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JOHN MURRAY, ALBEMARLE STREET.

1849.



STOKERS AND ~~POWERS~~

OR, THE

/
LONDON AND NORTH-WESTERN RAILWAY,

✓ THE ELECTRIC TELEGRAPH,

AND

THE RAILWAY CLEARING-HOUSE.

Dec 12, Sir Francis, Bart. 1793-

~~~~~  
BY THE AUTHOR OF

‘ BUBBLES FROM THE BRUNNEN OF NASSAU.’  
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TO

RAILWAY TRAVELLERS,

AND

TO THE PROPRIETORS

OF THE

GREAT WESTERN,
MIDLAND,
LANCASHIRE AND YORKSHIRE,
YORK, NEWCASTLE, AND BERWICK,
EASTERN COUNTIES,
LONDON AND SOUTH-WESTERN,
YORK AND NORTH MIDLAND,
CALEDONIAN,
GREAT SOUTHERN AND WESTERN (IRISH),
LONDON AND NORTH-WESTERN,

AND

OTHER BRITISH RAILWAYS,

THESE ROUGH SKETCHES, DELINEATING THE DIFFICULTIES
ATTENDANT UPON THE CONSTRUCTION,
MAINTENANCE, AND WORKING OF A RAILWAY,
ARE INSCRIBED.



CONTENTS.

CHAP.	PAGE
INTRODUCTION	7
I. ON THE CONSTRUCTION OF A RAILWAY	11
II. ON THE MAINTENANCE OF THE PERMANENT WAY	33
III. THE TRAINS, EUSTON	38
IV. THE RAILWAY CARRIAGES	48
V. LOST LUGGAGE OFFICE	53
VI. PARCEL DELIVERY OFFICE	56
VII. THE LOCOMOTIVE ENGINE—CAMDEN	61
VIII. GOODS DEPARTMENT	68
IX. WOLVERTON	81
X. LETTERS AND NEWSPAPERS	92
XI. CREWE	100
XII. A RAILWAY TOWN	109
XIII. THE ELECTRIC TELEGRAPH	113
XIV. THE RAILWAY CLEARING-HOUSE	134
XV. MORAL	144
APPENDIX	157
RULES AND REGULATIONS	159

INTRODUCTION.

A GOOD many years ago, one of the toughest and hardest riders that ever crossed Leicestershire undertook to perform a feat which, just for the moment, attracted the general attention not only of the country but of the sporting world. His bet was, that, if he might choose his own turf, and if he might select as many thorough-bred horses as he liked, he would undertake to ride 200 miles in ten hours!!!

The newspapers of the day described exactly how "the Squire" was dressed—what he had been living on—how he looked—how, at the word "*Away!*" he started like an arrow from a bow—how gallantly Tranby, his favourite racer, stretched himself in his gallop—how, on arriving at his second horse, he vaulted from one saddle to another—how he then flew over the surface of the earth, if possible, faster than before—and how, to the astonishment and amidst the acclamations of thousands of spectators, he at last came in . . . a winner!

Now, if at this moment of his victory, while with dust and perspiration on his brow—his exhausted arms dangling just above the panting flanks of his horse, which his friends at each side of the bridge were slowly leading in triumph—a decrepit old woman had hobbled forward, and in the name of Science had

told the assembled multitude, that, before she became a skeleton, she and her husband would undertake, instead of 200 miles in ten hours, to go 500—that is to say, that, for every mile “the Squire” had just ridden, she and her old man would go two miles and a half—that she would moreover knit all the way, and that he should take his medicine every hour and read to her just as if they were at home; lastly, that they would undertake to perform their feat either in darkness or in daylight, in sunshine or in storm, “in thunder, lightning, or in rain;”—who, we ask, would have listened to the poor maniac?—and yet how wonderfully would her prediction have been now fulfilled! Nay, waggons of coals and heavy luggage now-a-days fly across Leicestershire faster and farther than Mr. Osbaldestone could go, notwithstanding his condition and that of all his horses.

When railways were first established, every living being gazed at a passing train with astonishment and fear: ploughmen held their breath; the loose horse galloped from it, and then, suddenly stopping, turned round, stared at it, and at last snorted aloud. But the “nine days’ wonder” soon came to an end. As the train now flies through our verdant fields, the cattle grazing on each side do not even raise their heads to look at it; the timid sheep fears it no more than the wind; indeed, the hen-partridge, running with her brood along the embankment of a deep cutting, does not now even crouch as it passes close by her. It is the same with mankind. On entering a railway station, we merely mutter to a clerk in a box where we want to go—say “*How much?*”—see him horizontally poke a card into a little machine that pinches it—receive our ticket—take our place—read our newspaper—on reaching our terminus drive away perfectly careless of

all or of any one of the innumerable arrangements necessary for the astonishing luxury we have enjoyed.

On the practical working of a railway there is no book extant, nor any means open to the public of obtaining correct information on the subject.

Unwilling, therefore, to remain in this state of ignorance respecting the details of the greatest blessing which science has ever imparted to mankind, we determined to make a very short inspection of the practical machinery of one of our largest railways; and having, on application to the Secretary, as also to the Secretary of the Post-Office, been favoured with the slight authorities we required, without companion or attendant we effected our object; and although, under such circumstances, our unbiassed observations were necessarily superficial, we propose, first, to offer to our readers a faint outline of the difficulties attendant upon the construction and maintenance of a great railway, and then, by a few rough sketches, rapidly to pass in review some of the scenes illustrative of the practical working of the line, which we witnessed at the principal stations of the London and North-Western Railway—say EUSTON, CAMDEN, WOLVERTON, and CREWE.

LONDON AND NORTH-WESTERN RAILWAY.

CHAPTER I.

ON THE CONSTRUCTION OF A RAILWAY.

AT the grand inauguration dinner eaten in Paris on the 28th of December, 1848, for the express purpose of celebrating the installation of the new President of the French Republic, it has been recorded by the reporters present, that among the numerous guests assembled, there was no one whose presence engrossed such universal attention as that of an erect emaciated member of "*La Vieille Garde*."

The old soldier, it is stated, as he sat at table, scarcely noticed the constellations of bright, black, and hazel-coloured eyes that from all directions were concentrated upon him, but, addressing himself first to his own black bottle, and then with the utmost good humour to those of his neighbours, he drank and ate—drank—swigged—reflected,—and then, as if to refresh himself, drank again, again, and again, until, according to pre-arrangement, he stood up on the tribune to re-propose the health of "LOUIS NAPOLEON," to which—coupling the meteor now shining in its zenith with the "sun of Austerlitz," which, though sunk for ever below the horizon, still beamed as resplendently as ever within his heart—he added, with great naïveté, "MAIS SANS OUBLIER L'AUTRE!"

The French people, or rather the representatives of the French

nation who were assembled, had received the consecutive orations of several of the most illustrious of their fellow-citizens with considerable marks of approbation; but when the veteran in question, who was about seventy years of age, with hair white as snow, rose to address to them a short speech that would scarcely have filled his empty wine-glass, the sight of the uniform so dear to Frenchmen—the tall bear-skin cap, the crimson feather, blue coat, red facings, red worsted epaulettes, white breast, white breeches, long black gaiters reaching over the knee, and; above all, buttons with an eagle supporting the imperial crown—created a storm of applause which it would be utterly impossible to describe. For nearly a quarter of an hour shouts and clappings of hands prevented the old warrior from opening his lips, and the applause if possible increased when the veteran, with the palm of his hand turned outwards, stiffly saluted the company in correct martial style: and yet, strange to record, at the very moment of all this military enthusiasm, so characteristic of a nation of whom it was lately very eloquently stated “that it had been its ambition to be the world’s guide and its destiny to be the world’s warning,” the French Government was not only without funds to protect public or private property, but, in fact, had nothing but the plunder of both to conciliate and feed the multitude of misguided and misguiding people who, by the ruin of commerce and by the stagnation of trade, were literally all over France starving from cold and hunger. Of their enthusiasm, therefore, as of that of the veteran standing up before them, it may truly be said or sung—

“Happy’s the soldier that lives on his pay,
And spends half-a-crown out of sixpence a-day!”

Having related, or rather merely repeated, this curious little anecdote, we will now endeavour to explain in what manner it applies to the subject of our chapter, namely, “*the construction of a railway.*”

It has been justly observed that “England is bound over to keep the peace by a national debt, or penalty, of 800 millions.” During the glorious expenditure of all this money, the attention

of the country was solely engrossed with the art, employment, occupation, and victories of war. Our great statesmen were war-ministers—our great men were naval and military warriors of all ranks, whose noble bearing and gallant feats were joyfully announced, and, by universal acclamation, as gratefully rewarded; and if every man who took a government contract, or who in any way came into contact with government, easily made a large fortune by war, he, generally speaking, as rapidly spent it; and thus an artificial circulation of wealth was kept up, which, like the schoolboy's mode of warming himself, commonly called "beating the booby," produced a temporary glow, estimated at the moment to be of as much value as if it had naturally proceeded from the heart.

The English people during the period in question drank hard. The rule had scarcely an exception. As regularly as four o'clock P.M. struck, our noblemen, magistrates, judges, hunting squires, and country gentlemen, began to look a little flushed—the colour gradually increasing, until in due time they all became, like their sun in a fog, red in the face. Before bedtime the semi-rulers of the nation were half inebriated—some of our leading statesmen being, alas! notoriously, very nearly in the same state.

No sooner, however, were the British people, by the results of 1815, suddenly weaned from war, than their extraordinary natural powers, moral as well as physical, invigorated by comparative temperance, were directed to investigations, occupations, and studies which rapidly produced their own rewards. Indeed, without entering into details, the wealth which has been created and amassed since the period in question, added to that with which we have not only irrigated, but almost without metaphor top-dressed the greater portion of the old as well as of the new world, and, lastly, the extraordinary improvements that have taken place in light, heat, locomotion—electrical as well as by steam-power—machinery, in short in everything that administers to human comfort, form altogether the golden harvest of our labours; and thus, although to our eminent civil engineers considerable credit is due, they are, in fact, but secondary causes;

the engineer-in-chief—the primary inventor—the real constructor of our railways most indisputably being

THE GODDESS OF PEACE.

Send her victorious—happy and glorious—

Long to reign over us—God save that queen!

THE CONSTRUCTION OF THE LINE.

1. In considering the project of a railway, after fixing upon the two termini, it becomes necessary to select the towns through which it ought to pass.

2. When these have been determined, the chief engineer to whom the investigation of the proposed line has been confided, with the Ordnance map in his hand, walks and re-walks over the whole length (Mr. Robert Stephenson, in his investigation of the proposed line between London and Birmingham, walked upwards of twenty times over the country between each), until he feels that he carries in his mind the whole picture; and while he is thus imagining and making out various lines for consideration, his assistants are testing the eligibility of each by rapidly taking for him what are called “flying levels,” as also “cross levels,” along the principal ridges that at various angles intersect the proposed line, and yet, notwithstanding the accuracy of these mathematical precautions, it is almost invariably found that the eye of the chief engineer has intuitively selected the best line.

It is, however, as painful to reflect on, as it is humiliating to record, the prejudices, ignorance, passions, and artifice by which our principal engineers were opposed, or rather by which they were consecutively thwarted in the calm scientific investigations for the benefit of the public which we have just described.

Instead of a general desire on the part of the community to hail with gratitude, and to receive with open arms, an invention which was practically not only to enable them with double elbow-room, and at about half fares, to travel at four or five times the speed which by their utmost efforts they had previously been enabled to attain, but to afford similar facilities to millions of tons of manufactures and merchandize, much of which had

either been impeded by delay, or altogether clogged by the heavy charges on their transit, our engineers, in tracing the lines for our great arterial railways, were but too often looked upon as magicians, evil genii, or unclean spirits, whose unearthly object was to fright the land from its propriety.

In many instances where it was proposed, by tapping the dull stagnant population of a country town, to give vigour and animation to its system, the inhabitants actually fancied that their interests and their happiness would, like their habits, expire under the operation.

For example, it is well known that one of the results of Mr. R. Stephenson's deliberate investigations was, that the present London and North-Western Railway ought to pass through the healthy and handsome town of Northampton,—an arrangement which of course would instantaneously have given to it commercial importance of inestimable value. The inhabitants, however, urged and excited by men of influence and education, opposed the blessing with such barbarous force, that they succeeded, to their everlasting punishment, in distorting the line—*viâ* the Kilsby Tunnel, which, if the projected plan had been adopted, would not have been required—to a point five miles off! and if such ignorance could, in the nineteenth century, exist in a large and populous town, it cannot be a matter of surprise that our engineers should have had to encounter similar, or, if possible, still greater prejudices in rural districts.

It was there generally considered to be utterly incredible that a railway could ever possibly supersede our mail and stage coaches; at market meetings, and at market dinners, the invention was looked upon as, and declared to be, “a smoky substitute for canals;” and while men of property inveighed against its unsightly appearance, their tenants were equally opposed to the measure.

For instance, among the *reasons* for preventing the present London and North-Western Railway coming to Northampton, it was seriously urged by many very wealthy and respectable graziers in the neighbourhood, that the smoke of the passing

engines would seriously discolour the wool of their sheep ; that the continual progress through their verdant meadows of a sort of rumbling, hissing, fiery serpent, would, by continually alarming, fretting, and distracting the attention of their cattle, prevent them, "poor things !" from fattening ; in short, such was the opposition to the new system, that one of the engineers employed by the London and North-Western Railway to trace out a branch line (which, at a considerable expense to the Company, was to confer inestimable advantages upon its locality) was attacked by the proprietors of the soil, and a conflict or battle royal ensued, which ended in very serious legal results.

3. As soon as the chief engineer has, instead of the *best* line of railway that could have been determined on, decided on that which, for the *reasons* stated, it is *advisable* he should recommend—alas ! what a pity it is that, in the construction of our great arterial railways, such a discreditable difference should have been allowed to exist !—he employs his assistant engineers and surveyors to make for him accurate surveys, and to take correct sections, copies of which are to be deposited, according to Act of Parliament, with the various clerks of the peace of the several counties through which the line is to pass, with the Commissioners of Railways, &c. &c. &c. ; besides which there is to be prepared for each parish its proportion, as also for every landholder a section, showing the greatest depth of cutting or embankment in any of his fields.

In addition to the collection and construction of all these data and drawings, notices are to be served upon every landowner, wherever he may be, in the United Kingdom ; for which duty in 1845 almost everybody that could be picked up was engaged, the number of horses employed and *killed* in the operation having been utterly incalculable.

4. By the time these expenses have been incurred, the attention of the chief engineer is engrossed by a new struggle of vital importance, practically called "*the fight for the Act*," in both houses of Parliament.

As the question before the reader is abstractedly one of science, we gladly refrain from staining it by the slightest poli-

tical remark ; we will therefore, on this branch of the subject, only state that, from returns which have officially been published, it appears that, in the years 1845, 1846, and 1847, more than ten millions were expended in parliamentary inquiries and parliamentary contests.

This money would, at the rate of 20,000*l.* per mile, have constructed a national railway 500 miles in length—say from London to Aberdeen !

Casting aside the bitter mortification which these expenses must create to the man of science, whose mind is enthusiastically engrossed with the vast importance of railway communication, the permanent tax which they inflict upon the public can very briefly be demonstrated.

Supposing 5 per cent. be deemed an adequate return to railway proprietors for the capital they have expended, the comparative charges to be levied by them on every passenger or ton of goods would be as follows :—

Charge per mile on a railway which ought to have cost 15,000 <i>l.</i> per mile	1 <i>d.</i> per mile.
Ditto on a railway which has unnecessarily been made to cost 20,000 <i>l.</i> per mile	1½ <i>d.</i> "
Ditto on a railway which has unnecessarily been made to cost 25,000 <i>l.</i> per mile	1¾ <i>d.</i> "
Ditto on a railway which has unnecessarily been made to cost 30,000 <i>l.</i> per mile	2 <i>d.</i> "

5. As soon as the Act of Parliament has been obtained, the chief engineer directs the immediate construction of a most accurate plan and section of the whole line, from which he ascertains and lays down its gradients. He then determines the sizes of the bridges required, as also the nature and amount of masonry for each ; he calculates the quantities of embankments and cuttings, balancing the one against the other as nearly as circumstances will allow, and having, by first boring, and afterwards by the sinking of "trial shafts," ascertained as accurately as possible the nature of the various strata to be excavated or tunnelled, he proceeds to estimate in detail the cost of the several works, which he then divides into lengths for construction, taking care that in each the amount of earth to be excavated and filled

up shall as nearly as possible balance each other; in short, inasmuch as all contractors prudently, and indeed very properly, invariably lower their tenders in proportion as the work they are required to execute has been clearly laid open to their view, and, on the other hand, to secure themselves from unknown difficulties, as invariably *raise* their tenders for work which has not been sufficiently bored or examined, he is fully sensible that a considerable saving in the cost of the proposed railway will be effected by a clear preliminary development of its works.

6. This mass of information having been prepared, the chief engineer now advertises his work in its various lengths for execution by contract, and, on receiving tenders for the same, he selects, not always the *lowest*, but that which, for various reasons, is the most *approved*, taking security generally to the amount of 10 per cent. of the contract.

Previous, however, to the reception of the tenders the chief engineer appoints his staff of assistants. To each 40 or 50 miles there is usually appointed an experienced engineer, having under him "*sub-assistants*," who superintend from 10 to 15 miles each—these sub-assistants being again assisted by "*inspectors*" of masonry, of mining, of earth-work, and of permanent way, to each of whom a particular district is assigned.

7. The chief engineer now finds himself engaged in a new struggle with man in addition to nature. In many instances the contractors let out a portion of the work they have engaged to perform to sub-contractors, who again "*set*" the earth-work to a body of "*navvies*," who again among themselves sub-divide it among the three branches of which their State is composed, namely, "*excavators*," "*trenchers*," and "*runners*," each party of whom appoint their own "*ganger*."

The duty of effectually overlooking all these details, of preventing collusion as well as collision, of enforcing the due execution of the contract, and yet, where necessary, occasionally to alleviate the strict letter of its law, constitute perhaps the most harassing of the various difficulties which the chief engineer has to overcome: for it must be evident that if, by means of bribery, or from inattention, or from sheer roguery, any important portion

of the work be "scamped," or insufficiently performed, results may ere long occur of the most serious description.

TUNNELS.

8. The brief history of the construction of the Kilsby Tunnel of the London and North-Western Railway very strikingly demonstrates the latent difficulties which occasionally evade the investigations, baffle the calculations, and which, by chastening as well as by humbling, eventually elevate the mind of every man of science who has practically to contend with the hidden secrets of the crust of the earth which we inhabit.

The proposed tunnel was to be driven about 160 feet below the surface. It was to be, as indeed it is, 2399 yards 2 feet 6 inches in length, with two shafts of the extraordinary size of 60 feet in diameter, not only to give air and ventilation, but to admit light enough to enable the engine-driver in passing through it with a train to see the rails from end to end.

In order correctly to ascertain, and honestly to make known to the contractors, the nature of the ground through which this great work was to pass, the engineer in chief sank the usual number of what are termed "trial shifts," and, it clearly appearing therefrom that the principal portion of the stratum was the shale of the lower oolite, the usual advertisements for tenders were issued, and the shafts, &c., having been minutely examined by the competing contractors, the work was let to one of them for the sum of 99,000*l*.

In order to drive the tunnel, it was deemed necessary to construct 18 working shafts, by which, like the heavings of a mole, the contents of the subterranean gallery were to be brought to the surface.

This interesting work was in busy progress, when all of a sudden it was ascertained, that at about 200 yards from the south end of the tunnel, there existed, overlaid by a bed of clay 40 feet thick, a hidden quicksand, which extended 400 yards into the proposed tunnel, and which the trial shafts on each side of it had almost miraculously just passed without touching.

The traveller in India could scarcely be more alarmed at the sudden sight of a crouching tiger before him, than the contractor was at the unexpected appearance of this invincible enemy. Overwhelmed at the discovery, he instantly took to his bed, and though he was liberally, or, to speak more correctly, justly relieved by the Company from his engagement, the reprieve came too late, for he actually died!

The question then arose whether, in the face of this tremendous difficulty, the execution of the Kilsby Tunnel should be continued or abandoned. The general opinion of the several eminent engineers who were consulted was against proceeding, and certainly the amount of the difficulties which were subsequently incurred, justified the verdict. But in science, as well as in war, the word "*impossible*" can occasionally, by cool and extraordinary exertions, be divested of its first syllable; and accordingly, Mr. Robert Stephenson offering, after mature reflection, to undertake the responsibility of proceeding, he was duly authorised to do so.

His first operation was of course to endeavour by the power of steam-engines—the comrades of his life—to lower the water with which he had to contend; and although, to a certain degree, this attempt succeeded, yet by the draining of remote springs, and by the sinking of the water in wells at considerable distances, it was soon ascertained that the quicksand in question covered several square miles.

The tunnel, 30 feet high by 30 feet broad, arched at the top as well as the bottom, was formed of bricks laid in cement, and the bricklayers were progressing in "lengths" averaging 12 feet, when those who were nearest the quicksand, on driving into the roof, were suddenly almost overwhelmed by a deluge of water which burst in upon them. As it was evident that no time was to be lost, a gang of workmen, protected by the extreme power of the engines, were with their materials placed on a raft; and while, with the utmost celerity, they were completing the walls of that short length, the water, in spite of every effort to keep it down, rose with such rapidity, that at the conclusion of the work the men were so near being jammed against

the roof, that the assistant-engineer, Mr. Charles Lean, in charge of the party, jumped overboard, and then, swimming with a rope in his mouth, he towed the raft to the foot of the nearest working shaft, through which he and his men were safely lifted up into daylight, or, as it is termed by miners, "*to grass.*"

The water now rose in the shaft, and as it is called "drowned out" the works. For a considerable time all the pumping apparatus appeared to be insufficient. Indeed the effort threatened to be so hopeless that the Directors of the Company almost determined to abandon it, but the engineer-in-chief, relying on the power of his engines, prayed for one fortnight more; before that period expired Science triumphed over her subterranean foe, and—thanks to the inventors of the steam-engine—the water gradually lowered.

