physical conditions prevailing was abundantly apparent. The air was not in fittest mood for conveying sounds. The cheering of the crowd in the Palace grounds had quickly faded. In twenty minutes from the start we were sailing over Bromley. Half an hour later we could watch the trains burrowing under Polhill tunnel and could catch their smothered rumbling even under the hill that buried them. Presently Tonbridge and Tunbridge Wells lay beneath us. Then 4,000, 6,000, 8,000 feet were rapidly recorded. Soon we looked down from a mile and three-quarters high. What a sight it was!

“The sea was well in sight. Beachy Head stood bold and bluff on the right. Dungeness was away on the east and far down, but straight in front and rapidly approaching, were unmistakably outlines of the twin towns of Hastings and St. Leonards. Hastings loomed



LEAVING THE CROWD



ABOVE THE SUBURBS



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large on the weather bow, with the old town right ahead and apparently only three or four miles away. Mr. Spencer fell a-musing, and, looking over the side, began toying with fragments of paper, which he threw out from time to time. I ventured to break in on his reverie and remark that the town seemed very close, and that there was no margin between it and the bare sea-cliff.

“‘What’s the height, Doctor?’ he asked.

“‘Eight thousand feet,’ was the reply. Mr. Spencer, without deigning to look seaward, merely took the valve-line in hand.

“‘But, Mr. Percival,’ I said with gentle chiding, ‘you’re not looking the way we are drifting, and there are only two or three fields now between us and the sea.’

“For all that, Mr. Spencer obstinately looked another way and merely demanded the height again. The Doctor replied, without a tremor in his voice, yet somewhat promptly, ‘Six thousand feet.’

“We were already over the houses. Beyond them were the cliffs a hundred feet high, and beyond—the open sea.

“Flesh and blood could not stand this, and I asked in desperation if the hanging rope wouldn’t damage the chimney-pots.

“‘Yes,’ replied the helmsman, ‘but not so much as the car,’ and with that he looked harder than ever in the wrong direction. Already we were swooping down with a rush.

“‘Ready with this sandbag,’ broke in Mr. Spencer, ‘and look out.’ The next moment circumstances were all altered, and we were caught by a strong undercurrent blowing in another direction, the presence of which Mr. Spencer, watching the smoke of the chimneys beneath, alone had detected. And so we cleared the housetops after all, coming down in the identical harvest-field that

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our captain had had it in his mind to drop in from the very first.

“It was a bold exploit, beautifully carried out ; and successful as far as it went ; but our adventure was very far from being yet over. The wind that had been so light in the Palace grounds was now blowing half a gale along the bleak high cliff. In consequence of this we at once bowled over, and as we had no grapnel we began dragging very rapidly. All who are familiar with Hastings can picture the spot hard by the sea, on the eastern outskirts, and will understand how only one field separated us from the top of the high cliff. Along this field we now began to coast, at an accelerating pace which, to say the least, grew exciting. Right across the middle of this field, however, was drawn a substantial fence of posts and rails, and this was a most welcome obstacle. For as we were fairly tobogganing on the ground we hoped that this would hold us up until the balloon, already half empty, should have entirely collapsed. The mistake we made was in forgetting our momentum. One is so apt to regard a balloon as devoid of weight. Yet in reality we represented some three-quarters of a ton, moving as fast as a horse could trot. Railings are not found in a meadow that will stand such a mad charge, and we were quickly on the wrong side of the fence, with a huge gap behind us.

“We were now perfectly helpless, and dragging on our side could take no clear view of the ground before us. We only knew that, while our course was parallel to the coast-line, the actual outline of the headland was indented, and a yawning chasm was somewhere close ahead of us.

“It will need no insisting on that to have been dragged over the edge of a lofty cliff with a crippled balloon would have meant complete disaster. Further, if it be asked

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why we did not attempt to get out, the answer is a simple one. It would have been impossible for us all to have jumped out together, and the attempt would infallibly have meant the carrying away of one or more of the party. Come what might, we must stick by the craft and one another. Now and again one of us—the victim of some extra heavy bump—would utter an ejaculation as cheerily as he could, to indicate that so far he was all right. Then one, momentarily catching a better view, suddenly cried “Look out!” with an accent which proclaimed that the crisis had come. It had. Just ahead the ground disappeared, dropping into some steep hollow—how steep or where ending we knew not; but its brink was bordered by a few trees, and if only luck would stand by us——

“Well, it did. With a delicious ‘swish’ we crashed into a big oak, and our brave craft had found its haven. And where were we? We soon learned. Half Hastings was hurrying out to greet us, and then we found out that our career had ended actually at the romantic Fairlight Glen that overhangs the sea.”

And so voyage succeeded voyage all that summer, each adding its quota to the mass of valuable observations now beginning to assume important dimensions, each characterized by its own special incidents. One ascent from town followed with curious exactness the course of the famous Nassau journey of sixty years before, and the aeronauts were strongly tempted to make the resemblance more complete by crossing the Channel, as they might very easily have done. Only the fact that two days later they were to ascend at the meeting of the British Association at Bristol, and the risk of not returning in time, restrained them. Fear of descending

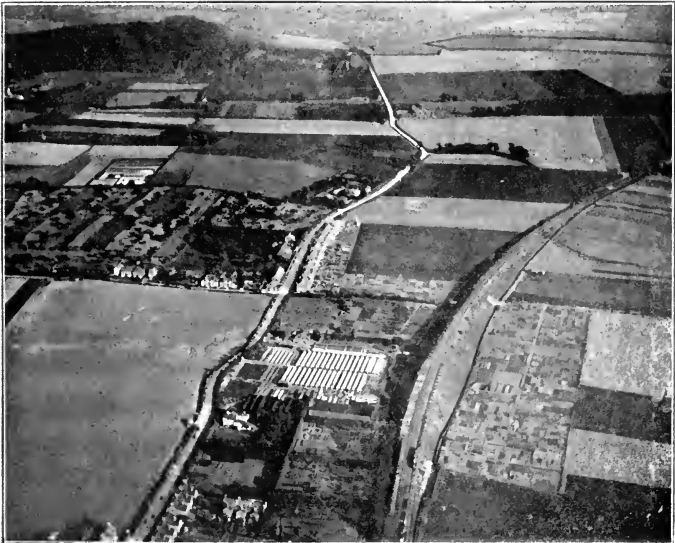
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among the hop-fields of Kent—a hop-field is a peculiarly unpropitious spot for a balloon descent, both because the crop is valuable and costly to damage, while hop-poles are stout and long and pointed, and poke unpleasant holes in silk and person—kept them aloft until dusk had fallen on the ground, though in the sky twilight and the exquisite colours of a flaming sunset yet lingered. The final plunge to earth was a plunge into darkness, and a quarter of a mile of blind tobogganing before the anchor held ensued. It was very much a case of trusting to luck, and in this case the luck held, for the balloon eventually found safe resting-place in a ditch. Then followed an amusing minute or two. Countrymen had seen the great craft against the sky, and were running up from all directions to where they surmised it had fallen. But by this time it was night, or very nearly so, and they could not locate the spot where the aeronauts lay quiet in the overturned car, listening through chinks in the basketwork, and waiting with glee to see what would follow.

Around them lay tumbled the great folds of the silk, floundering and flapping in the breeze like some stranded leviathan in its last throes ; an uncanny enough spectacle to encounter in lonely fields amid the shades of evening. So the rustics seemed to find it, for when the shouting crowd drew near and voices cried excitedly “ ‘Ere ’er be ! ” no great anxiety was at first displayed for a nearer acquaintance with the monster. A breathless pause ensued, and a half-doubtful inquiry, “ What be ’er ? ” The party hidden in the basket with difficulty stifled their mirth and remained motionless until cautious footsteps approached their hiding-place, and nervous hands felt about the car. Then they burst into a shout of laughter, all the heartier because at the unexpected sound their



OVER KENT
SHADOW OF THE BALLOON ON THE GROUND



OVER KENT. SWANLEY JUNCTION



ABOVE BRISTOL



LEAVING CLIFTON COLLEGE GROUNDS

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discoverers shied off again promptly, in alarm, into the darkness.

The British Association ascent which followed was an instructive one in many ways. Many leading scientific men were, of course, present, and displayed a warm interest in the proceedings: notably Professor Ramsay, who provided Bacon with an exhausted glass flask in which to bottle off air in the upper regions for his own subsequent analysis. The ascent was to form one of the attractions of the garden party given to the *savants* at Clifton College, and not until long evening shadows lay thick across the lawns where the guests had assembled did the balloon rise upon its voyage. Almost despairingly Bacon snapshotted the quickly alternating scenes. He had had little luck with aerial photography, attempted under seemingly most favourable conditions, during recent ascents, and there seemed small chance of succeeding better when the light was so far spent. Nevertheless he achieved on this occasion the best series of photographs he ever secured, and this curious fact appeared significantly to dovetail in with another observation made. Long weeks of sunny, rainless days had succeeded each other through a summer of most unusual drought. The dry weather had every appearance of still continuing, and no forecast yet had even hinted at the possibility of a break. Nevertheless the instruments carried aloft on this occasion revealed an unexpected state of affairs.

The temperature of the upper air had sunk in a marked degree, and high up the air was saturated with moisture. Clearly a colder current from the N.W. was settling earthward, replacing the dry dust-laden lower stratum with moister and more transparent atmosphere. The aeronauts foretold a coming change, and three days later their scarce-believed prophecies were justified. In the border-

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land of moist and dry air, encountered above, stray cloudlets formed and vanished again beside them. At their highest point of several thousand feet a floating globe of thistledown—a voyager far indeed from home—wandered past the car. A rapid descent which seemed to threaten an impact with the ground over-severe for delicate apparatus, was checked by a fall in the pliant branches of an oak tree near Frome. Ridiculously enough, some mistake occurred in communicating the safe termination of the voyage, and the newspapers next morning saw fit to announce that the aeronauts were “missing.” In fact they worked up quite a little sensation over the matter, so that my father, wholly unconscious, returning to London later in the day, found himself confronting a street placard of an evening edition announcing in large letters, “Safety of Professor Bacon!” The next number of the “World” contained the following verses—

“PIGS MIGHT FLY.”

(To the balloon in which Professor Bacon left Bristol on Monday night, and which, after its disappearance had caused some anxiety, alighted eventually near Frome).

You started for your journey in the clouds,
Bent on aerial investigation,
Acclaimed by shouts of scientific crowds,
Whose gas inspired you with your inspiration.

And after many hours, though you were tossed,
By tempest hurled, storm-buffed or shaken,
This you can boast—that honour was not lost,
For in the end, at least, you saved your Bacon.

So far the aerial experiments, promising and instructive as they were proving, had been carried out only in the hours of daylight, and Bacon was now thirsting to repeat them in the silence and altered conditions of night. A date was accordingly fixed for a night balloon voyage under the harvest moon of early autumn, and with boyish

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enthusiasm Bacon looked forward to a novel and altogether delightful experience. Glaishier, whose scientific ascents had also included a night journey aloft, had spoken of the difficulty of taking observations by lamp-light. My father decided to overcome this difficulty by preliminary practice, and, by way of fitting rehearsal for the event, to choose some isolated and elevated position for the purpose. With this view, he begged permission of his friend the Vicar to spend a night on the fine old tower of Thatcham Church, some mile and a half distant, and here with his son and daughter he kept night vigil, diligently practising with the apparatus intended for the balloon ascent, and adding many experiments to which the situation lent itself, as, for example, the hearing of faint sounds as carried from the ground to the parapet eighty feet above, and vice versâ.

It was somewhat of an eerie experience aloft above that moonlit, silent graveyard; but more especially so, when, in our toilsome ascent, laden with baggage, among the crazy jackdaw-littered ladders of the belfry, the solitary light we bore became extinguished, leaving us in total darkness, just as the timbers to which we clung commenced an uncanny trembling, and immediately beside us, with startling suddenness and deafening uproar, the bells crashed out the chimes and hour of midnight.

It proved splendid preparation, however, for the ascent, which took place from the Crystal Palace in ideal weather conditions a few days later. A night balloon voyage possesses romantic attractions of its own not to be surpassed, and in scenic effects alone the midnight journey over the Garden of England and beneath a moon positively blinding in its brilliance, at that height, was without its equal. In the upper regions the air proved consider-

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ably warmer than on the ground, and in much comfort and delight the three aeronauts (Mr. Swinbourne, the war correspondent, was this time of the party), leaving the sparkling, star-traced streets of London behind them, sped smoothly across Kent, over Eynsford and Aylesford, making meteorological and other observations by the light of a Davy lamp (necessary because of the near presence of the gas) slung aloft, and continually challenging the echoes from earth, this time behaving in a quite unexampled and most instructive fashion. In the strange deceptive mixture of darkness and moonlight it was a difficult matter to recognize landmarks, and time and again the white sheet of low-lying mists beneath suggested irresistibly to voyagers making their first night journey that the sea had been reached. Finally, a few miles from Maidstone, the balloon, sinking earthwards, caught her trail-rope in telegraph wires, and the party hauled themselves down, hand over hand, until a panting game-keeper, who swore he had run a mile and a quarter in pursuit, burst through one hedge, even as a burly policeman on night duty shouldered through another. The nearest habitation, a solitary inn, was a mile and a half away; but by skilful adjustment of the ballast the exactly poised balloon was conveyed breast-high, without effort, by these two cheerful helpers to the spot. They might have saved themselves the trouble, however, for that inhospitable "public" refused to open its doors to what it evidently supposed were belated hooligans, despite (or perhaps in consequence of) showers of pebbles on the windows and bugle-calls on the horn. Disgustedly the party, having succeeded in rousing a local carrier, drove five miles to Maidstone, where they arrived, cold and tired, as the town clocks were striking three.

Maidstone, however, did not, this time, live up to its

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usual hospitable reputation. At the only hotel they succeeded in rousing, an elderly gentleman put a furious head out of window and threatened to give them in charge of the police. The police themselves were not more helpful, and when Bacon in desperation suggested to them the breaking of a window, which would, at least, give them the *entrée* of the lock-up, replied sadly, “ You wouldn’t be comfortable in there, sir. It is already full of drunken hop-pickers ! ” Finally a humble but respectable inn afforded them scant accommodation until morning.

XIII

OBSERVATIONS AND ADVENTURES

MEANTIME Bacon was supplementing his aerial experiments with corresponding observations upon the earth. With the assistance of Mr. Nevil Maskelyne, sound tests of much delicacy were carried out in quiet ground near London, and a useful fortnight was spent at Kingsgate, Kent, where the coastguards, for several years past his especial friends, lent invaluable assistance in sound-signalling experiments of all kinds. Wishful to test the far-famed acoustic properties of the Whispering Gallery of St. Paul's, permission was again obtained (this time of Dean Gregory) to spend a night in the building; and in the silent hours Bacon thoroughly explored the famous echo and proved its nature to be quite otherwise than Sir John Herschel and other observers—noting it probably under much less favourable conditions—had described.

But Bacon longed for greater facilities for carrying on the work in which he was daily growing more absorbed. Balloon ascents, instructive as they were, lasted but so short a while. Observations on the ground were hampered by all manner of restrictions and disturbances that no care could wholly obviate. In Bacon's own words: "I was as yet no nearer learning more about those all-important Zones of Silence noticed by mariners at sea; and though the investigations of atmospheric conditions prevailing at all heights and at all hours should prove of

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great value, as also all records of the sounds that could be heard, or not heard, in the upper air, yet there were many questions which could only be answered by observations made actually at sea. Unfortunately, however, the motion and noise of the waves are usually great hindrances in the way of acoustic experiments, either on cliffs or shipboard. The ideal observatory would be some island well out at sea, but on whose shores the waves should never beat. It should be somewhere near the track of vessels, where steamers plying night and day should sound their warning signals, where fogs lie, and beacon lights be shining. Further, it would be well if it should be within earshot of distant cannon, and perhaps of big bells tossed about by the waves. It might be supposed such an island does not exist on the face of the waters, and yet it does, and through the extreme courtesy and generosity of Trinity House I found it."

Voyagers round our eastern coasts are familiar with the Maplin Lighthouse, a weirdly shaped erection, rising on an iron framework straight out of the waves, six miles from the nearest point of the Essex shore, far out in the estuary of the Thames—as strange and lonely a habitation as is to be found in the whole British realms. There is no reef where the Maplin stands reared high above the water, and on its slender piles is practically no lap of waves. It overlooks the great ocean highway between London and the North Sea, it is within sound of the guns of Shoeburyness and Sheerness, and of a bell buoy to the east; and four miles on either side of it the lightships of the "Swin Middle" and the "Mouse" blink their warning beams. "Ideal" was indeed the word to describe such an observatory, and probably never in all his life did Bacon thrill with keener delight or happier anticipation than when, Trinity House yielding graciously to his

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bold request, he started in the middle of November for his self-imposed exile (of unknown duration) to a Robinson Crusoe island entirely after his own heart.

Very miscellaneous was his luggage, consisting as it did of all manner of acoustical and meteorological instruments, "paraboloid ears," bed and bedding, and provisions (even to water-supply) for several weeks. He was particularly anxious, I recall, to meet with a fog, among his other experiences, and altogether before he was ready for it his desire was gratified. He left home one Monday afternoon bound for Blackwall, where he was to join the Trinity House yacht "Vestal," then starting on her monthly visitation to the lighthouses and lightships of the district. The next news heard of him was a hurried card: "Dense fog. Should have been quite lost but for extreme kindness of station-master." The letter I received two days later, however, was more reassuring:—

“ ‘Vestal,’ 9 p.m. Monday.

“ DEAREST GARTIE,

“ Never since Indian days have I met with such extreme attention and courtesy. The fog at Blackwall Station was so dense that it seemed impossible to venture outside, and the whole of the staff were out on fatigue duty with fog signals. By feeling the outside wall I tried to grope my way to the watchman of the dock. I missed his gate, however, and finding the way blocked by a chain I got under it and tried a little further, but gave it up as hopeless and went back. Lucky I did, for a few more steps would have taken me over the wall into the river.

“ The station-master, who proved a splendid friend, felt sure I couldn't move out of the station, and offered

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me a bed. The only safe way of reaching Trinity Wharf would be by a walk of two miles, and an old hand could hardly find the way. Eventually he thought of a plan. He took me himself (first class, at the Company's expense) to another station, where he got a porter with a signal lamp to walk $1\frac{1}{2}$ miles with me the whole round of the dock to the Superintendent's house—a Captain Browne, who was expecting me and had orders to make a royal guest of me. He vowed to put me on the steamer somehow, even though I could not get my gear, which was left at Blackwall. He had been forty years in the service of Trinity House, and sat for half an hour telling me about Tyndall and old days. Suddenly we found the fog (which had lasted twenty-four hours) had vanished like a dream. Then he hailed his boat, put me on board, and sent his own man by boat to fetch my baggage. So here I am in princely comfort, and have the private cabin reserved for the 'Elder Brethren.' We get under weigh at 10 a.m. to-morrow, and make quite a voyage, visiting a whole lot of light-stations (one is the 'Mouse,') finishing with the Maplin, which, by the way, is bang *in* the sea, not an inch of ground round.

“ Tuesday.

“ Am treated like a prince. No private cabin on the 'Egypt' could beat mine. Fog still thick, but the captain expects to reach the Maplin this afternoon. We are getting under weigh as I write—the same old motion, the same old sounds down the river. Very reminding of the old days, only I want you and Fred here. The flag at our stern is very service-like, a red ensign with four ships in the opposite corner to the 'Jack.' There are some hundreds of water-barrels (nine gallons) on deck, coal and oil, a big buoy to replace one carried away,

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and I know not what else below. I have my own private steward. Be chary of your telegrams, as they involve some little favour. I too shall not wire often. Best love to you both.

“Your own Dad.”

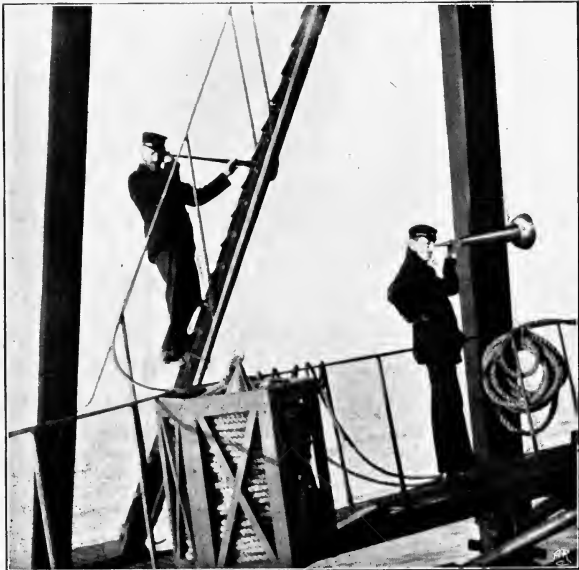
After this a brief but joyous telegram or two was the only communication received from the exile, now far beyond the range of the postman. The Maplin is in telephonic communication with Southend, which fact explains how messages were received at all. By means of the telephone-wire the keepers on that solitary station keep in touch with the land they are shut off from for several weeks at a stretch. By such intercourse, too, they form friendships with men with whom they hold frequent converse, perhaps for years, whose voices and modes of speech they are familiar with, but whose faces they have never seen.

When Bacon returned at length, greatly improved in health by his wholesome sea life, he had much to relate. His scientific observations were many, valuable and curious, exceeding indeed what he had anticipated. But it was the personal details of his strange sojourn that his children were especially keen to hear; and from his account, and from the photographs he brought back, they strove to picture the remote little world which had been his habitation. The main structure of the Maplin, he told us, consisted of one chief room—the living room—with odd-shaped side and store rooms opening out of it, and three cabins occupied by the two light-keepers and himself. Above was the lofty lantern, surrounded by a wide gallery, on which hung the harsh-tongued bell that in thick weather flung its dolorous monotonous note ceaselessly across the oily waves. The two keepers were



THE MAPLIN LIGHTHOUSE

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OBSERVATIONS ON THE MAPLIN

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fine, intelligent men, with whom Bacon was immediately, of course, on friendliest terms. One of them he quickly found was a self-taught but enthusiastic musician; in the cabin of the other, a youth of cultivated literary tastes, he noted, well worn, the complete works of Shakespeare. Both were clever cooks, especially skilful at baking delicious bread, for which, moreover, they manufactured their own yeast. A scrupulous neatness and cleanliness, exceeding that of almost any dwelling-house ashore, was of course maintained—this is a characteristic of the service of Trinity House—and, with good and abundant meals of quite astonishing variety, there was no lack of comfort within the restricted boundaries of this tiny world. Bacon asked his friends how they bore the strain of so long incarceration alone together, and received reply that they seldom or never quarrelled, but after the first week or so, when all topics of conversation were completely exhausted and, in their narrow life, no events arose to create more, relapsed into silence rarely broken.

Bacon's days on the *Maplin* were marked out by a strict routine, commencing at three o'clock in the morning, when the night-keeper, coming off duty, roused him and, fortified by a cup of hot Bovril, he kept two hours' watch on the gallery, returning to bed for a couple of hours' more sleep until dawn; after which, rising for good, the day's work of observations was broken only by stated meals and sundry interludes of hot tea and Bovril, provided by the attentive care of his two companions, who, welcoming with delight the friendly visitor who broke the dreary sameness of their lives, looked after his needs with utmost vigilance. For the rest, the distant guns across the river's mouth, the hooters of the passing vessels, and the deep boom of the bell buoy, brought him their own mess-

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ages. Fog banks sank down upon the brown waters and rose again, winds blew, waves curled, and clouds drifted with a purpose ; and through the darkness the " Mouse " and the " Swin " winked wicked green and yellow eyes upon him with a meaning he was quick to interpret. It was with much regret, and heartiest best wishes on the part of hosts and guest, that, a day coming when unmistakable warnings heralded the approach of rough weather and the termination of the experiments, a little coasting vessel, opportunely passing, was signalled ; and the light-keepers, with difficulty launching the lighthouse boat, for the waves ran high, rowed Bacon alongside the ship and left him to be landed later in the day at Colchester, after one of the pleasantest experiences of his life.

In the ensuing winter Bacon joined the ranks of the Lecture Agency, and commenced to deliver popular lectures on his work and experiences. He also began to write for the press, and henceforward articles from his pen appeared at frequent intervals in all the leading journals and magazines. It was with a very definite object in view that he adopted both these courses. The work that he had taken up was proving an exceedingly costly hobby. Ballooning, under all circumstances, what with the worth of the gas, the labour involved, and the great value of the craft itself, is an expensive business ; private and special ascents such as Bacon's investigations necessitated, are far more costly yet. Bacon's slender income had of late years, from one cause and another, very visibly shrunk, and it soon became evident that his work was assuming dimensions out of all proportion to what he could afford to spend on it. In other days, and in other countries, as he knew well enough, public and private funds were to hand to help the aspirant to aeronautical

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research. But a few abortive attempts at obtaining assistance, even of the smallest, from scientific societies and the like showed him he must expect no pecuniary help from these quarters, and that he must rely on his own exertions alone for the wherewithal to carry on the labour which had now become his life's work. Henceforward he must contrive to make the work support itself, and in this, by dint of sheer hard labour, by toil of pen and brain, by interesting influential people, by writing and lecturing, he may be said to have fairly succeeded.

Nor was the earning of money his sole aim in thus exploiting his scientific work and its results. From earliest days Bacon had held the strongest views on the importance to the world not only of the investigator but of the popularizer as well. He himself had derived too much benefit from the writings of Proctor, Sir Robert Ball, Grant Allen, and others of their school, to be likely to underestimate the value of the labour which unfolds to the multitude knowledge gained by the few. To share with others that which he himself had received, to foster and encourage the love of science as the highest and best education, to expound to the ignorant those laws of nature through the neglect of which half the sorrows of the world arise—this was now, as ever, his dearest wish and his most earnest endeavour.