By the main strength of 1250 men, 200 horses, and 13 steam-engines, not only was the work gradually completed, but during night and day, for eight months, the astonishing and almost incredible quantity of 1800 gallons per *minute* from the quicksand alone was raised by Mr. Robert Stephenson and conducted away!!

Indeed such is the eagerness with which workmen in such cases proceed, that, on a comrade being one day killed at their side by falling down the shaft, they merely, like sailors in action, chucked his body out of the way and then instantly proceeded with their work. In the construction of the tunnel there were lost twenty-six men, two or three of whom were "navvies," killed in trying, "for fun,"—as they termed it—to jump one after another across the summits of the shafts.

The time occupied from the laying of the first brick to the completion of the work was thirty months. The number of bricks used was 36,000,000, sufficient to make a good footpath from London to Aberdeen (missing the Forth) a yard broad!

On the completion of this great work the large populous village which had been constructed on its summit was of course suddenly deserted; it has since completely disappeared, and, instead of the busy scenes it once witnessed, there is now nothing heard on the dreary summit of the Kilsby Tunnel but the desolate

moan of the rumbling train, or the occasional subterranean whistle of its engine; these noises being followed by the appearance of a slight smoke slowly meandering upwards from the two great shafts of the tunnel.

During the operations we have just described, an artificer who had been working in the tunnel was ascending one of the shafts when, the back of his coat happening to get into an angular crevice of the partition, called by miners a "*brattice*," which separated the shaft from the pumps, it became so completely jammed therein that the man was obliged to let go the rope, and accordingly, while dangling over his head it rose to the surface, he remained, to the utter astonishment and dismay of his comrades, suspended about 100 feet from the bottom, until some of them descended and rescued him by cutting away the imprisoned piece of his coat, which, on being afterwards extricated, was long preserved in the engineer's office as a trophy demonstrating the strength of good honest English broadcloth.

At the same shaft an accident of exactly a contrary nature subsequently occurred. In order to execute some trifling repair to the brattice, there was, during a desperate cold night, suspended, about half-way down the shaft, a temporary scaffolding on which several artificers were working by candle-light, when all of a sudden a well-known powerful "*navvy*," named Jack Pierson, fell from the surface with such momentum, that, breaking through the frail scaffolding as if it had been tinder, he was in a few seconds heard to go souse into the water at a considerable depth beneath!

As soon as the men on the scaffold had recovered from their surprise they naturally all at once were animated with a desire to save their comrade. One lustily roared out for rope; another vociferously proposed something else; while several navvies, bawling from the surface, were each as eagerly and as loudly prescribing his own remedy. In the midst of this confusion the stentorian voice of Jack Pierson himself was heard, from the very bottom of the pit, calmly to exclaim,

"DARM YOUR EYES, MAKE LESS NOISE AND POOL ME ABOUT!!"

His rough command was instantly attended to, and moreover carried to his bed, where, poor fellow! he lay many weeks unable to move.

Besides the 1250 labourers employed in the construction of the tunnel, a proportionate number of suttlers and victuallers of all descriptions concentrated upon the village of Kilsby. In several houses there lodged in each room sixteen navvies, and as there were four beds in each apartment, two navvies were constantly in each; the two squads of eight men as alternately changing places with each other in their beds as in their work.

Such was the demand for lodging that it was, as we have stated, found necessary to construct a large village over the tunnel for the accommodation of the workmen, and, as they generally allowed themselves three meat meals a-day, it has been asserted that more beef was eaten at Kilsby during the construction of the tunnel than had previously been consumed there since the Deluge.

As these navigators are now before us, we trust that our readers will not only be curious but desirous to know a little more of the habits of a set of men who have lately added so materially to the prosperity of the country as well as to our luxuries, by the numerous railways which, by the honest sweat of their brows, they have one after another executed.

We need hardly say that, as regards their physical strength, they are the finest Herculean specimens of the British race; and, as is generally the case, in proportion as they are powerful so are they devoid of all bluster or bravado.

Those who have commanded large numbers of them state that they are not only obedient to all above them, even to their own "gangers," but that, although they have—we think very justly—occasionally required a permanent increase of pay, they have never meanly taken advantage of a press of business to strike for wages. Indeed the conduct of a "navvy," like his countenance, is honest and open. If from illness or misfortune he is unable to work, he and his family are maintained by his comrades; in truth the same provision is made among them for what are called by navvies their "*tally-wives*," a description of relationship exceedingly difficult *correctly* to describe.

As they earn high wages, it is a fashion among them to keep dogs; and as rather a noble trait, we may mention that there have been several instances where 10*l.* has been in vain offered to "a navvy" to induce him to sell his dumb favourite.

Generally speaking they are not addicted to poaching; but when not at work they usually amuse themselves by playing at skittles, at quoits, by drinking, and occasionally by fighting; and although the latter species of recreation is no doubt reprehensible, yet surely it is better for a man to walk homewards at night with a pair of black eyes and a bloody nose, than with an I O U cheque in his pocket for ten thousand pounds, gained by what the fashionable world terms "at *play*" from a companion whose wife he has made destitute, and whose children he has probably ruined!

At a navvy's funeral 500 of his comrades in their clean short white smock-frocks, with thin black handkerchiefs tied loosely round their throats, are seen occasionally in procession walking in pairs hand in hand after the coffin of their mate. In short, there exists among them a friendly "*esprit de corps*," which not only binds them together, but renders it rather dangerous for any stranger to cheat, or even to endeavour to overreach them.

During the construction of the present London and North-Western Railway, a landlady at Hillmorton, near Rugby, of very sharp practice, which she had imbibed in dealings for many years with canal boatmen, was constantly remarking aloud that no navvy should ever "*do*" her; and although the railway was in her immediate neighbourhood, and although the navvies were her principal customers, she took pleasure on every opportunity in repeating the invidious remark.

It had, however, one fine morning scarcely left her large, full-blown, rosy lips, when a fine-looking young fellow, walking up to her, carrying in both hands a huge stone bottle, commonly called "a grey-neck," briefly asked her for "half a gallon of gin;" which was no sooner measured and poured in than the money was rudely demanded before it could be taken away.

On the navvy declining to pay the exorbitant price asked, the

landlady, with a face like a peony, angrily told him he must either pay for the gin or *instantly* return it.

He silently chose the latter, and accordingly, while the eyes of his antagonist were wrathfully fixed upon his, he returned into her measure the half-gallon, and then quietly walked off; but having previously put into his grey-neck half a gallon of water, each party eventually found themselves in possession of half a gallon of gin and water; and, however either may have enjoyed the mixture, it is historically recorded at Hillmorton that the landlady was never again heard unnecessarily to boast "that no navvy could 'do' her."

A navvy at Kilsby, being asked why he did not go to church? dully answered in geological language—"Why, *Soonday hasn't cropped out here yet!*" By which he meant that the clergyman appointed to the new village had not yet arrived.

The contrast which exists between the character of the French and English navigator may be briefly exemplified by the following trifling anecdote:—

In excavating a portion of the first tunnel east of Rouen towards Paris, a French miner dressed in his blouse, and an English "navvy" in his white smock jacket, were suddenly buried alive together by the falling in of the earth behind them. Notwithstanding the violent commotion which the intelligence of the accident excited above ground, Mr. Meek, the English engineer who was constructing the work, after having quietly measured the distance from the shaft to the sunken ground, satisfied himself that if the men, at the moment of the accident, were at the head of "the drift" at which they were working, they would be safe.

Accordingly, getting together as many French and English labourers as he could collect, he instantly commenced sinking a shaft, which was accomplished to the depth of 50 feet in the extraordinary short space of eleven hours, and the men were thus brought up to the surface alive.

The Frenchman, on reaching the top, suddenly rushing forwards, hugged and embraced on both cheeks his friends and acquaintances, many of whom had assembled, and then, almost

instantly overpowered by conflicting feelings,—by the recollection of the endless time he had been imprisoned—and by the joy of his release,—he sat down on a log of timber, and, putting both his hands before his face, he began to cry aloud most bitterly.

The English “navvy” sat himself down on the very same piece of timber—took his pit-cap off his head—slowly wiped with it the perspiration from his hair and face—and then, looking for some seconds into the hole or shaft close beside him through which he had been lifted, as if he were calculating the number of cubic yards that had been excavated, he quite coolly, in broad Lancashire dialect, said to the crowd of French and English who were staring at him as children and nursery-maids in our London Zoological Gardens stand gazing half terrified at the white bear,

“YAW’VE BEAN A DARMNATION SHORT TOIME ABAAOWT IT!”

In the construction of the London and North-Western Railway, the contractor at Blisworth also failed and also died.

Besides the perpendicular cutting which he had undertaken to execute, there was, on the surface of the rock through which it now passes, a stratum of about twenty feet of clay of so slippery a nature, that for a considerable time, in spite of all efforts or precautions, it continued to flow over into the cutting like porridge. The only remedy which could be applied was, at vast labour and expense, to remove this stratum for a considerable distance, terminating it by a slope at a very flat angle, all of which extra labour, trouble, and expense, we may observe, is not only unseen but unknown to the traveller, who, as he flies through the tunnel, if he looks at the summit at all, naturally fancies that it forms the upper extremity of the work.

In the construction of the tunnel at Walford an accident occurred of rather a serious nature. A mass of loose gravel concealed in the chalk, slipping *viâ* the shaft into the tunnel, suddenly killed eleven men, besides letting down from the surface a horse and gin.

CUTTINGS.

9. In passing through the consecutive cuttings of a great railway, the traveller usually considers that those through rock must have been desperate undertakings, infinitely more expensive than those through clay. The cost of both, however, is nearly equal; for, not only does the perpendicular rock-cutting require infinitely less excavation than the wide yawning earth one of the same depth, but when once executed the former is not liable to the expensive slips which subsequently occasionally afflict the latter.

In determining whether the line should proceed by tunnelling or by cutting, the engineer's rule usually is to prefer the latter for any depth less than sixty feet; after which it is generally cheaper to tunnel. If, however, earth be wanted for a neighbouring embankment, it becomes of course a matter of calculation whether it may not be cheaper to make a cutting instead of what abstractedly ought otherwise to have been a tunnel.

In the construction of the Tring cutting alone of the present London and North-Western Railway, there were excavated 1,297,763 cubic yards of chalk, of which about fifteen cubic feet weighed a ton.

EMBANKMENTS.

10. Besides contending with water above ground as well as below, the constructor of a railway is occasionally assailed by an element of a very different nature. For instance, when the Wolverhampton embankment of the present London and North-Western Railway, at vast trouble and expense, was nearly finished, it was observed first to smoke, then get exceedingly hot, until a slow mouldering flame visible at night appeared. The bank began to consume away, and the heat continued until it actually burned the railway sleepers; at last, however, it exhausted itself. The combustion was caused by the quantity of sulphuret of iron or pyrites contained in the earth of the embankment, which, having been baked by the fire, will probably never slip.

11. It would be tedious, and indeed impossible, to detail the various works which a railway engineer has to superintend in the construction of the line, in the laying down of the rails or "permanent way," and in the subsequent, or rather simultaneous, erection of the various station-houses, storehouses, workshops, &c. &c., the interior of which we shall soon have occasion to enter.

An idea, however, of the magnitude of his operations may be faintly imparted by the following brief abstract of a series of calculations made by Mr. Lecount, one of the engineers employed in the construction of the southern division of the present London and North-Western Railway, and the writer of the article '*Railways*' in the '*Encyclopædia Britannica*.' The great Pyramid of Egypt was, according to Diodorus Siculus, constructed by three hundred thousand—according to Herodotus by one hundred thousand—men; it required for its execution twenty years, and the labour expended on it has been estimated as equivalent to lifting 15,733,000,000 of cubic feet of stone one foot high. Now, if in the same manner the labour expended in constructing the Southern Division only of the present London and North-Western Railway be reduced to one common denomination, the result is 25,000,000,000 cubic feet of similar material lifted to the same height; being 9,267,000,000 of cubic feet *more* than was lifted for the pyramid; and yet the English work was performed by about 20,000 men only, in less than five years.

Again, it has been calculated by Mr. Lecount that the quantity of earth moved in the single division (112½ miles in length) of the railway in question would be sufficient to make a foot-path a foot high and a yard broad round the whole circumference of the earth! the *cost* of this division of the railway in penny-pieces being sufficient to form a copper kerb or edge to it. Supposing therefore the same proportionate quantity of earth to be moved in the 7150 miles of railway sanctioned by Parliament at the commencement of 1848 (*Vide* Parliamentary Returns), our engineers within about fifteen years would, in the construction of our railways alone, have removed earth sufficient to girdle the globe with a road one foot high and one hundred and ninety-one feet broad!

Abandoning, however, speculations of this nature, we will conclude our slight sketch of the principal works required for a railway by a few data, exemplifying the magnitude of the Britannia Bridge over the Menai Straits, the construction of which has been intrusted by its well-known inventor to the very able and experienced management of Mr. Frank Forster.

The dimensions of this straight wrought-iron aerial gallery, through which passengers and goods are to travel by rail, are—

Total length of bridge, divided into 4 openings—	
2 of 230 feet	} Feet. In.
2 of 460 feet	
each	1834 9
Height of rails above high-water mark	104 0
Quantity of masonry in the towers and abutments .	} 1,365,000
Weight of one of the iron tubes for the largest span,	} 1,800 tons.
to be lifted 100 feet.	
Value of each of the largest of the iron tubes, not	} £54,000
including expense of raising it	
The cost of the scaffolding now in use about the	} £50,000
bridge has exceeded	

It would, we conceive, be impertinent to dilute the above facts by a single comment.

THE CHIEF ENGINEER.

As the selection of an engineer-in-chief, competent to determine the best line for a projected railway to take, the mode in which it should be constructed, and, lastly, to execute his own project—deviating from it with consummate judgment according to the difficulties, physical, moral, and political, which, sometimes separately and sometimes collectively, suddenly rise up to oppose him—is a point not only of vital importance to the success of the undertaking, but in the undertaking is the *first* important point to be decided, it would, we were aware, have apparently been the most regular to have commenced the present chapter with this subject. We conceived, however, that instead of there detailing the qualifications necessary for the duties required, it would save us very many words, and our readers as much time, if we were to defer the consideration of that subject until a brief outline of

those duties should, without comment, practically explain the qualifications required.

If the United Kingdom had only projected the construction of one or two great arterial railways, we might naturally have expected that the few competent engineers necessary would readily have been obtained; but when we consider the number of railways that were simultaneously created, the surveys, plans, sections, and other preparations that were necessary, the magnitude of the works of various descriptions that were to be constructed in each, it must evidently to many be a subject of astonishment that there should have been found on the surface of our country not only the amount of engineering talent necessary for the execution of such vast works, but an amount which may truly be said to have exceeded the demand.

The curious historical fact, however, is, that the amount of engineering talent thus suddenly required existed not on *the surface* of our country, but, on the contrary, many hundred fathoms *beneath it*. The brilliant talents that were required were "black diamonds," without metaphor embedded in the bowels of the earth. Science called her spirits from the vasty deep, and in obedience to her commands there arose out of the shafts of our coaleries, and from beneath the bottom of the Thames—

OLD GEORGE STEPHENSON, who had served his articles of apprenticeship in a coal-mine, for many years working at the engines both above ground and below ;

ISAMBARD BRUNEL, whose principal experience had been acquired in the construction of the Thames Tunnel ;

JOSEPH LOCKE, a colliery-viewer, who had served his apprenticeship below ground ;

ROBERT STEPHENSON, brought up as a coal-miner, served his apprenticeship at Killingworth colliery ;

FRANK FORSTER had worked for seven years as an apprentice in a coal-mine ;

NICHOLAS WOOD, ditto ;

CHARLES LEAN, ditto ;

And a crowd of similar genii, all slaves of the same lamp, or "*Old Davy*," as they term it.

To such men the difficulties attendant upon the construction of a railway were trifling as compared with those against which all their lives they had been contending.

For instance, he who along dark, intricate, subterranean passages, or "heavings," as they are termed, often only three feet and a half high, and occasionally only two feet high, creeping and crawling through foul air, could with great speed, not only with unerring certainty find his way, but in such a secluded study could plan a variety of new cuttings, each forming part and parcel of a reticulated system of excavation which an unpractised mind would find it utterly impossible to comprehend, would, it may easily be conceived, experience but little difficulty, when walking erect in sunshine and in balmy air, to carry in his mind from, say Harrow to Watford, Watford to Tring, Tring to Wolverton, and Wolverton to Birmingham, those great leading features of the surrounding country which would enable him to exercise for the laying out of a railway the judgment and decision required.

Again, what, it may justly be asked, are embankments, deep cuttings, and occasionally here and there a straight tunnel thirty feet broad, twenty-seven feet high, *usually forming by drainage its own adit*, in comparison with the overwhelming and intricate difficulties attendant upon—

1st. The excavation of coal from strata of various characters, at various depths, each passage or "air-heaving" requiring perhaps a different system of support.

2nd. Encountering at various depths quicksands.

3rd. The great as well as minute arrangements necessary for wheeling carriages and raising the coals.

4th. The organization and management of a subterranean army of men and horses.

5th, and lastly. Lifting by steam-power from various depths, by night and by day, streams, floods, and occasionally almost rivers of water?

It has been beneath the surface of our country that these and many other difficulties of vast magnitude—unknown to and unthought of by the multitude—have for many generations been

successfully encountered by science, capital, and by almost super-human physical exertion; and it was accordingly, as we have stated, from beneath the surface of Great Britain that an organised corps of civil engineers, who, like those we have named, had regularly served as apprentices, arose, in the emergency of a moment, to assist their eminent brother engineers above ground, in constructing for the country the innumerable railways so suddenly required.

CHAPTER II.

ON THE MAINTENANCE OF THE PERMANENT WAY.

As soon as an infant railway can run alone—we mean as soon as its works are all constructed, its permanent way finished, its buildings executed, its locomotive engines as well as its carriages constructed, and its whole establishment of officers and men appointed and organised—the chief engineer, like a month-nurse, usually departs to new troubles, leaving the maintenance of the way to those of his assistants whom he considers, and who in the opinion of the Directors of the Company are deemed, the most competent to execute its various details.

The manner in which this important duty is performed on the London and North-Western Railway is very briefly as follows:—

The line is, according to the nature of its works, divided into distances of from 17 to 30 miles, to each of which there is appointed “*an overlooker*,” whose district is subdivided into “lengths” of one or two miles, to each of which is appointed “*a foreman*,” with his gang of two or three men.

Every morning before the first train passes, the foreman is required to walk over his length, not only generally to inspect it, but especially to ascertain that each of the wooden keys which secure the rails are firmly fixed; and in case of any deficiency, his first operation is to put up, 800 yards above the point, a signal flag, which flies until the necessary repair is executed.

The ambition of the superintendent of the division is, however, to execute all necessary repairs not only with the utmost promptitude and despatch, but, if possible, without impeding the passage of the public; and considering the number of up and down passenger, goods, and coal trains (vide ‘Bradshaw’s List’) that are continually passing along the line, the success with which this object can, in railway management, be practically attained is worthy of explanation. For instance—

1. In February, 1848, three miles of single rails were relaid by the Company's engineer in Kilsby Tunnel; 125 men and one ballast-engine being employed in this work for four weeks, without stopping the public.

2. The Beech Wood Tunnel (situated about five miles north of Coventry, and about 300 yards in length) was entirely relined with bricks. Two hundred workmen were employed in this troublesome operation for about six weeks without a single accident, and without stopping the public, who, indeed, probably, during the whole period of the repair, passed through without being even aware of the execution of the job.

3. Between June, 1845, and October, 1848, the Company's engineer of the Southern District relaid 57 miles of single line of railway without stopping a train and without accident.

At the Agricultural Meeting at Northampton in July, 1847, upwards of 11,000 persons were sent to Northampton, and 13,000 returned in the evening, the carriages they occupied forming one mass as far as the eye could reach. From the Company's returns it appears that, of the above number, not a single person received any injury; and although, from some unaccountable reason, a good many of them on their return walked, it is whispered, zigzaggedly, only two out of the whole number were despatched to wrong destinations.

As the above facts require no comment, it is merely necessary to explain by what description of arrangements the works of a great railway can be repaired and renewed without stopping the public.

The two following specimens of the directions issued on such occasions by the Company's superintendent will best give the information required:—

LONDON AND NORTH-WESTERN RAILWAY.

*Superintendent's Office, Euston Station,
22nd January, 1848.*

RELAYING THE RAILS IN THE KILSBY TUNNEL.

The Engineer Department have given notice that the workmen are ready to commence removing the stone blocks and relaying the rails in the Kilsby Tunnel.

The Electric Telegraph having been laid through the Tunnel, the

work is to commence on the night of Wednesday the 2nd of February, and during its continuance the traffic is to be conveyed over one Line from the passing of the Up Lancashire Express Train (say 9 P.M.) until 8 o'clock the following morning, when the Up Line is to be clear for the passage of the 7 A.M. Train from Birmingham.

The passage of the Trains through the Tunnel during the night is to be under the following regulations:—

The *Red* Signal is to be kept on at each entrance to the Tunnel during the hours the traffic has to pass over the same Line; and every Train, whether Up or Down, is to stop short of the Cross Road laid down at the Tunnel mouth.

As a guide to the Drivers where to stop, a Post has been erected, upon which a Red Light will be shown, and beyond which the Engine is not to advance.

As a further precaution during the hours of relaying, the *Green* Signal is to be shown at Crick, and by the Policeman stationed at Hillmorton Ballast Pit, as notice to the Drivers in either direction to shut off the steam.

On the approach of a Train to either entrance, the Policeman on duty is to sound the Telegraph Bell, whereupon the Policeman at the other end will respond by sounding his Bell; and immediately after telegraph “*Line clear*,” or “*Line blocked*,” as the case may be.

If the answer be “*Line clear*,” the Train is to be allowed to enter the Tunnel, the Policeman at the entrance telegraphing back to the other end “*Train in*,” whereupon he will not again telegraph, or allow any Engine to enter the Tunnel, until he receives Telegraph Notice from the other end “*Train out*.”

The same process and precaution is to be observed with every Train that may arrive, and no Signal is to be considered received and understood until responded to.

Whichever end first rings the bell to announce the approach of a Train, that Train is to have the precedence, and a Train arriving at the other end is to be kept clear of the Crossing Points until the first announced Train has passed, when, after telegraphing “*Train out*,” and getting the response from the other end, the Policeman at that end will ring his bell as notice that he has a Train waiting to enter, which is to be allowed to proceed after passing the Signals as before described.

Three Policemen are also to be stationed in the Tunnel with Fog Signals and Hand Lamps, to signal the Trains as they pass through; and one additional at each entrance, to assist in the Signals and crossing the Trains.

The Drivers are to be strictly enjoined to approach the Tunnel with caution, as a Train may be standing outside, and on passing through they are to be prepared to bring their Train to a stand, should it be necessary to stop unexpectedly.

H. P. BRUYERES.

LONDON AND NORTH-WESTERN RAILWAY.

*Superintendent's Office, Euston Station,
30th August, 1848.*

RELAYING OF THE UP LINE BETWEEN BERKHAMPTSTAD AND TRING.

The Engineer Department have notified that they are prepared to relay a portion of the Up Line, between the 27 $\frac{1}{2}$ and 30 Mile Posts, north of Berkhamptstead Station.

The plate-layers are to work at the undermentioned times, viz. :—

From 3.50 A.M. to 5.40 A.M.

That is, after the passing of the 12.15 Night Mail Passenger Train from Birmingham, until the 2.0 A.M. Goods Train from Rugby becomes due. Again—

From 7.50 A.M. to 8.55 A.M.

That is, after the passing of the 6.45 A.M. Wolverton Passenger Train, until the 7.15 A.M. Passenger Train from Northampton becomes due. Again—

From 9.55 A.M. to 10.50 A.M.

That is, after the passing of the 7.0 A.M. Passenger Train from Birmingham, until the 9.45 A.M. Passenger Train from Bedford becomes due. Again—

From 12.40 Noon to 1.50 P.M.

That is, after the passing of the 10.35 Goods Train from Wolverton, until the 10.30 A.M. Passenger Train from Birmingham becomes due, when the relaying will cease for the day.

The interval from 12.40 Noon to 1.50 P.M. for relaying will be allowed daily, except on Thursdays and Saturdays, on which days, in consequence of the Up Special Cattle Trains, the relaying is to cease after the third interval, viz. at 10.50 A.M.

Although all the Up Trains will travel on their own line, should any arrive out of course during the hours the Relaying Party are engaged, they are not to proceed forward on their journey until advised by the Policeman engaged with the Workmen that the Line is ready for their passage.

Until the relaying be reported complete, the Drivers and Guards of

all Up Trains are to be instructed before leaving Wolverton that they are to be in readiness to stop on the instant the Policeman engaged with the Working Party signals them to do so.

A Policeman is to be specially appointed to attend the Working Party, and stop any Train should it be necessary.

The work to commence on Friday next, the 1st of September.

No Pilot Engine is to be allowed to leave Tring on its return to London during the time of the four intervals allotted to the Relaying Party.

(Signed) H. P. BRUYERES.

In cases of slips of embankments or other heavy accidents of any description, the Company's engineer is prepared to collect and forward to the spot with the utmost possible despatch the amount of men and materials required.

Having concluded a very faint outline of the difficulties attendant upon the construction of a great railway, and upon the maintenance of its permanent way, we will now proceed very briefly to describe the practical working of the whole concern.

CHAPTER III.

THE TRAINS—EUSTON.

The Down Train.

ON arriving in a cab at the Euston Station, the old-fashioned traveller is at first disposed to be exceedingly pleased at the new-born civility with which, the instant the vehicle stops, a porter, opening its door with surprising alacrity, most obligingly takes out every article of his luggage; but so soon as he suddenly finds out that the officious green straight-buttoned-up official's object has been solely to get the cab off the premises, in order to allow the string of variegated carriages that are slowly following to advance—in short, that, while he has been paying to the driver, say only two shining shillings, his favourite great-coat, his umbrella, portmanteau, carpet-bag, Russia leather writing-case, secured by Chubb's patent lock, have all vanished—he poignantly feels, like poor Johnson, that his “patron has encumbered him with help;” and it having been the golden maxim of his life never to lose sight of his luggage, it gravels and dyspepsias him beyond description to be civilly told that on no account can he be allowed to follow it, but that “*he will find it on the platform;*” and truly enough the prophecy is fulfilled; for there he does find it on a barrow in charge of the very harlequin who whipped away, and who, as its guardian angel, hastily muttering the words “*Now then, Sir!*” stands beckoning him to advance.

The picture of the departure of one of the large trains from the Station at Euston Square, however often it may have been witnessed, is worthy of a few moments' contemplation.

On that great covered platform, which, with others adjoining it, is lighted from above by 8797 square yards (upwards of an

acre and three-quarters) of plate-glass, are to be seen congregated and moving to and fro in all directions, in a sort of Babel confusion, persons of all countries, of all religions, and of all languages. People of high character, of low character, of no character at all. Infants just beginning life—old people just ending it. Many desirous to be noticed—many, from innumerable reasons, good, bad, and indifferent, anxious to escape notice. Some are looking for their friends—some, suddenly turning upon their heels, are evidently avoiding their acquaintance.

Contrasted with that variety of free and easy well-worn costumes in which quiet-minded people usually travel, are occasionally to be seen a young couple—each, like a new-born baby, dressed from head to foot in everything perfectly new—hurrying towards a coupé, on whose door there negligently hangs a black board—upon which there is printed, not unappropriately, in white bridal letters, the word “ENGAGED.”

Across this mass of human beings a number of porters are to be seen carrying and tortuously wheeling, in contrary directions, baggage and property of all shapes and sizes. One is carrying over his right shoulder a matted parcel, 12 or 15 feet long, of young trees, which the owner, who has just purchased them for his garden, is following with almost parental solicitude. Another porter, leaning as well as walking backwards, is attempting with his whole strength to drag towards the luggage-van a leash of pointer-dogs, whose tails, like certain other “tails” that we know of, are obstinately radiating from the couples that bind together their heads: while a number of newspaper-vendors, “fleet-footed Mercuries,” are worming their way through the crowd.

Within the long and apparently endless straight line of railway carriages which bound the platform, are soon seen the faces and caps of various travellers, especially old ones, who with due precaution have taken possession of their seats; and while most of these, each of them with their newspapers unfolded on their knees, are slowly wiping their spectacles, several of the younger inmates are either talking to other idlers leaning on their carriage-windows, or, half kissing and half waving their hands, are



bidding "farewell" to the kind friends who had accompanied them to the station.

Some months ago, at a crisis similar to that just mentioned, we happened to be ensconced in the far corner of a railway carriage, when we heard a well-known clergyman from Brighton suddenly observe to his next neighbour who sat between us, "*There must surely be something very remarkable in that scene!*" His friend, who was busily cutting open his *Record*, made no reply, but, as we chanced to witness the trifling occurrence alluded to, we will very briefly describe it. A young man of about twenty-two, of very ordinary height, dress, and appearance, was standing opposite to a first-class carriage just as the driver's whistle shrilly announced the immediate departure of the train. At this signal, without any theatrical movement, or affectation of any sort, he quietly reeled backwards upon a baggage-truck, which happened to be immediately behind him. Two elderly ladies beside him instantly set to work, first of all, most vigorously to rub with their lean fingers the palms of his hands—they might just as well have scrubbed the soles of his boots;—then they untied his neckcloth; but their affectionate kindness was of no avail. The train was probably separating him from something, or from some one. The movement however he had not witnessed, for the mere whistle of the engine had caused him to swoon! What corresponding effect of fainting or sobbing it may have produced on any inmate in that carriage before which he had long been standing, and which had just left him, we have no power to divine. It is impossible, however, to help reflecting what a variety of emotions must every day be excited within the train as well as on the platform at Euston Station by the scream or parting whistle which we have just described. From the murderer flying from the terrors of justice down to the poor brokenhearted creditor absconding from his misfortunes;—from our careworn Prime Minister down to the most indolent member of either House of Parliament—each simultaneously escaping after a long-protracted session;—from people of all classes going from or to laborious occupation, down to the schoolboy reluctantly returning to, or joyfully leaving, his

school;—from our Governor-General proceeding to embark for India, down to the poor emigrant about to sail from the same port to Australia—the railway-whistle, however unheeded by the multitude, must oftentimes have excited a variety of feelings which it would be utterly impossible to describe.

While the travellers of a train are peacefully taking their seats, artillery-men, horses, and cannon, on a contiguous set of rails, are occasionally as quietly embarking in carriages, horse-boxes, and trucks, which are subsequently hooked on to a mass of passengers perfectly unconscious of the elements of war which are accompanying them.

As a departing railway-train, like a vessel sailing out of harbour, proceeds on its course, its rate rapidly increases, until, in a very short time, it has attained its full speed, and men of business are then intently reading the “City news,” and men of pleasure the leading article of their respective newspapers, when this runaway street of passengers—men, women, and children—unexpectedly find themselves in sudden darkness, visible only by a feeble and hitherto unappreciated lamp, which, like the pale moon after a fiery sunset, modestly shines over their head. By this time the boarded platform at Euston Station, but a few minutes ago so densely thronged with passengers, is completely deserted. The lonely guard on duty, every footstep resounding as he walks, paces along it like a sentinel. The newspaper-vendors, sick unto death of the news they had been vaunting, are indolently reclining at their stalls; even the boy who sells ‘Punch’ is half asleep; and there is nothing to break the sober dulness of the scene but a few clerks and messengers, who, like rabbits popping from one hole of their warren into another, enter upon the platform from the door of one office to hurry into that of the next. In a few minutes, however, the loud puffing of an engine announces the approach towards the platform of a string of empty carriages, which are scarcely formed into the next departure train, when vehicles of all descriptions are again to be seen in our most public thoroughfares concentrating upon the focus of Euston Square; and thus, with a certain alleviation on Sundays, this strange feverish admixture of confusion and quiet-

ness, of society and solitude, continues intermittently from $\frac{1}{4}$ past 6 A.M. to 10 P.M. during every day in the week, every week in the month, and every month in the year.

The Up Train.

The out-train having been despatched, we must now beg our readers to be so good as to walk, or rather to scramble, with us from the scene of its departure across five sets of rails, on which are lying, like vessels at anchor in a harbour, crowds of railway-carriages preparing to depart, to the opposite platform, in order to witness the arrival of an incoming train. This platform, for reasons which will shortly appear, is infinitely longer than that for the departure trains. It is a curve 900 feet in length, lighted by day from above with plate-glass, and at night by 67 large gas-lamps suspended from above, or affixed to the iron pillars that support the metallic net-worked roof. Upon this extensive platform scarcely a human being is now to be seen; nevertheless along its whole length it is bounded on the off-side by an interminable line of cabs, intermixed with private carriages of all shapes, gigs, dog-carts, and omnibuses, the latter standing opposite to little ugly black-faced projecting boards, which by night as well as by day are always monotonously exclaiming, "*Holborn—Fleet Street—and Cheapside!*"—"Oxford Street—Regent Street—and Charing Cross!" &c.

In this motley range of vehicles, smart coachmen, tall pale powdered footmen, and splendid horses are strangely contrasted with the humble but infinitely faster conveyance—the common cab. Most of the drivers of these useful machines, strange to say, are absent; the remainder are either lolling on benches, or, in various attitudes, dozing on their boxes. Their horses, which are generally well-bred, and whose bent knees and fired hocks proclaim the good services they have performed, stand ruminating with a piece of sacking across their loins, or with nose-bags, often empty—until for some reason a carriage before them leaves their line: in which case, notwithstanding the absence of their drivers and regardless of all noises, they quietly advance along the edge of the little precipice which bounds the rails.

They there know quite well what they are waiting for, and have no desire to move. Indeed, it is a Pickwickian fact, well known to cab-drivers, that their horses travel unwillingly from the station, but always pull hard coming back, simply because it is during the waiting-time at Euston Station that their nose-bags are put on—or, in other words, that they are fed.

We may here observe that there are sixty-five selected cabmen who have the *entrée* to the platform, and who, *quamdiu se bene gesserint*, are allowed exclusively to work for the Company, whose name is painted on their cabs. If more than these are required, a porter calls them from a line of supplicant cabs standing in the adjacent street. Close to each departure-gate there is stationed a person whose duty it is to write down in a book the number of each cabman carrying away a passenger, as well as the place to which he is conveying him, which two facts each driver is required to exclaim as he trots by; and thus any traveller desirous to complain of a cabman, or who may have left any property in a carriage from Euston Station, has only to state on what day and by what train he arrived, also whither he was conveyed, and from these data the driver's name can at any lapse of time be readily ascertained.

But our attention is suddenly claimed by something of infinitely more importance than a passenger's luggage: for that low unearthly whine within the small signal-office behind the line of cabs and carriages requires immediate explanation.

The variety of unforeseen accidents that might occur by the unwelcome arrival of an unexpected or even of an expected passenger-train at the great terminus of the London and North-Western Railway are so obvious that it has been deemed necessary to take the following precautions.

As soon as the reeking engine-funnel of an up-train is seen darting out of the tunnel at Primrose Hill, one of the Company's servants stationed there, who deals solely in compressed air—or rather, who has an hydraulic machine for condensing it—allows a portion to rush through an inch iron pipe; and he thus instantaneously produces in the little signal-office on the up-platform of Euston Station, where there is always a signal-man watching

by night as well as by day, that loud melancholy whine which has just arrested our attention, and which will continue to moan uninterruptedly for five minutes:—

“ Hic vasto rex Æolus antro
Luctantes ventos tempestatesque sonoras
Imperio premit, ac vinclis et carcere frenat.
Illi indignantes magno cum murmure fremunt.”

The moment this doleful intimation arrives, the signal-man, emerging from his little office, touches the trigger of a bell outside his door, which immediately in two loud hurried notes announces to all whom it may concern the arrival at Camden Station of the expected up-train; and at this moment it is interesting to watch the poor cab-horses, who, by various small muscular movements, which any one acquainted with horses can readily interpret, clearly indicate that they are perfectly sensible of what has just occurred, and quite as clearly foresee what will very shortly happen to them.

As soon as the green signal-man has created this sensation among bipeds and quadrupeds, taking with him the three flags, of danger (red), caution (green), and security (white), he proceeds down the line a few yards to a point from which he can plainly see his brother signal-man stationed at the mouth of the Euston tunnel. If any obstruction exists in that direction, the waving of the red flag informs him of it; and it is not until the white one from the tunnel as well as that from the station-master on the platform have reported to him that “all is clear” that he returns to his important but humble office (12 feet in length by 9 in breadth) to announce, by means of his compressed-air apparatus, this intelligence to the ticket-collector at Camden Station, whose strict orders are, on no account whatever to allow a train to leave his platform until he has received through the air-pipes, from the signal-office at Euston Station, the Company’s lugubrious authority to do so.

In the latter office there are also the dial and wires of an electric telegraph, at present inoperative. The signal-man, however, mentioned to us the following trifling anecdote, as illus-

trative of the practical utility of that wonderful invention, which has so justly immortalized the names of Cooke and Wheatstone. An old general officer, who, from his residence some miles beyond Manchester, had come up to Euston Station on an invitation from the East-India Directors to be present at the dinner to be given by them to Lord Hardinge, found on his arrival that it would be necessary he should appear in regimentals: and the veteran, nothing daunted, was proposing to return to Manchester, when the signal-man at Euston advised him to apply for them by electric telegraph. He did so. The application, at the ordinary rate of 280,000 miles (about twelve times the circumference of the earth) *per second*, flew to Manchester; in obedience to its commands a porter was instantly despatched into the country for the clothes, which, being forwarded by the express train, arrived in abundant time for the dinner. The charge for telegraph and porter was 13s. 8d.

About four minutes after the up-train has been authorised by the air-pipe to leave Camden Station, the guard who stands listening for it at the Euston tunnel, just as a deaf man puts his ear to a trumpet, announces by his flag its immediate approach; on which the signal-man at the little office on Euston platform again touches his trigger, which violently convulsing his bell as before, the cab-horses begin to move their feet, raise their jaded heads, prick up their ears, and champ their bits; the servants in livery turn their powdered heads round; the Company's porters, emerging from various points, quickly advance to their respective stations; and this suspense continues until in a second or two there is seen darting out of the tunnel, like a serpent from its hole, the long dark-coloured dusty train, which, by a tortuous movement, is apparently advancing at its full speed. But the bank-riders, by applying their breaks—without which the engineless train merely by its own gravity would have descended the incline from Camden Station at the rate of forty miles an hour—soon slacken its speed, until the Company's porters at a brisk walk are preparing to unfasten one after another the doors of all the carriages.

While they are performing this popular duty, numerous salu-

tations, and kissings of hands of all colours and sizes, are seen to pass between several of the inmates of the passing train and those seated in or on the motley line of conveyances standing stock still which have been awaiting their arrival. A wife suddenly recognises her husband, a mother her four children, a sister her two dear brothers; Lord A. B. politely bows to Lady C. D.; John, from his remote coach-box, grins with honest joy as faithful Susan glides by; while Sally bashfully smiles at "a gentleman" in plush breeches reclining in the rumble of the barouche behind it.

As soon as the train stops, a general "*sauve qui peut*" movement takes place, and our readers have now an opportunity of observing that, just as it is hard to *make* money, easy to spend it, so, although it consumes at least twenty minutes to fill and despatch a long train, it scarcely requires as many seconds to empty one. Indeed, in less than that short space of time the greater number of the railway carriages are often empty!

When every person has succeeded in liberating himself or herself from the train, it is amusing to observe how cleverly, from long practice, the Company's porters understood the apparent confusion which exists. To people wishing to embrace their friends—to gentlemen and servants darting in various directions straight across the platform to secure a cab or in search of private carriages—they offer no assistance whatever, well knowing that none is required. But to every passenger whom they perceive to be either restlessly moving backwards and forwards, or standing still, looking upwards in despair, they civilly say "*This way, Sir!*" "*Here it is, Ma'am!*"—and thus, knowing what they want before they ask, they conduct them either to the particular carriage on whose roof their baggage has been placed, or to the luggage-van in front of the train, from which it *has* already been unloaded on to the platform; and thus, in a *very* few minutes after the convulsive shaking of hands and the feverish distribution of baggage have subdivided, all the cabs and carriages have radiated away—the parti-coloured omnibuses have followed them—even the horses, which in different clothing have been disembarked, have been led or ridden away—and, the foot-

passengers having also disappeared, the long platform of the incoming train of the Euston Station remains once more solely occupied by one or two servants of the Company, hemmed in by a new line of expectant cabs and omnibuses. Indeed, at various periods of the day, a very few minutes only elapse before, at the instigation of compressed air, the faithful signal-bell is again heard hysterically announcing the arrival of another train at Camden Station.

In a clear winter's night the arrival of an up-train at the platform before us forms a very interesting picture.

No sound is heard in the cold air but the hissing of a pilot engine, which, like a restless spirit advancing and retrograding, is stealing along the intermediate rails, waiting to carry off the next down-train; its course being marked by white steam meandering above it and by red-hot coals of different sizes which are continually falling from beneath it. In this obscure scene the Company's interminable lines of gaslights (there are 232 at the Euston Station), economically screwed down to the minimum of existence, are feebly illuminating the damp varnished panels of the line of carriages in waiting, the brass doorhandles of the cabs, the shining haims, brass browbands and other ornaments on the drooping heads and motionless backs of the cab-horses; and while the blood-red signal lamp is glaring near the tunnel to deter unauthorised intrusion, the stars of heaven cast a faint silvery light through the long strips of plate-glass in the roof above the platform. On a sudden is heard—the stranger hardly knows whence—the mysterious moan of compressed air, followed by the violent ringing of a bell. That instant every gaslight on and above a curve of 900 feet suddenly bursts into full power. The carriages, cabs, &c. appear, comparatively speaking, in broad daylight, and the beautiful iron reticulation which sustains the glazed roof appears like fairy work.

CHAPTER IV.

THE RAILWAY CARRIAGES.