In February of the following year Bacon read a paper on "The Balloon as an instrument of Scientific Research" before the Society of Arts. A brief holiday spent in Cornwall and the Scilly Isles—a very meteorologically instructive corner of the British Isles—formed the prelude to the next summer's campaign. During the winter Bacon had been formulating a new departure in his aerial acoustic experiments. So far the work had mainly taken

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the form of studying, from aloft, the carrying of sounds rising from below. Now the tables should be turned, and listeners on earth should hear and report on the artificial thunder he was going to provide for them in the clouds. Those terrific cotton powder fog-signals with whose power he was now familiar, exploded electrically beneath the car of his balloon, would form an exceedingly good imitation of nature's dread artillery ; while through the medium of the daily press it were easy enough to enlist hundreds of willing assistants on the ground who would listen for the explosions and record their nature and intensity. To ensure as many listeners as possible, the experiments should take place over London or the suburbs, and to avoid error the actual time of the firing should not be revealed.

The novel experiment was, perforce, widely advertised, and excited considerable interest ; but the first occasion drew a blank, for, through some mistake in the apparatus provided, the bombs refused to explode. And yet not quite a blank, since next morning's post after the ascent brought a score of reports, from all over the country, giving full times and detail of the hearing of the unfired signals. It at least showed what a little imagination, and possibly Easter Monday rifle practice in the distance, can bring forth, and threw useful light on the value of many observations, regarding the sounds of bursting meteors and the like, to be met with in the columns of many journals.

The second trial proved eminently successful, as also a trifle exciting to boot. It exemplified yet again—if further exemplification is indeed needed—that the real dangers of ballooning arise, not from its obvious risks, but from those thousands of small and quite unforeseen possibilities against which no amount of forethought

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can provide. Certainly it seemed as if the balloon, rising lazily from the "Welsh Harp," Hendon, rather late on a mid-April day, and drifting on the lightest of breezes southward over London, could have but the tamest and least eventful of voyages. So, somewhat regretfully, thought the voyagers, disregarding the fact that the gas which inflated the silk was heavy and wanting in lifting power, that they were overladen (Bacon's son and Mr. Thomas Simpson, a scientific friend and frequent aerial comrade, were of the party), and had been obliged to abandon the anchor and half the trail-rope and ascend with only a few pounds of ballast; while they were, at the time, ignorant of the further detail that the valve-rope was out of position, thus rendering the valve beyond their control.

Lazily they drifted towards the great city, and presently, when the houses grew thicker beneath them, with some little trepidation as to the wholly unknown result, they revolved the handle of the dynamo they carried, and touched the wires that exploded the detonating cartridge slung 120 feet below the car. They all knew the quite appalling force of the explosion of these signals when fired upon the ground, and the mere pistol-shot which immediately greeted their ears came as a complete anticlimax to their excited expectation. Of course they broke into disappointed exclamations and fears of failure, cut short hurriedly by a mighty uproar, like the falling of heaven itself, as from the boundless bosom of the earth there rolled back the million echoes of the sound, gathered up in one terrific whole, and fading gradually away in long-prolonged reverberation.

It was a strange and marvellously impressive experience, repeated many times as they floated over Kensal Green, Westbourne Park, and Wormwood Scrubbs.

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Repetition in no way detracted from its wonder, though it demonstrated again and again a remarkable result which subsequent experiments never failed to enforce. Most careful record was kept of the times of the explosion and of the hearing of the echo from earth, and in each case an unmistakable and well-marked "lagging" of the echo was detected, as if the sound-waves travelled less rapidly upwards than downwards through the air—an altogether unexpected occurrence.

Slowly and more slowly on the dying evening breeze their balloon hovered over Kensington, until just above the tiny toy which stood for the Great Wheel at Earl's Court it came to a complete standstill. Time passed and the darkness gathered, yet still they hung there immovable, save for the fact that the chilled balloon was gradually sinking nearer the earth. Their ballast was gone, the valve rope had failed them, their craft was out of control, and they were becalmed above the housetops. A forced descent on an extremely unfavourable landing-place, and a heavy bill for damages to roofs and chimneys, seemed before them. For this they prepared themselves, and indeed almost looked forward to the sensation they were about to create—since the experience, though costly, would scarcely be dangerous—when suddenly a new peril very literally "flashed" upon them, and the element of horror leapt instantly into their calculations. A street below was in a minute outlined with a string of gas lamps, glimmering brightly in the gloom, then another and another, till the glow-worms thickly speckled the whole ground below—each light a deadly menace to the inflammable explosive gas of their balloon, apparently just about to sink into their very midst. Strong measures were inevitable, if indeed the threatened disaster, the results of which did not bear thinking about, could

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anyhow be averted. The heavy and costly dynamo, borrowed property and highly treasured, must go overboard, no matter at what risk to heads below; and the trail rope was hauled in on which to partially lower it to the ground. Meanwhile the balloon sank, and by so doing escaped its fate. The river was close at hand, and along its bed and close to the earth a scarce perceptible breeze was breathing. Slowly, very slowly, the balloon began to drift again, creeping low over the housetops, while the aeronauts counted each yard of ground covered. The gas lamps thinned out, open ground was at last before them, and in market gardens at Willesden their race was narrowly won.

The acoustical results of this voyage were many and deeply instructive, and pointed to the necessity for other trials of a like nature. Accordingly, taking advantage of an advertised balloon ascent, Bacon went up from the Crystal Palace on the following Whit Monday, again equipped with sound-signals to fire from aloft. It is surely the fact that the possibilities and surprises of balloon travel are endless, and can in no wise be predicted, even under, apparently, the most ordinary conditions, that gives, in a prosaic age when adventures are far to seek, its especial fascination to sky sailing. No two voyages are ever alike, and this ascent in particular was to stand out from the rest as, in several points, peculiar. The balloon party were three in number, a young aeronautical enthusiast accompanying Bacon and Mr. Percival Spencer aloft, taking his place, by his own special request, perched up in the "ring" from which the car is slung, and thus in close proximity to the open mouth of the balloon. Whit Monday was following its usual unpropitious weather traditions, and drizzling rain-cloud hung heavy upon damp and dispirited sight-seers,

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and obscured the tops of the lofty towers of the Crystal Palace in dismal mist.

The wind was light, but constant, setting towards the west, a fact specially noted by the aeronauts, who foresaw that in a short time they would lose sight of the earth among the clouds. This, in fact, they quickly did ; but they were scarcely prepared for the exceeding thickness of the fog, so dense that in passing through it they could scarcely distinguish each other's faces ; or for the overpoweringly bright sunshine above and matchless beauty of the scene into which they burst. Above the clouds through which they had risen were higher clouds, from which, as they neared them, they perceived that fine rain was falling, rain which never reached the ground, but was absorbed in drier atmosphere below. Rising still above these they were bathed in fierce sunlight of a brilliance unknown on earth, at least in foggy England. White patches of loftier cloud still hung above, and beneath the sea of snowy glistening vapour, piled and tossed into mountain waves and billows as of some storm-swept ocean, presented that rapturous scene of indescribable heavenly beauty that only the aeronaut, and occasionally to a lesser degree the mountaineer, are privileged to behold.

Bacon was overjoyed, for it was the acoustic properties, whether conductive or non-conductive, of just such a barrier of cloud that he was above all anxious to test. He and Mr. Spencer were soon busy with their bomb firing, and while so engaged their attention was temporarily withdrawn from their companion in the ring, until a sound from aloft suddenly awoke them to the fact that all was not well with him. It was apparent at once that a fit of some kind had seized him, and that his wits had entirely forsaken him, as, screaming and foaming at the



ABOVE THE CLOUDS

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mouth, he clung convulsively to the ropes. The first duty was obviously to get him down from his dangerous position, and with infinite difficulty Bacon and Spencer, climbing on the edge of the car, unfastened his clenched fingers and half supported, half dropped him down into the basket beneath. Here he lay inert among the sandbags, wholly senseless, white as death, and to all appearance absolutely lifeless. In vain his horrified companions listened for his breathing, felt his heart, or raised the limp hand which fell again with sickening suggestiveness. In vain they tried to force brandy between his clenched teeth. No water or other means of recovering him was at hand. There was not a breath of air to fan his cheek. They could but loosen his clothes, tie handkerchiefs round the ropes to shield his head from the fierce sun, and gently bestow his long limbs as easily as might be in the hopelessly cramped quarters of that tiny basket. It added greatly to their distress and to the difficulty of their position, that they believed, from the direction of the wind when they left the earth, that the suburbs of London must yet lie thickly below them ; so that an immediate descent could not possibly be risked, especially with their helpless burden in the car. Their only course was to stay aloft for some while longer, until they could fairly presume that they were over open country. Meanwhile they had come hopelessly to the end of their very slight medical knowledge, and of the nature or cause of the sufferer's seizure they could not even guess. Truly it was a strange and a most woebegone little party in that wicker basket lost above the clouds !

For some while Spencer and Bacon really believed their poor companion, lying limply among the sandbags at their feet, to be dead, and their feelings are easier imagined than described. Will it be instanced in proof

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of the supposed callousness of the scientific mind that, having done everything in their power for his recovery and failed, they continued their acoustic experiments and fired the rest of the bombs they had brought aloft with them ?

So time wore on, and it was with relief of mind indescribable that they presently perceived in their comrade signs of returning animation. Slowly and painfully he was coming to his senses, and his first articulate words disclosed the nature of his illness: "It was that horrid gas!" Then they understood. The balloon had risen with great rapidity, and the young man up in the ring had breathed, perforce, the volumes of carburetted hydrogen pouring from the open mouth of the silk just above him—had been, in fact, asphyxiated. If a doctor had been present he would have adopted artificial respiration to expel the poison from the lungs, but the aeronauts can scarcely be blamed that this remedy had not occurred to them.

By this time, too, the balloon was sinking earthward, and they considered they now might safely descend. They had been aloft nearly two hours, and by ordinary calculation should find themselves over Berkshire or Hampshire. Their course was directly westward when they rose, their height had not been excessive, the character of the day was unchanged; and though they had completely lost sight of the ground since the start and thus had no exact knowledge of their course, they were confident they could not be far out in their reckoning.

So the valve was opened, and down they swooped into the dark abyss of the cloud, and as they sank through its depths there arose a strange sound from beneath. What could cause that splashing murmur which filled their ears? It was not a mill-stream or a waterfall, or



DESCENDING IN THE SEA

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the tossing of boughs in a gale. Surely below it must be raining heavily, and this was the splashing of rain-drops on the leaves of one of the extensive woods of Berkshire.

One more moment of uncertainty, then the clouds broke beneath, and behold—the sea! Wide grey waters, breaking waves, and a cargo boat so close beneath that the long trail-rope swept the deck, and astonished sailors stared open-mouthed and speechless at such an apparition sinking suddenly out of the overcast skies. Apparently a descent was about to be made in the ocean; an altogether disastrous contingency, especially with a sick man in the car, who though slowly recovering was still terribly ill and faint and incapable of exertion.

But as the lifting cloud disclosed wider horizon they perceived shore at some distance on either side, and the estuary of a wide river with ships passing up and down that it was impossible not to recognize as the Thames. But how could this be, when their course from the Crystal Palace had been due west? And behold they were travelling westward still, going up the river towards town, and they were soon looking directly downward into the fort at Gravesend! Here was indeed a marked instance of the vagaries of the wind: two currents of air, one above and one below the cloud barrier, blowing at the same time in diametrically opposite directions. Lucky it was they had descended when they did, or they might have found themselves so far out over the German Ocean that they would never have won back to land.

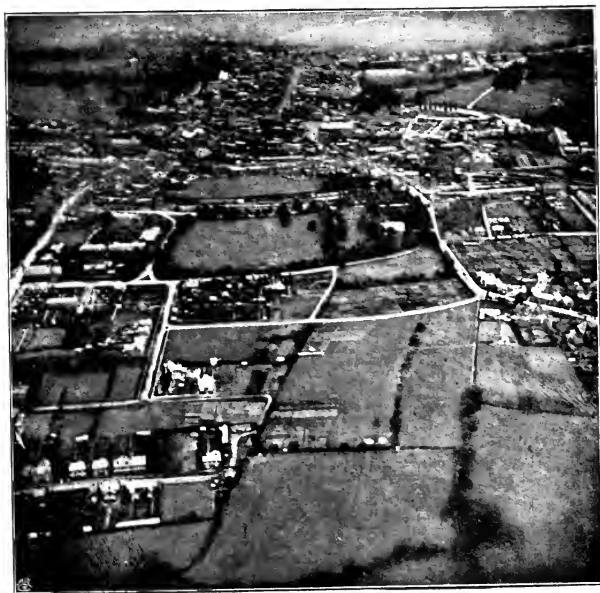
Ballast was now almost expended, and, the balloon keeping in midstream, it seemed as if a watery landing-place was still inevitable. But presently, at a bend in the bank, they drifted inland low down over the house-tops of Greenwich. The three-hundred-foot trail-rope,

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wet and heavy, which had been dragging in the water, was now actually slanting across the streets, climbing the sides of the houses, and rattling across the tiles. To attempt to haul it in would be to bring the car itself right down on the houses. Surely some damage must be done soon! and quickly there came a crash which Bacon ascribed to a falling chimney, but Spencer, more correctly, to a broken window. Luckily, at the last moment, a forgotten half-bag of ballast was discovered at the bottom of the car, and by its help the town was cleared and a safe descent made in open ground some miles beyond.

During the ensuing summer Bacon invested in a motor-car. It was a small Benz car, with a belt-driven engine and solid tyres, capable when all went well of carrying three passengers. But all was not always well. Bacon was of course his own chauffeur. He loved his little car, and was exceedingly proud of its performances; and certainly no one but he could have got so much out of its exasperating machinery. But motor-cars in those days were in their earliest and most inexperienced youth. The best of them were unreliable and subject to frequent breakdowns. Bacon's car was cheap, under-engined, and second-hand to boot. Yet he drove it for five years (when he exchanged it for a larger one), and succeeded in extracting from it an amount of use and pleasure out of all proportion to its worth or capabilities.

In the intervals between his ascents he employed himself in acoustic experiments on earth, testing echoes, and the like. By permission of the Duke of Marlborough he made an expedition to Woodstock Park, to investigate the famous echo there which guide-books and textbooks still insist upon as repeating seventeen syllables by day and twenty by night. With detonating rockets he



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roused echoes at Fair Rosamund's Well such as had never been heard there before, but of the seventeen repetitions he found no sign ; nor was he likely to, since investigation proved that they rested solely on the authority of an observer who flourished no less than two hundred years ago, when buildings, long since destroyed, were yet in existence. This he found but a typical instance of much textbook information on acoustic and other matters.

In a balloon ascent made from Newbury this August he and the Messrs. Maskelyne between them introduced a quite novel experiment. Mr. Nevil Maskelyne had lately begun his investigations in wireless telegraphy which have since rendered him famous ; and it was now proposed that, for the first time, the new discovery should be applied to balloon travel, and apparatus carried in a free balloon capable of receiving messages transmitted from earth. As possessing no little importance from a strategic and military point of view, the experiment excited wide interest in many quarters, and was freely commented on in the daily press. Full precautions were taken for its success. A lofty pole in the field at Newbury, whence the balloon was to ascend, carried one of the necessary long vertical wires, while the other wire was run up the rigging of the balloon to the top of the silk. The transmitting apparatus was considered too heavy to bear aloft, and the aeronauts contented themselves with carrying the small " receiver," being thus able only to receive and not to transmit the wireless messages. The result proved a signal success. The day was perfect, the sky flecked with summer clouds, behind which the balloon became presently hidden from view. Above the rolling vapour, in a fairyland of their own, the aeronautical party were as completely severed from earth and

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the friends they had left behind them as it was possible to conceive. And yet not so, for there in the car between them the delicate bell of the little apparatus they carried continued to tinkle forth the messages which Mr. Maske-lyne, in the field now ten or twelve miles away, was still flashing to them across empty space.

Later in the summer Bacon experienced two sad disappointments. He was particularly keen to test the theory, held by many aeronauts and meteorologists, that high aloft in the sky there is always to be found a constant and unvarying wind-current blowing from west to east, and corresponding with the direction of motion of the earth's rotation. Experienced balloonists have made no doubt of this current. In fact both Green in England and Wise in America each desired to attempt an aerial crossing of the Atlantic, so certain were they of finding a driving wind for the purpose. Bacon more modestly essayed to settle the point by crossing the North Sea from London, if possible to the coast of Denmark.

The mere crossing of the Channel from England to France he considered a feat altogether too hackneyed and cockney to engage his attention ; but a voyage to Denmark would mean five hundred miles of salt water to traverse, while a wind but a few points more from the north would yet entail a fairly respectable voyage to northern Germany or the neighbourhood of the Zuyder Zee. In either case, however, it would be unwise to start unless the breeze were absolutely favourable, both in direction and intensity ; especially as no very large balloon was available for the purpose, so that the amount of ballast to be carried would perforce be small for so great a distance to be traversed.

Arrangements were accordingly made that a balloon

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then doing captive work at the Crystal Palace should be at Bacon's disposal to start with the first fair wind ; and Bacon accordingly came to town and spent a fortnight, mainly at the Palace itself, ready and waiting to take instant advantage of the first favourable occasion. But the occasion never came. Once or twice the wished for wind blew for a short while, but before preparations were complete had veered again. At the final attempt a sudden squall arose, swept the balloon ground, tore away ropes and netting, and would have utterly destroyed the balloon itself had not the silk been promptly emptied.

The second disappointment was at the meeting of the British Association held this year at Dover. Here again the wind frustrated the promised experiments. The season was now drawing to a close, and Bacon feared that there was but little likelihood of retrieving his ill fortune. An adventurous voyage, however, was shortly before him, which, in its way, was to establish a record in English aeronautics. To this, as perhaps Bacon's most famous experience, as it was certainly his greatest peril, a fresh chapter is due.

XIV

A PERILOUS VOYAGE

ON the 16th of November, 1899, astronomers predicted a return of that great shower of meteors, radiating from the constellation "Leo" and known as the "Leonids," whose periodic recurrence thrice a century, at thirty-three years' interval, had until then been one of the great events of astronomical chronology. The last display, in 1866, had proved a marvellous sight, still fresh in the memories of the older generation. All classes, and not the scientific world alone, were deeply interested in the coming marvel; and half England were forming resolutions to sit up until the early hours that night, and rouse up the children to behold a wonder they would remember all the rest of their lives.

But, alas, the skies of foggy November were not to be relied upon. It seemed more than likely, in that season of mists, that thick clouds would intervene, and astronomers and sightseers alike be balked of their marvel. Clearly here was an obvious opening for a balloon, by which means alone, in the very probable event of an overcast night, record could be obtained of the coming meteors. Bacon had a strong case, which he presented to influential quarters. As a result "The Times" newspaper itself rose to the occasion, and generously undertook to finance an ascent which should ensure the fact that *some* English witnesses at least should behold and report upon the expected shower.

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To obtain the best possible results from the mission entrusted to him, Bacon consulted the chief authorities, both astronomical and aeronautical. The former told him that, while the shower was pretty confidently predicted for the early hours of November the 16th, it was just possible it might appear twenty-four hours earlier ; so that it would be as well to be prepared to ascend, if necessary, the night before. Aeronautical experts, represented by the Spencer Brothers, advised in this case that, as the balloon might have to remain inflated for a long while before starting, one of large size should be employed, and a "solid" or "ripping" valve substituted for the usual "Butterfly" variety ; which, though possessing the undoubted advantage of being able to be opened and shut while the balloon is aloft, can, by no amount of "luting," be rendered absolutely gas-tight.

A "ripping" valve can best be described by likening it to the top of a jam-pot. A piece of the varnished silk of which the balloon itself is made is drawn tight over the orifice at the top, and hermetically sealed down. A sharp wrench alone, at the end of the voyage, tears this covering bodily away, leaving a large gaping hole through which, of course, the gas escapes with great rapidity. For this reason, and because the valve when once wrenched apart cannot again be closed, the voyage must be at an end and the balloon quite close to the ground before the hole be torn open ; otherwise—so quickly does the balloon empty—a fatal fall to earth would inevitably result. This form of valve is perfectly gas-tight, neither, under ordinary circumstances, does it present any dangerous disadvantages. It is rarely the case in balloon travel that the aeronaut requires to open his valve until the last moment. Gas is always wasting away through silk or joints or open neck while the craft is afloat ; so that

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the difficulty is not to come down, but to keep up and prevent the balloon sinking of its own accord. Only by the frequent discharge of ballast—well called the “life” of a balloon, can the aeronaut hope to maintain his position in the sky.

The ascent was to take place from the grounds of the Newbury gas-works, and the aeronautical party were three in number ; Mr. Stanley Spencer, younger, though no less experienced member of the firm, being in charge of the balloon, and the writer accompanying her father as assistant. According to arrangement, the silk was inflated with its 56,000 cubic feet of gas, and everything in readiness by the evening of Tuesday, the 14th. The night, however, proved clear and cloudless, and it was soon apparent that there were no meteors to ascend for. Evidently the astronomers were correct in their calculations, and the shower was coming at the predicted time.

Wednesday, the 15th, closed in dark and heavy. Thickest clouds covered the sky, and all over England thousands of would-be observers retired disgustedly to bed in bitter disappointment. Not so the three aeronauts, excitedly waiting at Coldash. Such a night was just what they wanted. It was the very presence of the clouds which justified their ascent and gave them the opportunity for which they were thirsting.

A couple of hours' sleep was snatched, a meal partaken of, and then at midnight the trio, heavily coated and laden with impedimenta, drove into Newbury in the little car and spent an hour or two at the Guildhall Club, kept open all night for the occasion. Careful deliberation had fixed four a.m. as the hour of the ascent. Firstly because from four to six the shower was predicted at its height ; secondly because above those clouds the balloonists would quickly lose all sight of earth, and a prolonged

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journey must not be embarked on, since, with the prevailing wind, it would almost certainly lead them to the sea-coast.

On the way to the gas-works the probable duration of the voyage was discussed and settled. The wind was light but constant, blowing directly west, and the darkness above made it impossible to tell the drift of upper currents. If the breeze aloft was the same as below—by no means a certainty—we should follow the course of the Kennet Valley and Great Western Railway, and reach the sea at Bristol, sixty miles away. Putting the force of the wind at thirty miles an hour, our voyage should last but a couple of hours. Probably the speed was less, so three hours might perhaps be risked ; but four would be very unsafe, and anything beyond quite out of the question. In the practically certain event of losing all sight of the earth above the clouds, we finally decided to finish our voyage at dawn, when our work would be at an end ; though should the wind bear us northward, and the clouds breaking allow us to see our course, we might be tempted to keep up a little longer.

It was a weirdly impressive scene at the gas-works that black November night. The moon, though at the full, yet could not penetrate the heavy wetting mist now settled into a fine drizzle ; and flaming gaslights dimly revealed hundreds of white upturned faces, and glittered on the shiny sides of the damp silk towering up monstrosously into the darkness, its top completely hidden in the gloom. A large crowd who, despite the weather, had patiently waited all night, heralded our arrival with cheers. Soon the gold-braided aeronaut and his eager assistants were swarming about the balloon in their final preparations, carrying sandbags, adjusting the ring, the valve-cord, the trail-rope and the heavy grapnel.

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Next our paraphernalia was stowed in the car—a camera, field-glasses, a specially constructed instrument for collecting the meteoric dust that might be floating in the upper air, notebooks, pencils, and star-maps on which to chart the meteor tracks, a Davy lamp to light us, rugs and great coats, and a thick packet of sandwiches. Nothing had been forgotten; even life-belts, in case of a possible descent in the sea, had been provided, but at the last it seemed ridiculous to be burdened with what was so obviously needless, and they were left behind. Lastly we ourselves scrambled into our wicker basket, and amid general enthusiasm, shouts of farewell, and the wild tooting of the steam hooter at the gas-works, our craft rose gracefully and swiftly into the darkness. For some three or four minutes the spectators below, straining their eyes, could still trace the dim light of our Davy lamp hovering over the town. Then it vanished in the mist and the crowd went home to bed, expecting by breakfast-time at latest to hear tidings of our descent, probably not so very far distant. Bacon had, of course, promised the Guildhall Club that he would wire them the earliest intimation on reaching the ground. Yet hour by hour went by and no news came; and when morning wore to afternoon, lunch-time to tea-time, and still no telegram, friends grew more and more nervous as to our safety, and anxious excitement ran high.

Meantime, we in the car, quickly exchanging the turmoil of the start for the calm silence of the free heavens, were in a very few minutes enveloped in the cloud. Very dense and oppressive we found it, and through its stifling, clinging folds our balloon could but with the utmost difficulty force her upward way. Bag after bag of ballast was emptied rapidly over the side, and still the indicator of the tell-tale aneroid recorded but little progress. The

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cloud was 1500 feet deep, and it took four sandbags to clear it, an unprecedented quantity for so short a time. But the contents of the fourth was scarcely discharged before, at last, the vapour broke above our heads, and we emerged into a realm of beauty aloft that none but we three in all the world were privileged to enter.

For us alone the full moon, strange tawny copper in hue, reigned glorious in the heaven, ringed about with a wondrous double halo of brightest rainbow tints. For us alone Sirius flashed magnesium blue, and the other stars glistened as jewels in a blue-black velvet sky. For us, and us alone, was spread that "perilous sea, in faery lands forlorn," whose filmy, tossing billows were turned to silver in the moonlight, whose deep hollows harboured shadows of richest purple, whose boundless, snowy expanse stretched to the horizon's furthest limit in one vast, silent, glorious ocean. For a while we gazed spell-bound and speechless at this crowning marvel of loveliness of all our lives. For quite an appreciable interval we forgot the meteors; and when, after a while, we looked upwards at the empty sky and the bright sickle of Leo, from which not one "Leonid" would condescend to "shoot," we had scarcely room for disappointment that the marvellous shower had never come after all.