WE will now proceed to detail a few circumstances respecting the railway carriages, about which our readers have probably never cared to inquire.—And, *firstly*, as soon as an up-train arrives at the commencement of the Euston platform, while it is still in motion, and before its guard—distinguished by a silver-buckled black shiny patent-leather belt, hanging diagonally across the white buttons of his green uniform-coat—has ventured with practised skill to spring from the sideboard of the train to the platform, two greasy-faced men in canvas jackets, with an oil-can in each of their right hands and with something like a mophead of dirty cotton hugged under each of their left arms, are to be seen running on each side of the rails below in pursuit of the train; and while the porters, holding the handles of the carriage doors, to prevent any traveller from escaping, are still advancing at a brisk walk, these two oilmen, who have now overtaken the train, diligently wipe as they proceed the dust and perspiration from the buffer-rods of the last carriage. As soon as these irons are perfectly clean and dry rubbed, they oil them from their can; and then—crawling beneath the open doors of the carriages and beneath the feet and ankles of a crowd of exuding travellers of all ages, who care no more for oilmen than the oilmen of this world care for them—they hurry to the buffer-rods of the next carriage—and so rapidly do they proceed, that before the last omnibus has driven off, the buffer-rods of the whole train are as bright as when new. But, *secondly*, these two men have been closely followed by two others in green jackets—one on each side of the carriage—who deal solely in a yellow composition of tallow and palm-oil. Carrying a wooden box full of this ointment in one hand and a sort of short flat salve-knife in the other,

they open with the latter the small iron trap-doors which cover the receptacles for greasing the axles, restore whatever quantity has been exhausted, and then, closing with a dexterous snap the little unctuous chamber over which they preside, they proceed to the next tallow-box ; and thus, while the buffer-rods of the whole train are being comfortably cleaned and greased, the glistening axles of the carriages are simultaneously fed with luxurious fat.

Thirdly, while these two operations are proceeding in the lower region, at about the same rate two others are progressing, one inside the carriages and the other on their roofs ; for on the arrival of every passenger-train, the carriage "*searcher*," also "beginning at the end," enters every carriage, lifts up first all the stuffed blue seats, next the carpet, which he drops in a heap in the middle of the carriage, and then, inquisitively peeping under the two seats, he leaves the carriage, laden with whatever article or articles may have been left in it, to continue his search throughout the train. The inconceivable number and variety of the articles which he collects we shall shortly have occasion to notice. *Fourthly*, above the searcher's head, on the roof, and following him very closely in his course, there "sits up aloft" a man called a "*strapper*," whose sole duty it is, on the arrival of every train, to inspect, clean, shampoo, and refresh with cold-drawn neat's-foot oil the luggage-straps, which, in consequence of several serious accidents that have occurred from their breaking, are now lined inside with strong iron wire. It is the especial duty of this inquisitor to condemn any straps that may be faulty, in order that they may be immediately replaced.

As soon as these four simultaneous operations are concluded, directions are given by the station-master to remove the up-carriages from their position, that the rails may be clear for the arrival of the next train. At this word of command a pilot-engine, darting from its lurking place like a spider from its hole, occasionally hisses up to the rear of the train, and drags it off bodily into a siding. The usual mode, however, of getting an in-train out of the way is by the assistance of various unnoticed turn-tables, upon which portions of it are standing. By these simple contrivances the carriages, after being unhooked from

each other, are rapidly carried off into the sidings, where they are arranged, according as they may afterwards be required, among the five sets of rails which lie between the opposite platforms of the arrival and departure trains. No sooner, however, do they reach this haven, than, *fifthly*, a large gang of strong he-housemaids, clattering towards them in wooden shoes and in leather leggings rising above their bony knees, are seen advancing; some with mops in their hands, others with large chamois leathers, while others are carrying on their shoulders a yoke, from which are suspended *in equilibrio* two pails. From pipes on each side of these five sets of rails water is immediately drawn off, and the busy operation of washing then begins. Half a dozen dusty, dirty-faced, or rather dirty-bodied, carriages are simultaneously assailed on each of their sides by wet mops flying up, down, and around in all directions. The wielders of these, be it noticed, are so skilful in their vocation, that, while they are talking to their "pailers," they with great velocity continue to mop round the wood-work of the various-shaped plate-glass windows just as vigorously and as accurately as if they were looking at them; indeed, it is evident that they know the position of railway-carriage doors, windows of all forms, handles, steps, &c., so accurately, that they could mop a coach clean in the dark;—and probably they often go through these motions when they are asleep, just as King Richard III. in his dream called for his horse and for linen bandages—just as the sleeping orator ejaculates portions of his last speech—and just as an equally tired outstretched fox-hound during the night occasionally convulsively kicks with his uppermost hind leg and yelps aloud when he thinks of the view he got of Renard as he first gallantly broke away from — gorse. It may possibly not be known to some of the most fashionable of our readers that among "moppers" there exist the same gradations which so distinctly separate other classes of society. A "first-class mopper" would on no account demean himself by mopping a second-class carriage, and in like manner a "second-class mopper" only attains that distinction after he has for a sufficient length of time been commissioned to mop horse-boxes and common luggage-trains.

After the passenger-carriages are all washed and dried, they are minutely examined, *sixthly*, by one or more of the foremen of the coach department, who order off to their adjoining establishment any that may require repair. Those that remain are then visited, lastly, by "*the duster*," who enters each carriage with a cloth, a leather, a brush, and a dust-pan, with which apparatus he cleans the windows, wipes the wood-work, brushes the blue cloth seats, sides, and backs—and when this operation is concluded, the carriages are reported fit to depart, and accordingly are then marshalled into trains for that purpose.

Coach Department.

The new carriages for the southern division of the London and North-Western Railway are principally built by contract in the City by Mr. Wright, who also supplies carriages for other English railways, as well as a great number for Germany. The Company's establishment at Euston Station, which is therefore principally for the maintenance of carriages of various descriptions running between London and Birmingham, consists of a large area termed "*the Field*," where, under a covering almost entirely of plate-glass, are no less than fourteen sets of rails, upon which wounded or spare carriages lie until doctored or required. Immediately adjoining are various workshops, the largest of which is 260 feet in length by 132 in breadth, roofed with plate-glass, lighted by gas, and warmed by hot air. In this edifice, in which there is a strong smell of varnish, and in the corner of which we found men busily employed in grinding beautiful colours, while others were emblazoning arms on panels, are to be seen carriages highly finished as well as in different stages of repair. Among the latter there stood a severely wounded second-class carriage. Both its sides were in ruins, and its front had been so effectively smashed that not a vestige of it remained. The iron-work of the guard's step was bent completely upwards, and a tender behind was nearly filled with the confused *débris* of its splintered wood-work—and yet, strange to say, a man, his wife, and their little child, who had been in this carriage during

its accident, had providentially sustained no injury ! Close to this immense warehouse we found a blacksmith's shop seventy-five feet square, lighted from the roof with plate-glass, containing in the centre a large chimney, around which there were simultaneously at work fourteen forges, blown by a steam-engine of seventeen-horse power, which works machinery in two other shops. As, however, we shall have occasion to describe the Company's coaching establishment at Crewe, we will abruptly take leave of the details before us.

CHAPTER V.

LOST LUGGAGE OFFICE.

AT a short distance from the terminus of the up-trains there is a foundling-office, termed the Lost Luggage Office, in which are received all articles which the passengers leave behind them, and which on the arrival of every train are brought by the Company's "searcher" to this office. The superintendent on receiving them records in a book a description of each article, stating on what day, by what train, in what carriage it arrived, and by whom found. All luggage bearing an address is kept about forty-eight hours, and, if during that time no one calls for it, it is then forwarded by rail or other conveyance to its owner. In case it bears no address, if not inquired after, it is after a month opened; and if any clue to the owner can be found within, a letter is addressed to him. If no clue be found, the property is kept about two years, and has hitherto been then sold by auction in the large coach-factory to the Company's servants—a portion of the proceeds being handed over to the sick-fund for persons who have been hurt in the service, and the remainder to "the Friendly Society" among the men. It having, however, been ascertained that a few of the Railway men who had spare cash purchased the greater portion of these articles, it has, we understand, very lately been determined henceforward to sell the whole of this property by auction *exclusively to the public*; and as the Company's servants are not allowed to be purchasers, they can no longer derive any benefit whatever from lost property, which must often be of inestimable value to its owner, and which they therefore should have no interest, direct or indirect, in concealing from him.

A second ledger, entitled "*Luggage Inquiry Book*," is kept in this office, and, if the articles therein inquired after have not

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been brought in by the searcher, copies of the description are forwarded to each of the offices where lost luggage is kept ; for, by the Company's orders, all luggage found between Wolverton and London is without delay forwarded to the latter station, all between Wolverton and Birmingham to Birmingham, and so on.

It is possible, however, that the above orders may not have been attended to, and therefore, as a last resource, the superintendent of the Lost Luggage Office at Euston Station applies to the manager of the Railway Clearing House, who writes to 310 stations on forty-seven lines of rails to inquire after a lost article, be it ever so small, and if it be at none of these stations a letter is then addressed to the owner, informing him that his lost property *is not on the railway*.

In the office in which these ledgers and letter-books are made up are to be seen on shelves and in compartments the innumerable articles which have been left in the trains during the last two months, each being ticketed and numbered with a figure corresponding with the entry-book in which the article is defined. Without, however, describing in detail this property we will at once proceed to a large pitch-dark subterranean vaulted chamber, warmed by hot-air iron pipes, in which are deposited the flock of lost sheep, or, without metaphor, the lost luggage of the last two years.

Suspended from the roof there hangs horizontally in this chamber a gas-pipe about eight feet along, and as soon as the brilliant burners at each end were lighted the scene was really astounding. It would be infinitely easier to say what there is not, than what there is, in the forty compartments like great wine-bins in which all this lost property is arranged. One is choke-full of men's hats, another of parasols, umbrellas, and sticks of every possible description. One would think that all the ladies' reticules on earth were deposited in a third. How many little smelling-bottles—how many little embroidered pocket-handkerchiefs—how many little musty eatables and comfortable drinkables—how many little bills, important little notes, and other very small secrets each may have contained, we felt that we would not for the world have ascertained ; but when we gazed at the

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enormous quantity of red cloaks, red shawls, red tartan-plaids, and red scarfs piled up in one corner, it was, we own, impossible to help reflecting that surely English ladies of all ages who wear red cloaks, &c., must in some mysterious way or other be powerfully affected by the whine of compressed air, by the sudden ringing of a bell, by the sight of their friends—in short, by the various conflicting emotions that disturb the human heart on arriving at the up-terminus of the Euston Station; for else how, we gravely asked ourselves, could we possibly account for the extraordinary red heap before us?

Of course, in this Rolando-looking cave there were plenty of carpet-bags, gun-cases, portmanteaus, writing-desks, books, bibles, cigar-cases, &c.; but there were a few articles that certainly we were not prepared to meet with, and which but too clearly proved that the extraordinary terminus-excitement which had suddenly caused so many virtuous ladies to elope from their red shawls—in short, to be all of a sudden not only in “a bustle” behind, but all over—had equally affected men of all sorts and conditions.

One gentleman had left behind him a pair of leather hunting-breeches! another his boot-jack! A soldier of the 22nd regiment had left his knapsack containing his kit! Another soldier of the 10th, poor fellow, had left his scarlet regimental coat! Some cripple, probably overjoyed at the sight of his family, had left behind him his crutches!! But what astonished us above all was, that some honest Scotchman, probably in the extasy of suddenly seeing among the crowd the face of his faithful *Jeanie*, had actually left behind him the best portion of his bagpipes!!!

Some little time ago the superintendent, on breaking open, previous to a general sale, a locked leather hat-box, which had lain in this dungeon two years, found in it, under the hat, 65*l.* in Bank of England notes, with one or two private letters, which enabled him to restore the money to the owner, who, it turned out, had been so positive that he had left his hat-box at an hotel at Birmingham that he had made no inquiry for it at the railway-office.

CHAPTER VI.

PARCEL DELIVERY OFFICE.

BESIDES what is termed "the goods traffic," or the conveyance of heavy goods in luggage-trains, the London and North-Western Railway Company have for some time undertaken to forward by their passenger-trains, to the various stations on as well as beyond their lines, light parcels, for the conveyance and delivery of which, charges, of which the following are a sample, are made:—

For parcels under 12 lbs. weight:—	<i>s.</i>	<i>d.</i>
From London to any part of Birmingham and <i>vice versa</i>	1	0
For distances under 160 miles	1	6
" " 210 miles	2	0
From London to Durham, Carlisle, or Newcastle	3	0
From London to Edinburgh or Glasgow	4	0

The above charges include portorage and delivery of the parcels. In London, however, the delivery is limited to within three miles of the General Post-office, or say six miles from Euston Square.

The mode in which the business of this department is conducted at Euston Station is briefly as follows:—

The superintendent of the department sits in an elevated room, the sides of which being glazed enable him to look down on his right and left into two offices, both of which communicate on the south with the street by which parcels arrive from or depart to various parts of the metropolis, and on the north side with a branch railway leading into the main line. The floor of one of these two offices is generally covered with baskets, brown-paper parcels of all sizes, game, triangular boxes of wedding-cake, and other articles, which have just arrived by rail from all

parts of England, Ireland, and Scotland; that of the other with a multitude of parcels to be forwarded by rail to similar destinations. In the daytime the down parcels are despatched from the office in the break-waggons of various passenger-trains, and the following locked-up vans laden with small parcels are also forwarded every night:—

2 vans for Birmingham,	1 van for Newcastle,
1 „ Manchester,	1 „ Derby,
1 „ Liverpool,	1 „ Nottingham.
1 „ Carlisle and Lancaster,	

The number of parcels thus conveyed to and from London and the North amounted, in the year 1847, to 787,969, and in the year 1848 to 774,464; of the latter number it appears that only two were lost. The manner in which all these little parcels are circulated throughout the country is as follows:—

As soon as the empty railway vans arrive by the branch-rail close to the north side of the parcels-office, a porter, who, assisted by his comrades, has for some time previously been arranging the parcels into heaps according to their respective destinations, commencing with one set of them and rapidly taking up parcel after parcel, exclaims in a loud monotonous tone, easily enough set to music, inasmuch as it is exactly the middle note of a stout porter's voice, and which never varies for a moment during the whole operation—

“ Now *Leighton*.

“ A paper for Hancock, of —, light.

“ A basket for Wagstaff, of —, out 8*d.*, light.

“ A box for Tomkins, of —, weighs (he puts it into an index-scale at his right hand, and in about three seconds adds) 26 pounds.

“ A paper for Jones, of —, out 4*d.*

“ Now *Leamington*.

“ A paper for S. on Avon (the porter never says *Stratford*) for —, light,” &c. &c.

As fast as this chanting porter drawls out his facts the chief clerk indelibly records them, convulsively snatching up at each change of station the particular book of entry which belongs to

it. Another clerk at each exclamation hands over to a porter a bill for the cost of conveyance, which he pastes to every parcel. For all articles declared by the first porter to be "*light*," by which he means that they do not exceed twelve pounds weight—(by far the greater number are of this description)—the charge on the paper to be affixed is ready printed, which effectually prevents fraud; but where the weight *exceeds* twelve pounds, or where any sum has been paid out, the charges are unavoidably inserted in ink. The velocity with which all these little parcels are booked, weigh-billed, placed into hand-trucks, wheeled off to their respective vans, packed, locked up, and then despatched down the little branch-rail to the main line, on which is the train ready to convey them, is very surprising. While witnessing the operation, however, we could not help observing that the Company's porters took about as much notice of the words "Keep this side uppermost," "With care," "Glass," "To be kept very dry," &c., as the Admiralty would to an intimation from some dowager-duchess that her nephew, who is about to join the Thunderer as a midshipman, "has rather a *peculiar constitution*, and will therefore require for some years *very particular care*."

During Christmas week the number of railway parcels that flow into and ebb out of London is so enormous, that extra accommodation, as well as preparations, are necessary for their reception and despatch; and as we chanced to arrive from the country at Euston Station on Saturday the 23rd of December last, we will endeavour briefly to describe the scenes which for a very few minutes we stopped to witness.

A considerable portion of the space usually allowed for the disembarkation of the passengers arriving by the up-trains had been cut off by a lofty partition, or, as it is now-a-days termed, a barricade, behind which, instead of red republicans armed with loaded muskets, we were exceedingly happy to find nothing but phalanxes, solid squares, columns, and pyramids of small parcels, the destinations of which in large letters were chalked on consecutive compartments of the north wall of the Euston territory, as follows:—

“ OVER THE WATER.” “ FINSBURY.”
“ STRAND.” “ SQUARES.” “ CLERKENWELL.”
“ ISLINGTON.” “ KINGSLAND.”
“ CAMDEN TOWN.”
“ CITY.” “ WEST END.”
“ WESTMINSTER.”
“ PIMLICO.”

As soon as we had rapidly glanced over the tarpaulin-covered-in arrangements above described, which had been made for the reception of parcels *for* London, we hurried across the five sets of rails that separate the platforms of the in and out trains to the “Parcels Delivery Office,” both departments of which we found had been exclusively devoted for the week to the reception and despatch of parcels *from* London to the country. On the floor of each of the offices we have already described we saw piled to a considerable height masses of parcels, which it was evident could scarcely be despatched as rapidly as they were arriving. The clerks, the assistants, as well as the extra persons who had been engaged, all appeared more or less exhausted. The accountant—the recording angel of the establishment—looked deadly pale, while the voices of the chanting porters were, to a pitiable degree, weaker and fainter than when we had last heard them; indeed, the whole establishment had evidently been overwhelmed with parcels which the Company’s servants were still collecting, receiving, lifting, driving, wheeling, turning, twisting, weighing, pasting, labelling, and hallooing at, and yet, notwithstanding the rapidity with which they were despatched by rails, vans, waggons, carts, and busses, they were arriving, if possible, faster than ever!

Now, after this afflicting description of the plague of parcels which during Christmas week annually infests and infects the Euston Station, our readers will, no doubt, feel somewhat alarmed when we state that we propose to inform them in detail of the contents of each!

The job, however, is easily performed, for in these parcels

there are neither gold, silver, jewels, pictures, nor books—they contain neither covering for the body nor consolation for the mind—they belong neither to the vegetable nor to the mineral kingdom—in short, they are simply composed of good, plain, honest eatables, bequeathed by British hearts, addressed by British hands to British stomachs of all classes of society.

But as our arterial blood is of one colour, while that which returns through our veins is of another, so is there a most remarkable difference in the character of these flowing and ebbing parcels: all those which have come *into* London being either deceased turkeys or game, while the outgoing or outward-bound parcels are, with scarcely an exception, composed of barrels of live oysters, several of which are accompanied by a good heavy basket of fish. The number of barrels thus despatched from Euston Station within twenty-four hours amounted to 5009, and, as a hundred oysters are usually packed in each barrel, it is strange to think of half a million of “natives” leaving London in one day for the express purpose of wishing “a merry Christmas and a happy new year” to those whose hares, pheasants, partridges, rabbits, turkeys, and chickens have inanimately come to the metropolis on the very same day on the very same errand! To the above “bills of fare” we may add, that during last Christmas week no less than 450 waggons of live cattle arrived at Camden Station within the space of twenty-four hours.

CHAPTER VII.

THE LOCOMOTIVE ENGINE.—CAMDEN.

CONSIDERING how many fine feelings and good feelings adorn the interior of the human heart, it is curious to observe with what facility we can put them all to sleep, or, if they won't sleep, stupify ourselves, at any moment when it becomes inconvenient to us to listen to their friendly admonitions. All the while mailing, coaching, and posting were in fashion, every man's countenance beamed—every person's tongue gabbled freely as it described not only "*the splendid rate*" (say ten miles an hour) at which he had travelled, but the celerity with which no sooner had the words "*First turn-out!*" been exclaimed by the scout, who vanished as soon as he had uttered them, than four horses in shining harness had appeared half hobbling half trotting from under the archway of the Red Lion, the Crown, or the Three Bells, before which the traveller had from a canter been almost suddenly pulled up, to receive various bows, scrapes, and curtsies from the landlord and his rosy-faced cap-beribboned wife. But, although we could all accurately describe our own enjoyments, and, like Johnson, expatiate on "the delightful sensations" we experienced in what we called *fast travelling*, who among us ever cared to ascertain, or even for a single moment to think of, the various arrangements necessary for watering, feeding, cleaning, and shoulder-healing all the poor horses whose "brilliant" performances we had so much admired? Whether they slept on straw or on stones—indeed, whether they slept at all—what was their diet—what, if any, were their enjoyments—what were their sufferings—and, lastly, how and where they eventually died—it would have been deemed exceedingly vulgar to inquire; and so, after with palpitating flanks and panting nostrils they had once been unhoused from our splinter-bars,

“Where they went, and how they fared,
No man knew, and no man cared!”

In a similar way we now chloroform all kindly feelings of inquiry respecting the treatment of the poor engine-drivers, firemen, and even of the engine that has safely conveyed us through tunnels and through storms at the rate of thirty, forty, and occasionally even fifty miles an hour—

“Oh no! we never mention them!”

and in fact scarcely do we deign to look at them. Indeed even while in the train, and most especially after we had left it, we should feel bored to death by being asked to reflect for a moment on any point or any person connected with it. We have therefore, we feel, to apologise at least to some of our readers for intruding upon them, in bringing “betwixt the wind and their nobility” the following uninteresting details.