I doubt if we saw a dozen meteors all that night; but the unutterable beauty of the fairy land we had invaded was amplest recompense for our trouble, and delightedly we made a compact to come meteor-hunting again the next year and every year afterwards! But before this we had been much concerned at finding the balloon sinking back again into the mist. Two more sandbags had to go at once, and then another, making seven altogether in twenty minutes. This was quite exceptional, and could only be accounted for by supposing the silk of the

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balloon to have become heavily moisture-laden in its passage through the fog, and the gas chilled in the colder upper air. Mr. Spencer hesitated indeed at the seventh bag, and questioned the wisdom of parting with weight so rapidly. But Bacon reminded him that our duty was not yet fulfilled, and instructed him, at all hazards, to keep aloft for some while longer. So the sand shower went hurtling downwards just before we touched the cloud floor, and after this we maintained an even height—3000 feet above the earth, just above the top of the mists, and, at the time, we congratulated ourselves upon the fact.

We were a supremely happy party up there in fairy-land, wrapped in rugs, nibbling dry sandwiches, counting stray meteors, and trying to judge from the occasional sounds of earth that reached us our probable landing-place. A chorus of wild barkings early in the voyage revealed we were over the kennels of Ashdown. The rumble of a train and the rhythmic clatter of horses' hoofs stood for the G.W.R. and the Bath Road. As six o'clock approached we caught the buzzing of a steam hooter, and imagined ourselves somewhere in the vicinity of the Westbury iron-works. A church clock below tolled out the hour, and almost on the moment one of us, facing eastward, uttered an exclamation, and, turning, we beheld in the already fast-lightening sky the breaking flush of dawn. With great rapidity the daylight strengthened; and as it invaded the realm over which the moon had lately held sole sway the white ocean turned green and copper and golden, the stars faded, and thick grey mists swept upwards to hide the face of the conquered satellite as she sank, vanquished, towards the west. Then from below, as in a pæan of victory, came up a chorus of piercing cockcrows, shrill, continuous, and triumphant. Seem-

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ingly there were many poultry farms below; and since the cocks aroused the dogs, and the dogs in turn woke up the cows, the rural cantata was loud and varied.

The grey mists were sweeping around our basket too, and stretching up clammy arms to clasp us. Surely our descent must be near at hand, and an easy landing in the still dawn assured. Yet a glance at the aneroids revealed the astonishing fact that our height was unchanged, though no further ballast had now been thrown out for an hour and more. Also, as it grew lighter and lighter, the mist wreaths rolled up lower and less frequently around us, as if they lacked the power to enfold us in their damp embrace. An awkward silence had fallen on our trio, and Mr. Spencer's genial face looked strangely white in the dawn. Presently the situation began to dawn on me. "Would it be safe," I inquired, "supposing in another half-hour we are at the same height, to pull the valve open?" Quickly and emphatically the answer came, "No!" and then I understood. In another half-hour the sun would have risen, and with bright beams be drying the silk and expanding the gas, in which case should we not rise instead of fall, and rise for how long?

The next half-hour passed almost in silence; but the changing beauty of the dawn had lost its charm. Mr. Spencer continually threw out of the car tiny scraps of paper which fluttered ominously downwards. Bacon leant far out looking at the cloud floor, and in so doing his cap dropped overboard and disappeared instantly in the mist. Then indeed we laughed, for we pictured the scene below, saw in imagination the unsophisticated rustic going to milk in the early dawn, and fancied his face as, from the cloudy, overcast sky above, there falls at his feet—coming from heaven as it were—an ancient cap! After this, above the sinking mists there shot up a

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brilliant ray of light, obscured for a moment, but rising again higher and higher; and as we gazed, fascinated, we saw the dazzling body of the sun in golden splendour mount majestically into his kingdom. Below us the creeping vapours, like baffled spirits of the night, sank down for the last time. Above us was the cloudless blue and the gaudy seams of the balloon, stretched tight and dry in the warming beams. Beside us, slung under the extinguished Davy lamp, the aneroids indicated a rise of 500 feet.

It was no use pretending any longer. We were cornered—caught in a trap. The sun would continue to increase in power and warmth; our balloon would continue to rise into realms where no clouds could form to shield us. It was now seven o'clock, and not for five long hours, till noon was past, could we even hope to descend. Five more hours in the narrow world in which we had already spent nearly three, was not in itself a terrible fate. There were plenty of dry sandwiches left in the packet, although certainly the contents of one of the ballast bags had become somewhat mixed up with them, and made them *sand-wiches* in literal truth. The bright sunbeams would ensure our being warm enough, November though it was. Our limbs were growing cramped in our little basket (six feet long, by three and a half wide and three deep) but not unendurably so. No, it was not here that our trouble lay, but in the awful uncertainty of our position, our inability to see the earth and so to judge in any way our direction or speed, our knowledge that we had already exceeded the time we had considered safe to be aloft when we left the ground, and our hopeless conviction that we were already close approaching the Atlantic, out over which we must surely float, hour after hour, beyond hope of rescue, until, with declining day, our spent



BALLOON FILLING AT NEWBURY GASWORKS

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A MILE ABOVE THE CLOUD-FLOOR

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balloon sank down far out on that watery waste, to rise no more.

For the time indeed we were over the country, and clearly travelling at a very slow rate. For almost half an hour we hung above one particular farm, and were able distinctly to recognize and distinguish the voices of its varied and vociferous live stock. But we were rising rapidly, 600 feet at least each quarter of an hour, and earth's peaceful voices melted one by one into the silence of space. Soon beneath us the white snow-sheet of the cloud floor lay flat and glistening a whole mile distant. To our lofty eyrie only the whistle and rumble of trains seemed able to penetrate; and yet, all too soon, there rose another softer sound, that confirmed our worst fears and sent the blood rushing to our hearts as with one accord we exclaimed to each other, "We are over the sea!" The sound was the shrill, well-remembered shriek of a ship's steam siren, and mingled with it was the clash and clang of hammers in a dockyard seaport town. But more ominous far than these was that gentle rhythmic beat, that softly sighing accompaniment that could belong to one thing and one thing only in all the world. Who that has ever heard its distant murmur can mistake the sound of breaking waves upon a pebbly beach?

So our fears were realized, and we had reached the Atlantic at last. Now there remained but a few hours dragging, weary wait before our journey ended in the waves. Probably our balloon would float awhile on the waters, but we had no life-belts, and heavy net and cordage would entangle and hold us down. It was small odds indeed, on that wide ocean, that we fell within sight or aid of a ship. In very truth our case was desperate, and Mr. Spencer was in favour of ripping open the valve—put his hand, in fact, upon the valve-rope. There was

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the feeble chance, even then, that if in the awful descent that would ensue we threw everything out of the car, down to our own hats and coats, the empty silk, collapsing into a parachute, *might* bring us down alive. But Bacon restrained him. The risk was too terrible to contemplate. It was a choice of evils indeed, but drowning seemed a preferable death to being dashed to pieces.

To the writer, recalling the hours that followed, indelibly imprinted on the mind as they must ever be, the fact that stands out the clearest was Bacon's own absolute calmness and apparent perfect indifference to his fate. One thing alone seemed in the least to trouble him—the press telegram that he was writing to “The Times.” With the utmost care he composed his message, turned the sentences, counted the words, and copied them out on the forms. He was rather proud of what he had written, read it aloud for commendation, and was really genuinely distressed to think that Mr. Moberly Bell and his readers might not, after all, receive the benefit of it. Beyond this absurd and tiny detail the situation had no terrors for him, the near approach of death no fears. For himself he minded not at all, for his two younger companions he was all sympathy and consideration. The more desperate our circumstances grew, the more persistently cheerful he became. “If only we come out of this alive,” he said, “what friends we shall all be!”—this by way of cheering poor Mr. Spencer, thinking, as we knew, of his wife and little one at home, to whom, we believed, he wrote his farewell message. Breakfast was his next suggestion, and obediently we consumed an unappetizing meal. After this he proposed photography, and we unpacked the camera and snap-shotted the cloud floor, the sky, the open mouth of the balloon, and finally each other, huddled up in the corners of the car. The

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sun by this time was growing almost uncomfortably powerful, and to shield ourselves somewhat from his rays we tied scarves and coats about the ropes, and Bacon, since his cap was gone, improvised a head-covering from a pocket-handkerchief, the knotted ends of which hung in ridiculous fashion about his grey whiskers and patriarchal beard. In truth we were a forlorn crew, in a forlorn plight, and fairyland had proved a trap, and meteor hunting had brought us woe. Bacon waxed facetious at our rueful faces, and we had at least one hearty laugh over a situation that had comic as well as tragic sides to it.

For long we heard the sea beneath us (subsequent events led us to suppose we traversed some twenty miles of the Bristol Channel), but all the while from time to time arose sounds that made us believe we were still in the vicinity of some big sea-port town. We imagined it to be Bristol (though it may have been Cardiff), and we wondered if no help were to be had from all those thousands below, whose willingness to aid us we could not doubt, did they only know of our situation a couple of miles above them, behind the clouds. Suddenly we bethought us of the press telegraph forms with which Bacon's pockets were filled. Why not use them as distress messages to the folk beneath, and get them to warn the coastguards round the neighbouring shores that we expected shortly to descend in the sea, so that they might be on the lookout and have their boats in readiness to pick us up if we came down in sight of land? It was the maddest of chances to rely on, of course, and the feeblest of straws to clutch at, but at least it was better than nothing. So out came pencil and forms, and, dividing the labour equally among us, during the next three hours we wrote and posted over the side three

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dozen or so neatly folded notes, labelled "Important," and bearing the following message within :—

" Large balloon from Newbury overhead, above clouds. *Cannot descend.* Telegraph to sea coast (coastguards) to be ready to rescue.

" BACON AND SPENCER. 11 a.m. Nov. 16."

Surely their destination was the Bristol Channel, for two only were ever heard of again—picked up several days later on the Welsh mountains near Pontypridd, apparently many miles from where we threw them out.

Yet they served their purpose, if only in passing the time. They helped the hour of noon to come at last, and almost with the hour came our earliest ray of hope. Bacon, who kept watch over the aneroids, announced that we had fallen since the last reading from 9000 feet (our greatest height) to 7000, and were still falling. Nor was this all. Mr. Spencer, who had been gazing long and silently upon the cloud floor far below, suddenly exclaimed, "I can see a church!" It seemed impossible to suppose he could really have seen anything of the sort, and I knew from the soothing way in which my father laid a hand upon his shoulder and said, "Where, my good fellow, where?" that he thought the long strain and hot sun had affected our aeronaut's head, and that he was wandering. But, looking down also, we saw to our surprise that the cloud floor was thinning beneath us, as snow melting in the sunbeams, and actually breaking in places into pits and hollows, through one of which we caught a momentary glimpse of a white thread on a pink ground. The thread we knew for a road, and red soil belongs to the West of England. Land and not sea was still beneath us, but the next glimpse showed us our pace was quick-

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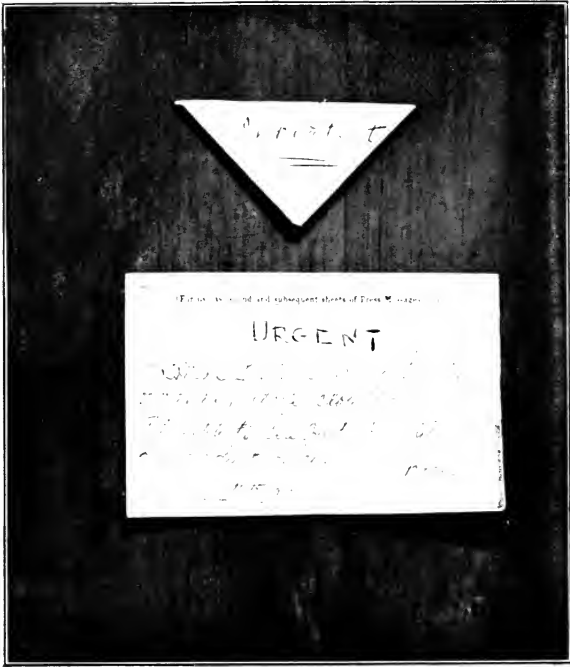
ening, and we wondered if we should yet reach the ocean before our voyage was at an end.

How slowly our balloon, dying obstinately by inches, crept down the sky, falling a hundred feet, stopping altogether, and then retrograding ninety-five. How fast and faster sped the earth beneath, seen in momentary peeps among the rolling vapour. For two long hours more—the most trying of our ten-hour voyage—the race continued, and then, at length, when nerves were strained near to breaking point, the mists once more received us, enveloped us but for a few minutes, and then let us through again beneath. Sea was before us and not far distant, but we heeded it not, since we were falling, now with great rapidity, on peaceful green fields below. The earth was rushing up towards us at a great rate, but not for the world would we risk, by the discharge of a grain more ballast than was necessary, a return to those wearisome realms aloft. With bent knees we awaited the shock of the fall, but when it came it proved infinitely more violent than we had anticipated. We had not reckoned indeed upon a boisterous gale of wind raging for several days past upon the Glamorganshire coast. But as we swooped downwards a sudden wild gust, sweeping from between the hills, caught our crippled craft, and sported with it in rudest horse-play. First it hurled us to earth with a crash that strained our groaning wicker basket in every twig and broke my right arm above the wrist. Next it dashed us, all sideways, in maddest steeplechase across the sloping gully in which we fell, our grapnel bounding impotently and furrowing long tracks in the grass behind. An eight-stranded barbed-wire fence was our first obstacle ahead, and a murderous one it looked. “Duck down in the basket!” cried Mr. Spencer, and we ducked low as the wires snapped and

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coiled about our shoulders. But one strand went over the top of the car, and I heard my father cry: "I am badly torn in the leg!" Of course I promptly pictured him as bleeding to death, but there was no time to investigate the damage, for the next instant, with a crash and lashing of leafless branches, we were in the top of a weather-beaten oak tree, and the moment later we had carried the whole top away in our rigging and were rolling with the big torn branches among gorse bushes in the next field. The silk was flapping and tearing in the gale with a noise like thunder, but in the root of the splintered oak the anchor held, and our course was stayed.

Soon in the distance came the sound of excited voices, calling to each other, but in an unknown tongue, and a little group of dark-eyed men came panting up, but halted at a respectable distance from the struggling, tossing monster. "Come and help us!" shouted my father; then as they still did not move: "Come and help, you fools! Don't stand gaping there!" But never before in the memory of man had so strange an object fallen from a cloudy sky on the outskirts of the town of Neath, and for a few moments longer the cautious Welshmen refused to approach. The hurried arrival of the landowner and neighbouring residents, however, soon inspired them with confidence, and never surely was a more hospitable welcome accorded to wayworn travellers. It was half-past two when we stepped at length from our basket world upon terra firma, after what Mr. Spencer declared was the roughest landing of all his long experience. Our voyage then had lasted for ten hours, and terminated but a mile and a half from the sea, towards which we were directly heading when we fell. Five minutes more, therefore, would have seen us over the Atlantic, wildly rough, so we learned, at the time. So long and perilous a voyage



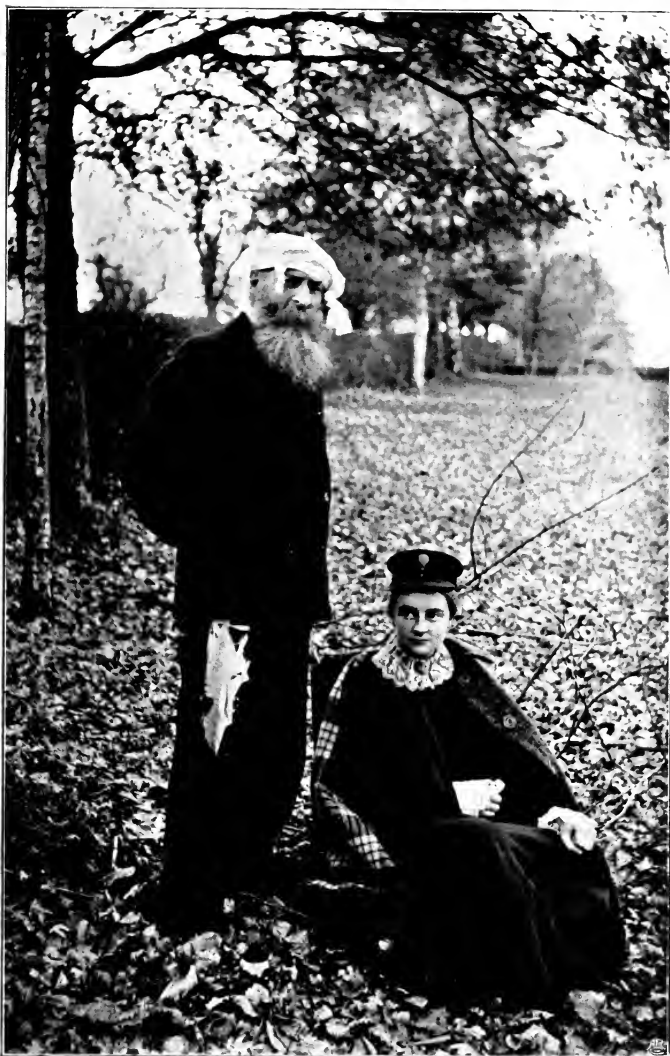
DISTRESS MESSAGES THROWN FROM BALLOON

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THE DESCENT AT NEATH: SHOWING BROKEN BOUGH





AFTER THE "LEONID" VOYAGE

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constituted an undoubted record for ballooning in the British Islands, for danger and for length of time aloft.

Early next morning a happy, but utterly disreputable-looking, pair presented themselves proudly at Printing House Square; the writer with bandaged arm in sling, Bacon in borrowed hat and borrowed trousers—his own nether garments were torn completely to rags—the back of his coat one plaster of mud which he absolutely refused to have brushed away. I think the editorial staff were a little impressed with our appearance; certainly the interview was gratifying and flattering. Out in the streets our exploit was already on posters and headlines, passers identified us, policemen grinned recognition. For days the papers were full of the adventure, and, Silas Wegg like, the “Globe” dropped into poetry and perpetrated a verse described as the composition of “a humble Cockney acquaintance”:

“I’m thinkin’ no rasher excursion’s been tiken’
Than that Meteor hunt by balloon of old Bicon.
As it dived towards the earth, getting nigher an’ nigher,
I reckon he thought, ‘Ere’s the fat in the fire!’
And when he got chucked, an’ lay battered an’ shiken,
I bet that he felt just a bit afride Bicon!”

XV

THE AMERICAN ECLIPSE—SOME NARROW ESCAPES

THE ensuing winter brought Bacon many lecture engagements from all over the country. As a popular lecturer he was scoring a big success. His natural eloquence, his power of lucid explanation, his fine voice and fascinating personality, combined with the novelty and adventurous nature of his subject and the unique interest of his illustrations to render him extremely popular upon the platform. For himself lecturing was a real delight, both for its own sake and because it brought him many delightful acquaintances, and not a few close friends, in all parts of the kingdom. With the spring of 1900 came fresh occupations and distractions.

On the 28th of May was to take place another Total Solar Eclipse, visible this time in Spain, Portugal, and Northern Africa, and also along a narrow track crossing certain of the Southern States of America. The British Astronomical Association was again rising to the occasion, and organizing expeditions of its members, of whom the greater majority naturally preferred to observe the eclipse at the nearer stations of Spain or Algiers. Some few there were, however, ourselves among the number, who elected to cross the Atlantic; and accordingly to Bacon again fell the task of conducting a party who had

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the honour to form, in fact, the only English Eclipse Expedition to America. The task of arranging for his followers proved an easier one than in the case of the Indian Eclipse, partly because the distance was so much less, but more because of the extreme friendliness and hospitality of American officials and astronomers. These gentlemen seemed to vie with each other in deeds of kindness and offers of assistance to the little English party coming in their midst, and many letters of introduction opened the doors to delightful acquaintances in the American scientific world. Bacon had only one child to accompany him this time, for by now his son was an undergraduate at Trinity College, Cambridge. Among other members of his party were Mr. Nevil Maskelyne and his wife, the former bringing with him the famous animatograph, much improved in the interval, to which he was determined, this time, that no mishap should occur. It seemed, however, as if the stars in their courses fought against that unlucky machine, for on arrival in New York it was discovered that, through the failure of a carrier, the box of apparatus had never been put on board!

Fortunately on this occasion the mischief proved not irremediable; the essential part of the machinery was not in the box but in Mr. Maskelyne's private luggage, and therefore still to hand. New York was able to supply the necessary lenses, etc., and there was yet time, before the eclipse, for Mr. Maskelyne, though only with intense and unremitting labour, to rig up a stand and other appurtenances which, though only makeshift, were sufficient for his purpose.

The outward voyage on the Atlantic Transport's then new boat the "Minneapolis" had proved a delightful one, and once again a letter, in diary form, from Bacon

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to the Secretary of the Guildhall Club is at hand to describe it:—

‘Minneapolis,’ Sat., May 12.

“DEAR FORSTER,

“We are having our usual luck—dry, bright weather; smooth, oily seas; long, slow rollers; our one grief the lack of news. No papers reached ship ere we left Tilbury, but Archie Maskelyne stood among the crowd on the dock with a ‘Daily Mail.’ We threw him a rope and got it on board, the only copy!* Nevil Maskelyne and self are scheming special experiments, during his holiday, with wireless telegraphy, with which he has made great progress. A balloon, and perhaps more than one, will come into it, but further details must develop. The ‘Chief’ is going to fit up a vice, bench, etc., on the cattle deck, now empty, for N. Maskelyne to complete work on his instrument, now much improved.

“Monday.

“Still the same ideal passage. Our ship scorns all lesser waves and winds, and well she may, being, I learn, the third largest afloat in the world! Her engine-room, which we have thoroughly explored, recalls Woolwich Arsenal. Greater comfort, luxury, and good discipline throughout cannot exist anywhere. We find ourselves regarded as quite a distinguished party on board, and nearly every one we talk to has read all about the ‘Leonid’ balloon ascent from Newbury.

“Tuesday.

“A rough wet day at last, with big waves, but our boat behaves splendidly, and has made its record run

* Excitement as to the fate of beleaguered Mafeking, the news of whose relief greeted our arrival at New York, explains this craving for news.

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of 388 miles. We have learned a little of North Carolina (our destination) from a fellow-passenger. Puff-adders and rattlesnakes abound, the country is wild, with boundless pine forests, and if we are lucky we shall get the natives to build us a birch-bark hut. This should help out the photography.

“Wednesday.

“Thick fog and intensely cold. Off the banks of Newfoundland, and icebergs thought to be about. Going half-speed with hooter every three minutes. Fine acoustical effects, but monotonous!

“Thursday.

“Colder yet, but bright and fresh, with a fine wild sea. None of us have been the least ill on the voyage, which we expect to end to-morrow night.

“Friday.

“Fogs are putting us back again, and we can't get in at least before to-morrow morning, and may miss the Cunard mail home. Writing will be somewhat difficult in future, but I will try and send some tidings in another week. Sharks are round us, and one bit off our running log yesterday. Remember us to all.

“Yours very sincerely,

“JOHN M. BACON.”

Arrived at New York, Bacon fell of course, as did indeed the whole party, into the clutches of the American reporter, flash-light camera and all, and gained a little insight into the unique methods of the “yellow” journalist. Every other person asked him how he liked New York, but he had no time there sufficient to form an unbiased opinion, for it was necessary to push on with all speed to our destination, Wadesborough, in North Carolina, whither we journeyed almost immediately; pausing,

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however, a few hours at Washington, for Bacon to examine the far-famed acoustic properties of a hall in the huge marble Capitol. Concerning the celebrated echo there Bacon writes later :—

“ I have spent a long morning in this hall studying the matter critically, and having obtained due permission have photographed the various groups of visitors while being placed in chosen position by the guides, and by them put through ‘ the show. ’ This is a regular performance, and well rehearsed, but scarcely scientific. The stations on the floor, marked out with such strict exactness, are the apparent secrets of the professional showman, and are invested with an air of mystery, which, however, is practically dispelled when you and a competent colleague experiment on your own account. Moreover when the guide retreats to a distance to whisper, you may observe, on approaching him with due caution, that his whisper is decidedly of the ‘ stage ’ sort, and calculated to carry with great distinctness, which it undoubtedly does. The chief acoustic peculiarity of the chamber is clearly due to the fact that the roof, which is partly domed, is not symmetrical with the floor, so that much complex reverberation is the consequence.”

Our stay in New York, short though it had been, was enough to emphasize the contrast between that intensely up-to-date city and the quaint little Southern township where the next happy week was passed. It was the comment of an American lady, visiting Wadesborough for the first time, that it seemed like a page out of “ Martin Chuzzlewit,” only it was an altogether delightful page, with all the disagreeable people left out, and scores more charming ones put in. Far from the rush and roar of

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the great cities, buried amid cotton plantations and the endless pine forests of the south, the little townlet of about 1000 inhabitants, the greater part blacks, descendants of the former slaves, pursued its peaceful sleepy existence, nor fretted itself unduly about the minor worries of life. "Take it easy" should surely have been the borough motto inscribed upon the white front of the Court House, the one substantial building of the place, on whose outside steps, smoking in the sun, would sit for hours the Mayor and the portly 'Judge,' local magnate of the district. It is unusual in England to encounter the chief magistrates of a town sitting on the Town Hall steps, but in Wadesborough it was quite *de règle*; for did not the shopkeepers pass their days lolling on much-tilted cane-bottom chairs on the pavement—chewing the while—awaiting their leisurely customers; the innkeepers sit in the road outside their hotels; the editor, in shirt-sleeves, outside his office; and even the minister pass the time before his congregation arrived seated on the steps of his little church?