As soon as an engine has safely dragged a passenger-train to the top of the incline at Camden Station, at which point the coupling-chains which connect it with its load are instantly unhooked, it is enabled by the switchman to get from the main line upon a pair of almost parallel side rails, along which, while the tickets are being collected, it may be seen and heard retrograding and hissing past its train. After a difficult and intricate passage from one set of rails to another, advancing or “shunting” backwards as occasion may require, it proceeds to the fire-pit, over which it stops. The fireman here opens the door of his furnace, which by a very curious process is made to void the red-hot contents of its stomach into the pit purposely constructed to receive them, where the fire is instantly extinguished by cold water ready laid on by the side. Before, however, dropping their fire, the drivers are directed occasionally to blow off their steam to clean; and we may further add that once a-week the boiler of every engine is washed out to get rid of sediment or scale, the operation being registered in a book kept in the office. After dropping his fire, the driver, carefully taking his fire-bars with him, conducts his engine into an immense shed or engine-stable 400 feet in length by 90 in breadth, generally half full of loco-

motives, where he examines it all over, reporting in a book what repairs are wanting, or, if none (which is not often the case), he reports it "*correct*." He then takes his lamps to the lamp-house to be cleaned and trimmed by workmen solely employed to do so, after which he fetches them away himself. Being now off duty, he and his satellite fireman go either to their homes or to a sort of club-room containing a fire to keep them warm, a series of cupboards to hold their clothes, and wooden benches on which they may sit, sleep, or ruminate until their services are again required; and here it is pleasing to see these fine fellows in various attitudes enjoying rest and stillness after the incessant noise, excitement, and occasional tempests of wind and rain, to which—we will say nothing of greater dangers—they have been exposed.

The duties which the engine-driver has to perform are not only of vital importance, but of a nature which peculiarly illustrates the calm, unpretending, bull-dog courage, indigenous to the moist healthy climate of the British Isles. Even in bright sunshine, to stand—like the figure-head of a ship—foremost on a train of enormous weight, which, with fearful momentum, is rushing forward faster than any race-horse can gallop, requires a cool head and a calm heart; but to proceed at this pace in dark or foggy weather into tunnels, along embankments, and through deep cuttings, where it is impossible to foresee any obstruction, is an amount of responsibility which scarcely any other situation in life can exceed; for not only is a driver severely, and occasionally without mercy, punished for any negligence he himself may commit, but he is invariably sentenced personally to suffer on the spot for any accident that from the negligence of others may suddenly befall the road along which he travels, but over which he has not the smallest control. The greatest hardship he has to endure, however, is from cold, especially that produced in winter by evaporation from his drenched clothes passing rapidly through the air. Indeed, when a gale of wind and rain from the north-west, triumphantly sweeping over the surface of the earth at its ordinary rate of say sixty miles an hour, suddenly meets the driver of the London and North-Western, who has not only to withstand such an antagonist, but to dash through him, and in

spite of him to proceed in an opposite direction at the rate of say forty miles an hour—the conflict between the wet Englishman and Æolus, tilting by each other at the combined speed of a hundred miles an hour, forms a tournament of extraordinary interest.

As the engine is proceeding, the driver, who has not very many inches of standing-room, remains upon its narrow platform, while his fireman, on about the same space, stands close beside him on the tender. We tried the position. Everything, however, proved to be so hard, excepting the engine, which was both hard and hot, that we found it necessary to travel with one foot on the tender and the other on the engine, and, as the motion of each was very different, we felt as if each leg were galloping at a different stride. Nevertheless the Company's drivers and firemen usually travel from 100 to 120 miles per day, performing six of these trips per week; nay, a few run 166 miles per day—for which they are paid eight days' wages for six trips.

But to return to the engine which we just left in the engine-house. As soon as the driver has carefully examined it, and has recorded in a book the report we have described, the "foreman of the fitters" comes to it, and examines it all over again; and if anything is found out of order which, on reference to the book, the driver has not reported, the latter is reported by the former for his negligence. A third examination is made by Mr. Walker, the chief superintending engineer of the station, a highly intelligent and valuable servant of the Company, who has charge of the repairs of the locomotive department between Camden and Tring. If HE detects any defect that has escaped the notice not only of the driver, but of the foreman of the fitters, woe betide them both!

While the engine, with several workmen screwing and hammering at it, is undergoing the necessary repairs, we will consider for a moment a subject to which Englishmen always attach considerable importance, namely, its victuals and drink, or, in other words, its coke and water. There is at Camden Station a coke-factory composed of eighteen ovens, nine on each side, in which coal after being burnt for about fifty hours gives nearly two-thirds of its quantity of coke. These ovens produce about 20 tons of coke per day; but, as 50 tons per day are required for the

Camden Station alone, the remaining 30 tons are brought by rail all the way from Newcastle. Indeed, with the exception of fifty ovens at Peterborough, the whole of the coke required annually for the London and North-Western Railway, amounting to 112,500 tons, of an average value of 1*l.* per ton, comes from the Northern Coal-fields. For some time there were continual quarrels between the coke suppliers and receivers, the former declaring that the Company's waggons had been despatched from the North as soon as loaded, and the latter complaining that they had been unnecessarily delayed. A robin-redbreast settled the dispute, for, on unloading one of the waggons immediately on its arrival at Camden Station, her tiny nest with three eggs in it minutely explained that the waggon had *not* been despatched as soon as loaded.

In order to obtain an ample supply of water for their engines, the Company at considerable expense sank at Camden an Artesian well 10 feet in diameter and 140 feet deep. The produce of this well, pumped by a high-pressure steam-engine of 27-horse-power into two immense cisterns 110 feet above the rails at Euston Square, supplies all the Camden Station, all the Company's houses adjoining, the whole of the Euston Station, as well as the Victoria and Euston Hotels, with most beautiful clear water; and yet—though every man who drinks it or who shaves with it admires it, and though every lady who makes tea with it certifies that it is particularly well adapted for that purpose—strange to say, it disagrees so dreadfully with the stomachs of the locomotive engines—(who would ever suspect *them* to be more delicate than our own?)—that the Company have been obliged, at great inconvenience and cost, to obtain water for them elsewhere. The boilers of the locomotives were not only chemically liable to be incrustated with a deposition of the unusual quantity of soda contained in the Artesian-well water at Camden Station; but, not even waiting for this inconvenience, the engine without metaphor spit it out—ejecting it from the boiler with the steam through the funnel-pipe, a well-known misfortune termed by engineers "*priming*."

As much time would be required for each travelling engine to

get up its steam *ab initio*, a coke-furnace has been constructed at Camden Station to hasten the operation. Here nine men during the day, and the same number throughout the night, are continually employed to heat coke, which by means of iron shovels is to be delivered red-hot into the engines' furnaces.

These preparations having been made, the driver's duties are as follows :—

On leaving the shed in the morning the engine, after having been heated at the coke-furnace, is conducted on to a great turn-table 40 feet in diameter, which twists it towards a set of rails leading to the water-crane, where it imbibes at one draught about a thousand gallons of cold water, which, under ordinary circumstances, will enable it to draw its train about 40 miles ; although in slippery weather, when the wheels revolve *on*, instead of *along*, the rails, it of course would not carry it so far. It then proceeds to the coke-shed, an enclosure 210 feet by 45 feet, capable of holding 1500 tons, for its proper supply of coke, namely, 1 ton—a goods-engine usually devouring 2½ tons.

The driver, leaving his engine in charge of his fireman, now proceeds to the office, where he signs his name in a book, the object being that it may be observed whether or not he is perfectly sober. From the chief clerk he receives his coke and time ticket, upon which, at every station, he has to record whatever time he may have lost up to that point ; and when his chronometer is wound up, and set to the proper time, he is then considered to be ready for his journey.

The gigantic power of the locomotive engines hourly committed to the charge of these drivers was lately strangely exemplified in the large engine-stable at the Camden Station. A passenger-engine, whose furnace-fire had but shortly been lighted, was standing in this huge building surrounded by a number of artificers, who, in presence of the chief superintendent, were working in various directions around it. While they were all busily occupied, the fire in the furnace, by burning up faster than was expected, suddenly imparted to the engine the breath of life ; and no sooner had the minimum of steam necessary to move it been thus created, than this infant Hercules not only

walked *off*, but without the smallest embarrassment walked *through* the 14-inch brick wall of the great building which contained it, to the terror of the superintendent and workmen, who expected every instant that the roof above their heads would fall in and extinguish them! In consequence of the spindle of the regulator having got out of its socket, the very same accident occurred shortly afterwards with another engine, which, in like manner, walked through another portion of this 14-inch wall of the stable that contained it, just as a thorough-bred horse would have walked out of the door. And if such be the irresistible power of the locomotive engine when feebly walking in its new-born state, unattended or unassisted even by its tender, is it not appalling to reflect what must be its momentum when, in the full vigour of its life, it is flying down a steep gradient at the rate of 50 miles an hour, backed up by say 30 passenger-carriages, each weighing on an average $5\frac{1}{2}$ tons? If ordinary houses could suddenly be placed on its path, it would, passengers and all, run through them as a musket-ball goes through a keg of butter; but what would be the result if, at this full speed, the engine by any accident were to be diverted against a mass of solid rock, such as sometimes is to be seen at the entrance of a tunnel, it is almost impossible to calculate, or even to conjecture. It is stated by the Company's superintendent, who witnessed the occurrence, that some time ago, an ordinary accident happening to a luggage-train near Loughborough, the waggons overrode each other until the uppermost one was found piled 40 feet above the rails!

At Camden Station there are every day five spare or pilot engines, with their steam up, ready for assisting a train up the incline, or for any special purposes that may be required.

The average cost of the locomotive engines and tenders, which, for the rails between London and Birmingham, are usually purchased by the Company from makers at Manchester, Warrington, and Liverpool, is—

Cylinder 15-inch diameter	£1,950	0	0
„ 16 „	2,113	10	0
„ 18 „	2,500	0	0

The tenders cost 500*l.* each.

CHAPTER VIII.

GOODS DEPARTMENT.

THE duties of this department, which forms one of the most important establishments at Camden Station, may very briefly be elucidated. It appears from returns lying before us, that during the six months ending the 26th of August last there entered and departed from Camden Station alone 73,732 railway waggon-loads of goods! Now in the annals of political economy there can perhaps scarcely exist a more striking exemplification of the extraordinary extent to which the latent resources of a great country may be developed by diminishing the friction, or, without metaphor, by lowering the tolls of its goods-traffic, than the fact that, notwithstanding the enormous amount thus conveyed along the London and North Western rails, the quantity carried along the Grand Junction Canal, which meanders alongside its powerful antagonist, instead of having been drained, as might have been expected, to zero, has, from the opening of the railway in 1836 up to the present period, actually increased as follows :—

	Tons.
Average amount of goods annually moved on the Grand Junction Canal during the three years prior to the opening of the London and Birmingham Railway in 1836	756,894
Average amount of ditto annually moved during the twelve years subsequent to 1836	1,039,333
Amount moved in 1847	1,163,466

Besides the innumerable arrangements necessary for the conveyance along their rails of the number of waggon-loads of goods we have stated, the Company undertake the vexatious and intricate business of collecting and delivering these goods from and to all

parts of London, as also throughout the various towns on their line, excepting Liverpool, where the collection and delivery of goods is otherwise arranged. The number of letters on business received by the branch of this department at Camden Station only, averages 300 per day.

For the collection, loading, unloading, and delivery of a certain portion of the merchandise conveyed by the Company on their rails, the Board of Directors have, we think with great prudence, availed themselves of the practical knowledge and experience of Messrs. Pickford and of Messrs. Chaplin and Horne, whom they have engaged as their agents at Camden Station—the Company's superintendent there marshalling and despatching all luggage-trains, arranging the signals, and making out the weigh-bills, &c. The undertaking is one of enormous magnitude; for besides immense cargoes of goods in large packages, an inconceivable number of small parcels are sent from Birmingham, Wolverhampton, Sheffield, &c. to numberless little retail shopkeepers in London, who are constantly requiring, say a few saucepans, kettles, cutlery, &c.; and when it is considered that for the collection, conveyance, and delivery of most of these light parcels 1s. only is charged, and, moreover, that for the conveyance of a small parcel by the Company's goods-trains from say Watford to Camden Station, to be there unloaded into store, thence reloaded into and transported by a spring waggon to almost any street and house in London, or to the terminus of any railway-station to which it may be addressed, the charge is only 6d., it is evident that a great deal of attention and skill are necessary to squeeze a profit from charges which competition has reduced to so low a figure.

At, and for some time after, the commencement of railway traffic, it was considered dangerous to convey goods by night. They are now, however, despatched from Birmingham at 8·45 p.m., to arrive at Camden Station at 3½ in the morning. Goods from London are despatched at 9 in the evening, at midnight, at 12½, at ½ before 1, at 3, and at 5 in the morning. In the day they are despatched at 12·40, at 1·15, at 2·6, and at 6½; and such regularity is attained, that packs of cotton, linen, and woollen

goods from Manchester are usually delivered in London almost with the regularity of letters. An immense quantity of fish from Billingsgate, and occasionally as much as 20 tons of fruit from Covent Garden market, are injected into the country by the midday train: indeed the London wholesale dealers in these articles do not now fear receiving too great a supply, as, whatever may be their surplus, the railway is ready to carry it off to the manufacturing districts—Manchester alone swallowing almost any quantity; besides which, large quantities of fruit are conveyed by rail as far as Glasgow. Many tons of meat in hampers, and oftentimes a flock of a hundred dead sheep, wrapped up only in cloths, are also despatched from the country to the London market.

Without tiring our readers with minute details, the following is a rough outline of the mode in which the goods-traffic is conducted.

As soon as an up luggage-train arrives at Camden Station, its loaded waggons of merchandise, which are placed under the care of the Goods-department Superintendent as soon as they arrive, are, under his directions, drawn by horses along a variety of branch-rails to a certain point, where they are left by the superintendent in the open air, from which moment Messrs. Pickford and Messrs. Chaplin and Horne—to whom the different waggons are respectively addressed, and between whom a wholesome competition exists, highly advantageous to the public—are held responsible by the Company for fire or accident of any sort; in short, for their safe delivery. The waggons thus deposited by the superintendent, solely under the canopy of heaven, are instantly approached by drivers and horses belonging to the two competing agents, who with great cleverness, by repeatedly twisting them on turn-tables, and then by drawing them along an apparent labyrinth of rails, conduct each species of goods to its own store, where, by experienced porters, it is immediately unloaded and despatched by spring waggons to its destination.

As regards the down-trade, the business transacted in this department, although apparently complicated, is very admirably

arranged. The spring waggons and carts of the Company's agents, like bees in search of honey, with extraordinary intelligence migrate in all directions to the various localities of the metropolis in search, piecemeal, of that enormous traffic, large and small, which by every diurnal pulsation of the heart of London is projected into our manufacturing districts, which in return send back to the metropolis very nearly the same amount. Every waggon-load of merchandise thus obtained, as well as every boat-load of goods (for the Company have also at Camden Station a branch water-communication leading into the Regent's Canal), is either carted at once to the particular storehouse to which it belongs, to be thence reloaded into railway vans, or it is brought to "*The General Receiving Shed*" either of Messrs. Pickford, or of Messrs. Chaplin and Horne; and to prevent mistakes, all invoice-forms and truck-labels for the former firm are printed in black, those for the latter in red. In these enormous receptacles goods "*coming in*" are arranged on one side, those "*going out*" on the other. In Messrs. Pickford's receiving shed, which is 300 feet in length by 217 in breadth, there are in operation, for the purpose of rapidly loading and unloading goods—

- 24 steam-cranes,
- 21 wooden cranes,
- 1 steam-doller or lift,
- 1 travelling-crane on the roof,
- 1 steam-capstan for hauling trucks along rails to the various loading bays.

We observed also at work 4 steam hay-cutters, which cut 200 trusses in four hours, and 1 steam hay-cleaner. The above machines are worked simultaneously by an engine of 16-horse power, which also raises from an Artesian well, 380 feet deep, water, which is given warm to 222 horses in adjoining stables. These horses are all named, and branded with a number on their hoofs.

In the general receiving-shed of Messrs. Chaplin and Horne there are also a series of cranes, with large stables full of horses

that work about twelve hours a-day; the "Weights of Goods allowed to be taken by them in each Vehicle" being as follows :—

From Camden.

	Tons.	Cwts.		Tons.	Cwts.
4 Horses	. 5	0 . .	Not to exceed	. 6	0 waggons.
3 Do.	. 4	0 . .	Do.	. 4	10 vans.
2 Do.	. 3	0 . .	Do.	. 3	5 do.
1 Do.	. 1	10 . .	Do.	. 1	15 carts.

By the very great powers committed by the Company to their two agents, 50 waggon-loads of merchandise, collected and brought by spring-waggons to Camden Station, have often, within two hours, been despatched by the superintendent to the manufacturing districts. During the day, as fast as the spring-waggons arrive their contents are unloaded, and either left on the covered platform of the building or ranged around the walls in large compartments, labelled "Glasgow," "Birmingham," "Manchester," "Leicester," "Nottingham," "Coventry," &c.; and as on the great square of Valetta at Malta one sees congregated the costumes of almost every merchant upon earth, so do these receiving-sheds display goods and chattels of almost every description. Here lies a waggon-load of beer from Chester,—there another of sugar-loaves, in blue paper, for Northampton,—of groceries for Buckingham,—cheeses, millinery, and gas-pipes for Peterborough,—a vanload of empty hosiery skips (baskets) to return to Leicester,—empties for Glasgow,—filberts for Birmingham, &c.: and as the goods are coming in as fast as they are going out, the colours of this kaleidoscopic scene are constantly changing. Indeed, during the short time we were ruminating on the strange chance-medley of objects before us, fourteen truck-loads of goods were unladen, and eight spring-waggons loaded and despatched.

The amount of business transacted in each of these great receiving-sheds every evening, from seven till about ten o'clock, is quite astonishing. On Messrs. Pickford's great elevated platform, which at that time is laden with goods of all descriptions, several clerks, each protected by a sort of rough harbour of iron rods,

and lighted by gas, are seen, in various localities, sitting before little desks, towards which porters from all directions are wheeling, on trucks, different articles which have just been unloaded from a series of spring-vans, the bottoms of which are nearly on a level with the platform. The drivers of these carriages, entering the building at a large gate, twist, turn, and then back their horses with a dexterity which an unpractised person would think it impossible for men and horses to attain: "*Now then!*" and "*All right!*" being almost the only vociferations to be heard. As fast as the goods can be unladen from the spring-waggons to the platform, a porter lustily calls out the address on each bale or parcel, which is actively registered by a clerk. These invoices are then briskly sent across to the other side of the platform, in order that each article enumerated therein, when reloaded—as it almost immediately is, into railway waggons—may be ticketed off, to ascertain whether every package taken in at the receiving side of the platform has *bonâ fide* been safely despatched from the other.

Until the visitor to this extraordinary nocturnal scene has had some time first to recover his composure, and then to observe, analyse, and reflect on the various arrangements simultaneously in operation before him, the picture altogether is really astounding. For from one side of the platform a set of active porters are centripedally wheeling from different spring-waggons innumerable packages to the recording clerks, as eagerly as from these clerks (whose duty it is to record the weight of every article, and to affix to it the Company's printed charge for conveyance to its address) other porters, equally active, are centrifugally wheeling other packages to various railway vans, which, as fast as they can be filled, are drawn away from the despatching side of the platform, and immediately replaced by empty ones. One set of porters are wheeling to a recording clerk a waggon-load of raw silk, valued at 9000*l.*, from China, which, *viâ* the South-Western Railway, has just arrived from Southampton to go to Macclesfield to be manufactured; another set, Russia tallow, in casks; others, draperies; another set, yarns for Gloucester; one porter has on his truck a very small but heavy load of iron or lead;

another, with comparative ease, is wheeling through the crowd a huge wool-bag, large enough to contain, if properly packed, a special jury. Here comes a truck of mustard, in small casks, followed by another full of coffee; there goes a barrow-load of drugs—preceding a cask of spirits, which, to prevent fraud, has just been weighed, tapped, gauged, and sampled; also several trucks full of household furniture; the family warming-pan being tacked round the body of the eight-day clock, &c. This extraordinary whirl of business, set to music by the various noises proceeding from the working of the steam-cranes, steam-doller, steam-capstan, common cranes, and other machinery above the platform—from the arrival, turning, backing, and departure of spring-waggon beneath it—from the rumbling of porters' trucks crossing the platform, as also of the railway vans as, laden with goods, they are successively rolled away—forms altogether, we repeat, a scene which, though rarely visited, is astounding to witness, and which, we are sensible, we have but very faintly described.

But, besides the amount of business above mentioned daily transacted in each of the agents' great "receiving-sheds," there are nine other sheds, in which, throughout the day, and especially at night, the same process on a smaller scale is going on. Close to these stores there is also a water-dock for iron and heavy goods to be shipped for the Thames. The carting establishments of Messrs. Pickford and Chaplin for the collection and delivery of their share only of the goods-traffic—for the Company have establishments of their own for loading and unloading at every station except London—would appear to any foreigner unacquainted with the modest and unassuming powers with which the mercantile business of England is quietly transacted, to be incomprehensible and almost incredible. For instance—

Messrs. Pickford's establishment, on account of the London and North-Western Railway, is as follows:—

Clerks.	Porters.	Horses.	Vans.	Waggons.	Drays.
234	538	396	82	57	25

The weights carted by Messrs. Pickford, on account of the Company, for the year ending the 30th of June last, amounted to—

	Tons.	cwts.	qrs.	lbs.
Collected	133,437	18	0	15
Delivered	139,898	19	0	5
Making a gross total of	273,336	17	0	20

Or rather more than 841 tons per day.

And yet the Company's merchandise operations at Liverpool exceed those at London in the proportion of 9 to 6½!

As soon as the two agents, at their respective receiving-sheds, have loaded their trucks, and have securely covered them with water-proof and fire-proof tarpaulins, they turn them out, labelled, into the open air, from which moment they are considered to be in the hands of the Company's superintendent of the goods-department. Accordingly, under his direction, they are immediately drawn by horses first over a weighbridge to receive their weigh-bills, and thence to a series of ten turn-tables, by which they are scattered among thirteen sets of rails, where they are marshalled into trains for their respective destinations. In this operation it is alarming to see the superintendent's horses dragging the various luggage-vans, for not only are the rails as well as the pavement between them exceedingly slippery, but as the carriages have no shafts, the poor horse has not power to stop his load, and accordingly affixed to it by his traces he trots away before it, until it appears as if he must inevitably be smashed to a sandwich between it and the carriage at rest which he is approaching; however, just before the collision between the buffers of each vehicle takes place, the dull-looking animal jumps aside, and very dexterously saves himself from annihilation. The luggage-trains thus formed are usually composed of 35, but sometimes of 70 or 90 waggons, weighing when empty about three tons each, and averaging when laden about six tons. At the rear of each of these trains there sits a guard. The Company's goods-waggons of all descriptions amount in number to 6236.