Nevertheless, sleepy and behind the times in many respects as they undoubtedly were, in one point at least the townfolk of Wadesborough were immensely ahead of them. We had heard much previously, of course, of the hospitality of the Southern States, but not enough to prepare us for what was coming; since we found that our little Southern town attached quite a new interpretation to the word, a broadening, heightening, and deepening of its signification out of all recognition. Fitting terms indeed are lacking adequately to express the warmth of the welcome extended to us, the entertainments, parties, and picnics lavished upon us, the countless acts of kindness and assistance rendered us, even to the length of two carriages and pairs (one of black, and one

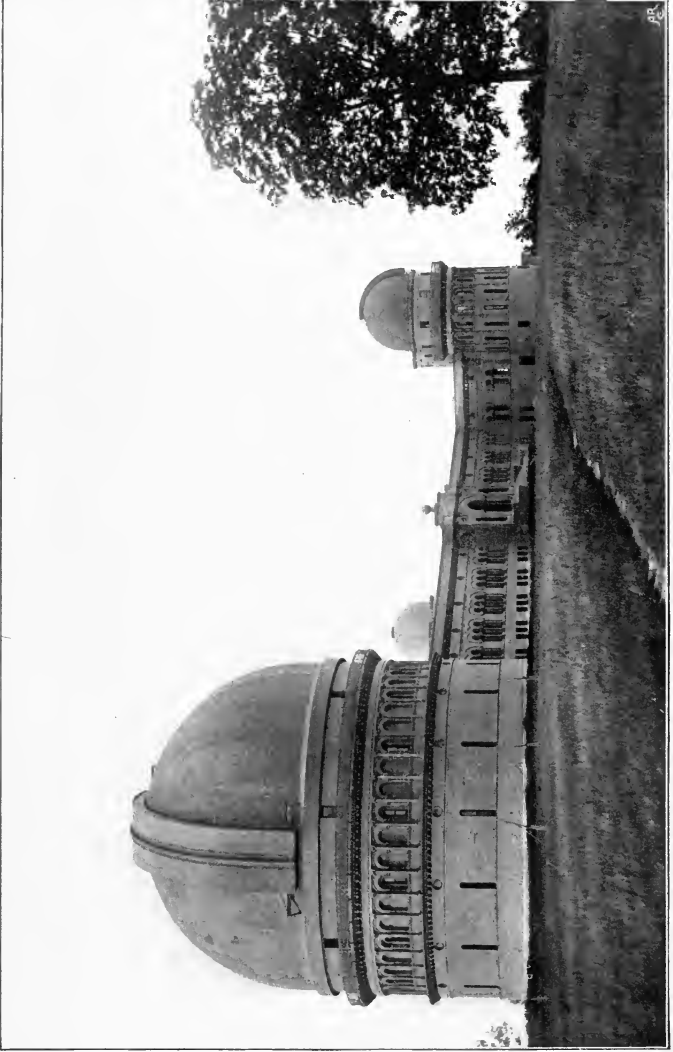
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of "calico," i.e. piebald steeds) waiting all day long outside our hotel to drive us, gratis, to and from the camp or whither we listed.

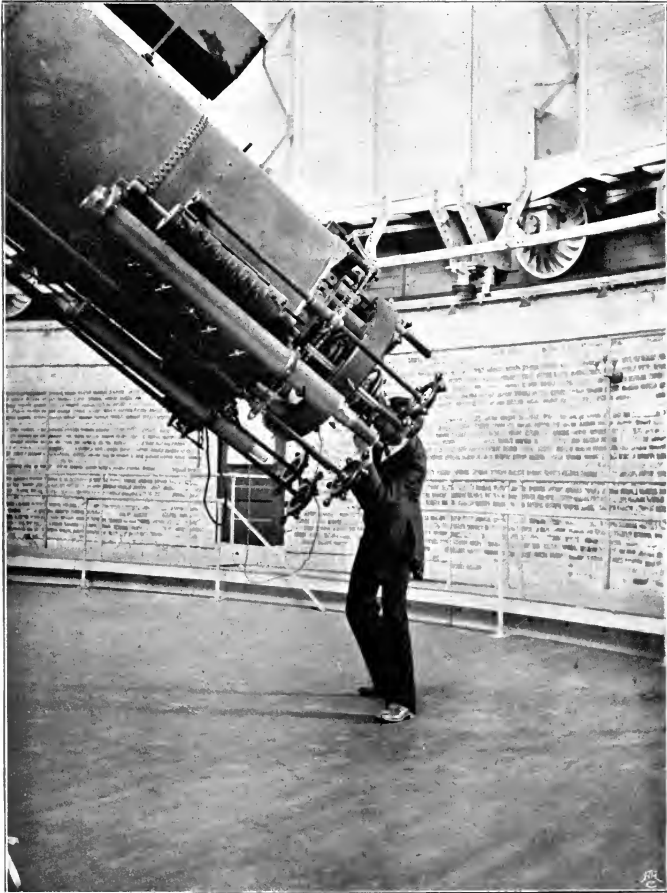
Nor was it only the townsfolk who thus overwhelmed us with favours. Careless of the proverb concerning the wisdom of trusting too many eggs to one basket, there had congregated at Wadesborough the eclipse expeditions of all the great American universities and observatories, and the town was packed with the astronomical leaders of a continent. From Yerkes Observatory came Professors Hale, Barnard, and Ritchey; from Princeton, Professor Young; from the Smithsonian Institute, Washington, Professor Langley—each with a large and scarcely less distinguished following—which, with lady astronomers from Vassar, and many other scientific celebrities, formed a shining galaxy of intellect unrivalled in the annals of shadow-seeking. The instrumental outfit of this great gathering was in proportion to its importance, covering acres of ground, and constituting by far the most important and valuable collection of astronomical apparatus ever brought together in one place to observe an eclipse. Amid such a concourse Bacon was indeed in his element, and never for him did days pass more quickly and happily. The astronomers had caught the infection of the Wadesborough open-heartedness, and lavished unending kindness upon the English party; chief among them the veteran Professor Young—most charming and courtly of scientists—who took us under his special protection, shared with us his camping ground and guard, and allowed us to use his elaborate and specially erected observatory and dark room. On the roof of this building, by the way, we found flying, beside the Stars and Stripes, a silken Union Jack, procured at much trouble in our especial honour.



THE ENGLISH ECLIPSE EXPEDITION AT WADESBOROUGH



THE YERKES OBSERVATORY



THE GREAT REFRACTOR, YERKES OBSERVATORY

The American Eclipse

Too much space has already been devoted to descriptions of eclipses to allow of more than the brief statement now that, on the momentous day itself, weather conditions were perfect, and the spectacle proved no less gloriously impressive than before. Bacon's own description (he was Special Correspondent for "The Times") may be looked for elsewhere. Suffice it to say the observations were all (or almost all) successful. Valuable photographs were taken, and Mr. Maskelyne defeated Fate by securing a fine animatograph picture (the first ever produced) of the whole length of totality. Bacon and his expedition were triumphantly happy, nor did their astronomical treats finish with the striking of the camp at Wadesborough. By most hospitable invitation of its chiefs the whole party were enabled to visit the great Yerkes Observatory on Lake Geneva, 75 miles distant from Chicago, where they became the personal guests of Professor Barnard and his charming English wife, the Bacons and Maskelynes actually staying in their delightful house.

It may be doubted whether the few days here spent were not the cream of the whole expedition. The vast observatory, complete in every detail of library, laboratories, dark rooms and workshops, containing within its 90-ft. dome the giant 40-in. refractor which is the greatest telescope of the world—even as the whole building is the finest observatory—was the princely gift of Mr. Chas. T. Yerkes to the University of Chicago. It forms, surely, the finest single contribution of wealth to science ever offered. It was a great privilege indeed to be enabled to visit it, a greater privilege still to be allowed, as we were, for a whole hour and a half, to explore the wonders of the heavens—revealed as never before—through the mighty eye of the great refractor. Greatest

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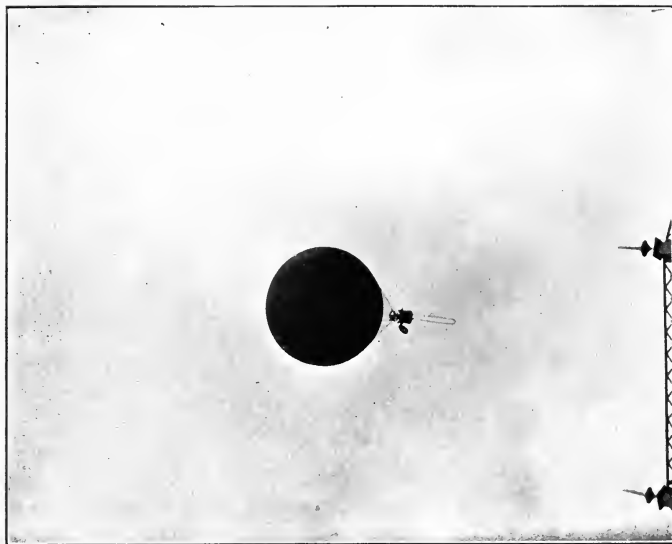
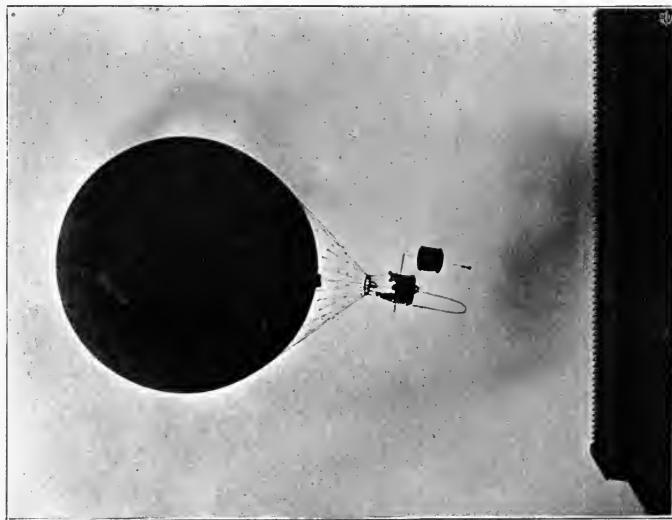
privilege of all to be the guests of the famous discoverer of the fifth satellite of Jupiter, of comets, and other celestial marvels past enumeration, the most distinguished, but withal the most modest, simple-minded, kind-hearted and delightful of astronomers, American or otherwise—Professor Barnard.

A short stay in Canada, and a visit to the Falls of Niagara, where Bacon of course explored the Cave of the Winds, completed our American travels; and on the 16th of June the party sailed for Liverpool from Montreal, on the Allan Liner "Parisian." It was on the voyage home that Bacon made the acquaintance of that distinguished naval officer, Admiral Sir Edmund Fremantle, G.C.B., and discovered that despite the varied and exciting experiences afloat and ashore, in war time and in peace, "in perils in the wilderness, in perils in the sea," of a long and active life, he yet hankered after a fresh achievement and desired to embark, in a new craft, on the only ocean he had not yet explored—the ocean of air. In other words, he was keen to go a balloon voyage. He readily fell in with Bacon's proposal that he should form one of the aeronautical party in the next scientific ascent that summer; and the sequel provided the gallant sailor with an adventure of quite novel interest—even to him.

The ascent was from the Newbury gas-works on a July day when heavy storm-packs lay banked in frowning masses on the horizon, and sudden squalls, coming apparently from nowhere, from time to time hid the sky. The start was delayed hour after hour in hopes of better weather, and a number of pilot balloons were sent up in advance to test the doubtful trend of upper currents. These as they vanished into distance disclosed the fact that aloft two fast currents, blowing one to the west the



BACON AND ADMIRAL FREMANTLE ABOUT TO ASCEND FROM NEWBURY GASWORKS



ENTERING THE THUNDER-CLOUD

The American Eclipse

other to the north-west, struggled together in the air for mastery, and formed eddies where they mingled.

It is common in summer-time for storms to cease suddenly towards evening, even though they may return again at night, and presently, the clouds clearing, the eager party cut their moorings, and embarked into the sky, confident that in so doing they ran small risk of a drenching, since naturally any cloud arising might be expected to follow with the same wind on which they had already a good start. All the same, the friends they left behind them, watching the great balloon, like a drop in the air, slowly recede from sight and melt into the sky, presently perceived, with no little alarm, a frowning, ominous thunder-pack, dark and closely compacted, rise against the wind full in the path of the aeronauts, whom they now anticipated would beat a hasty retreat from so perilous a position and effect a forced descent. To their astonishment and concern, however, the balloon continued its course, and was slowly enveloped in the approaching storm, clearly a very heavy one, whose distant artillery could even then be heard in faint but ever-increasing rumblings.

Possibly the four in the balloon (young Bacon was of the party) were too much occupied with their experiments and the exhilaration engendered by their situation, to pay much attention to their surroundings. Certainly they were not in the best position to observe the sky, hidden as it was by the great mass of the silk, drawn closer over the car than usual by the shrinking of the cordage in a recent shower. The pace was rapid, and the Kennet Valley, green and beautiful, slipped quickly by. Yet presently as they gazed down upon the fertile pastures they saw the wide view grow indistinct, veiled with a blue-grey mist that deepened and broadened,

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apparently the while creeping ahead of them, though in reality in process of formation by the settling down of a colder upper air. Presently upon the silk aloft came the rattle of hailstones, and looking ahead they saw the sky already blotted out by a dense black pall, whose advancing fringe had formed about them with great suddenness, and had thus hidden until now the depths of the vast threatening masses piling around.

Then almost before the situation had dawned upon them there came a wild shriek in the air above, and a minute later they were swallowed up in a pitiless onslaught of hail, whipping their faces and battering down on the seams of the balloon with furious patter. An ice-cold down-draught came with the hail, and a wild conflict of opposing currents raged round them. Then the thunder broke, the lightning flashed on one side and another, as batteries opening in quick succession on a beleaguered city, while the answering crashes, not long prolonged as on earth but smarter and sharper, followed each other from all over the sky with the briefest intermission.

It is an interesting question, frequently discussed by meteorologists and aeronauts alike, whether a free balloon aloft in a thunderstorm can really be struck by lightning.* From its position it has every likelihood of entering the "path of least resistance" and coming in the direct line of the flashes. On the other hand, it has no connection with earth, and silk is a non-conductor. It is a nice point, and one that the scientific world would gladly see settled; but Bacon unhesitatingly avowed afterwards that the aeronautical party on this particular occasion were of

* The late deplorable accident on the Continent, when a military balloon was struck by lightning, with fatal results, is not a fair answer to this question, since, I understand, the balloon bore a quite unusual amount of metal.

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opinion that it was an experiment that might well be postponed for another occasion. For the moment the thought of the 50,000 cubic feet of gas above them, in close proximity to the electric fires, distracted their attention, and militated against close scientific observation. In fact they had but one desire, and that was to descend with all speed. But this proved at the moment the very thing they were unable to attempt. Their course had now brought them to the edge of Savernake Forest, whose whole long length of waving tree-tops now stretched beneath them in impenetrable phalanx. For a few minutes more—long and anxious minutes they proved in truth—they were perforce detained aloft in the very heart of the storm, until a small clearing appeared among the trees, to drop in whose narrow bounds called forth the aeronaut's best skill and judgment. Rustic harvesters received them heartily, startled for once a little from their habitual stolidity. For from the ground the peril of the party had appeared much greater than from aloft. Lightning had simply surrounded the balloon, which appeared as if framed in fire, and every moment the spectators had expected to behold its utter destruction. As a matter of fact the storm proved one of the worst for years in that neighbourhood, brooding for five hours over Devizes, spreading damage right and left, one house being struck and burned to the ground not far from where the balloon fell, and two soldiers killed on Salisbury Plain, just over the near ridge of hills.

Admiral Fremantle accompanied Bacon on another balloon voyage some six weeks later. The occasion was the meeting of the British Association at Bradford, and the ascent was made from Lister Park. The special purpose in view was a further demonstration of the wireless telegraphy trials inaugurated at Newbury a year

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before. Mr. Nevil Maskelyne had charge of the transmitting instrument on the ground, and constant communication was continued with the balloon during its whole journey, which terminated near Sheffield. When three or four miles distant in the sky the aeronauts "wirelessly" exploded a mine in the grounds whence they had started.

This year also brought Bacon another "storm" experience, of a somewhat different but no less exciting nature. Towards the end of November—always a favourite month for aeronautical enterprise—an international experiment for meteorological purposes, involving the simultaneous ascent of many balloons from different great cities, was organized upon the Continent. This was still before the days when ballooning in this country had become a fashionable pastime, and it was only through the single-handed efforts of that well-known enthusiast, Mr. Patrick Y. Alexander, that England could furnish one properly equipped balloon, and so participate in the proceedings. The post of scientific observer for this voyage was offered to Bacon, who gladly accepted it. The ascent was from the Crystal Palace, and the morning broke foul and stormy. Conditions indeed were entirely unfavourable from an aeronautical point of view, but under the special circumstances it was evident the ascent must be made at whatever hazards.

Hour after hour the party waited, hoping for an improvement in the weather, the balloon but partially filled and moored close down to the earth with many restraining bags of ballast. The wind, however, continued to blow gustily with unabated violence, and in addition heavy clouds, blowing up blacker and blacker, soon overspread the sky with inky grey, across which ominous scud blew low and fast.

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The currents were setting towards high elms to eastward of the filling ground, and the balloon, when inflated, had to be dragged as far as possible in the opposite direction in order to avoid fouling them. The final preparations and affixing of the car were effected with much difficulty; the monster, maddened by the gusts, surged and tore at her moorings, men at the ropes were swept off their legs, until at length the crowd lent their assistance and hung on to the cordage, as many as could catch on at a time, and even then were dragged hither and thither about the ground. Coolness and skill triumphed, however, and, taking advantage of a lucky moment, the balloon was released, and with but a slight brush through the topmost branches of the elms attained the upper air.

Here, of course, in the free sky, travelling with the wind, she was safe enough for the time—but what a wind it proved! Describing this voyage later, Bacon writes: “We were chiefly concerned that day in taking the readings of our instruments, and just after making the first entries and noting it was only five minutes from the start, my eye caught far down the outline of a domed building and enclosure which was strangely familiar. What place was it so close to the Crystal Palace grounds that lay below? I looked again, and it was no longer below but already in our wake and fast receding; and then the truth flashed upon me. We were even at this time far from the neighbourhood of the Palace, and that was Greenwich Observatory, five miles from the great glass roofs and towers already far in the distance, showing we were flying at the startling speed of sixty miles an hour.”

On the wings of this furious gale they sped, over the suburbs, over the river, out over Essex in the direction of Chelmsford. Above the lower scud it was bitterly cold, and the thermometer sank below freezing-point.

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It was obvious that at their present wild rate the voyage must prove a short one, and ere an hour was past a creamy line in the distance showed they were already nearing the coast of Essex. It would be unwise to approach that line too nearly, since the roughest of landings, entailing probably a long dragging across country, was inevitably before them. The balloon was accordingly brought low, the long trail-rope dropped to fullest extent, and a suitable landing-place awaited.

Open ploughed fields were beneath, and in one of these the car came slanting down with a crash, only instantly to rebound again and clear a copse before she once more touched earth. This time the impact was harder, and there followed a few moments of ugly dragging, the heavy anchor trailing useless behind, leaping from field to field; the battered aeronauts, gasping with each fresh shock, holding on with might and main to the ropes and breathlessly awaiting developments. Fortunately this furious chase was not of long continuance: "Ere long we found ourselves plunging into a couple of stout young trees, a holly and an oak, growing in a thick hedgerow close together. We charged those trees literally with the speed of an express train. The holly, I recollect, was prickly; the oak was tough, very tough—yet bough after bough gave way as the gale, catching the emptying balloon, pulled harder and harder, until at last the car stove in and then turned upside down among the boughs, spilling us into the quickset hedge below, from which we were glad enough to emerge little the worse save for a few scratches."

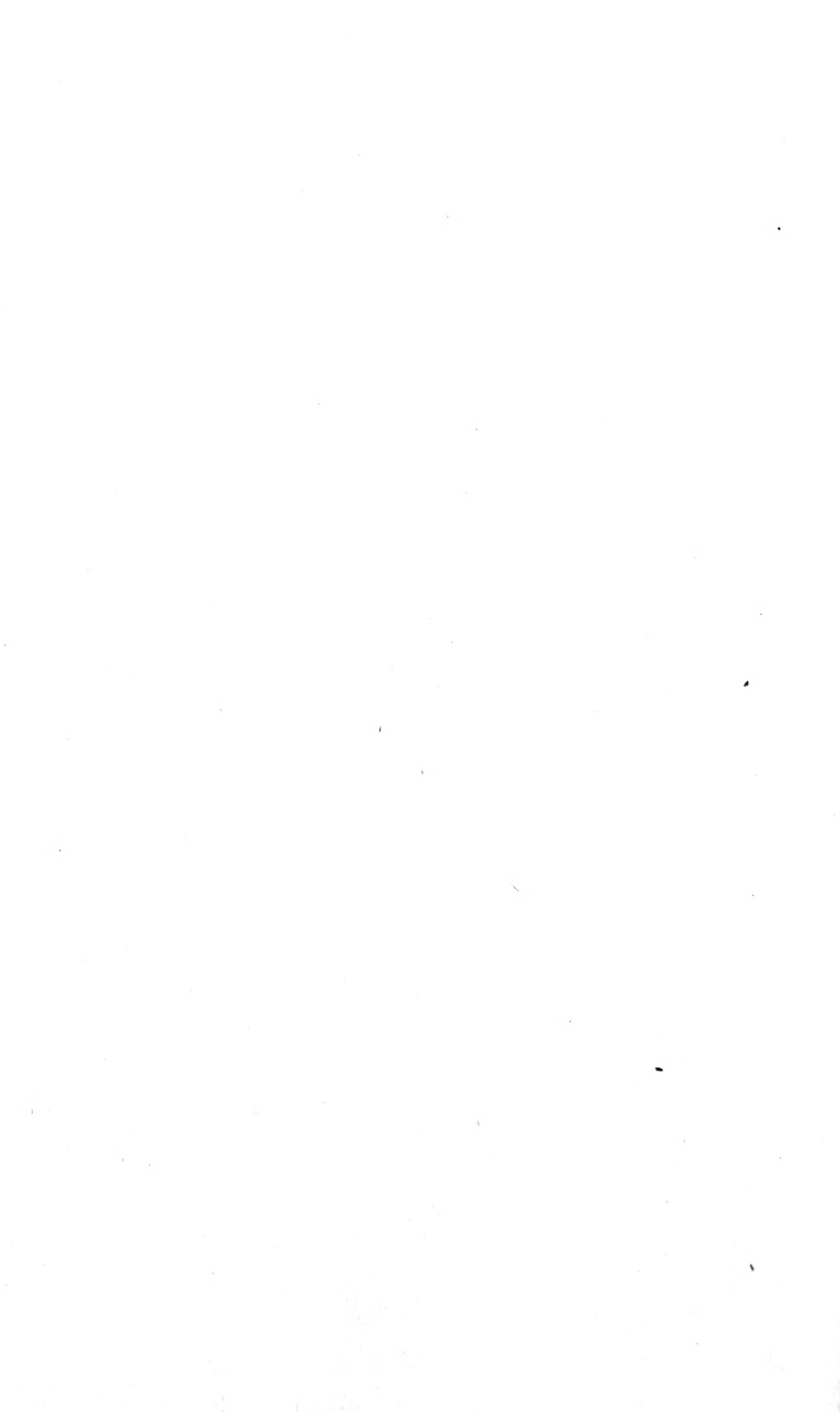
The end of this year saw the publication of Bacon's first book, "By Land and Sky," on which he had been engaged the greater part of the summer. Early in 1900 Mr. William Canton, at that time sub-editor of the "Con-



A CALM DESCENT



A ROUGH DESCENT



The American Eclipse

temporary Review" (to which Bacon had often contributed), and Manager for Messrs. Isbister and Co., wrote suggesting to my father that his unique experiences and scientific investigations might well form the contents of an interesting volume. Bacon, who had not until then aspired to authorship, was immediately taken with the idea. Writing, in facile, lucid style, came easy enough to him. To recall his adventures was to live again many delightful hours. He enjoyed every moment of his task, from the commencement to the final correcting of the proof-sheets, and his pleasure culminated on the day when his new-born child lay before him, fresh from the press, in all its glory of red cloth and gold lettering. The book—dedicated, by the way, to Sir Edmund Fremantle—was very favourably received by the critics. The comment of the "Literary World" reads almost prophetic: "Mr. Bacon writes with almost contagious enthusiasm, and so charmingly describes the fascinations of ballooning that unless millionaires have hearts of stone or—horrible thought!—never read books like 'By Land and Sky,' some man of redundant wealth will surely establish an Institute of Ballooning and finance the enterprise of budding aeronauts." In view of recent events this sentence reads curiously. It may not have fallen to "Land and Sky" to effect that revolution in public taste which has since made ballooning the sport of the wealthy, and flying the aim of the inventor thirsting for great awards. Nevertheless, it was Bacon who, in this country at least, set the fashion, raised aeronautics from its fallen state, pointed the course years ahead of everybody else, and himself led the way.

XVI

ACOUSTIC MYSTERIES—AN EXCITING DESCENT

THE lecture season of 1900-1 led Bacon far afield, to Scotland, Ireland and Wales. He had the usual experiences that attend the popular lecturer, some amusing, some trying. Once, realistically describing a balloon inflation, he gave the aeronaut's order, "Turn on the gas!" with so much effect that the hall-keeper took it to himself, and the room was immediately flooded with light, to the astonishment of audience and lecturer. Another time, stepping quickly backwards on a high and improperly protected platform, he fell down behind, and suddenly disappeared completely from view of his startled and much alarmed hearers. Minor discomforts of long day and night winter journeys—fog-delayed trains, lanterns that refuse to shine, lanternists who refuse to listen, chairmen who refuse to cease, and the like—of course befell him, as they do all frequenters of the platform. But with them he shared to the full the joy of having a vast audience hang upon his words, of feeling the subtle sympathy which links the speaker, moment by moment, to the hearers whose minds he grips, of holding thousands as it were in the hollow of his hand and playing upon them as upon an instrument. All descriptions of audiences fell to his lot: cultured, critical audiences in the famous old established institutions of London, Edinburgh and

Acoustic Mysteries

the northern towns; dock labourers of Liverpool sitting with their caps on, sailors on men-of-war, soldiers in garrison towns; fashionable afternoon audiences too refined for anything but the gentlest murmur of approbation; vociferous Welsh miners, who roared the roof off; stolid rustics, hearty schoolboys, keen mechanics—he knew and loved them all. Pleasantest of all experiences, perhaps, was the hospitality and kindness lavished upon him in all quarters and from every class, the delightful acquaintances made, the lasting friendships cemented, the fresh ideas exchanged. No wonder Bacon loved his lecturing and looked forward to it from one winter to the next.

This winter he read papers on his work before the Society of Arts, the Royal Astronomical Society, the Aeronautical Society, etc., and exhibited his balloon photographs—of which he had now a quite unique collection—before the Royal Photographic Society and the Camera Club. After his winter's work he took a brief holiday to the Scilly Isles, and here he turned his leisure to good account by experiments on a new line. During his last visit to this breezy archipelago he had occupied himself chiefly with scientific kite-flying—of late years a very favourite and instructive occupation, from which he had gleaned much information concerning the minor currents of the air. This time he gave his attention to a simple apparatus of his own devising for testing the amount of matter—in extremely fine division—in suspension in the atmosphere. This work he continued, in all sorts of different places, throughout the year, and some of his results were sufficiently curious.

As might be expected, the breeze blowing straight from the Atlantic on to the granite rocks of St. Mary's, Scilly,

The Record of an Aeronaut

contained the minimum amount of impurities, and yet, curiously enough, a sample secured on another side of the same island proved the most dust-impregnated of Bacon's whole series. A fresh wind was blowing directly off St. Agnes—an islet only a mile across and more than a mile distant—but it was at the season of the spring flowers, and the pollen off the millions of blooms with which the tiny land was carpeted loaded the air in such quantity as actually to stain the spirit in the test bottle that formed part of the apparatus. The same experiment transferred to London showed that from the height of the top of Tower Bridge a gentle west wind following the stream was very dust-free. Air collected on the top of a 'bus in Highbury was most palpably laden with particles from off the broad thoroughfare. This was what might have been expected, though it is more curious that air tested from a balloon flying 2000 feet over Kingston-on-Thames should have proved almost equally impure, the fragments in this case too being of relatively large size, resembling small shreds of straw or chaff, which were fluttering about like thistledown, which penetrates sometimes to very lofty regions. Most unexpected of all was the discovery that the air of Aldersgate Street Station on the Metropolitan—the most choking and stifling of stations in the sulphurous days of yore—proved on examination to be almost the freest from matter in suspension that Bacon had ever tested. The simple explanation doubtless was that the volumes of steam from the passing trains served to entrap and cleanse out the dust, but the Press affected to find something humorous in Bacon's statement. The poetical "Globe" (I think it was) again produced an effusion (which my father much appreciated at the time) under title "Our Health Resort," which, after urging all invalids to "come with me to Aldersgate and tour along

Acoustic Mysteries

the 'Met,' " continued, as I trust I may be pardoned for quoting :—

There you find the purest air in all our great Metropolis :
Though you mightn't think it, yet the atmosphere is sweet.
If your brain is reeling, and your reason like to topple is,
Half an hour of Aldersgate will put you on your feet.
There you never see the railway porter lounging wearily,
" Matter in suspension " there is practically *nil*,
Smith's young representative is singing loud and cheerily :
No one down at Aldersgate is ever feeling ill.

Talk of breezy Brighton and of far away Davozes is
Idle, silly chatter, and essentially unsound.
Aye, the only method now to cure tuberculosis is
Just to take an airing on the London underground.
Even Christian Scientists could do no greater miracle ;
Sweet and balmy Aldersgate was never known to fail.
Put aside all thought of trust in remedies empirical—
Come and buy a " season " on the subterranean rail !

Other experimental work of 1901 was partly suggested by the national event of the year. Queen Victoria died in January, and on February the 1st there boomed out from Spithead the minute guns of a mighty fleet in such thunderous volume as only a naval engagement or the obsequies of a great sovereign can call forth. Bacon, mindful of the anomalous hearing of the noise of great guns in times of battle in the past—history is full of such instances—and knowing that half England on this occasion would keep watch and record of the fact, took special measures to investigate the carrying of the sound to all quarters of the south of England. The result proved not less striking than of old. The windows of Sutton and Richmond Hill rattled to the shock, as did also those of Tunbridge Wells and Ashford, in Kent. As far away as Cambridge and Peterborough the firing was unmistakably detected. Yet in the immediate neighbourhood—that is to say in places distant but from ten

The Record of an Aeronaut

to forty miles of Spithead—the guns were “almost or quite inaudible !”

Clearly here was scope for much investigation, and through the coming summer Bacon made many experiments bearing on the subject of the hearing of loud noises across wide stretches of country. The cotton powder fog-signals aforementioned, carried aloft by powerful rockets and exploded when high in air, made as much noise as it was possible or advisable (!) for him to produce. He generally fired them in the still hours of evening or night, when their effect could be heard to best advantage, and had it not been that he lived in a remote and open part of the world, and that his vagaries were well known and condoned with in the neighbourhood, there might have been complaints made of the manner in which he disturbed the peace of the countryside. As it was, his acoustic efforts sometimes produced untoward results. One night's experience proved too much for the nerves of a friend's aged pony. The first rocket, bursting in wild uproar in the sky, startled him from his accustomed calm, the second set him trembling, with back-set ears and quivering flanks, the third started him galloping madly round his narrow paddock. Round and round he went, furiously and wildly, and though the firing now ceased it seemed still to echo in his frenzied brain, for he never abated for a moment in his mad career. His owner was wakened by the sound of charging hoofs, and at intervals during the night he woke again, always to hear the rhythmic beat of that endless chase still going on. Only with daylight did the pony regain possession of his nerves, when he had to be parted with as broken-winded ! On another occasion the rockets were fired—by special permission of Lord Carnarvon—from the summit of Beacon Hill, a lofty point of the Hampshire range. It

Acoustic Mysteries

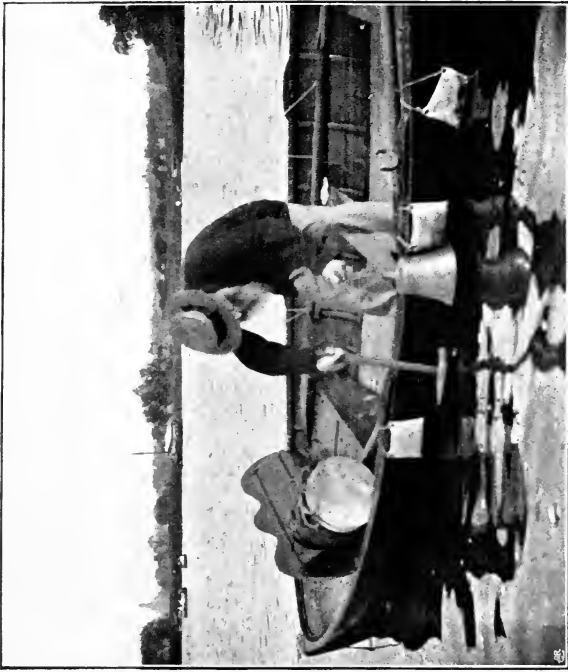
seemed as if in so exposed and desolate a spot no damage could possibly ensue, but on the slopes of the hill was a large sheepfold from among whose hundreds of woolly occupants the shepherd had—with great care—chosen out the twenty best to be taken to the local sheep-fair on the morrow. This select party were penned in a corner by themselves, but, alas, the events of the night proved too many for them, and the disgusted shepherd found next morning that they had all leapt the hurdles and mixed themselves up again hopelessly with the crowd. His feelings (and language) are better imagined than described.

One August night of this summer Bacon instructed volunteers from the Guildhall Club to fire more rockets from Beacon Hill, while he and two assistants repaired in the little motor to the other Beacon Hill near Amesbury, highest point of Salisbury Plain, eighteen miles W.S.W. as the crow flies. Detonating rockets were fired from both stations at prearranged times, their flashes being seen in the sky, but not even with the paraboloid "ears" could a suspicion of a sound be heard from either station, though the breeze was but light at the time. The ears were of use in another way, however. The Wiltshire Beacon Hill is in close proximity to Bulford Camp, and as Bacon was preparing to fire his own signals he was astonished to see another, much lesser rocket, climb feebly into the night, somewhere below the hill, followed by the mild popping of Roman candle stars. Was it some "Tommy" from the camp, who had chosen this occasion for a firework display? No voices could be detected, but on turning the big paraboloid in the direction of the firing the emphatic words, "Get out of the way, d—— you!" clearly distinguished, left no doubt that a British officer was engaged in an exhibition of his own pyrotechnic efforts. The rest of the events of this

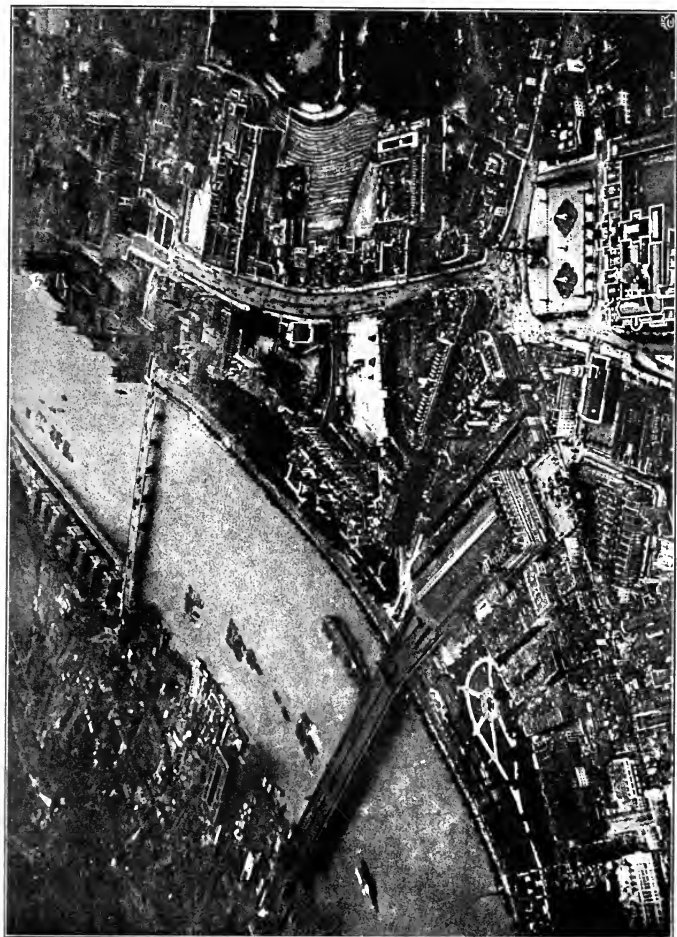
The Record of an Aeronaut

night, when the little motor-car got off the track in the darkness and was lost, hopelessly, at midnight, in the wilds of Salisbury Plain, proved somewhat interesting at the time. Here it may suffice to record as a curious fact that, the same acoustic experiment being repeated shortly afterwards, a Captain of Royal Artillery, standing on the Wiltshire Beacon, heard without difficulty the signals from the Hampshire Beacon, in spite of a stiff breeze blowing at right angles to the line joining the two stations.

As a corollary to these tests of the travel of sound through air arose experiments as to the audibility of signals made and received beneath the surface of water. The importance, from a utilitarian point of view, of knowledge on this point is obvious, when one considers how the noise of wind and wave militates against the hearing of warning bells, etc., at sea; warnings which might still, with proper appliances, be received without interruption through the medium of the water itself. Bacon followed up this interesting side-issue with considerable thoroughness, and after providing himself with carefully thought out apparatus for the purpose, spent a week with his son experimenting on the Norfolk Broads, After long and careful investigation with bells and so forth. the effect was tried, on the last day, of a cotton powder detonator, exploded some ten feet below the boat. Acoustically the result was most instructive, but other wholly unforeseen results also ensued. Shortly after the explosion there rose to the surface of the lake the body of a dead fish, followed by another and another, until the water was speckled with the white undersides of rising corpses. The massacre was too wholesale and extensive to be regarded with equanimity, and the experimenters beat a hasty and horrified retreat.



SOUND EXPERIMENTS ON THE NORFOLK BROADS



VIEW, TWO THOUSAND FEET ABOVE TRAFALGAR SQUARE

Acoustic Mysteries

Bacon's most interesting scientific balloon voyages of the year were two ascents made, one by day and one by night, in August, from the Stamford Bridge Athletic Grounds, Fulham. In the first he was accompanied by Sir Henry Truman Wood, Secretary of the Society of Arts, and the balloon passing directly over the best known parts of London (the voyagers exchanged greetings with workmen on the roof of Buckingham Palace), and the air proving singularly clear and free from haze, photographs were secured of the very heart of the great city, which eventually turned out to be some of the most interesting of all Bacon's collection. Careful testings were made of the conditions of the upper atmosphere, revealing its floating impurities to be mainly of a fibrous, or, as Bacon described it, a "fluey" nature; while bombs were fired above the housetops, the records of the hearing of which, carefully plotted on a map, again revealed the curious point that the sound travelled farther at right angles to the balloon's course than either up or down the wind.

The termination of this voyage was marked by a small yet laughable incident over which the voyagers chuckled for many a long day. Their landing-place was near Woodford, in Essex, at the back of the Claybury Lunatic Asylum, in one of whose fields they actually fell. The staff of the establishment proved hospitable, and tea was partaken of in the Doctor's apartments. Arrangements being then made for the disposal of the balloon, a fly was sent for to drive the aeronauts to the nearest station. Their departure was from the front of the building, where, owing to their novel method of arrival, they had not before been seen, and, as they might have expected, a somewhat astonished porter stopped them at the lodge.

"Where are you going to?" commenced the catechism.

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“ To the station.”

“ And where have you come from ? ”

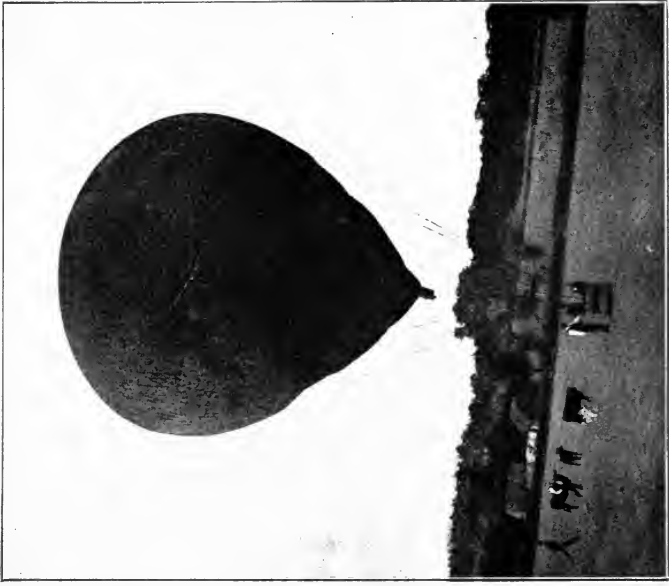
“ From the Asylum. We have been there to tea.”

The porter's face darkened and stiffened. “ But I never saw you arrive. How did you come ? ”

“ Oh, we came in a balloon,” was Bacon's innocent and airy answer. But it proved altogether the wrong reply, for the janitor, very stern by now, remarked that it was just what he had expected, that he had heard that tale before, and other icy witticisms of a like nature, the while the gate remained obstinately closed. Until due explanations had cleared the air, and the path, the aeronauts could not but feel that those facetious friends who dubbed them “ balloonatics ” were nearer the mark than they supposed.

In the night balloon voyage of a couple of days later Mr. C. W. Wyllie, the well-known artist, occupied a seat in the car—a fact permanently recorded by a fine black-and-white drawing of the star-spangled metropolis, its bridges, streets, and buildings outlined in myriad sparkling gems, lying in the stillness of its uneasy slumber as an enchanted city of a magician's dream. It was a matchless scene indeed over which they passed, revealed but to a very few elect, and not less impressive was the beauty of the dawn when, seen from an altitude of 5000 feet, the sun peeped golden above the rose-red banks of stratus clouds, while over the fair fields of Kent below, the winding ribbon of the Medway, and the pale moat which circles the ancient pile of Leeds Castle, the shadows of night yet brooded.

Aeronautical work the following year opened as early as the middle of April with a scientific ascent from Woolwich. The hearing of signals over long range of land and sky was again the object of research, and on this occasion



DESCENT AT DAWN



DAWN OVER THE MEDWAY

Acoustic Mysteries

Trinity House and Greenwich Observatory lent assistance. Military authorities also displayed their interest, and by the kind permission of the officer in command, Col. H. T. S. Yates, in whom Bacon was delighted to claim an old school friend, partner with him and Lord Francis Douglas in the most unauthorized of the pranks at "Pritchett's" forty years before, the ascent was made on the parade-ground of the Royal Artillery Barracks, and a party of artillerymen were told off to give their skilled assistance in the preparations. It was unfortunate for certain of the experiments contemplated that the day proved misty and thick, so that five minutes after the balloon had started she was lost sight of entirely in the fog; but from an acoustical point of view the presence of this heavy haze was not uninstrucive. Through partial rifts in the white rolling vapour we, the aeronautical party—on this occasion Bacon had both his children aloft with him—caught fleeting glimpses of the docks, the river, and the crowded mean streets of East London; after this, at a height of 5000 feet, dense cloud, piled crater-like around the balloon, effectually hid everything else from view. A dull continuous rumble punctuated with shrill whistles, arising from all the railways of the metropolis, formed the ceaseless accompaniment, through which broke at times, even at the height of a mile, the raucous yells of street hawkers and the barking of high-voiced dogs. Sirens and steam hooters, of course, were audible, but though the city was crossed just at the hour of noon, and careful watch was kept, no trace of that uproar of clocks and bells, so noticeable in the streets, could be detected. The tenor bell of Woolwich Church, which, by arrangement, was rung at the time of the ascent, was also wholly inaudible, although a bugle blown from the barrack field was heard for a long time after the start.

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After some interval, occupied by the firing of aerial bombs and so forth, the balloon swooped low beneath the cloud, and soon the long trail-rope, after skipping some telegraph wires, caught itself up in the branches of an oak tree and held fast. No amount of pulling sufficed to free it, and the very effect of such efforts on our part was to bring us to earth, which we touched, gently as a feather, in a ploughed field which excited bystanders informed us was not far from Hertford. A small station was hard by, and a railway porter, more active than the yokels who soon surrounded us, climbed the tree and unhitched the rope while we were still deliberating on our next action. Our liberation decided it. A glance overhead showed the silk still fully inflated; a glance at our watches, that the day was yet young. Immediately we scrambled back into the basket and commenced to throw out ballast in order to rise again.

But the gas of the balloon had become chilled in the few minutes we had spent upon the earth, and when all the sand, even to the last grain, had been exhausted, we still rested, though lightly, on the ground. Whereupon Mr. Spencer, hauling out his pocket-knife, cut adrift the long heavy trail-rope, and left it coiling like a huge brown snake across the field. "Rail it back to London," he shouted to the porter below, as, lightened of its weight, we sprang upwards into the cloud, and this time, so energetically did we rise, shot through it altogether and emerged into bright sunshine above.

Then at last our balloon got a chance of showing what she could do. The sunshine was drying her sodden silk and expanding the chilled gas, the cloud floor fell lower and lower beneath us, and the tell-tale aneroid marked off a fresh thousand feet in every five minutes: 13,000,



DESCENT NEAR HERTFORD

Acoustic Mysteries

14,000, 15,000. "Nearly three miles!" cried Bacon delightedly. "By far the highest I have ever been!"

At about 15,000 feet—the height of Monte Rosa—on the mountain, and indeed for some people far lower, mountain sickness makes itself very evident to the climber exhausted with exertion. We four, squatting at ease in the corners of the steady car, felt, or declared we felt, no inconvenience. Nevertheless, our faces were greenish-white, our ears sang, and another thousand feet would surely have had effect upon us. As it was when Mr. Spencer suddenly declared he could hear the lowing of a cow we were inclined to attribute the statement to a little temporary aberration, for we had passed a mile and more beyond the range of such gentle noises, and only an occasional railway-whistle, faint and far, broke the utter silence of the sky. Nevertheless a moment later we all heard the same sound, feeble but unmistakable—an extraordinarily "long shot," an acoustical "freak," ascending through one of those "chimney shafts" of audibility among the air-currents that every investigator sooner or later encounters.

Another curious fact noted that day was that at about 10,000 feet high a biting east wind unpleasantly invaded the basket. This was remarkable, since aloft, no matter the speed of onward motion, no breath of air is ordinarily felt. We were obviously not travelling with this easterly breeze, and could only suppose ourselves temporarily encountering a cross-current. By-and-by our balloon began sinking cloudward—slowly at first, then with ever-increasing velocity, so that presently the experienced aeronaut thought fit to call our attention to a fact we had previously overlooked. The height we had attained had been altogether unusual for an ordinary voyage, and a great height is only reached at the expense

The Record of an Aeronaut

of much loss of gas, which pours from the open mouth. Much loss of gas means a very rapid descent, in this case to be further accelerated by the chilling of the dense cloud floor below. A rapid descent can only be combated by the plentiful discharge of ballast, and the use of a long trail-rope to break the perilous shock of the fall. Our sandbags lay empty of their last grain at our feet, and our trail-rope we had left in the field at Hertford an hour and a half ago.

Down we sank and down, fast and faster. Things were beginning to grow exciting, but your sky sailor never allows himself to become flustered. The balloon was promptly "parachuted," that is to say the loose lower part of the silk, already flapping ominously over our heads, was released, and by the rapid downward motion immediately collapsed into the upper portion, forming a natural umbrella or parachute. It is this expedient which has saved the necks of many aeronauts whose balloons have burst in the upper air, but the area of our parachute was vastly too small, considering our weight, to ensure us an easy landing, and presently, as our speed increased and increased, quicker and quicker, we grew anxious as to what might lie beneath the masses of the cloud floor now surging up dark around us.

It would be impossible in any way to pick our ground or influence our course, so that a river beneath us must mean a ducking, a wood a swinging crash into the tree-tops, a town—worst thought of all—the trying of unpleasant conclusions with the chimney-pots. All available articles, such as empty sandbags, had already gone overboard, but more must surely go. In a corner lay the battery of dry cells used to explode the detonating sound-signals. They weighed twenty pounds at least, and what about possible heads below! We could see nothing

Acoustic Mysteries

through the clouds, but needs must under certain circumstances, and over they went, while a moment afterwards the clouds broke and disclosed a prospect of brown fields and green meadows beneath. But we had no time to take in their details. Ten seconds exactly from leaving the cloud we struck the earth, our spent balloon lifting not an inch from where she fell. The shock was severe, but the grass was soft and marshy. We lay for a moment breathless in the car in the middle of a large deserted pasture, and then there slowly strolled up a solitary labourer. He had been in an adjoining field with some sheep when our dry cells fell from the cloudy sky with terrific impact almost beside him. A little natural excitement might have been pardoned him under the circumstances, but he seemed barely interested. The rustics of Oundle, in Northamptonshire, within three miles of which we fell, are undoubtedly of a peculiarly phlegmatic turn of mind.

XVII

ACROSS THE IRISH SEA

TWICE this summer of 1902 Bacon spent a happy night sitting up in the Ball of St. Paul's, listening to the acoustic effects of the sleeping city's restless slumbers, testing minor air drifts, ascending and descending currents and the like, with tiny paper parachutes or delicate anemometers, and taking photographs with a couple of hours' exposure—unique pictures they proved—of the strange and beautiful scene. The last occasion was the night of the Coronation illuminations, when fairyland itself seemed revealed to the watcher aloft. One noteworthy observation recorded was the far greater audibility of distant sounds carried along the reaches of the river. It seemed made clear that the penetration of sounds across water is influenced by conditions of atmosphere, of which wind is not always the chief. It was for the following up of these lines of investigation that Bacon sought and obtained permission, another time, to pass a night in the upper rooms of Tower Bridge. The whole central building, both towers, with the connecting galleries, were placed at his entire disposal, and, wholly unmolested (for he and his daughter were locked in and left by the night watchman), he prosecuted his experiments out on the leads or in the great dusty, deserted chambers under the roofs.

As an honoured guest at civic dinners, scientific soirées, conversaziones, meetings, and the like, Bacon



LUDGATE HILL



LOOKING UP THE RIVER

LONDON BY NIGHT, FROM THE BALL OF ST. PAUL'S

Across the Irish Sea

was coming personally more into touch with the leaders of the scientific world, while his work, original and picturesque as it was, was daily attracting more general and widespread attention. I think it was Judge Bacon who first informed him of his popular nickname of "Bacon-in-the-Air," a happy counterpart to "Bacon-under-Water," the illustrious Captain Bacon of submarine fame. The idea of a clerical balloonist—a veritable "sky pilot," as it was pointed out—seemed to appeal to the lay mind, and not only were articles from his own pen frequent in the daily and monthly journals, but interviews, portraits, biographical sketches, and the like, testified to the general interest his labours and personality excited. As a natural result of so much notice directed to it, the science of aeronautics was becoming a much-talked-of one, and ballooning, after lying many years in abeyance, was rapidly rising into fashion.

The events of the recent South African Campaign had brought to the front again the all-momentous question of the use of the balloon in warfare. Military history has shown, over and over again, but most strikingly in the story of the siege of Paris, of what great service a balloon may prove in time of war; and, ardent aeronaut as he was, it could not be doubted that Bacon's interest would be keenly aroused in this branch of his art. As has been told, he had already experimented in methods of signalling, for military purposes, from a free balloon, by means of a collapsing drum, wireless telegraphy, and the like, and this summer, in conjunction with his friend Mr. Maskelyne, he began work with a hot-air military balloon of their joint invention of which more anon. Meanwhile other ideas were occurring to him.