Engine Stable and Cattle Wharf.

In order to prevent the locomotive engines which draw these luggage-trains from crossing, or otherwise perilling the main passenger-line at Camden Station, there has been constructed an immense rotunda, 160 feet in diameter, lighted from the top by plates of glass nine feet in length by half an inch thick, and capable of containing twenty-four of the largest-class engines. In the centre of this great brick building there is a turn-table 40 feet in diameter, from whence the engines radiate to their twenty-four stalls, which on a large scale much resemble those constructed in a stable for hunters. The majority of these locomotives are capable of drawing 600 tons at the rate of twelve miles an hour. Each, when supplied with coke and water, with steam up ready for its journey, weighs about 50 tons. At the entrance of this building there is a pit into which, after their journey, they may drop their fire, and between the rails in each of the twenty-four stalls we observed a smaller pit to enable artificers to work beneath any engine that may require reparation. The drivers of these huge locomotives, after every journey, inspect and report in a book, as in the passenger-trains, any repairs that may be required, and the engines are thoroughly cleaned every time they come in.

At a short distance from this rotunda we observed a platform about 300 yards long, constructed for the landing of cattle, which arrive there generally on Thursdays and Saturdays from 2 P.M. till midnight. Fifty waggon-loads of bullocks, sheep, or pigs can here be unloaded at a time, and then driven into strong pens or pounds, constructed in the rear. The Company's cattle and merchandise waggons are usually painted blue, their sheep-waggons green. On the arrival of a train of cattle it is interesting to see such a quantity of polished horns, bright eyes, streams of white breath, and healthy black wet noses projecting above the upper rail of their respective waggons, and fatal as is the object of their visit to John Bull's metropolis, it is some consolation to reflect that—poor things—they are, at all events, in ignorance

of the fate that awaits them. In disembarking the cattle, in spite of every precaution, an infuriated Welsh or a wild Irish bullock will occasionally escape from this platform, and by roaring, jumping, and galloping, with depressed head and upstretched tail—

“ Hereditary bondsmen ! know ye not,
Who would be free, himself must strike the blow ! ”—

create no small consternation as well as confusion among the green-coated pointsmen, porters, and policemen in charge of the various sets of tributary rails which flow from the waggon department into the main line. Instead, however, of attempting, as in the case of Mr. Smith O'Brien, to capture the fugitive by force, this object is effected by the simple stratagem of instantly turning loose several other black-nosed bullocks, which he no sooner sees, than, running and galloping towards the herd, he is quietly driven with them into a pen, where he appears quite to enjoy “the Union,” which a few minutes ago he had so violently and so vociferously attempted to “*repale*.”

Waggon Hospital.

Among the large establishments at Camden Station is one for the maintenance and repair of the luggage-trucks and goods-carriages of the Southern District, namely, from London to Birmingham—in which alone there are 2000 luggage-waggons with a proportionate number of trucks. The construction-shop for this department, in which 129 men were at work, is 437 feet in length by 64 in breadth. With its sideways it is capable of containing and of repairing at one time 100 carriages; the average number in hospital being, however, from 60 to 70. In the smiths' shop we observed working at once 14 common forges blown by steam, also four portable ones. In locked-up vaulted stores adjoining there was lying, besides deals and Memel planks, 4000*l.* worth of oak timber in scantlings of the various sizes required, each lot ticketed with its dimensions. It is surprising to observe the quantity of iron and oak timber used in the construc-

tion of the Company's luggage-trucks. Nevertheless, although they are built infinitely stronger in proportion than any ship (for their oak stanchions, being straight instead of curved, when they come in collision strike end foremost), yet we witnessed results of accidents which were really appalling; in many cases the largest of these timbers had been splintered; indeed, in a railway smash the British oak usually either stands the shock without flinching, or, if it *does* give, shivers into atoms. Barring, however, accidents, a luggage-truck or waggon will last about twelve years.

Among the Company's goods-carriages we observed eight powder-magazines, constructed under a patent invention of the superintendent, Mr. Henson. They were covered outside with sheet iron, lined with wood, had leaden floors, and the axles were cased with hornbeam 'to prevent vibration. With these precautions they each safely convey $4\frac{1}{2}$ tons of gunpowder through and over the sparks of fire and red-hot coals that are continually, during the progress of a train, flying from the funnel-pipe or dropping from the furnace of the engine.

As soon as a luggage-train has been unloaded at Camden Station all the wheels of the waggons are 'gauged to see that there are no bent axles, and that none of the "journals," or working ends of the axles, have been heated, for they sometimes get red-hot; and we may here remark, that under heavy loads the tremendous vibration of the axles of goods-carriages during their journeys materially alters the composition of the iron, and that when the axles have once been red-hot, although after cooling they are as strong as ever, they are always particularly liable to get red-hot again, and the brass boxes amalgamating with the iron, the ends of the largest axles are occasionally wrenched off as one would break a carrot. The luggage-waggons are minutely inspected on arriving and on departing from Camden, Wolverton, and Rugby; besides which the guard hastily examines them at every station, where they are also greased if required.

The Pointsman.

Among the servants of a railway company, or rather we should say of the public, there is no one who, in his secluded station, has more important duties to attend to than "the pointsman," in charge of the switches for diverting a train from one set of rails to another. As it is of course necessary that these switches should be carefully worked and guarded by night as well as by day, there are usually appointed to each station two pointsmen, each of whom remains on duty twelve hours at a time, taking the night and day work week about. At Camden Station one of these men has fourteen switches to attend to, and at Wolverton thirteen pairs. At the latter place, to prevent intrusion and to increase precaution, the pointsman has always the signal of danger on, but on perceiving an up-train about a mile off, he shows a green flag to the Station signal-man, and does not avert that of danger until he has received answer that "all is right." In thick weather he himself works a subterranean auxiliary signal 500 yards off, showing lamps of different colours. In a fog, to prevent any train running into the station, a man is sent down the line about a mile, to affix upon the rails, every 200 yards, one of Toy and Hansom's patent fog-signals, which, exploding under the engine with the report of a small cannon, warn the driver to stop and remain where he is, until some one comes to give him orders. At Crewe Station, from whence radiate three important lines of rails, namely, on the right to Manchester, straight on to Liverpool, and on the left to Chester, there are constantly on duty three pointsmen, one of whom has seventeen pairs of points to attend to, namely, five belonging to the Chester line, one to the Liverpool, eleven to the workshops. His box stands between the Liverpool and Chester lines.

Nothing can apparently be more cheerless than the existence of these poor fellows, who, cut off from society, in all weathers and in all seasons have, in solitude, to perform duties for which no passing traveller ever thanks them, and which he probably does not even know that they perform. It is, however, providen-

tially decreed that the human heart warms under almost every description of responsibility; and, accordingly, we invariably found these pointsmen not only contented, but apparently intently interested in their important duties; indeed the flowers which we observed blooming around their little wooden habitations were not, we felt, inappropriate emblems of the happiness which naturally springs up in the heart of every man who will honestly perform the duties of his station. The Company's pointsmen have nominally not very high wages:—a gratuity, however, every twelve months is given to them, provided they cause no accident; but should one occur from their switches, no matter how small, they forfeit it—an arrangement, we think, very cleverly conceived.

CHAPTER IX.

WOLVERTON.

FLYING by rail through green fields below Harrow Hill and thence to Watford,—stopping for a moment in a deep cutting to hear a man cry “*Tring!*” and a bell say “*Ring!*” until the passenger gets so confused with the paltry squabble that he scarcely knows which of the two competitors is vociferating the substantive and which the verb,—we will now conduct our readers to the Station and little town of Wolverton.

As every city, village, or hamlet on the surface of the globe is usually inhabited by people of peculiar opinions, professions, character, tastes, fashions, follies, whims, and oddities, so there is always to be witnessed a corresponding variety in the allinement and architecture of their dwellings—the forms and excrescences of each often giving to the passing traveller a sort of phrenological insight into the character of the inmates. One street, inhabited by poor people, is as crooked as if it had been traced out by the drunken Irishman who, on being kindly questioned, in a very narrow lane across which he was reeling, as to the length of road he had travelled, replied, “*Faith! it’s not so much the length of it as the BREADTH of it that has tired me!*” Another—a rich street—is quite straight. Here is a palace—there are hovels. The hotel is of one shape—the stock-exchange of another. There are private houses of every form—shops of every colour—columns, steeples, fountains, obelisks *ad infinitum*. Conspicuous over one door there is to be seen a golden pestle and mortar—from another boldly projects a barber’s pole—a hatchment decorates a third—the Royal Arms a fourth—in short, it would be endless to enumerate the circumstantial evidence which in every direction proves the truth of the old saying, “*Many men, many minds.*”

To all general rules, however, there are exceptions ; and certainly it would be impossible for our most popular auctioneer, if he wished ever so much to puff off the appearance of Wolverton, to say more of it than that it is a little red-brick town composed of 242 little red-brick houses—all running either this way or that way at right angles—three or four tall red-brick engine-chimneys, a number of very large red-brick workshops, six red houses for officers—one red beer-shop, two red public-houses, and, we are glad to add, a substantial red school-room and a neat stone church, the whole lately built by order of a Railway Board, at a railway station, by a railway contractor, for railway men, railway women, and railway children ; in short, the round cast-iron plate over the door of every house, bearing the letters L. N. W. R., is the generic symbol of the town. The population is 1405, of whom 638 are below sixteen years of age ; indeed, at Wolverton are to be observed an extraordinary number of young couples, young children, young widows, also a considerable number of men who have lost a finger, hand, arm, or leg. All, however, whether whole or mutilated, look for support to “the Company,” and not only their services and their thoughts but their parts of speech are more or less devoted to it :—for instance, the pronoun “*she*” almost invariably alludes to some locomotive engine ; “*he*” to “the chairman ;” “*it*” to the London Board. At Wolverton the progress of time itself is marked by the hissing of the various arrival and departure trains. The driver’s wife, with a sleeping infant at her side, lies watchful in her bed until she has blessed the passing whistle of “the down mail.” With equal anxiety her daughter long before daylight listens for the rumbling of “the 3½ A.M. goods up,” on the tender of which lives the ruddy but smutty-faced young fireman to whom she is engaged. The blacksmith as he plies at his anvil, the turner as he works at his lathe, as well as their children at school, listen with pleasure to certain well-known sounds on the rails which tell them of approaching rest.

The workshops at Wolverton, taken altogether, form, generally speaking, an immense hospital or “Hôtel des Invalides” for the sick and wounded locomotive engines of the Southern

District. We witnessed sixty of them undergoing various operations, more or less severe, at the same time. Among them was Crampton's new six-wheel engine, the hind wheels of which are eight feet high, weighing thirty-eight tons, and with its tender sixty tons. It is capable of drawing at the usual speed twelve carriages laden with passengers. The workshops at this station are so extensive, that it would be tedious and indeed almost impracticable to describe them in detail; we will therefore merely mention that in one of them we saw working at once by the power of an 18-horse steam-engine twelve turning-lathes, five planing-machines, three slotting-machines, two screw-bolt ditto—and, as a trifling example of the undeviating accuracy with which these contrivances work, we may state that from a turning-lathe a shaving from cold iron will sometimes continue to flow for forty feet without breaking. There are a large cast-iron foundry, a brass foundry, machines for grinding, and also for polishing; sheers for cutting, and stamps for punching cold iron as if it were pasteboard; an immense oven for heating tires of wheels; a smith's shop containing twenty-four forges, all of which were in operation at once. Two steam-engines—one for machinery, the other for pumping water for the town and offices only, for the Company's well-water here, as at Camden Station, disagrees with the locomotives. A large finishing store, in which were working by steam fifteen turning-lathes, five slotting-machines, five planing ditto, one screwing ditto, two drilling ditto, two shaving ditto. Beneath the above we entered another workshop containing sixteen turning-lathes, two drilling-machines, one slotting ditto, one screwing ditto, one nut ditto, one cylinder-boring ditto, one shaping ditto. In the great store-yard there is an hydraulic press of a power of 200 tons for squeezing wheels on to their axles, or wrenching them off. Another workshop is filled with engines undergoing repair, and adjoining it there is a large store or pharmacopœia, containing, in the form of oil, tallow, nuts, bars, bolts, &c., all the medicine which sick locomotives occasionally require.

At a short distance towards the south we entered a beautiful building, lighted during the day by plate-glass in the roof, by

gas at night, and warmed by steam. In its centre there stands a narrow elevated platform, whereon travels a small locomotive, which brings into the building, and deposits on thirteen sets of rails on each side, twenty-six locomotive engines for examination and repair. On the outside, in the open air, we found at work what is called "*a scrap drum*," which by revolving cleans scraps of old rusty iron, just as a public school improves awkward boys by hardly rubbing them one against another. The scrap iron, after having been by this discipline divested of its rust, is piled on a small wooden board for further schooling, and when sufficiently hot the glowing mass is placed under a steam-hammer alongside, whose blows, each equal to about ten tons, very shortly belabour to "equality and fraternity" the broken bolts, bars, nuts, nails, screw-pins, bits of plate-iron, &c., which are thus economically welded into a solid mass or commonwealth. In another smelting-shop, 150 feet in length, we saw at work fourteen forges, six turning-lathes, one drilling-machine, and one iron-shaving machine. Lastly, there are gas-works for supplying the whole of the Company's establishment with about seventy or eighty thousand cubic feet of gas per day.

The above is but a faint outline of the Company's hospital at Wolverton for the repair and maintenance merely of their locomotive engines running between London and Birmingham.

The magnitude of the establishment will best speak for itself; but as our readers, like ourselves, are no doubt tired almost to death of the clanking of anvils—of the whizzing of machinery—of the disagreeable noises created by the cutting, shaving, turning, and planing of iron—of the suffocating fumes in the brass-foundry, in the smelting-houses, in the gas-works—and lastly of the stunning blows of the great steam-hammer—we beg leave to offer them a cup of black tea at the Company's public refreshment-room, in order that, while they are blowing, sipping, and enjoying the beverage, we may briefly explain to them the nature of this beautiful little oasis in the desert.

Wolverton Refreshment-Room.

In dealing with the British nation, it is an axiom among those who have most deeply studied our noble character, that to keep John Bull in beaming good-humour it is absolutely necessary to keep him always *quite full*. The operation is very delicately called "*refreshing him*;" and the London and North-Western Railway Company having, as in duty bound, made due arrangements for affording him, once in about every two hours, this support, their arrangements not only constitute a curious feature in the history of railway management, but the *dramatis personæ* we are about to introduce form, we think, rather a strange contrast to the bare arms, muscular frames, heated brows, and begrimed faces of the sturdy workmen we have just left.

The refreshment establishment at Wolverton is composed of—

1. A matron or generallissima.
2. Seven very young ladies to wait upon the passengers.
3. Four men and three boys do. do.
4. One man-cook, his kitchen-maid, and his two scullery-maids.
5. Two housemaids.
6. One still-room-maid, employed solely in the liquid duty of making tea and coffee.
7. Two laundry-maids.
8. One baker and one baker's-boy.
9. One garden-boy.

And lastly, what is most significantly described in the books of the establishment—

10. "An odd-man."

"Homo sum, humani nihil à me alienum puto."

There are also eighty-five pigs and piglings, of whom hereafter.

The manner in which the above list of persons, in the routine of their duty, diurnally revolve in "the scrap-drum" of their worthy matron, is as follows:—Very early in the morning—in cold winter long before sunrise—"the odd-man" wakens the two

house-maids, to one of whom is intrusted the confidential duty of awakening the seven young ladies exactly at seven o'clock, in order that their "première toilette" may be concluded in time for them to receive the passengers of the first train, which reaches Wolverton at 7h. 30m. A.M. From that time until the departure of the passengers by the York Mail train, which arrives opposite to the refreshment-room at about eleven o'clock at night, these young persons remain on duty, continually vibrating, at the ringing of a bell, across the rails—(they have a covered passage high above them, but they never use it)—from the North refreshment-room for down passengers to the South refreshment-room constructed for hungry up-ones. By about midnight, after having philosophically divested themselves of the various little bustles of the day, they all are enabled once again to lay their heads on their pillows, with the exception of one, who in her turn, assisted by one man and one boy of the establishment, remains on duty receiving the money, &c. till four in the morning for the up-mail. The young person, however, who in her weekly turn performs this extra task, instead of rising with the others at seven, is allowed to sleep on till noon, when she is expected to take her place behind the long table with the rest.

The scene in the refreshment-room at Wolverton, on the arrival of every train, has so often been witnessed by our readers, that it need hardly be described. As these youthful handmaidens stand in a row behind bright silver urns, silver coffee-pots, silver tea-pots, cups, saucers, cakes, sugar, milk, with other delicacies over which they preside, the confused crowd of passengers simultaneously liberated from the train hurry towards them with a velocity exactly proportionate to their appetites. The hungriest face first enters the door, "*magnâ comitante catervâ*," followed by a crowd very much resembling in eagerness and joyous independence the rush at the prorogation of Parliament of a certain body following their leader from one house to the bar of what they mysteriously call 'another place.' Considering that the row of young persons have among them all only seven right hands, with but very little fingers at the end of each, it is really astonishing how, with such slender assistance, they can in

the short space of a few minutes manage to extend and withdraw them so often—sometimes to give a cup of tea—sometimes to receive half-a-crown, of which they have to return two shillings—then to give an old gentleman a plate of warm soup—then to drop another lump of sugar into his nephew's coffee-cup—then to receive a penny for a bun, and then again threepence for four "lady's fingers." It is their rule as well as their desire never, if they can possibly prevent it, to speak to any one; and although sometimes, when thunder has turned the milk, or the kitchen-maid over-peppered the soup, it may occasionally be necessary to soothe the fastidious complaints of some beardless ensign by an infinitesimal appeal to the generous feelings of his nature—we mean, by the hundred-thousandth part of a smile—yet they endeavour on no account ever to exceed that harmless dose. But while they are thus occupied at the centre of the refreshment table, at its two ends, each close to a warm stove, a very plain matter-of-fact business is going on, which consists of the rapid uncorking of, and then emptying into large tumblers, innumerable black bottles of what is not unappropriately called "*Stout*," inasmuch as all the persons who are drinking the dark foaming mixture wear heavy great-coats, with large wrappers round their necks—in fact, are *very stout*. We regret to have to add, that among these thirsty customers are to be seen, quite in the corner, several silently tossing off glasses of brandy, ruin, and gin; and although the refreshment-room of the Wolverton Station is not adapted for a lecture, we cannot help submitting to the managers of the Company, that, considering not only the serious accidents that may occur to individual passengers from intoxication, but the violence and insolence which drunken men may inflict upon travellers of both sexes, whose misfortune it may be to be shut up with them; considering moreover the ruin which a glass or two of brandy may bring upon a young non-commissioned officer in the army, as also the heavy punishment it may entail upon an old soldier, it would be well for them peremptorily to forbid, at all their refreshment-rooms, the sale by any of their servants, to the public, of ardent spirits.

But the bell is violently calling the passengers to 'Come!

come away !' — and as they have all paid their fares, and as the engine is loudly hissing—attracted by their pockets as well as by their engagements, they soon, like the swallows of summer, congregate together and then fly away.

It appears from the books that the annual consumption at the refreshment-rooms averages—

182,500 Banbury cakes.	5,110 lbs. of moist sugar.
56,940 Queen cakes.	16,425 quarts of milk.
29,200 patés.	1,095 „ cream.
36,500 lbs. of flour.	8,088 bottles of lemonade.
13,140 „ butter.	10,416 „ soda-water.
2,920 „ coffee.	45,012 „ stout.
43,800 „ meat.	25,692 „ ale.
5,110 „ currants.	5,208 „ ginger-beer.
1,277 „ tea.	547 „ port.
5,840 „ loaf-sugar.	2,095 „ sherry.

And we regret to add,

666 bottles of gin.
464 „ rum.
2,392 „ brandy.

To the eatables are to be added, or driven, the 85 pigs, who after having been from their birth most kindly treated and most luxuriously fed, are impartially promoted, by seniority, one after another, into an infinite number of pork pies.

Having, in the refreshment sketch which we have just concluded, partially detailed, at some length, the duties of the seven young persons at Wolverton, we feel it due to them, as well as to those of our readers who, we perceive, have not yet quite finished their tea, by a very few words to complete their history. It is never considered quite fair to pry into the private conduct of any one who performs his duty to the public with zeal and assiduity. The warrior and the statesman are not always immaculate ; and although at the Opera ladies certainly sing very high, and in the ballet kick very high, it is possible that their voices and feet may sometimes reach rather higher than their characters. Considering, then, the difficult duties which our seven young attendants have to perform—considering the temptations to which they are

constantly exposed, in offering to the public attentions which are ever to simmer and yet never to boil—it might be expected that our inquiries should considerably go no further than the arrival at 11 P.M. of “the up York mail.” The excellent matron, however, who has charge of these young people—who always dine and live at her table—with honest pride declares, that the breath of slander has never ventured to sully the reputation of any of those who have been committed to her charge; and as this testimony is corroborated by persons residing in the neighbourhood and very capable of observation, we cannot take leave of the establishment without expressing our approbation of the good sense and attention with which it is conducted; and while we give credit to the young for the character they have maintained, we hope they will be gratefully sensible of the protection they have received.