Conditions of warfare have altered tremendously in the course of thirty years, yet the sieges of Ladysmith, Kim-

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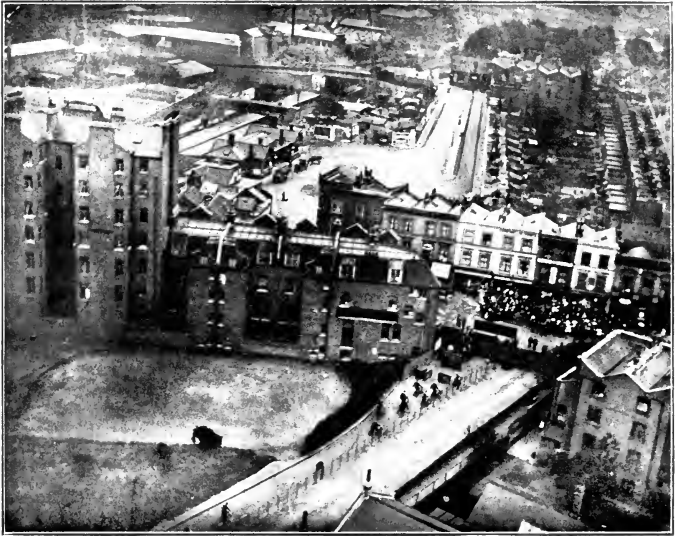
berley, and Mafeking could not fail to suggest comparisons with the siege of Paris, and invite speculations as to what chance a free balloon, rising from a beleaguered city, would have of escaping from the guns of to-day, or of a pursuing enemy mounted on cycles or motor-cars. Reflection on this point eventually led Bacon to the suggesting of a pretty and instructive little experiment, which was immediately welcomed with popular enthusiasm. A balloon ascent was arranged from Stamford Bridge, representing for the nonce a besieged town, one August Saturday afternoon; and, through the Press, a challenge was issued to the various military cycle corps of the Home District, inviting them to impersonate the enemy, and try and catch the balloon and secure the dispatches it was supposed to be conveying. The competition was approved by the Commander-in-Chief, and a fine muster of men from the 26th Middlesex, the Tower Hamlets, the Artists' Corps, and others, in uniform, supplemented by many civilian cyclists, vaulted on to their bicycle saddles in hot pursuit as the balloon rose majestically above the shouting crowd, filling the Athletic Grounds, and drifted south-west over Fulham.

The arrangement was that the balloon should come to earth within twenty miles of London, when every effort would be made by Bacon, as bearer of the dispatches, to escape by any means from his pursuers. The course was purposely maintained close above the ground, out of consideration for the cyclists threading their way at a disadvantage through crowded streets, and the light breeze drove it forward at a speed of some twelve miles an hour.

Nevertheless, the "enemy" quickly found that balloon hunting through South London suburbs was a harder task than they had anticipated. It was a case of each



BALLOON r. CYCLE RACE. MUSTERING



RISING ABOVE FULHAM

See page 302



CAPTURING THE DESPATCHES
BALLOON vs. CYCLE RACE

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Across the Irish Sea

man for himself, and while some followed new roads running apparently in the direction of the balloon's course, only to find themselves confronted by boundaries and blank walls, others hauled their machines over fences, crossed fields and market gardens on foot, and hoped to emerge on more likely tracks where they could mount again. One party, coming to cross roads and a sign-post, decided on a road which, after a seven-mile ride, brought them back to the sign-post again. Another became so entangled in brickfields that when they at length emerged all hope of successful pursuit was at an end. Not until too late did the wheelmen realize that the wiser course would have been to have carried maps, to have noted at the outset the general direction that the balloon was taking, and having drawn a line in this direction to have followed it as the true guide to the best route.

It was a game race, for a shifting wind caused the balloon from time to time to tack back and forth, doubling on her tracks like a hare. Wimbledon was passed, and Epsom, and the aeronauts saw the streams of crawling black ants on the white roads thin out and fall farther behind, until at last, when ground was touched in a harvest field a little off the road between Leatherhead and Bookham, not a cyclist was in sight. They were close at hand though, and quick as possible Bacon was out of the car, across the field, and had effectually hidden himself inside a corn-shock, before the first panting and perspiring pursuer burst shouting through the hedge. Others were quick upon his heels, until the field was full of the enemy, but it was the fourth man in who disinterred Bacon from his hiding-place and seized his dispatches, for which feat he was awarded the prize of a handsome pair of field-glasses.

On all hands the chase was voted a great success ; hare

The Record of an Aeronaut

and hounds were equally delighted, and the party were already dispersing with mutual congratulations, when, like a bolt from the blue, a sudden and terrible disaster converted the pleasure of the day in a moment to saddest tragedy. The race had been over an hour and more, the last cyclists had long ago arrived, and Bacon and his party were already directing their steps towards the station, when a cry arose from the still crowded field that the balloon was loose ; and in a moment it sprang up above the heads of the crowd, rapidly rising, with three or four startled people, one a mere child, standing horror-stricken in the car. As it rose it dragged up after it its long trail-rope lying on the ground, and at the shout, " Hold on to the rope ! " first one man and then another laid hold in the hope of restraining the fugitive craft. Had they only all got their strength on together all would have been well, but, as it was, one by one they were lifted from the ground, and dropped off at greater or less height, falling over each other, until half a dozen people were rolling on the field, of whom one at least was badly bruised and shaken.

Shaking off its would-be captors, the balloon plunged aloft, and the crowd shrieked with horror as they saw that one man still clung to the trail-rope and now hung dangling, many feet high in air. All too late he realized his predicament, and, hand over hand, he slid down the rope at a speed which must have ripped the skin from off his palms. But before he reached the end of the cord he was forty feet at least from the ground, and he fell upon the iron-parched earth with a sickening thud which those who heard it can hear still, and which, breaking his neck, killed him instantly.

The cause of the accident was soon explained. The balloon descended quietly, still full of gas, and out of

Across the Irish Sea

pure good nature Mr. Spencer allowed the cyclists, and the many harvesters and villagers who quickly crowded to the scene, captive ascents in the car, letting them up to the length of the trail-rope and pulling them down again. There was no lack of helpers while the fun lasted, and all went smoothly until Mr. Spencer announced that it was time to cease and that no more rides would be given. Forgetful of the result of so doing, the men who were holding the basket, now that the fun was over, let go their hold and turned on their heels, when, in a moment, the balloon was off and away, bearing its unintentional passengers with it. Concerning their fate there was much agonized apprehension among the crowd, but in reality their position was not one of any danger; and one of them having the sense to pull the valve-line they descended safely, though horribly scared, a few hundred yards away. The man who lost his life was one John Tickner, a farm labourer in corduroys and hob-nailed boots, who either lacked the quickness to realize his peril until it was too late, or, as we prefer to think, while realizing it, imagined that by holding on he might be saving the lives of those in the car, and so knowingly risked his own in noble self-sacrifice. Alas! he left a wife and family, for whom Bacon immediately opened a subscription, and, much sympathy being aroused, a hundred pounds or so was quickly collected and placed in good hands for their relief.

From a military point of view the result of the race seemed to show that, granted a moderately calm day, without low-lying cloud, cyclists should certainly be able to follow and capture a balloon when the journey is short. On the other hand, the pursuers were convinced that with a strong wind blowing they would have had no chance whatever, while for such a course as they had just run a

The Record of an Aeronaut

cavalryman, lightly equipped and on a mount used to cross-country work, would have had the advantage of them. Moreover the balloonist, unless the cyclists were very close up when he fell, might well hope to escape by hiding, if the country were wooded. Pursuers and pursued alike were keen for another trial, and so a fortnight later a second race was organized, starting this time from the Crystal Palace, and on a day when widely different conditions prevailed.

For this time, although along the surface of the ground the wind travelled but slowly, at the level of the clouds it blew in strength; and soon after the start—a somewhat exciting one, for the balloon narrowly escaped collision with the North Tower—the heavy canopy of vapour dropped earthward, and presently completely hid the balloon from view. The cyclists, riding on this occasion in military formation and under the direction of officers, had profited by their previous lesson, and kept to the broad main thoroughfares, following the wind. But above the cloud the current sped swiftly, and when the aeronauts descended again it was evident that they had gained largely on the pursuit. Darkness was gathering, and they desired to come down, but the country over which they found themselves was thickly wooded, and not till near Godalming could they happen on a suitable landing-place. They were then more than thirty miles from their starting-point, and their escape from capture was beyond question. Nevertheless a plucky party of the King's Royal Rifles, with splendid determination, kept up the chase as far as Guildford, when night closed down upon them. The lesson in this case was obvious. Let an enemy be as vigilant as he may, and possessed of the deadliest weapons known in modern warfare, it should still be perfectly possible in any country

Across the Irish Sea

where overcast skies recur to make an aerial flight over any hostile country soever. More than this, the balloonists need fear no capture when they voyage on a dark night. On the other hand, when cyclists chase a war balloon they need not abandon hope of catching it when the balloon is occasionally hidden from view by clouds, so long as they can make sure of following its general course.

On the whole, the balance of advantage would appear to rest with the balloon in a race against wheelmen.

Military balloon hunting, thus happily inaugurated by Bacon, became for a while very popular; motor-cars were substituted for bicycles, and several exciting races took place after balloons piloted by Mr. Frank Butler, the Hon. C. S. Rolls, Mr. Leslie Bucknell, and other Aero Club leaders. Bacon, meantime, had bent his thoughts in other directions, and now was meditating how his beloved art could be made to benefit not the Army alone, but might even be turned to the use of the sister service, the Navy.

At first sight it might indeed appear that, however useful a balloon may be to an attacking or defending army on land, in naval warfare at least it can find no possible place. But this is very far from being the fact. It has long been recognized that objects under water, such as shoals and sunken rocks, become visible, or more visible, when viewed from a height, and it was on the authority of Admiral Fremantle that Bacon learned that it is customary at sea, when some sunken object is suspected of lying in a vessel's course, but cannot be seen from deck, to send a man aloft, when the higher he can climb the mast the further will his vision penetrate beneath the waves. There is a recognized optical reason for this fact, and were the sailor on the top of a lofty

The Record of an Aeronaut

cliff he would see better still. Therefore, argued Bacon, from a balloon at not too great an elevation his power would be yet further increased, and he would be enabled to see the bottom of a shallow sea in a way that could not by any other means be obtained. It needs no pointing out that in these days of submarines, sunken mines, torpedoes, and the like, the possibility of seeing beneath the waves becomes of the vastest naval importance, and thus at once it becomes evident that, far from a balloon being useless at sea, it might, under certain circumstances, prove of the utmost value.

This granted, there immediately arise many other points of much interest ; such as the feasibility of steering a reconnoitring balloon with a trail-rope across the sea, and the maintaining of communication over great distances—say from the shore to a ship that has long passed out of sight—by means of balloon signalling. The more Bacon thought of the matter the more convinced he became that here lay a fresh field for most instructive and useful investigation, and it further appeared to him that for experiments of such a nature the Irish Sea—mainly bounded as it is by neighbouring coast-lines—offered obvious and special facilities.

It goes without saying that to Bacon it was an immense attraction that from an aeronautical point of view the Irish sea was practically—if the phrase may be pardoned—a *terra incognita*, and that it moreover possessed some certain element of danger. The crossing of the English Channel by balloon has become, comparatively speaking, a cockney performance, accomplished without risk times beyond number, ever since the days when an American doctor and a French aeronaut made the first aerial passage a century and a quarter ago, less than two years after the balloon was first invented. Only once, how-

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ever, in the whole story of aeronautics, had a balloon found its way over that treacherous stretch of water that divides England from the Emerald Isle ; for here the winds are proverbially fickle and headstrong ; and high aloft there blows ever an upper current, sweeping in the direction of the Channel's length, and offering great obstacle and grave risk to a balloonist endeavouring to reach either shore. No more adventurous voyage was ever experienced than befell Mr. Sadler, when, in 1812, he made the first and unsuccessful attempt to cross the Channel. Twice the upper current bore him out towards the Atlantic, until he was forced at length to descend in the water and cling desperately to his sinking craft until picked up by a passing vessel with the life scarce left in him. It was his own son, five years later, who accomplished the feat, passing in five hours with a fair wind and a low flight straight from Dublin to Holyhead.

Clearly, for balloon experiments to be carried out with anything like safety over such a dangerous sea, the services of a vessel on the water, to "stand by" in case of trouble, were imperative. For should the upper wind bear the aeronauts irresistibly out towards the ocean, their only possible chance would be to drop in the water and fight it out with the waves until picked up. Even then shoals, currents, and fickle breezes might render the rescue anything but an easy one. The possessors of private yachts to whom Bacon applied for help doubted their capability for such a task ; the manager of a well-known firm of shipowners replied that he had no spare vessel, but could build one ! Finally, my father—ever more convinced of the importance of the work—laid the whole scheme before the Admiralty itself ; with a result that the suggested trial was discussed, approved of, and ultimately heartily taken up. A gunboat—

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H.M.S. "Renard,"—under command of Lieut. Sholto Douglas, was placed at Bacon's disposal, and full instructions were issued to her officers to lend every assistance in their power for the prosecution of the experiments.

By this time it was November, a month curiously associated with balloon enterprise, since its general absence of wind more than atones for the shortness of the autumn days. The work was to take place immediately, and Bacon repaired to Holyhead, where the "Renard" lay, there to consult with the experts, both naval and aeronautical, as to the plan of campaign. The first move was to telegraph to the gas managers of a number of seaports on the west coast of England and Wales, and on the east coast of Ireland, regarding the feasibility of inflating a balloon in their towns. Next, guided by their replies and by the probable direction of the wind, came the task of selecting the most suitable starting-point. After much studying of maps and discussion of pros and cons, the choice fell on the Isle of Man, which, from its position between the shores of England, Wales, Scotland, and Ireland, offered most latitude in the matter of air-currents. A favourable answer was received as to the gas-supply of Douglas, and it was decided to repair thither the next morning.

With service-like despatch, the bulky balloon, its car and appurtenances, were placed in the steam cutter of the gunboat and conveyed on board, followed by Bacon and Mr. Percival Spencer. They found the "Renard" a smart craft of 800 tons, carrying a complement of ninety-two officers and men. More than a third of these came under command of the chief engineer, who answered all anxious queries as to the capability of the "Renard" to keep pace with the balloon with ready confidence,

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since could she not, he said, produce fourteen knots if desired, and probably more if put to it? Two experts, in the persons of an officer from H.M.S. "Vernon" and a naval engineer, were on board as special representatives of the Admiralty to report on the experiments. For the rest, Bacon, who, of course, was in his element, writes delightedly of the novel experience:—

"Life on a British gunboat was a revelation to one whose knowledge of sea voyages had been confined to liners. Being put on board, it is needless to say that, though the hour was early, all was in perfect order, with spotless decks, and every inch of brass shining brilliantly in the sunlight. Then the cutters, which had been ashore for our bulky gear, were hauled up to the davits with the sheer strength of seventy men, giving way together as only sailors can. After this I was 'lionised' everywhere—in the snug cabins of the Captain and officers, the well-found and well-lit quarters of the men, that marvel of culinary art the galley, down to the very stoke-hole itself, if I cared for a descent to a miniature Tartarus. Then came the grim reality of the thing. To climb the companion you squeezed past a long evil-looking gun pointing aft, technically known as a '4.7.' Hard by was a three-pound quick-firing recoil gun, as also a Maxim, faced on the opposite side by a Whitehead torpedo of newest pattern, the wicked working of which was shown me with obvious pride. The sharp propeller blades—responsible for the loss of many a man's fingers—were set revolving, a charge in dummy inserted in one of the pieces, and the safety pin removed, which then left the discharge simply controlled by a press button in the conning tower. But at noon a bugle-call turned the general attention to a happier topic, and I had the grati-

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fication of witnessing the ship's company attending, in serious earnest, to the business of dinner in the various messes—right good fare was there, beautifully cooked, and keenly relished. Of course there was the grog, the businesslike serving of which was as much a reality as in the days of Marryat; after which the crew dispersed to a score of tasks, splicing where rigging had been damaged, repairing canvas, even needlework of an apparently private nature accomplished with a veritable sewing machine brought on deck. The impression left on a landsman's mind was that, when all is said and done, the British Navy must surely be all that it ever was, and that Jack at sea has by no means a bad time of it."

But before long Bacon had an opportunity of seeing that life on a gunboat is not all the pleasant experience it at first appeared. Ere the Isle of Man was reached that afternoon, dark clouds had enveloped the November sun, the wind uprose, the sea grew rough and rougher, until heavy seas washed the deck with every frequent roll. The "Renard" anchored off Douglas in a regular gale, and with some difficulty Bacon and Spencer were rowed ashore amid big sea mountains, momentarily rising higher. To land the heavy balloon gear proved absolutely out of the question, nor were matters any better the next day, when the south-easterly gale continued to urge the tumultuous sea in heavy rollers into the bay, and through the mist the "Renard" showed barely visible a mile from the shore. This was Wednesday, and on Thursday Bacon wrote to the "Morning Post," through whose columns he was communicating daily, to an interested public, tidings of his doings:—

"Calmer air and a rising glass have restored the hope

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of an early start, but it has been foul and contrary weather of the worst type. The gunboat had a long rough night, which kept the night watch busy if not anxious, and the balloon gear had to be securely lashed to avoid its being washed completely overboard. A big green sea invaded the officers' quarters, and banished comfort for many hours. One contrary and serious circumstance still remains; the wind veers treacherously about the one quarter fraught with danger, which would carry us out to the open sea through the North Channel. But operations are in full progress; only unfortunately our requirements are altogether beyond the power of man—whether spelt with a capital M or otherwise. We must have it reasonably calm to render inflation possible, and though the right weather has prevailed for a month, we seem to have brought with us an east wind which the weather-wise assure us will last a week. There is a strange sense of isolation and helplessness about our position to-day. Having come ashore last night to make necessary preparations, we became cut off from our vessel by a sea almost too wild for any boat to live in, and though the flash-light from the masthead was sweeping the waves up to a late hour of the night, to aid our return over the black water if we cared to attempt it, there was no object to be gained by our so doing. We have no course left but to exercise all the patience we are possessed of.

“ Friday Night.

“ The same stormy weather prevails here, with the wind impetuous in strength, and dangerous in direction. Upper clouds are flying so fast that the gunboat could not possibly overhaul us if in distress, and life-belts would not long preserve life in this wild sea. A wind due north or due south would suffice, and would be safe with any

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point of west in it. North-east would also serve, but veering as it does between south and east there would be the gravest danger of being carried out to the ocean through the North Channel. Moreover, the present force of the gale renders inflation impossible. Our sympathies are with our friends on the 'Renard,' who have seas constantly sweeping their decks. While I was crossing to the ship yesterday one of the sailors was washed overboard and hauled out with a rope."

Trying as this forced detention was, the time was being turned to good account on the island. Preparations were going forward apace, with a celerity and ease unprecedented, in fact, for the Manxmen had extended a welcome to the aeronauts which fairly astonished them. How hearty a Manx welcome may be the King and Queen had experienced only a few weeks earlier, while on their summer cruise; but it may be doubted whether even their Majesties were hailed with greater enthusiasm, since kings and queens, though rare, are not unheard of in Mona's Isle, while never before in history had its narrow shores witnessed the ascent of a free balloon. From the moment of Bacon's arrival the good folk of Douglas vied with each other in their efforts to assist the experiments by all means in their power, and in truth the balloonists were scarce over-modest in their demands. The first requirement was a suitable spot for inflation, which should be at once central, open, and in proximity to the largest gas-mains of the town. Such conditions indeed were admirably fulfilled by the quadrangle at the southern end of the Parade, one of the principal open spaces of the town, in front of the chief hotel and flanking the approaches to the harbour. No place, in fact, would be better for the purpose, but then, as Bacon pointed out,

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who in their senses would dream of suggesting to the town authorities a request which would be equivalent to a demand for Piccadilly Circus or Trafalgar Square, in which to inflate a balloon ?

Nevertheless, the gas manager raised no sort of objection, provided the consent of the police was obtained. To ask the superintendent of police in an important town for leave to break up and obstruct the chief highway might seem a bold proceeding, yet the favour was immediately and right graciously granted, with the one proviso that the Harbour Commissioners must first be conciliated, since the busy traffic to and from the boats must necessarily be impeded. But the Commissioners made light of the matter, said that the traffic could go another way, and merely pointed out that the Peveril Hotel would be the principal sufferer, since its whole front entrance would be absolutely blocked. However, after the hotel proprietor had smilingly assured them that his customers would be quite as delighted to come in at the back, the matter was considered settled, the thoroughfare was fenced off with barriers, and workmen dug down and unearthed the gas connections.

On the Friday Bacon writes in his note book : " Our detention continues, but the whole place is doing its very utmost to make our stay not only tolerable but enjoyable. Our hotel is the centre of attraction in the island. Residents from a distance drive up to the newly erected barrier outside, peep down the ' filling pit,' and drive off again, or in many instances pay us a formal call and offer every hospitality. The Club is thrown open to us, boxes at the theatre placed at our disposal ; little acts of genuine courtesy, gracefully and naturally rendered, greet us at every turn. A pint of varnish was needed and obtained for a patch in the balloon, but the

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tradesman would on no account accept payment for what he regarded as but a friendly service. A message was required to be sent to a neighbouring bay. Well, there was a boat, and the rowers were idle ; they would go for the mere gratification of making themselves of use. As some slight return, it is arranged that should we be here over to-morrow night I am to give a lecture in the Town Hall on my past aeronautical experiences and the work now in prospect. I take it that at this period, when the season is completely over, and the thousands of visitors have drifted back to Lancashire and elsewhere, one sees the Manxman at his best, and certainly I have never been more favourably impressed with a people anywhere."

Saturday morning broke wild as ever, and the "Renard" at daybreak flew the negative signal as an indication that the balloon voyage was considered inadvisable. As the day wore on the gale increased, and presently the gun-boat, tired of her continual buffeting, weighed anchor and steamed away to Holyhead, there to lie in shelter until the weather should moderate. The proposed lecture was given in the Douglas theatre that night, and repeated again on Sunday evening, by which time the storm seemed to have blown itself out. Monday broke fair and sunny, with subsiding sea and only a moderate wind from the south. Clearly the chance had come at last, and almost before sunrise the empty balloon was laid across the roadway in preparation for the inflation, which was immediately commenced when a wire came from the "Renard" announcing that she had started from Holyhead, and by midday would be lying in readiness twenty miles to leeward.

Then indeed the excitement of the past week culminated. The news was flashed round the island, and by special trains and trams and all manner of vehicles the Manxmen

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in their thousands came pouring into Douglas. By noon 15,000 people at least were crowded into the space before the Peveril Hotel, swarming like bees upon the roofs, the piers, the beach, everywhere where a glimpse could be caught of the swelling balloon towering up into the air, and bearing on one side the big white sail with which it was proposed to steer it when open water was reached. Many were the speculations as to the probable course of the voyage. Originally the aeronauts had hoped for a breeze which would bear them to Ireland, but in this they were clearly doomed to disappointment. Early in the day all indications seemed to point to Cumberland being their destination, so much so that on the mainland friends went to the coast and watched for their arrival. But as the morning advanced the wind seemed veering round to the west with troublesome little gusts and scuds that, in that draughty corner, drove the restive silk in dangerous proximity to sharp angles of buildings and pointed lamp-posts. Shortly after noon, while the willing boatmen helpers laboured to restrain the heaving monster, a ringing shot boomed out across the sea and echoed round the bay, telling that the "Renard" was already at hand. Preparations were pressed forward, and at 1.30 Bacon and Spencer, on whom enthusiastic islanders had pressed provisions for the voyage, button-holes, lucky Manx coins, and all imaginable tokens of good will, jumped into the basket, and rose into the air as the roar of 15,000 voices rent the sky in a deafening shout.

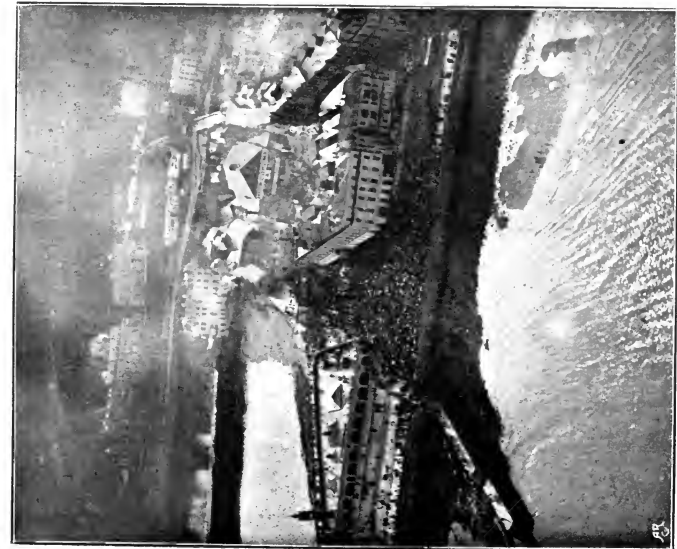
At the start an ugly collision with a corner of the hotel roof caused a moment's alarm. No damage, however, was done, but what caused the balloonists some real anxiety was the discovery, quickly made, that the upper currents were bearing them markedly to the left of their

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anticipated drift, and in unpleasant proximity to that north-eastern course leading through the dread North Channel and out over the ocean, with no land ahead short of Greenland. Moreover the wind aloft was proving a rapid one, and in the event of a forced descent in the water, to avoid the Atlantic, no vessel built, save possibly a destroyer, could overhaul them in time to be of any service.

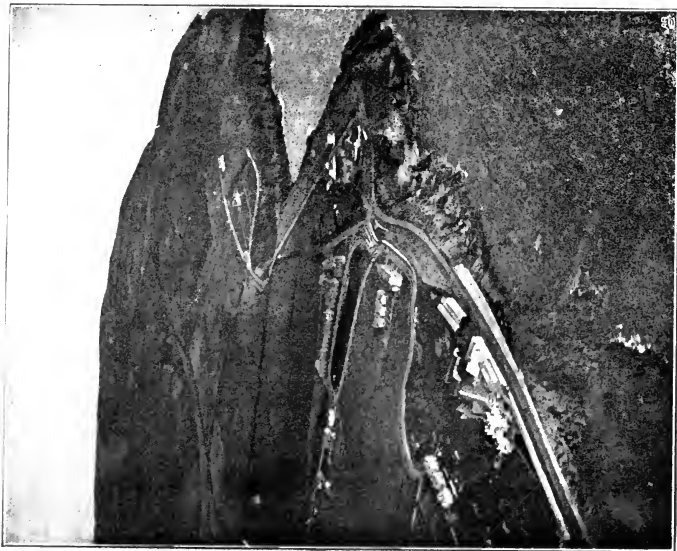
Meantime the view below was unfolding in ever greater beauty and interest. Douglas Bay gleamed fair as that of Naples, its myriad ripples reflecting the sunlight. On its shores clustered the dark masses of the people with white upturned faces. Every detail of the Parade revealed itself, and then the bold promontory of Derby Castle with the electric railway twisting along the coast, and the waves foaming at the foot of the cliffs. After this the course was inland over the rugged heart of Man, the village of Laxey with its giant wheel, romantic glens and watercourses, and then the lofty mountain-tops, some bare, some cloud-capped, to avoid which the balloon had perforce to rise higher in air. The long trail-rope, already free, slithered over the summit of Snaefell, the highest peak of the island, and immediately after the course seemed to change, veering again to safety and the eastward, and bearing the balloon over Ramsey, where, warned by telephone from Douglas, the inhabitants had poured out into the streets to watch its advance over the wooded hills. On the left lay the Point of Ayre, the extreme tip of the island. Above this they passed at a height of 4000 feet, and then out over the open sea.

Where was the "Renard"? Bacon's gaze wandered over the wide expanse of sparkling water, from that height apparently of glassy smoothness, and lighted on a tiny craft like a child's toy, rounding a distant headland,



LEAVING DOUGLAS

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DERBY CASTLE, ISLE OF MAN (FROM ALOFT)

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and churning up in its rear a just perceptible line of creamy foam. Was this indeed the gunboat, and could it be possible to be in communication with so minute an object? With the collapsing drum, slung beneath, he signalled in Morse code, "Whistle," and immediately uprose faintly a double blast from the ship's steam hooter. Clearly the sailors of air and water were perfectly in touch, yet probably not for long, since it soon became evident that the boat, despite its efforts, was falling behind. Nor could this be helped, since, though the faithful engineer was getting his fifteen knots out of the engines, was not the brisk upper current urging the aerial craft forward at a good thirty!

The steering experiments must be carried out at once, and, the sun breaking through clouds which occasionally enveloped it, Bacon lowered his other signalling apparatus—a bright heliographic ball which seemed to hang like a star beneath the car, and telegraphed, "Shall trail soon." Down came the balloon with a swoop, barely avoiding a ducking. The trail-rope now dragged a long length through the water, and the big sail bellied out full and straining. So the helm was put about, and immediately the balloon's course came under control.

In his subsequent report to the Admiralty on the subject of the steering experiments Bacon writes: "Our steering apparatus fully justified our expectations. The possibility of diverting our course to a very useful extent was clearly demonstrated, though we cannot commit ourselves to any statement as to the actual angle of divergence. . . . Practically it is an exceedingly difficult matter to keep the balloon within the limits required for steering manœuvres. As soon as the trailing rope has slowed down the balloon, the sail and silk, catching the wind, tend to lift the machine like a kite,

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and if owing to this the rope rises clear of the water, the sudden release means a fresh and a free start into the sky. . . . Our contiguity to the waves was awkward in our case, where we had other apparatus to take damage, but I am convinced that the steering in question deserves another trial specially devoted to it. It would probably entail occasionally dipping in the water and again rising clear out of it, but there need be no risk."

So presently the balloon plunged upwards into the sky again, where it hung at varying heights, and then arose the all-important question that they had come primarily to settle—the visibility of the bottom of the sea. Here at least the answer admitted of no possible doubt. The surface of the water was broken and ruffled with the tossing waves that a week's wild weather had lashed to anger. To peer from a ship's side even a few feet into that troubled sea, over which the white horses were careering, would have been absolutely impossible. Yet from the balloon, although the sun's rays were reflected dazzlingly from the rollers which seemed to cross and intersect each other in curious criss-cross pattern, the whole appeared of glassy transparency, through which the sea-bottom showed with absolute distinctness. Not only could it be seen with the eye indeed, but it was clear enough to admit of being photographed, and, with his ordinary five-guinea Kodak camera, Bacon secured a record which was absolutely unique in the annals of photography.

It was taken from a height of about 600 feet over shoal water, ten fathoms—that is sixty feet—deep. How disturbed the surface was at the time is plainly shown by the ripple marks all over the picture, and which in one corner, where the sun was reflected, cast a myriad white speckles. Yet most clearly visible, despite these, appear



FIRST GLIMPSE OF SCOTLAND—SUNDOWN

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PHOTOGRAPH OF THE SEA-BOTTOM

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the broad, white, misshapen patches of sand at the bottom, and bounding them the well-marked darker masses of seaweed-covered rock among which they lie. No one looking at this photograph can, for a moment, doubt that should a submarine be lurking in such depths it would be instantly and unmistakably revealed.

Bacon found that this visibility of the sea-bottom was entirely a matter of height. For seeing was best at and below 500 feet aloft, while at 1000 feet or higher, whether the balloon were over deep water or not, the sea appeared opaque. It seemed to him, therefore, absolutely established by practice, and not only in accordance with theory, that the secrets of the sea depths, which hide themselves even from the trained eye of the sailor on board ship, should become revealed to an aeronaut who will poise himself in open space overhead, say ten times higher than the maintop.

After these experiments ballast was thrown out, and the balloon ascended till its occupants looked down on the sea from the height of a mile and a half. Around them was spread a sky-scape unrivalled—"a far-reaching sea of cloud, torn and fretted, and tossing wildly aloft, while from the depth arose a strange, soft, musical murmur which filled the air. Silver cloudlets sailing through the void below served to make the deep gulf look deeper, and far and faint, a mere dark, dim, wedge of earth, the last of Manxland was fading out in distance. And now, looking ahead, we scanned with eager curiosity a dark belt of lowering cloud that hung heavily across the sky-line and barred our view. Somewhere beyond and behind must lie our goal, and this, if the balloon held its course, should be the Scottish coast, as yet some forty miles away."

Long before land was reached the "Renard," hope-

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lessly outdistanced, had become indistinguishable on the now dark sea. Nevertheless, she loyally kept her course until, in Kirkcudbright Bay, she caught a last glimpse of the balloon disappearing far inland to the south. For, as the day waned, the rocky Scottish shores approached, and the coast line of the Solway Firth was crossed eastward of Abbey Head. Then the balloon sped inland with Castle Douglas on the left, and wild moors lay beneath them in shadowy desolation as the daylight faded. In place of the murmur of the sea rose the cry of the grouse, and ever and again the roar of mountain streams. Tiny pale blue lochs lay here and there, but suddenly all was swallowed in a rolling Scotch mist into which they plunged headlong, and while completely hidden in its damping folds came a trembling and jerking of the car, as the long trail-rope, skimming over a mountain peak in whose "nightcap" they were then enveloped, touched earth. Every vibration of the trail as it danced up and down the mountain-side could be felt, but not a thing could be seen until, with startling suddenness, they emerged to find themselves over a broad valley, fertile and dotted over with dwellings.

Here was the spot for the descent, and down they came on the lee side of a pine plantation expecting to fall in a field there. But they cleared the wood and found immediately on the other side a trim country house, towards whose front windows they were driving straight. With horror they watched the trail-rope wriggle itself in and out of the chimney-pots, a whole stack of which it threatened to demolish. Happily it contented itself with knocking down the coping of a wall in the next field, and finally, in the long damp grass and bog of a neighbouring deep glen, they found their resting-place, with daylight gone and heavy wet settling in. "We looked

Across the Irish Sea

around for sympathy and succour," wrote Bacon, "but whence was it to come? We listened, but heard no sound save a dismal wail which came up the valley as a gust of wind, charged with flying scud, swept past. It was a wild, unpeopled spot, and the house with the chimneys was out of sight. The night was coming up dark and dirty, and the prospect was not cheering. . . . Presently there were voices, both human and canine, and two men appeared with three dogs between them. Then more men and more dogs, the latter, however, always preponderating, and becoming increasingly obtrusive. Never had I seen Scotch caution more strikingly displayed than it was now by our present friends, and they were true friends at heart, though they kept their hands in their pockets and helped not a jot with the fallen balloon. 'Was there a cart to be had?' 'Well, they could na' be sure.' But of course there was a cart, wouldn't money hire it? 'Well, maybe the horse was tired and——' the dogs ended the argument. It had long been brewing, and now a wild sea of lank collies and the like, madly tearing and entangled, surged over the ground, while their masters belaboured them with sticks."

It was Colonel Ewing, of Stroquhon, the owner of the house they had passed over, and laird of the land, who eventually appeared on the disordered scene and extended all help and hospitality in his power. Their landing-place was the Glen of Glenesslyn, fourteen miles from Dumfries and about eighty-five in a straight line from Douglas, which distance they had covered in a rare and historical sky voyage over land and sea never traversed by balloon before.

XVIII

THE BALLOON IN WARFARE

THE Admiralty were much interested in the results of the cross-Channel voyage, and subsequently, I understand, followed up the experiments, thus successfully inaugurated, for themselves in the Mediterranean. The photograph of the sea-bottom especially excited much attention, and subsequently led to two interesting sequelæ. In the spring of the following year, the President of the Royal Society, then Sir William Huggins, invited Bacon to exhibit his balloon photographs—by this time famous—at the Royal Society Soirée at Burlington House. The Prince of Wales attended the function, and Bacon had the honour of being presented and showing his pictures. His Royal Highness was greatly interested, especially in the view of the sea-depths, which naturally appealed to his sailor mind, and he asked many questions and made many pertinent comments thereon.

The second occasion was a year later still, at the time when public feeling was keenly aroused over the “regrettable incident” of the Dogger Bank. In a letter to the “Morning Post,” Bacon, discussing the occurrence, and citing his own experience, pointed out how, from a balloon aloft over the sea, it would be readily possible to prove, or disprove, the existence of that mythical Japanese torpedo-boat which the Russian fleet declared had attacked them, and which now lay sunk by their guns. The papers rather took the matter up, and my father

The Balloon in Warfare

was interviewed on the subject ; but he was scarcely prepared to receive a letter from the Russian Embassy in London, asking him if he would be willing, on their behalf, to undertake the experiment he had suggested.

National excitement at that moment was running perilously high, and Bacon felt that, while willing enough to make the trial—though of his success in finding that torpedo-boat he could not but entertain the gravest doubts—he should first consult his own Government on so momentous a step. He wrote accordingly to the Admiralty, and also to Mr. Balfour, at that time Prime Minister, explaining the position and asking what he should do. Mr. Balfour answered as follows :—

“ Private.

10 Downing Street,

“ November 19th, 1904.

“ DEAR SIR,

“ In reply to your letter of the 14th, I think that if the Russian Naval Attaché desires to have your assistance for any investigations bearing on the North Sea Disaster, it would be only right that you should give it. Anything which conduces to a knowledge of the truth must be valuable.

“ Please keep the Admiralty informed of what you propose to do, as I think there should be an Admiralty representative present.

“ I remain,

“ Yours faithfully,

“ A. J. BALFOUR.”

The Admiralty replied in similar terms, stipulating for a representative. So the course was cleared, but in the few intervening days before these answers were received the excitement had largely subsided, the political atmo-

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sphere was brightening, and it was felt wisest on both sides to let the matter drop.

In the autumn of 1902 Bacon's second book, "The Dominion of the Air," a popular history of aeronautics from their first inception to the present day, was published, and met with a favourable reception. Again a busy lecture season filled the winter, and much literary and other work kept the ever-active mind and facile pen employed. With the spring Bacon recommenced his experiments with the hot-air military balloon already referred to, and to which due reference must now be made.

As has been already shown, it was from the invaluable practical advice and willing personal assistance of Mr. J. N. Maskelyne and his son Nevil that Bacon had ever received most help in his aeronautical and other experiments. With them, in their frequent meetings, he invariably discussed all details of his schemes, and the result of certain of these consultations was the evolving of an invention for the ready inflation of military balloons. Every one knows that one of the greatest drawbacks attaching to the employment of balloons on active service—a drawback which militates terribly against their efficiency—is the difficulty and cost of transport and inflation. It is obviously impossible to count on ordinary household gas supply in the field. Military balloons, therefore—which are of small size comparatively, and made of gold-beaters' skin, an exceedingly expensive material—are inflated with pure hydrogen compressed and conveyed in bulky and tremendously heavy steel cylinders. The production of hydrogen is in itself a lengthy and expensive process, and when, as in the South African War, the cumbrous cylinders have to be carried thousands of miles by sea, and then hundreds more by land transport over difficult country, it needs no pointing

The Balloon in Warfare

out what tremendous labour and cost is involved, and how the inclusion of a balloon section may seriously hamper the mobility of a column. Moreover, the contents of a war balloon, once filled, are too valuable to be lightly wasted, and unless the silk can remain inflated—in most cases impossible—only a very few captive ascents can be taken. Small wonder the military balloon in recent campaigns has met with but scant favour or success.

Bacon and Maskelyne proposed to do away entirely with the hydrogen gas, and inflate instead with hot air. This method, of course, is not new, dating back to the days of Montgolfier, and frequently employed at the present time for parachute work. It was in the production of the hot air that the secret of the invention lay. Most of us are familiar with the little apparatus called a "roarer," which house-painters use to burn old paint off woodwork, and which, by the combustion of petroleum under pressure, gives out a heat quite marvellous in comparison to its size. It was with a modified and greatly enlarged burner of this description that Bacon and Maskelyne planned to inflate their balloon, which moreover should, if necessary, carry its burner aloft with it in the sky—even as Pilâtre de Rozier carried his open fire with him in the first aerial voyage a century and a quarter ago.

Experiments must be made tentatively; so to begin with a small balloon of about 2000 cubic feet capacity was obtained, and trials commenced on the open ground of Bucklebury Common, beside Mr. Maskelyne's country cottage. The results were eminently encouraging. When details of inflation, burner, etc., had been satisfactorily mastered, the tiny craft, made simply of the closely woven cotton fabric from which balloons are

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nowadays manufactured, would fill completely in the almost incredibly short space of thirty-eight seconds, and rise high in air—not infrequently breaking loose from its restraining cord and leading its pursuers a stiff chase over springy heather and prickly gorse bushes. This balloon, of course, could not support the big burner which inflated it, but instead it carried a small box camera slung beneath, which, by an ingenious electrical arrangement worked through the restraining cable of insulated wire, could be made to take a photograph at the will of the operator below. By such a means as this it was claimed that even so tiny a craft could be turned to advantage in war time by allowing pictures to be taken, without risk, of the enemy's country.

Encouraged by so successful a beginning, Bacon and Maskelyne, having patented their invention, launched out on more important trials. They bought a large hot-air balloon nearly 70,000 cubic feet in capacity, 50 feet in diameter, standing when filled 70 feet high, and weighing in itself nearly 300 lb. To inflate this monster they had made a special burner of the nature described, fitted with pump and oil receiver, which at full pressure was capable of vaporizing $8\frac{1}{2}$ gallons of petroleum an hour. Then they set to work on experiments which were carried out on every available fine day throughout the spring and summer of 1903. The procedure was as follows. Early in the afternoon, Mr. Maskelyne being present, some dozen members of the Guildhall Club would cycle out to Coldash—ideal assistants, quick and intelligent, giving their services enthusiastically out of love for their President. By them the bulky balloon was carried into an adjoining field and carefully hauled across a portable wooden staging over which it was spread as a tent. Next the burner was placed beneath and lighted, the heat



MASKELYNE AND BACON EXPERIMENTING WITH BURNER
OF HOT AIR BALLOON

The Balloon in Warfare

generated being conveyed into the mouth of the balloon through a long flexible and non-inflammable flue of asbestos.

The next few minutes demanded care and attention on the part of the helpers, for the heat from the burners was tremendous, and unless the cotton folds of the balloon were properly placed and adjusted there was risk of their becoming scorched. However, the men soon grew handy at the work, and in a very short time the filling material had lifted itself out of danger. In but nine minutes the great mass was slowly heaving aloft, and displaying the scarlet gores and stars with which it was ornamented. In a quarter of an hour it was standing upright, and in twenty-five minutes only from the start it was fully inflated and fidgeting to be off and away. When full, the wooden staging was removed, and a wicker car attached below the burners, carrying the oil pump and reserve supply of petroleum, and in which the aeronaut could take his place. Then, at a given signal, the ropes being loosed, the whole soared proudly aloft into the air, where it could continue, either as a captive or free, for just as long as the supply of oil lasted.

The advantage of such a form of balloon in time of war needs no insisting on. The whole apparatus, balloon, burner, staging, and all, was not more than could be loaded into one wagon; the cost of an hour's supply of petroleum to the burners worked out at under five shillings; while the inflation, which could be made as often as desired, was completed in less than half an hour from the beginning. Naturally the experiments attracted considerable attention and much favourable comment in aeronautical, as also military circles. Many experts came to Coldash to inspect the new design. Major Baden Powell, President

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of the Aeronautical Society, was one of these ; also, Mr. Patrick Alexander ; Mr. Chanute, the eminent American aerial investigator ; representatives of the War Office ; and, from the German Embassy, a military attaché in the person of Count von Schulenburg. One and all expressed their heartiest approval of an invention which, had but circumstances admitted of its completion, had surely a great future before it. As it was, the work, stopped in the midst by the approach of winter, was postponed to the next season, which, when it came, found both Maskelyne and Bacon too much engaged in other business to spare the necessary time. So but little more was done, except to lay plans for a grand revival of the proceedings in the spring—a spring which Bacon never lived to see.

My father met again the aeronautical friends just mentioned, as well as other leaders with whom he was well acquainted, as Sir Hiram Maxim, Mr. Eric Bruce, Professor C. V. Boys, and Mr. Cody, at the International Kite Competition of the Aeronautical Society, held on Worthing Downs this June of 1903—an enjoyable and instructive function.

Out of the voyages of this summer two merit particular reference. One was another of the long series of scientific ascents, undertaken especially for acoustic observation, and again Bacon was to fire bombs from aloft and invite reports of the hearing of them by observers on the earth—the results of similar trials being so curious and unexpected as well to demand a repetition. The experiment was to take place in the quiet of the night, the voyagers starting in their balloon from the Crystal Palace at ten p.m. ; but at the commencement they met with a sad disappointment. It had always been Bacon's special desire to make a long journey all night under a full moon over sleeping England, travelling northward the whole

The Balloon in Warfare

length of the country, with no fear of being carried out to sea, even should cloud shut out all view of earth. At last it really seemed as if the chance had come, for that evening a due south wind was unmistakably blowing, and all pointed to a course which would bear them to the Midlands or even to York before dawn. All were delighted, of course. Nevertheless, either the breeze shifted just at the moment of ascent, or an undetected middle current seized them, for as they rose from the ground the balloon, floating away gently from the grasp of its restrainers, suddenly made a sidelong dash for the top of a tall poplar—narrowly escaped—and headed off on a course of its own nearly due east, flying fast and faster as it rose above the trees. The disappointed aeronauts, consulting their maps, realized not only that Yorkshire was not their haven that night, but that with cruel perversity their craft was choosing, from out all points of the compass, the one course most unpopular with aerial travellers from the Crystal Palace; for it was that which brings them soonest to the water, Sea Reach and Mucking, but thirty miles away, the course from which lies straight down the estuary of the Thames, with the whole breadth of the German Ocean beyond.

It was very hard luck, but they could but make the best of a bad job, and in the hour that followed Bacon fired his detonators at six minutes' interval, with results which, when the crowded post-bag came in next day, proved sufficiently interesting and instructive. Again observers who had taken up stations along the entire length of the country traversed, as also far on both sides, recorded that it was off the track, in regions lying remote from the direction of the wind, that the aerial sounds were best heard; while those near at hand heard least, showing the

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range of audibility scarce exceeded five miles, either up or down the wind in the balloon's path.

More than this, those who heard the clearest at long distances across the wind were generally found to be in groups—i.e. within a mile or two of each other, as though the aerial sounds were borne down to earth on certain favoured patches. From the Brentwood direction, ten miles away at least, came a good report from several observers; from Sevenoaks, fourteen miles south of the balloon's track, better still. Outside this limited locality a wide district apparently heard no sound, but Edenbridge, nine miles beyond, heard excellently; while from Dormans, in Sussex, fully twenty miles away from the nearest firing point, came the completest record of all.

All these reports, however, were put in the shade by a most extraordinary communication from a country parsonage in Norfolk. Here three observers sallied forth to listen at the appointed hour, one standing within the shelter of an empty pit which might serve as sounding-board, and all alike recorded the hearing of a faint sound "resembling thunder" coming from the right direction, and corresponding in time with the moment when the last and nearest bomb was fired over Purfleet, in Essex, eighty miles away. Was this mere coincidence, or another wonderful instance of those phenomenal "far shots" every now and again to be met with?

The second ascent was a fortnight later, again from the Crystal Palace, but under widely different circumstances. Yielding to the wishes of many who had found the previous hunts exciting and instructive, Bacon had once again arranged a military race of cycles versus balloon, but this time, to vary the proceedings, and lend a new interest, he introduced a novel feature. On the former occasions the balloon was presumably escaping with despatches

The Balloon in Warfare

from beleaguered Paris, pursued by the Prussians without the walls. This order was now reversed, and the aeronauts, starting from neutral ground, and taking every advantage of upper currents, were to endeavour to drop actually within the besieged city, thus carrying out a manœuvre discussed but never actually accomplished in the war of 1871. Moreover, it was announced in the papers beforehand, that, in order to render the illusion yet more complete, a certain distinguished officer, one General Jacqueminot, seeking to return to Paris, would ascend in full regimentals in the balloon, and make a sensational parachute descent as near his prearranged haven of refuge as possible. The general would be the bearer of despatches, secretly sewn inside his uniform, which it would be the aim of the military cyclists, divided into two parties representing friends and foes, to secure intact.

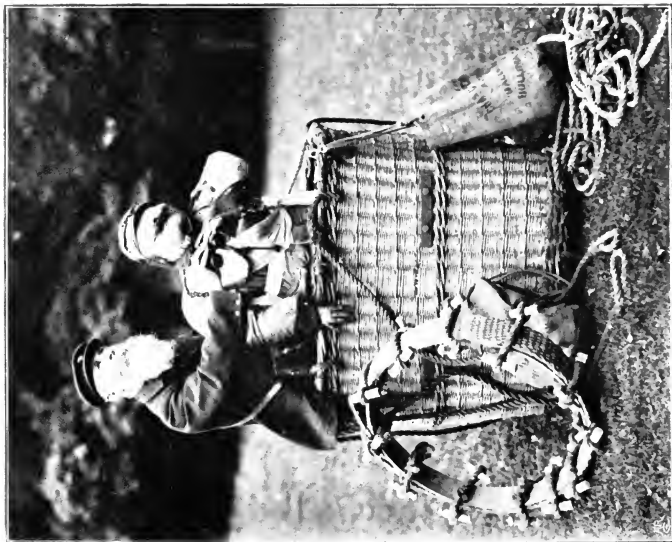
The matter was well taken up on all hands, and not a little discussion was evoked as to the identity of the military passenger. His name was obviously French, and presumably he was a veteran survivor of the great siege. Newspaper men wrote to him for particulars of his career, and requests for his photograph. These Bacon was delighted enough to supply—after the event. “Judging from appearance,” he wrote, “my friend is about seventy years of age, with set features. He is also somewhat stiff in the joints, and weighs only seventeen pounds in full regimentals.” The construction of the “General” was indeed a source of much joy to the family party then assembled at Coldash, as was also the preparing of his dispatches, said to be in a species of cipher, which read after this fashion: “Watteau. Elle bompe,” “Votre mère, sait-elle que vous êtes sortis?” “Maintenant nous ne serons pas longtemps,” etc. etc.

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The day of the ascent was fine and bright, with a breeze so light that "Paris" had perforce to be declared at a very moderate distance. There were a large muster of military cyclists, mostly of the 26th Middlesex, whose commanding officer had a seat in the balloon car, and, the secret having been well preserved, the appearance of the "General," as he was supported to the basket, his livid face and limp limbs suggesting extreme nervousness, was hailed with rapturous delight. Had he been ordinary flesh and blood his situation would indeed have been a trying one, for during the voyage, the car being full and his person somewhat cumbersome, he was slung by the neck outside until, at the close of the journey, "Paris" being considered reached, the parachute was fastened to his shoulders and he was launched into space.

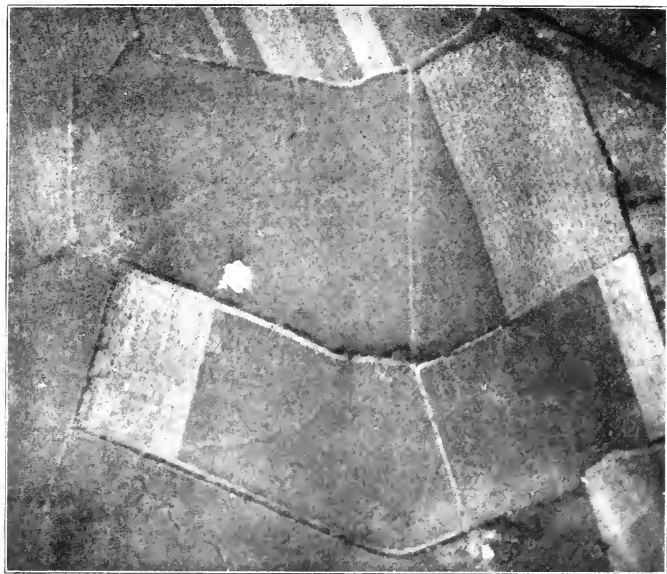
Not without some qualms of pity—his terrified face was so pathetically human, the aeronauts watched his downward progress, and were relieved to see the white parachute expand and support him gracefully and gently earthward. Dropped from about 3000 feet, for full five minutes he could be seen falling, his pendent legs just visible below the sheet, until, lightly as a feather, he alighted on a green grass meadow, and lay prone. His fall had been witnessed from afar, and people came rushing up on all sides, and many were the anxious inquiries, "Is the poor gentleman much hurt?" The cyclists, however, were first on his track, and the despatches being secured, he was placed across a bicycle and carried in triumph back to the Crystal Palace, where they exhibited him all the rest of the day.