Postscript.

We quite forgot to mention that, notwithstanding the everlasting hurry at this establishment, four of the young attendants have managed to make excellent marriages, and are now very well off in the world.

Gardens, Libraries, and Schools.

Before leaving Wolverton Station our readers will no doubt be desirous to ascertain what arrangements, if any, are made by the Company for the comfort, education, and religious instruction of the number of artificers and other servants whom we have lately seen hard at work. On the western boundary of the town we visited 130 plots of ground, containing about 324 square yards each, which are let by the Company at a very trifling rent to those who wish for a garden; and, accordingly, whenever one of these plots is given up, it is leased to him whose name stands first on the list of applicants. A reading-room and library lighted by gas are also supplied free of charge by the Company. In the latter there are about 700 volumes, which have mostly been given; and the list of papers, &c. in the reading-room was as follows:—Times, Daily News, Bell’s Life, Illustrated News, Punch,

Weekly Dispatch, Liverpool Albion, Glasgow Post, Railway Record, *Airs' Birmingham Gazette*, *Bentley's Miscellany*, *Chambers' Information*, *Chambers' Journal*, *Chambers' Shilling Volume*, *Practical Mechanic's Journal*, *Mechanic's Magazine*.

Besides the above there is a flying library of about 600 volumes for the clerks, porters, police, as also for their wives and families, residing at the various stations, consisting of books of all kinds, excepting on politics and on religious controversies. They are despatched to the various stations, carriage free, in nineteen boxes given by the Company, each of which can contain from twenty to fifty volumes.

For the education of the children of the Company's servants, a school-house, which we had much pleasure in visiting, has been constructed on an healthy eminence, surrounded by a small court and garden. In the centre there is a room for girls, who, from nine till five, are instructed by a governess in reading, writing, arithmetic, geography, grammar, history, and needlework. Engaged at these occupations we counted fifty-five clean, healthy faces. In the east wing we found about ninety fine, stout, athletic boys, of various ages, employed in the studies above mentioned (excepting the last), and learning, moreover, mathematics and drawing. One boy we saw solving a quadratic equation—another was engaged with Euclid—others with studying land-surveying, levelling, trigonometry, and one had reached conic sections.

At the western extremity of the building, on entering the infant-school, which is under the superintendence of an intelligent looking young person of about nineteen years of age, we were struck by the regular segments in which the little creatures were standing in groups around a tiny monitor occupying the centre of each chord. We soon, however, detected that this regularity of their attitudes was caused by the insertion in the floor of various chords of hoop iron, the outer rims of which they all touched with their toes. A finer set of little children we have seldom beheld; but what particularly attracted our attention was three rows of beautiful babies sitting as solemn as judges on three steps one above another, the lowest being a step higher

than the floor of the room. They were learning the first hard lesson of this world—namely, to sit still ; and certainly the occupation seemed to be particularly well adapted to their outlines ; indeed their pinafores were so round, and their cheeks so red, that altogether they resembled three rows of white dumplings, with a rosy-faced apple on each. The picture was most interesting ; and we studied their cheerful features until we almost fancied that we could analyze and distinguish which were little fire-flies—which small stokers—tiny pokers—infant artificers, &c.

On leaving the three rooms full of children, to whom, whatever may be the religion of their parents, the Perpetual Curate, the Rev. G. Weight, is apparently devoting very praiseworthy attention, we proceeded eastward about 100 yards to the church, the property of the Radcliffe Trustees, the interior of which is appropriately fitted up with plain oak-coloured open seats, all alike. In the churchyard, which is of very considerable area, there are, under the north wall, a row of fraternal mounds side by side, with a solitary shrub or a few flowers at the foot of each, showing that those who had there reached their earthly terminus were kindly recollected by a few still travelling on the rails of life. With the exception, however, of the grave of one poor fellow, whose death under amputation, rendered necessary from severe fractures, has been commemorated on a tombstone by his comrades, there exists no interesting epitaph. Besides this church, a room in the library is used, when required, as a Wesleyan Chapel ; at which on Sundays there are regular preachers both morning and night—and on Tuesdays and Fridays about 100 of the Company's servants attend extempore prayers by one of their brother artificers.

CHAPTER X.

LETTERS AND NEWSPAPERS.

AMONG the manifold arrangements which characterise the interior of the British hive there is, we believe, no one which offers to an intelligent observer a more important moral than the respect which is everywhere paid by us to the correspondence of the nation. Prior to the introduction of railways our post-office establishment was the admiration of every foreigner who visited us. But although our light mail-coaches, high-bred horses, glittering harness, skilful coachmen, resolute guards, and macadamised roads were undeniably of the very best description, yet the moral basis on which the whole fabric rested, or rather the power which gave vitality to its movements, evidently was a patriotic desire indigenous in the minds of people of all classes to protect, as their common wealth, the correspondence of the country; and accordingly it mattered not whether on our public thoroughfares were to be seen a butcher's cart, a brewer's dray, a bishop's coach, a nobleman's landau, the squire's chariot or his tenant's waggon;—it mattered not what quantity of vehicles were assembled for purposes good, bad, or indifferent, for church, for race-course, or for theatre;—it mattered not for what party of pleasure or for what political purpose a crowd or a mob might have assembled; for at a single blast through a long tin horn people of all ranks and conditions, however they might be disposed to dispute on all other subjects, were ready from all quarters to join together in exclaiming, “MAKE WAY FOR THE MAIL!”

At the magic whistle of the locomotive engine the whole of the extremely slow, dull, little-bag system we have just referred to suddenly fell to pieces. Nevertheless, the spirit that had animated it flew from the road to the rails, and although our

penny-postal arrangements, notwithstanding their rapid growth, are less conspicuous, there exists throughout the country the same honest anxiety that our letter-bags should be circulated over the surface of the United Kingdom with the utmost possible care and despatch. In order, however, to fulfil this general desire the duties which our Postmaster-General is now required to perform are most extraordinary.

The difficulty of transmitting from London to every part of the United Kingdom, and *vice versâ*, the innumerable quantity of letters which, like mushrooms springing up from a bed of spawn, have arisen from our sudden adoption of a penny-postage, would alone require minute calculations, involving an infinity of details; but when it is considered that besides this circulation from and to the heart of the metropolis—(the average weight of letters and newspapers carried daily by the London and North-Western Railway is seventeen tons)—there exists simultaneously a cross circulation, not only from and to every great city and town, but from every little post-office to every part of the United Kingdom and *vice versâ*, and moreover to every region on the globe, the eccentric zigzag courses of all these letters to their respective destinations may justly be compared to the fiery tracks and sparks created by the sudden ignition of a sackful of fireworks of all descriptions; of rockets, Catherine wheels, Roman candles, squibs, stars, crackers, flower-pots, some flying straight away, while others are revolving, twisting, radiating, bouncing, exploding in every possible direction and in all ways at once.

To explain the mode in which all our postal arrangements are conducted would not only exceed our limits, but be foreign to our subject; we will therefore only attempt to supply our readers with a slight sketch of a very small portion of this business, namely, the transmission of letters from the metropolis by the London and North-Western Railway's night mail.

While the passengers by the Lancashire mail-train are taking their seats and making other preparations for their departure, two or three Post-office vans are seen to enter the main carriage gate of the Euston Station, and then to drive close to their tenders on the railway, which form the last carriages of the train. The

servants of the Post-office, rapidly unloading their vans, remove a portion of the bags they contained into the travelling-office and the remainder into two large tenders, which, as soon as they are filled, are locked up by the guard, who then takes his place in the flying office, in which we propose to leave him to his flight for 132½ miles—only observing, however, that no sooner has he started than another flying post-office, which had been lying in ambush, advances (with its tender), and, after being loaded in a similar manner, in a quarter of an hour they are despatched to Yorkshire and the East of Scotland.

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It had been raining for upwards of twenty-four hours, and it was still pouring when, at about half-past one o'clock of a dark winter's night, we reached the railway platform at Stafford, to await there the arrival from Euston Station of the night-mail, whose loading and departure we have just described. At that lonely hour, excepting a scarlet-coated guard, who, watching over a pile of letter-bags just arrived from Birmingham by a branch-train, was also waiting for the down-mail, there were no other passengers on the platform; and, save the unceasing pattering of the rain, there appeared nothing to attract the attention but the glaring lamps of three or four servants of the Company. One with his lantern in his left hand was writing in a small memorandum-book placed on a desk before him. Two others with lights suspended round their necks were greasing the axles of some carriage whose form could not be distinguished, while the station-man on duty with his lamp in his hand was pacing up and down the boarded platform.

At this moment the signal-man had scarcely announced the approach of an up-train when there rapidly rushed by a very long, low, dark, solid mass protected by some sort of wet black-looking covering which here and there glistened as it rolled past the four lamps that were turned towards it; in short, it was a

common luggage-train. The whole line of waggons, their various contents, as well as the powerful puffing engine that was dragging them through utter darkness, were all inanimate; and it was almost appalling to reflect that, in case of any accident to the drivers, the great train with two red eyes shining in front as well as in rear would proceed alone on its dark iron path—lifeless—senseless—reckless of human life—unconscious of the agonies it might cause or the mischief it might create. It was the work of man—and yet it was ignorant of his power, or even of his name. Devoid of reason or of instinct, it knew nothing—saw nothing—heard nothing—loved nothing—hated nothing—cared for nothing—had no pleasures—no pains—nothing to fear—nothing to hope for; it knew not whence it came,—it rushed forwards it knew not why,—to go it knew not where; it had substance, it had motion, it produced loud sounds, and yet it was as lonely and as destitute of life as the heavens and the earth when in chaos they were without form and void, and when darkness was upon the face of the deep! But these reflections were agreeably interrupted by the arrival of a down-train, swarming alive with passengers, whose busy feet were very shortly to be heard trampling in all directions along or across the platform. At the same time the conductor of the train was delivering over to the Post-office-guard, who had so patiently been awaiting their arrival, a quantity of leather bags of all sizes—white, brown, or black, according to their ages—and which remained in a large heap on the platform until, in about eight minutes, the signal-bell announced first the approach and then the arrival of “the down London mail.”

As soon as this train, which we had been awaiting, stopped, the door of the Flying Post-office was opened, and the bags which had been lying on the platform were no sooner packed either into it or into its tender behind, than, the engine-driver's whistle announcing the departure of the train, we without delay presented an order which we had obtained to travel in the post-office from Stafford to Crewe, and we were scarcely seated in a corner on some letter-bags to witness the operations of its inmates, when the train started and away we went!

The flying Post-office.

This office, which every evening flies away from London to Glasgow, and wherein Government clerks are busily employed in receiving, delivering, and sorting letters all the way, is a narrow carpeted room, twenty-one feet in length by about seven in breadth, lighted by four large reflecting lamps inserted in the roof, and by another in a corner for the guard. Along about two-thirds of the length of this chamber there is affixed to the side wall a narrow table, or counter, covered with green cloth, beneath which various letter bags are stowed away, and above which the space up to the roof is divided into six shelves fourteen feet in length, each containing thirty-five pigeon-holes of about the size of the little compartments in a dove-cote. At this table, and immediately fronting these pigeon-holes, there were standing as we flew along, three Post-office clerks intently occupied in convulsively snatching up from the green-cloth counter, and in dexterously inserting into the various pigeon-holes, a mass of letters which lay before them, and which, when exhausted, were instantly replaced from bags which the senior clerk cut open, and which the guard who had presented them then shook out for assortment. On the right of the chief clerk the remaining one-third of the carriage was filled nearly to the roof with letter-bags of all sorts and sizes, and which an able-bodied Post-office guard, dressed in his shirt-sleeves and laced waistcoat, was hauling at and adjusting according to their respective brass-labels. At this laborious occupation the clerks continue standing for about four hours and a half; that is to say, the first set sort letters from London to Tamworth, the second from Tamworth to Preston, the third from Preston to Carlisle, and the fourth letters from Carlisle to Glasgow. The clerks employed in this duty do not permanently reside at any of the above stations, but are usually removed from one to the other every three months.

As we sat reclining and ruminating in the corner, the scene was as interesting as it was extraordinary. In consequence of the rapid rate at which we were travelling, the bags which were

hanging from the thirty brass pegs on the sides of the office had a tremulous motion, which at every jerk of the train was changed for a moment or two into a slight rolling or pendulous movement, like towels, &c., hanging in a cabin at sea. While the guard's face, besides glistening with perspiration, was—from the labour of stooping and hauling at large letter-bags—as red as his scarlet coat which was hanging before the wall on a little peg, until at last his cheeks appeared as if they were shining at the lamp immediately above them almost as ruddily as the lamp shone upon them—the three clerks were actively moving their right hands in all directions, working vertically with the same dexterity with which compositors in a printing-office horizontally restore their type into the various small compartments to which each letter belongs. Sometimes a clerk was seen to throw into various pigeon-holes a batch of mourning letters, all directed in the same handwriting, and evidently announcing some death; then one or two registered letters wrapped in green covers. For some time another clerk was solely employed in stuffing into bags newspapers for various destinations. Occasionally the guard, leaving his bags, was seen to poke his burly head out of a large window behind him into pitch darkness, enlivened by the occasional passage of bright sparks from the funnel-pipe of the engine, to ascertain by the flashing of the lamps as he passed them, the precise moment of the train clearing certain stations, in order that he might record it in his “time-bill.” Then again a strong smell of burning sealing-wax announced that he was sealing up, and stamping with the Post-office seal, bags three or four of which he then firmly strapped together for delivery. All of a sudden, the flying chamber received a hard sharp blow, which resounded exactly as if a cannon-shot had struck it. This noise, however, merely announced that a station-post we were at that moment passing, but which was already far behind us, had just been safely delivered of four leather letter-bags, which on putting our head out of the window, we saw quietly lying in the far end of a large strong iron-bound sort of landing-net or cradle, which the guard a few minutes before had by a simple movement lowered on purpose to receive them. But not only

had we received four bags, but at the same moment, and apparently by the same blow, we had, as we flew by, dropped at the same station three bags which a Post-office authority had been waiting there to receive. The blow that the pendent bag of letters, moving at the rate say of forty miles an hour, receives in being suddenly snatched away, must be rather greater than that which the flying one receives on being suddenly at that rate dropped on the road. Both operations, however, are effected by a projecting apparatus from the flying post-office coming suddenly into contact with that protruding from the post.

As fast as the clerks could fill the pigeon-holes before them, the letters were quickly taken therefrom, tied up into a bundle, and then by the guard deposited into the leather bag to which they belonged. On very closely observing the clerks as they worked, we discovered that, instead of sorting their letters into the pigeon-holes according to their superscriptions, they placed them into compartments of their own arrangement, and which were only correctly labelled in their own minds; but as every clerk is held answerable for the accuracy of his assortment, he is very properly allowed to execute it in whatever way may be most convenient to his mind or hand.

Besides lame writing and awkward spelling, it was curious to observe what a quantity of irrelevant nonsense is superscribed upon many letters, as if the writer's object was purposely to conceal from the sorting clerk the only fact he ever cares to ascertain, namely, *the post town*. Their patience and intelligence, however, are really beyond all praise; and although sometimes they stand for eight or ten seconds holding a letter close to their lamp, turning sometimes their head and then it, yet it rarely happens that they fail to decipher it. In opening one bag, a lady's pasteboard work-box appeared all in shivers. It had been packed in the thinnest description of whitey-brown paper. The clerk spent nearly two minutes in searching among the fragments for the direction, which he at last discovered in very pale ink, written apparently through a microscope with the point of a needle. The letters sorted in the flying post-office are, excepting a few "late letters," principally cross-post letters, which,

although packed into one bag, are for various localities. For instance, at Stafford the mail takes up a bag made up for Birmingham, Wolverhampton and intermediate places, the letters for which, being intermixed, are sorted by the way, and left at the several stations.

The bags have also to be stowed away in compartments according to their respective destinations. One lot for Manchester, Liverpool, and Dublin; one for Chester; a bundle of bags for Newcastle-under-Lyne, Market-Drayton, Eccleshall, Stone, Crewe, Rhuabon; a quantity of empty bags to be filled coming back; a lot for Edinburgh, Glasgow, and Carlisle; and one great open bag contained all the letter-bags for Dublin taken upon the road.

The minute arrangements necessary for the transaction of all this important business at midnight, while the train is flying through the dark, it would be quite impossible to describe. The occupation is not only highly confidential, but it requires unceasing attention, exhausting to body and mind. Some time ago, while the three clerks, with their right elbows moving in all directions, were vigorously engaged in sorting their letters, and while the guard, with the light of his lamp shining on the gilt buttons and gold lace which emblazoned the pockets of his waistcoat, was busily sealing a letter-bag, a collision took place, which, besides killing four men, at the same moment chucked the sorting clerks from their pigeon-holes to the letter-bags in the guard's compartment. In due time the chief clerk recovered from the shock; but what had happened—why he was lying on the letter-bags—why nobody was sorting—until he recovered from his stupor he could not imagine.

CHAPTER XI.

CREWE.

WE have now reached the most important station on the London and North-Western Railway; indeed the works here are on a scale which strikingly exemplifies the magnitude of the arrangements necessary for the maintenance of an arterial railway.

The Company's workshops at Crewe consist of a Locomotive and of a Coach department. In the manufactories of the former are constructed as well as repaired the whole of the engines and tenders required for the Northern Division, namely, from Birmingham to Liverpool; Rugby to Stafford; Crewe to Holyhead; Liverpool to Manchester; Liverpool, Manchester, and Warrington to Preston; Preston to Carlisle. The establishment also "works," as it is termed, the Lancaster and Carlisle and Chester and Holyhead Lines. The total number of miles is at present 360, but the distance of course increases with the completion of every new branch line. In this division there are 320 engines and tenders (each averaging in value nearly 2000*l.*), of which at least 100 are at work every day. Besides repairing all these, the establishment has turned out a new engine and tender on every Monday morning since the 1st of January, 1848. The number of workmen employed in the above department is 1600, their wages averaging 3800*l.* a fortnight. The accounts of these expenses, as also a book of "casualties," in which every accident to, as well as every delay of, a train is reported, are examined once a fortnight by a special committee of directors.

Without attempting to detail the various establishments, we will briefly describe a few of their most interesting features.

Close to the entrance of the Locomotive Department stands, as its *primum mobile*, the tall chimney of a steam-pump, which,

besides supplying the engine that propels the machinery of the workshops, gives an abundance of water to the locomotives at the station, as also to the new railway town of Crewe, containing at present about 8000 inhabitants. This pump lifts about eighty or ninety thousand gallons of water per day from a brook below into filtering-beds, whence it is again raised about forty feet into a large cistern, where it is a second time filtered through charcoal for the supply of the town. On entering the great gate of the department, the office of which is up a small staircase on the left hand, the first object of attention is the great engine-stable into which the hot dusty locomotives are conducted after their journeys to be cleaned, examined, repaired, or, if sound, to be greased and otherwise prepared for their departure—the last operation being to get up their steam, which is here effected by coal, instead of coke, in about two hours.

After passing through a workshop containing thirty-four planing and slotting machines in busy but almost silent operation, we entered a smith's shop, 260 feet long, containing forty forges all at work. At several of the anvils there were three and sometimes four strikers, and the quantity of sparks that more or less were exploding from each,—the number of sledge-hammers revolving in the air, with the sinewy frames, bare throats and arms of the fine pale men who wielded them, formed altogether a scene well worthy of a few moments' contemplation. As the heavy work of the department is principally executed in this shop, in which iron is first enlisted and then rather roughly drilled into the service of the Company, it might be conceived that the music of the forty anvils at work would altogether be rather noisy in concert. The grave itself, however, could scarcely be more silent than this workshop, in comparison with the one that adjoins it, in which the boilers of the locomotives are constructed. As for asking questions of or receiving explanations from the guide, who with motionless lips conducts the stranger through this chamber, such an effort would be utterly hopeless, for the deafening noise proceeding from the riveting of the bolts and plates of so many boilers is distracting beyond description. We almost fancied that the workmen must be

aware of this effect upon a stranger, and that on seeing us enter they therefore welcomed our visit by a charivari sufficient to awaken the dead. As we hurried through the din, we could not, however, help pausing for a moment before a boiler of copper inside and iron outside, within which there sat crouched up—like a negro between the decks of a slave-ship—an intelligent-looking workman holding with both hands a hammer against a bolt, on the upper end of which, within a few inches of his ears, two lusty comrades on the outside were hammering with surprising strength and quickness. The noise which reverberated within this boiler, in addition to that which was resounding without, formed altogether a dose which it is astonishing the tympanum of the human ear can receive uninjured; at all events we could not help thinking that, if there should happen to exist on earth any man ungallant enough to complain of the occasional admonition of a female tongue, if he will only go by rail to Crewe and sit in that boiler for half an hour, he will most surely never again complain of the chirping of that “cricket on his hearth”—the whispering curtain-lectures of his *dulce domum*.

The adjoining shop contains a brass and also an iron foundry, in which were at work seven brass-moulders and five iron-moulders. In the corner of this room we stood for a few moments looking over the head and shoulders of a fine little boy who was practically exemplifying the properties of the most wonderful of the mineral productions of nature—the loadstone. Among the mass brought into this workshop to be recast are occasionally a quantity of brass shavings and other sweepings, among which there is a small proportion of iron filings, &c. The little boy’s occupation consisted in constantly stirring up the mass or mess before him with a magnet, which, as often as it came out bristling with resplendent particles of iron of various sizes, he swept clean, and then continued his work until the investigator came out of the heap as clear of iron as it went in.