The voyage was noteworthy to Bacon in another way, because this day there accompanied him in the car for the first time the young lady who a few weeks later he made his wife. On the 7th of October, at his brother



"GENERAL JACQUEMINOT"

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THE FALL OF THE "GENERAL"

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The Balloon in Warfare

Maunsell's church at Swallowfield, near Reading, he married Stella, youngest daughter of the late Captain T. B. H. Valentine, of Goodwood, niece of his brother's wife. There was great dissimilarity of age between the two, but so perfect were their mutual affection and accord of taste, and so marvellously had Bacon preserved his youthfulness of heart and mind, that the thirty years which separated them seemed to both a negligible quantity. Their romantic union was an ideal one, and the months which followed—so few, alas! they proved—were of unalloyed and most intense happiness—a gleam of brightest sunshine at the end of a life which many clouds had darkened.

After the simple marriage ceremony, from which the bride drove herself and her husband away in the little Benz motor referred to, a brief honeymoon was spent at Cromer. The week before the wedding Bacon entertained some hundred of his faithful friends of the Guildhall Club to an outing—it was the last—at his home at Coldash. A merry day it proved, for Bacon fairly outdid himself in the originality of the entertainment he provided. The young men—prepared for anything out of the common—arrived to find that half their party represented shipwrecked mariners of the Robinson Crusoe variety. Their “desert islands,” marked out carefully with shells and sawdust on the grass, were already prepared for them in the field, and when stranded in groups of six on their inhospitable shores, each party found for themselves there the rough material—very rough indeed some of it proved—from which they were expected to build a hut, plant a garden, light a fire, and cook a dinner in the shortest possible space of time. All entered into the fun thoroughly, and there was keen competition between the rival islands, and much enthusiasm, which was, however,

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rather damped when it was discovered that one of the rules of the game was that the cooks should *eat* the meals that they had elaborated! Even this, however, was accomplished, and when a chosen bard on each island had sung an ode commemorating their achievements, the other half of the club, arrayed as savages in feathers and war paint, swooped down with cannibalistic yells on the seamen, and a most realistic war, waged chiefly with syringes and garden squirts, repelled by mad charges under open umbrellas, brought proceedings to a close. Bacon this day introduced his friends to his future wife, and they in their turn presented the pair with a huge silver rose-bowl and all heartiest good wishes.



ABOVE A LONDON FOG

XIX

THE LAST

LATE autumn and winter this year brought back to Bacon, as they had for several years past, a return of interest in and a renewal of observations concerning one of his pet subjects of investigation—London fog. Personal experience alone would have sufficed to make the matter one of much moment to him, for the state of his lungs rendered him specially sensitive to the influence of fog; and many choking winter visits to the Metropolis, when he could scarce draw breath, and many long, cold journeys north, when the dark, reeking pall hung heavy over the Black Country, were enough in themselves to draw his special attention to our island's annual scourge. But more than this was the experience of many of his balloon voyages, when, ascending in misty weather, and piercing in a few minutes to brightest sunshine aloft, he had marvelled at the wondrous shallowness of the cloud which was making life wellnigh intolerable below, and gazed spellbound at the matchless beauty of the upper surface of what we are accustomed to consider the embodiment of all hideousness. So short a distance, he found, separates the Londoner, wallowing and groaning in midday night, from purest skies and a scene of loveliness not to be matched in all the earth.

Bacon followed up the subject of the Fog Fiend, its causes, its possible remedies and mitigations, until he

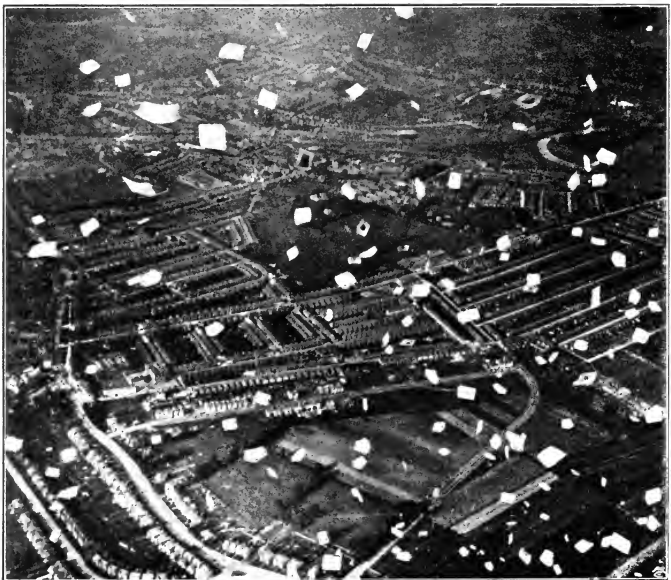
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became a recognized expert on the subject. He studied its vagaries by day and night from high buildings in the city—the Ball of St. Paul's, the roof of the St. Pancras Hotel, and so forth, as well as from the altitude of his balloon. He worked out the past history of London fogs, which goes back in unmistakable record hundreds of years before the very word "fog" was known. He saw that the great cause of offence has always been the domestic grate, and only in part the much-abused factory chimney. He advocated the scheme for manufacturing London's gas-supply at the coal fields of the Midlands, and conveying it over the intervening distance—no insuperable engineering difficulty—so that the town might be heated and lighted without defiling its skies with coal smoke. Specially he insisted that a good wind service is as essential to a city as a good water service, and that too much cannot be done to ensure strong currents of air through the streets and houses by widening thoroughfares, clearing open spaces, and wiping away enclosed courts and culs-de-sac.

Most eagerly he followed up the idea, suggested by experiments of Sir Oliver Lodge, Sir Douglas Galton, and others, that the unstable equilibrium of a fog might be upset by sudden artificial atmospheric disturbance producing rain, even as the firing of great guns, in battle or at reviews, is said to break the clouds and change the weather. He was specially anxious at one time to put the project to a practical test by ascending in a balloon from London in a heavy fog, and firing numbers of his powerful cotton-powder detonators aloft. Many times he laid careful plans for so doing, and made all arrangements; holding himself in readiness at his home to repair at once to London and begin the work as soon as a sufficiently determined fog should warrant proceedings.



CYCLE TRACK, CRYSTAL PALACE GROUNDS. FROM A BALLOON



LEAFLETS THROWN FROM A BALLOON

The Last

Is it necessary to say, in this contrary world, that at those times when all was prepared London rejoiced in unseasonably clear skies, and, after the fashion of the watched kettle, a fog steadily refused to make its appearance ?

Later experience convinced Bacon, or nearly convinced him, of the hopelessness of the task. Ascents in fog time showed him that the balloon is to the fog much in the same proportion as the proverbial broom to the Atlantic. There remain, however, many most interesting and valuable observations concerning the origin and nature of fog, its acoustical properties, and so forth, for which a balloon gives special facilities. It was mainly in the hope of encountering a good "London Particular" that Bacon gratefully accepted the offer extended him of making use of certain balloon ascents, to be carried out over London for advertising purposes, during the last days of 1903 and the first of the following year.

I cannot find out from my father's notes on these voyages that he obtained the results he desired. I believe the hoped-for fog once more evaded him, but at least he added to his collection of beautiful aerial photographs, as also to his store of amusing balloon experiences. Twice over he demonstrated the facility with which the traveller by sky may make his way, without let or hindrance, into places which, under ordinary circumstances, he might find the greatest difficulty in entering. On the first occasion the balloon descended, all unwittingly, in the middle of the great gunpowder factory at Waltham Abbey. All Board of Trade regulations disregarding, with matches in their pockets and all manner of forbidden details, they plumped on the grass in the sacred enclosure, and the surprised employés, who could by no means say them nay, hailed their unauthorized appear-

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ance with great amusement. The following day they took a liberty of another kind.

Flying westward from London on an unfamiliar track, their voyage ended in the grounds of a private house of more than ordinary pretensions. They had no intention, of course, of intruding on such a spot, but when a balloon flies close to the ground, in a wind, at the close of its voyage, it is not always possible to decide, within a field or two, exactly where it shall fall. The park where their craft alighted was obviously that of no ordinary person, nor were the smart servants who came rushing up. Presently a policeman appeared on the scene, bristling with importance. "Are you aware that you are trespassing?" "Perfectly," said Bacon, "but, as it happens, I can't help it."

"Do you know where you are? Do you know what house this is?"

"I haven't the slightest idea."

"Cumberland Lodge, the residence of His Royal Highness Prince Christian!" said Robert, expecting the announcement to have terrific effect. But Bacon was not at all abashed. Princess Christian, whom he had had the honour of meeting, had expressed much interest in his aeronautical experiences, and had graciously accepted one of his books and some of his balloon photographs. She herself was at that time from home, but immediately Prince Christian heard of his unceremonious visitors he sent to invite Bacon into the house, where he talked with him some time, and offered him all hospitality and assistance.

On the last ascent of this series Bacon's young wife—already an enthusiastic aeronaut—accompanied him on what proved a somewhat interesting flight, for, rising from the East End, they crossed the whole length of

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London at a height so low that at one moment they apparently only just escaped collision with the dome of St. Paul's, which suddenly loomed up, a huge dark monster, before them ; and later on they held animated conversation with an indignant policeman in Hyde Park. The town being traversed, they shot above the mist into magnificent cloud scenery, and eventually descended in Buckinghamshire.

During the following spring Bacon's mind was full of a scheme—daring and original—but which, had he lived, it is certain he would have tried to put into execution. This was nothing more or less than the exploration by balloon of the unknown interior of Arabia. My father was convinced that, rightly employed, a balloon could be made to add vastly to our knowledge concerning inaccessible countries, and that, in this direction, not sufficient advantage had been taken of its unique assistance. True there had been Andrée's disastrous dash to the Pole, but in his case the venture seemed doomed to failure from the outset, and the circumstances such as afforded no reasonably fair trial. All things—wind, climate, country—were against him, and yet even then his last recovered message, sent by carrier pigeon, showed that at the end of forty-eight hours, the longest aerial voyage ever made, the balloon was still going strong, and the party in good hope of success.

Enough had not been made, Bacon claimed, of the constant current of air, blowing at all times from west to east in the upper atmosphere, to which aeronauts and meteorologists alike unite in testifying. Wise, the great American balloonist, sixty years ago, was so convinced of the existence of this drift, which he estimated at from twenty to forty or even sixty miles an hour, that he offered to trust himself to it, in a suitable balloon, for a

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voyage across the Atlantic. Green, in England, was of similar opinion. Hundreds of records made by travellers and scientific men point to the same thing, with, moreover, the additional fact that the nearer the Equator is approached the more regular do the winds become, even such as blow at low levels ; while with respect to the seaboard of Asia—due to the great rarefaction of the atmosphere over the centre of the Continent—powerful and long-lasting south-westerly gales, so unvarying as to be foretold almost to the inside of a week, are a heritage of the country.

These constant winds, it was contended by Bacon, offer special facilities for balloon exploration of lands lying in tropical and sub-tropical regions, such as the Sahara, Central Asia, and Australia ; but, above all, of that mysterious and fascinating *terra incognita*, not to be reached apparently by any other means, the centre of Arabia. In this “Happy Arabia” of the ancient geographers we have an unknown land as difficult of access as the Poles, jealously guarded by fanatical Bedouins, circled about by superstitious fears and tales of terror, containing the sand-buried ruins of ancient civilization lost these thousands of years, and described by Sir Henry Rawlinson as the most romantic country in the world. It is a country of saline oases, wild palm groves, of fertile spots where are running streams and many springs, of deserts vast and frightful, yet so far from unproductive that their mere red sand after rain becomes covered, so says Mr. Wilfrid S. Blunt, with grass and flowers. Here lies apparently no waste corner of the earth, but a land which under European enterprise might be made to yield the richest harvest, but which, under present conditions, it is absolutely impossible for any European even to attempt to enter.

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But here, to Bacon's mind, lay an unrivalled opportunity for the enterprising aeronaut. His carefully thought out project was to inflate an exploring balloon on the shores of the Red Sea. This would have to be done on the western side, since on the east lies the sacred province of the Medjar, where even the unrolling of a map is resented by the jealous natives. The passage of the narrow sea, however, would add but a few miles to the aerial journey, which might be commenced even at Aden, or on one of the many islands at the southern end. Study of the map shows that, with the prevailing winds, by the route from Aden the unknown centre could be traversed and the Persian Gulf reached by balloon in nine hundred miles. From a point a little below Mecca a W.S.W. wind would carry an aeronaut across the country in seven hundred miles. A due west wind would add another hundred miles in the latter case. With a north or south wind an important section of Arabia could be passed over in five hundred miles, while from Mascat a yet shorter, but useful, voyage might be carried out.

To descend in a balloon on Arabian soil would certainly be inadvisable, but once across to the Persian Gulf rescue by boat should not be difficult, provided due provision had been made. Fleets of pilot balloons previously despatched could indicate the route with great exactness, and wireless telegraphy apparatus would be carried aloft by which the aeronauts would keep in constant touch with their friends along the coast. Concerning the power of the balloon, if properly constructed, to keep afloat in air for the long period needed, Bacon had no doubts; pointing out that the constant sunshine to be absolutely relied upon in this part of the world would replace the vagaries of temperature which waste so much gas in

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ordinary voyages, while the withdrawal of the sun's rays at night would simply entail a steady subsidence of the balloon to lower altitudes, where the heat radiating from the earth would then maintain it, without waste of ballast, at a safe, if varying, level.

Bacon's project, which he carefully unfolded this year in the pages of the "Nineteenth Century" and elsewhere, drew much comment at the time, and met with the support of experts familiar with the scene of the proposed exploration, who pronounced his plans as feasible, and assisted him with valuable information and advice. All through his last months Bacon's thoughts and speech were ever running on this theme, which daily grew more attractive to him. Without doubt, had time and opportunity been spared him, he would before long have endeavoured personally to make the attempt.

There was but one balloon ascent this summer of 1904, a night voyage from Newbury at the close of a hot August day. The ascent formed part of a well thought out and elaborate scheme, the most ambitious of Bacon's scientific series, as it was also his last, for the testing of sound-signals, and in this case of the power of warning signal-lights. By the ready co-operation of many friends, private and official, Bacon had arranged for a line of helpers stretching right across the south of England, from Bristol to Hampstead Heath. These assistants were gathered in thirteen camps at an average distance of about ten miles apart, all on high ground, and following as nearly as possible the course of old-time beacons. Dundry Down, seven hundred feet above Bristol, was the first of these stations; Lansdown, near Kelston, lay between that and Combe Down, Bath. The monument at Cherhill, near Calne, came next; while a science master from Marlborough College, and an able staff of boys,

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occupied the neighbouring Martinsell Hill. Inkpen Beacon and Greenham Common, next in order, were manned by Newbury friends ; and the masters and boys at Claysmore School, above Pangbourne, kept watch on their lofty tower. Next came high ground at Sonning ; then, by special permission, a watchman on the Round Tower of Windsor Castle ; next, high ground at Uxbridge ; then Harrow-on-the-Hill ; while Hampstead Heath completed the series. To each of these stations, save the last, were issued two kinds of signal rockets, supplied by Messrs. Brock ; one a sound-signal capable of being heard over a distance of twenty miles, the other a "parachute" rocket bearing a very brilliant light. Thus each beacon had two means of passing its message on to its neighbour across the country when, at ten o'clock precisely on the appointed night, Bristol started the alarm. At the same time, from Newbury, central station of the line, Bacon's balloon climbed into the air, firing detonating signals of its own at carefully fixed intervals, the while listening to the signals on earth. Each signal station had an elaborate list of questions concerning the seeing and hearing of lights and bombs to fill in, while independent observers all over the south of England were invited to be on the watch for lights and sounds and to record their observations.

The night proved admirable for the experiment ; all went without a hitch, and the beacons bore their message so satisfactorily that Bacon was convinced that it would be readily possible by their means to convey a warning signal from Bristol to London in five minutes, and not only this, but through all the country intervening, a result which would surpass any effort of modern telegraphy, with or without wires. Anomalies of sight and hearing proved as remarkable and instructive as ever,

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bearing out the curious results of previous similar experiments. In the balloon, Bacon was accompanied by his wife and daughter, with Mr. Percival Spencer in charge, and, their signalling and observing work finished, they floated dreamily all through the warm summer night over fields and woods, sleeping villages, and shuttered houses, until the grey dawn broke slowly over the peaceful scene, the sun lifted from the mists of the morning, and the scent of dew rose off the deserted Berkshire downland. With daylight came a freshening of the breeze, and the balloon sped faster, and then, nearing the ground, her trail narrowly escaped impact with an early goods train, snaking along the G.W.R., whose driver whistled shrilly in astonished greeting. Eventually she descended in a grass field at Kidlington, five miles beyond Oxford. It was Sunday, and not a soul had yet risen in the village, so the voyagers, sheltered in their car, turned sideways on the ground, had an hour's sleep before finding their way to a neighbouring farm-house in search of help and much needed food. The farmer and his wife, though astonished, were hospitality personified, and while they completed their toilet—for they had yet scarcely risen—the balloonists sat on a hen-coop in the farmyard, sipping new milk until a substantial breakfast, to which they did amplest justice, was prepared for them.

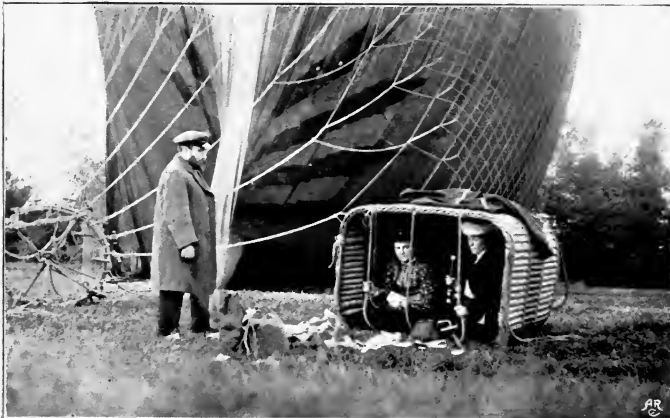
This autumn the British Association, under the presidency of Mr. Balfour, met at Cambridge. Bacon was to read a paper on "Upper Air Currents and their Relation to the Far Travel of Sound." In this he summarized some of the results of his more recent balloon voyages, and gave instances of the extreme complexity of higher drifts causing the strange acoustic vagaries he had so often experienced.

It is the pleasant custom at the British Association



THE HOT-AIR BALLOON ALOFT

See page 329



THE LAST VOYAGE. DESCENT AT KIDLINGTON

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Meetings for the residents of the neighbourhood to offer hospitality to the most distinguished of the members, and Bacon and his wife were delighted to find themselves the favoured guests of Canon and Mrs. Pemberton, of Trumpington Hall, his host an old acquaintance of thirty years before. All circumstances combined to make this—Bacon's last—visit to his beloved University a specially delightful one. It was keenest pleasure to him to show his happy, bright, young bride the scenes of his early joys and sorrows, to introduce her proudly in turn to his old friends. Intellectual and social treats alternated all through the days. The meeting was an unusually brilliant one, and the great minds of all the world had congregated together. His own fame had gone abroad, and scientific friends and acquaintances were flattering and kind. Every hour was enjoyable, and the whole week one of the happiest of his life.

With the coming of autumn, the busy lecture season began afresh. This winter Bacon had more engagements than ever of the sort that he specially preferred. Of all his audiences of every kind he loved schoolboys best of all, and in addressing them he was ever in his happiest, brightest vein. Masters testified enthusiastically to his success. With the boys themselves he was immensely popular, for not only was his adventurous subject such as appealed particularly to their imaginations, but some subtle sympathy seemed to exist between their young natures and a man who, all through his life, had kept his heart as young and fresh as theirs. Lectures at the great public schools were his especial delight, and he embarked on this season's programme with greater pleasure and zest than ever.

All through my father's chequered life his indomitable pluck and energy had risen superior to his bodily powers,

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and now, at the close, it was still this courageous spirit, this unconquered will, this utter absence of thought of self, which blinded others, even those nearest and dearest to him, to the change which was too surely taking place in him. Not until his last brief illness was the truth revealed, and then, indeed, doctors, nurses, and friends alike stood amazed at the marvellous power of the dauntless mind over the frail body. The dread disease of the lungs, for thirty years kept in abeyance and forgotten, had, with declining years, reasserted itself, and all unsuspected by others, and, it would seem, even by himself, had been following its fell course for months, perhaps for years past. Yet never for a moment in all this period of decreasing power had Bacon relaxed his wonderful energy, nor had his unfailing spirits flagged; and this it was which, at the time, hid those small tokens of failing strength which, looking backwards when all was over, became clear enough. How long and splendid had been the fight may never be known, but now at length the end was at hand.

On the 16th of November was born a daughter of his happy second marriage—Bacon's fourth child. The date of her birth, as it happened, was the anniversary of that never-to-be-forgotten meteor hunt above the clouds of five years before; and largely on this account, as also after parent and grandparent, the name of Stella Mary was bestowed upon her. Mother and child did well, and Bacon continued his busy life of writing, travelling, and lecturing as before. His last lecture was on the 14th of December, at the famous Birkbeck Institute in London. That night the delighted audience could trace no sign of weakness in the beautiful voice, nor of diminishing power in the spirit and enthusiasm with which he spoke, racily describing his aerial adventures, and, as ever, bearing

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all away with him in his infectious ardour for the work he had made his own. This fact is testified to in the following letter from an unknown correspondent, received a couple of days later, and which, under the peculiar and pathetic circumstances, may here be quoted :—

“ LONDON,

“ *December 15th, 1904.*

“ SIR,

“ Votes of thanks are not the order of the day at the Birkbeck College, so I can only take this means of saying how greatly I appreciated your lecture yesterday evening. You contrived to give in a popular way a great deal of information, your descriptions of certain voyages were most realistic, and your lantern slides were delightful, especially those of the clouds from above.

“ I am not looking for a reply, and I am therefore giving no address. Again thanking you for your lecture, and hoping that you may be able to do the things you have projected in the not far distant future,

“ I am, yours sincerely

“ HUBERT A. GILL.”

The morning after this lecture, while still in town, the news reached my father of the terribly sudden death, from heart seizure, of his third brother, the Rev. H. V. Bacon, then Rector of East Tisted, Hants. The tidings of this wholly unexpected loss proved a very severe shock, further lowering already exhausted vitality. The December weather at the time was foggy and treacherous. Arrived at home that night he complained of chill, and retired to bed, from which he never rose again. For nine days only he lay in patient suffering. Almost from the first, when medical examination revealed the

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extent of his malady, it was realized that there was little hope ; but he himself, ever bright and cheerful, with no word of complaint, thinking only of those around him, fought out his brave battle for life, for the sake of those he was leaving, to the bitter finish, and on Christmas night, the struggle over, breathed his last, brave and patient to the end.

Then, from high and low, rich and poor, far and wide, poured in the testimony of those who loved and revered him : scientists who deplored his loss to knowledge, famous men who eulogized his work and aims, editors and publishers who lamented the close of his bright literary career, people who had never known him, but to whom, by his writings and doings, he was familiar and beloved ; others who, having merely heard him speak or lecture, had come under the spell of his magnetic personality, humble friends whom he had loved as dearly as those of his own station, friends to whom he had stretched out a helping hand in need, friends to whom he had opened his brotherly sympathy in time of sorrow, friends to whom he had spoken a word of advice in season ; lighthouse friends on the Maplin, friends of his aerial voyages, of his eclipse expeditions, of his lecture experiences : all alike uniting in their sorrow, and in their testimony of truest affection, admiration, and regard.

Four days later his body was laid to rest beside the beautiful little church at Swallowfield, which but fifteen months before had been the scene of his marriage. Six chosen friends carried him, by his own desire, once expressed, to the grave—two well-loved members of his Guildhall Club (one the Bee Expert of bygone days), one of the old Coldash Ringing Team, his favourite Coast-guard, the aeronaut who had shared with him his greatest peril, and his own faithful servant. Thus were drawn

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together at the last, as it were, the threads of a lifetime. The brave eldest brother, Maunsell, who but ten days before had buried one younger brother, now read the burial service over another, while around the grave stood Bacon's nearest and dearest, his best-loved friends, and those who loved him longest and most truly.

Bacon was but in his fifty-ninth year, in the midst of his new-found happiness, in the height of his labour and ambition. He might have been spared for many years more of valuable work in the field of scientific research and of domestic joy at home. And yet it cannot be doubted that he died as he would have wished—in harness, with his mental strength yet undiminished, his powers of usefulness yet unimpaired, his heart yet fresh and young. In the recollection of the outside world his memory will stand as the man of science, the original thinker, the fearless aeronaut ; in the minds of those who met him personally, for how much more ! To those who knew and loved him best, it will ever seem that something of the vastness, the purity, the serenity of the realms he so delighted in, had entered into his own soul ; and that in the wideness of his outlook, the boundlessness of his sympathies, the utter absence of all smallness of thought, word, or deed, he came in tune with those mighty, all beneficent forces whose nature he sought to trace.

Only a few weeks before his death he had been asked to write—as a message to some of his schoolboy friends—his favourite text or motto. He chose a text, the same which now is on the plain granite cross marking his last resting-place :—

“THE HEAVENS DECLARE THE GLORY OF GOD.”



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