Close to this shop is one in which the models and patterns of the castings are constructed. From a spacious open yard covered with stacks of old scrap-iron, much of which was of the size of common buttons, a door opens into a large shop containing

twelve forges solely used for the construction of engine-wheels, which are forced on as well as off their axles by an ingenious machine of extraordinary power. Adjoining the open yard we saw in operation Nasmyth's great steam-hammer, on the summit of which there sat perched up a man who could regulate its blow from say twenty-five tons to a little tap sufficient only to drive a common-sized nail. As soon as the furnace-door on one side of this hammer was opened, a large lump of scrap-iron at a white heat was lifted and then conducted by a crane on to the anvil beneath. At the same moment from an opposite furnace a long iron bar, heated only at one extremity, was by a gentle blow of the hammer no sooner welded to the mass than the head smith, using it as a handle, turned and re-turned the lump on the anvil so as to enable the steam-hammer to weld its contents into proper form. Of course there has been selected for this extremely heavy work the strongest man that could be obtained. He is of about the height and bulk of the celebrated Italian singer Signor Lablache, with apparently the strength of Hercules, or rather of Vulcan himself—and certainly nothing could be a finer display of muscular power than the various attitudes which this heavy man assumed, as, regardless of the sparks which flew at him, or of the white heat of the lump of iron he was forging, he turned it on one side and then on the other, until at a given signal a small smith in attendance placed a sort of heavy chisel on the iron handle, which by a single blow of the steam-hammer was at once severed from it, in order that it might be piled away and another mass lifted from the fiery furnace to the anvil.

Close to this Cyclopean scene there is a shop solely for turning wheels and axles, which, brought here rough from the smiths' forges we have described, never leave this place until they are ready to go under the engine for which they have been made.

After passing through a grinding-shop and a coppersmith's shop, which we must leave without comment, we entered a most important and interesting workshop, 330 feet in length, by 60 feet in breadth, termed the "fitting-shop," because the work brought here in various states is all finally finished and fitted for its object. Besides 11 planing-machines, 36 shaping and slotting ma-

chines, and 30 turning-lathes, all working by steam-power, we observed, running nearly the whole length of the building, five sets of tables, at which were busily employed in filing, rasping, hammering, &c., eight rows of "*vice-men*," only so called because they work at vices. The whole of the artificers in this room are of the best description, and the importance of their duties cannot perhaps be more briefly illustrated than by the simple fact that, besides all the requisite repairs of 200 locomotive engines, they were employed in finishing the innumerable details of 30 new ones in progress. Some were solely engaged in converting bolts into screws; some in fitting nuts; some in constructing brass whistles; in short, in this division of labour almost every "*vice man*" was employed in finishing some limb, joint, or other component part of a locomotive engine destined to draw trains either of goods or passengers.

After visiting a large store-room, in which all things appertaining to engines, sorted and piled in innumerable compartments, are guarded by a storekeeper, who registers in a book each item that he receives and delivers, we will now introduce our readers to the climax of the establishment, commonly called "*the Erecting-shop*." Hitherto we have been occupied in following in tedious detail from the foundry to the forge, and from the anvil to the vice, the various items, such as plates, rivets, bolts, nuts, rings, stays, tubes, ferrules, steam-pipes, exhausting-pipes, chimney-pipes, safety-valves, life-guards, axle-boxes, pistons, cylinders, connecting-rods, splashers, leading and trailing wheels, &c., amounting in number to 5416 pieces, of which a locomotive engine is composed. We have at last, however, reached that portion of the establishment in which all those joints, limbs, and boilers, which have been separately forged, shaped, and finished in different localities, are assembled together for the consummation of the especial object for which, with so much labour and at so great an expense, they have been prepared: indeed, nothing, we believe, can be more true than Mr. Robert Stevenson's well-known maxim—" *A locomotive engine must be put together as carefully as a watch!*"

The Erecting-shop at Crewe is a room 300 feet long by 100

feet broad, containing five sets of rails, upon three of which are erected the new engines and tenders—the other two being usually occupied by those under heavy repair. The number of artificers we found employed was 220. In this magnificent building we saw in progress of erection 20 passenger-engines, also 10 luggage-engines; and as this shop has (as we have before stated) turned out a locomotive engine and tender complete on every Monday morning for very nearly a year, and is continuing to supply them at the same rate, we had before us in review locomotive engines in almost every stage of progress; and when we reflected on the innumerable benefits, and even blessings, which resulted to mankind from their power, it was most pleasing to be enabled at one view to see—as it were in rehearsal behind the scenes—performers who were so shortly to appear upon the stage of life.

At the further end of the line of rails close to the north wall there appeared a long low tortuous mass of black iron-work, without superstructure or wheels, in which the form of an engine-bed in embryo could but very faintly be traced; a little nearer was a similar mass, in which the outline appeared, from some cause or other, to be more distinctly marked; nearer still the same outline appeared upon wheels: to the next there had been added a boiler and fire-box, without dome, steam-escape, or funnel-pipe; nearer still the locomotive engine in its naked state appeared, in point of form, complete:—and workmen were here busily engaged in covering the boiler with a garment about half an inch thick of hair-felt, upon which others were affixing a covering of inch deal-plank, over which was to be tightly bound a tarpaulin, the whole to be secured by iron-hoops. In the next case the dome of the engine was undergoing a similar toilette, excepting that, instead of a wooden upper garment, it was receiving one of copper. Lastly—(it was on a Saturday that we chanced to visit the establishment)—there stood at the head of this list of recruits a splendid bran-new locomotive engine, completely finished, painted bright green—the varnish was scarcely dry—and in every respect perfectly ready to be delivered over on Monday morning to run its gigantic course. On other

rails within the building were tenders in similar states of progress ; and, as the eye rapidly glanced down these iron rails, the finished engine and tender immediately before it seemed gradually and almost imperceptibly to dissolve, in proportion to its distance, until nothing was left of each but an indistinct and almost unintelligible dreamy vision of black iron-work. On one of the furthest rails, among a number of engines that were undergoing serious operations, we observed "*The Colonel*," which, by going off the rails at Newton Bridge, caused the death of General Baird.

Coach Department.

As our readers will no doubt feel some little selfish interest in the construction of the railway-carriages in which they travel, we shall conclude our rapid survey of the Company's workshops at Crewe by a short inspection of the coach establishment. This department constructs and maintains for the traffic on 393 miles of rails all the requisite passenger-carriages, luggage-vans, travelling post-offices and tenders, parcel-vans and parcel-carts, milk-trucks (principally to supply Liverpool), and break-waggon.

At the Company's "Waggon Department" at Manchester are constructed and maintained all the requisite goods-waggon, horse-boxes, coke-waggon, carriage-trucks for private carriages, cattle-waggon and timber-trucks.

The total number of carriages of all descriptions maintained at Crewe amounts to 670, of which about 100 at a time are usually in hospital. There are generally from 30 to 40 new carriages in progress : the number of workmen employed was 260. The establishment is divided into one set of workshops for the construction, and another for the repair of carriages.

1. In a large shop, 300 feet in length, warmed by steam, at night lighted by gas, and by day from lofty windows on each side, there is throughout the whole length of the building a wooden pavement containing eight sets of rails, upon which we beheld, like hackney-coaches on their stands, a variety of carriages in various stages of construction and of alteration, each surrounded by several intelligent artificers, who, instead of throwing away

their time in dancing round a tree of liberty, to the tune, or, as it is poetically termed by M. Lamartine, "the dogma" of liberty, fraternity, and *equality*, were sedulously occupied in framing different sorts of carriages to suit the various gradations of human society. For instance, one set, with beautiful colours, were painting the outside of a "first class;" while their comrades within were padding it, and petting it, and stuffing it, as if its object were to fit every bend and hollow in the human frame. Another set were strongly varnishing the wooden oak-painted interior of a "second-class," whose exterior had evidently received considerable attention; while another gang were "finishing off" a covered "third-class," whose inside certainly appeared not only very hard, but what old nurses term "terribly troubled with wind."

In another quarter a set of workmen were economically converting an old first-class into a second-class—the transmutation being effected by taking out the lining, and then converting large, fashionable, oval windows into little vulgar square ones. But though comfort, like cheese, bacon, or any other description of merchandise, was thus doled out to each class of passengers according to the amount of it which they may desire to purchase, the materials of all the carriages appeared to be of good sound quality. The panels of first, second, and third-class carriages, as well as those even of luggage-vans, are invariably made of mahogany; "the bottom-sides" of English oak; the rest of the framing of ash. The break-blocks are made of willow, and usually last about ten weeks' work. Adjoining this congregation of carriages is a smith's shop, containing twenty-eight forges and a tire-oven; above which we found a large store-room filled with lace-trimming, horse-hair, superfine cloth, varnished oil-cloth, nails, rugs, and, among a variety of other requirements, plate-glass for windows. We observed that those for the front glasses of coupés—in order to enable them to resist the occasional pelt-ing of hot cinders from the engine—were half an inch thick! There was also, in an adjoining store, a collection of old cushions, mercilessly indented and worn out by some description of dull heavy pressure.

2. The hospital of the Coach Department at Crewe is an

enormous shed, 600 feet long by 180 broad. It is capable of holding 90 carriages, with ample room for working around them, but only 80 were under repair. Among them we observed several flying post-offices and tenders bearing the Royal arms. Adjoining is a large smith's shop, also a spacious yard containing a heavy stock of timber piled under sheds, with an office for recording the daily amount received and delivered. On entering "*the Grease house*," which, contrary to expectation, we found to be as clean as a dairy, we perceived, standing against the walls, three huge casks of Russia tallow, a quantity of yellow palm-oil, several boxes of soda, and a water-cock. On the opposite side there was a small steam-boiler for heating two open cauldrons and two wooden cooling-vats. This apparatus is constructed for the fabrication of that yellow mixture which our readers have seen bestowed so generously to the axles of the carriages of every train. We had often in vain endeavoured to ascertain its composition, which, from the grease-master, the highest possible authority on the subject, we at last discovered to be as follows :—

200 lbs. of Russia tallow.
70 lbs. of palm-oil.
20 lbs. of soda.
50 gallons of water.

Besides heating the two cauldrons we have mentioned, large iron pipes pass from the steam-boiler to the immediate vicinity of two casks, each containing one ton of sperm-oil, which is thus kept constantly fluid, instead of crystallizing, as it is prone to do, during cold weather.

CHAPTER XII.

A RAILWAY TOWN.

HAVING now concluded our rough sketch of the workshops of the locomotive and coach departments at Crewe,—in both of which the Company's artificers and workmen toil both winter and summer from six in the morning till half-past five in the evening, except on Saturdays, when they leave off at four,—our readers will, we hope, feel sufficiently interested in their welfare to inquire, as we anxiously did, a little into their domestic history and comforts. About a hundred yards from the two establishments we have just left there stands a plain neat building, erected by the Company, containing baths, hot, cold, and shower, for the workmen, as well as for their wives and daughters, the hours allotted for each sex being stated on a board, which bluntly enough explains that the women may wash while the men are working, and *vice versâ*. For this wholesome luxury the charge for each person is $1\frac{1}{4}d.$; and although we do not just at present recollect the exact price of yellow soap per bar, of sharp white sand per bushel, of stout dowlas-towelling per yard, or the cost of warming a few hundred gallons of water, yet, as we stood gazing into one of these baths, we could not help thinking that if that Hercules who works the steam-hammer can, on Saturday night after his week's toil, be scrubbed perfectly clean and white for three half-pence, he can have no very great reason to complain, for surely, except by machinery, the operation could scarcely be effected much cheaper! To a medical man the Company gives a house and a surgery, in addition to which he receives from every unmarried workman $1d.$ per week; if married, but with no family, $1\frac{1}{2}d.$ per week; if married, and with a family, $2d.$ per week; for which he undertakes to give

attendance and medicine to whatever men, women, children, or babies of the establishment may require them. A clergyman, with an adequate salary from the Company, superintends three large day-schools for about three hundred boys, girls, and infants. There is also a library and mechanic's institute, supported by a subscription of about 10s. a year, at which a number of very respectable artificers, whose education when young was neglected, attend at night to learn, *ab initio*, reading, writing, and arithmetic. There is likewise a vocal and instrumental class, attended by a number of workmen, with their wives and daughters.

The town of Crewe contains 514 houses, one church, three schools, and one town-hall, all belonging to the Company; and as the birth, growth, and progress of a railway town is of novel interest, our readers will, we think, be anxious to learn at what speed our railway stations are now turning into towns, just as many of our ancient post-houses formerly grew into post-towns. Although the new houses at Crewe were originally built solely for railway servants, yet it was soon found necessary to construct a considerable number for the many shopkeepers and others who were desirous to join the new settlement, and accordingly, of the present population of 8000, about one-half are strangers. Not only are the streets, which are well lighted by gas, much broader than those of Wolverton, but the houses are, generally speaking, of a superior description, and, although all are new, yet it is curious to observe how insidiously old customs, old fashions, old wants, and even old luxuries, have become domiciled. Many of the shops have large windows, which eagerly attempt to look like plate-glass. In the shoemakers' shops, contrasted with thick railway boots and broad railway shoes, there hang narrow-soled Wellingtons and Bluchers, as usual scarcely half the gauge or breadth of the human foot. The Company's workmen began by having a cheap stout dancing-master of their own; but the aristocracy of Crewe very naturally requiring higher kicks, we found a superior and more elegant artist giving lessons in the town-hall—a splendid room capable of containing 1000 persons.

It would of course be quite irregular for 8000 persons to live together without the luxury of being enabled occasionally to bite

and tickle each other with the sharp teeth and talons of the law, and accordingly we observed, appropriately inscribed in large letters on the door of a very respectable looking house,

GRIFFIN, ATTORNEY.

Mankind are so prone to draw distinctions where no real differences exist, that among our readers there are probably many who conceive that, although they themselves are fully competent to enjoy Fanny Kemble's readings from Shakspeare, such a mental luxury would be altogether out of character at *New Crewe*! In short, that shops full of smiths and other varieties of workmen (particularly him of the steam-hammer, and most especially the artificer we saw squatted in the boiler), although all exceedingly useful in their ways, could not possibly appreciate the delicate intonations of voice or the poetical beauties to which we have alluded. Now, without the smallest desire to oppose this theory, we will simply state, that while, during the men's dinner-hour, we were strolling through the streets of Crewe, we observed on the walls of a temporary theatre, surrounded by a crowd of gaping mouths and eager unwashed faces, a very large placard, of which the following is a copy :—

BY PARTICULAR DESIRE.

MR. JONES WILL REPEAT

The Scene from *Macbeth* and Cato's Soliloquy :

LIKEWISE

IMITATIONS OF CHARLES KEMBLE, EDMUND KEAN,
AND MR. COOPER.

The town and shops of Crewe are well lighted by gas from the Company's works, which create about 30,000 cubic feet per day—the foot-paths of the streets being of asphalt, composed of the

Company's coal-tar mixed up with gravel and ashes from the workshops. The town is governed by a council of fifteen members, two-thirds of whom are nominated by the workmen and inhabitants, and one-third by the directors. Their regulations are all duly promulgated "by order of the council."

Although our limits do not allow us to enter into many statistical details, we may mention that the number of persons employed on account of the London and North-Western Railway Company, including those occupied in the collection and delivery of goods, is as follows:—

2 Secretaries to the Board of Directors.

1 General Manager.

3 Superintendents.

2 Resident Engineers.

966 Clerks.

3054 Porters.

701 Police-constables.

738 Engine and Firemen.

3347 Artificers.

1452 Labourers.

Total number 10,266

The number of horses employed is . 612

Ditto vans, &c. 253

CHAPTER XIII.

ELECTRIC TELEGRAPH.

IN strolling down Lothbury, in the City of London, the stranger suddenly sees, opposite to the dull dead wall of the Bank of England and pointing down an alley, the forefinger of a little black hand, under which are written the following words:—

“TO THE CENTRAL TELEGRAPH STATION.”

and accordingly, at the bottom of the small *cul-de-sac* there it stands, appropriately designated by its “Electric Clock.”

On entering the door of this establishment the visitor suddenly finds himself in a very handsome reception-hall, 53 feet long, 32 broad, and 45 feet high, illuminated from above by a skylight, which also gives light to three galleries, one above another, communicating with the various departments of the establishment.

Across this reception-hall, on the left of which are the secretary's and accountant's offices, there is at each side a long counter or table, that on the right being divided by green curtains into six desks, at which are to be seen the round, stout, slight, slim backs of persons of all shapes, and occasionally of both sexes, intently occupied in writing—unseen by each other—the important communications they are severally desirous to despatch. These messages are required to be written on a half-sheet of large-sized letter-paper, nearly one half of which is pre-occupied by a printed form, to be filled up by the name and address of the writer, as also of the person to whom his communication is addressed; the charge of the message, answer, portorage, or cab-hire; the date and hour at which the message is received; and lastly, the date and hour at which the operation of conveying it was commenced and finished by the person who works the electric instrument.

On glancing at these forms our first impression was that the space allotted for the letter or message was insufficient. It is, however, practically found that the Company's charges, which amount, from, say London—

To Birmingham or Stafford	3 $\frac{3}{10}$ d. per word.
„ Derby, Norwich, Nottingham, or Yarmouth	4 $\frac{1}{2}$ „
„ Liverpool, Leeds, Manchester	5 $\frac{1}{10}$ „
„ York	5 $\frac{3}{4}$ „
„ Edinburgh	7 $\frac{1}{2}$ „
„ Glasgow	8 $\frac{3}{4}$ „

seriously admonish writers of all descriptions to be as brief as possible: indeed it is a very curious fact in natural philosophy that a lawyer under the Company's galvanic influence is suddenly gifted with a description of *clairvoyance* which enables him to write on any subject in a laconic style, which in his chambers he would consider, and would most conscientiously assure his client, to be utterly impracticable!

As fast as these messages are written, they are, one after another, passed through a glass window to a small compartment, or rather department, on the ground-floor, termed "*the Booking-office*," where, after having been briefly noted and marked with their distinctive numbers, they are by the same hand put into a small box, a bell is then rung, and at the same instant up they fly, through a sort of wooden chimney, to the attic regions of the building, to "*the Instrument department*;" and as we slowly followed them by a staircase, on every landing-place of which we involuntarily paused for a moment or two to reflect on the wonderful process we were about to witness, we own it was with admiration and surprise that, on entering the attic, we suddenly saw before us the simple materials with which such astonishing effects are produced.

In most of our manufactories it may but too truly be said that "the workmanship exceeds the materials." Before a common coffin-nail can be made, the bowels of the earth must be ransacked, ores raised in Cornwall must be smelted in Wales by coals which have been excavated, raised, carted, recarted, &c. The amount of labour which has been expended in the fabrication

of every trifling commodity exhibited in our shops is in a similar manner almost incalculable: indeed if our countrywomen did not know how many hours of unwholesome and unremitting application have been required, nay, how many constitutions have been ruined, in the fabrication of the light beautiful dresses and trinkets that adorn their persons, they would surely feel that their dance, delightful as it may have appeared to them, has been that of death to many of the poorest of their sex. Even the tedious details of the trifling volume we are writing prove that, while the public are luxuriously flying along the rails of only one arterial railway, an army of upwards of ten thousand workmen are labouring in a variety of ways for the management, protection, and maintenance of the way; and as we were not insensible of the usual necessity for these details, we certainly did expect to find that a proportionate amount of labour would be requisite for the simultaneous transmission of messages with extraordinary velocity to distances from one to upwards of four hundred miles. Simplicity, however, is the characteristic of science, and certainly the attics or garrets of the London Central Telegraph Station strikingly illustrate the truth of the axiom: indeed the whole of the Company's stock in trade which we found therein consisted of four or five intelligent-looking boys, from fourteen to fifteen years of age, and eight little "*instruments*," each about half the size of those which German women and Italian men carry on their backs through our streets; and as our advertising horse-dealers, in offering, or, as it is technically termed, in *chaunting* their cob to the notice of "a heavy timid gentleman," invariably assure him "that a child can ride it," so it may truly be said of the electric telegraph, which transmits its intelligence at the incomprehensible rate of 280,000 miles *per second*, that *a boy can guide it!*

Although the ordinary rate at which electric communication is now effected has above been easily expressed by a few figures, it is evident that it is a velocity which the human mind has not power to comprehend.

When Shakspeare, in the exercise of his unbounded imagination, made Puck, in obedience to Oberon's order to him—

" be here again
Ere the leviathan can swim a league,"

reply--

" I'll put a girdle round the earth
In forty minutes"—

how little did our immortal bard think that this light, fanciful offer of "a fairy" to "the king of the fairies," would, in the 19th century, not only be substantially realised, but surpassed as follows.

The electric telegraph would convey intelligence more than twenty-eight thousand times round the earth while Puck, at his vaunted speed, was crawling round it only *once* !

On every instrument there is a dial, on which is inscribed the names of the six or eight stations with which it usually communicates. When much business is to be transacted, a boy is necessary for each of these instruments ; generally, however, one lad can without practical difficulty manage about three ; but as the whole of them are ready for work by night as well as by day, they are incessantly attended in watches of eight hours each by these satellite boys by day, and by men at night.

As fast as the various messages for delivery, flying one after another from the ground floor up the chimney, reach the level of the instruments, they are brought by the superintendent to the particular one by which they are to be communicated, and its boy, with the quickness characteristic of his age, then instantly sets to work.

His first process is, by means of the electric current, to sound a little bell, which simultaneously alarms all the stations on his line ; and although the attention of the sentinel at each is thus attracted, yet it almost instantly evaporates from all excepting from that to the name of which he causes the index needle to point, by which signal the clerk at that station instantly knows that the forthcoming message is addressed solely to *him*, and accordingly by a corresponding signal he announces to the London boy that he is ready to receive it. By means of a brass handle affixed to the dial, which the boy grasps in each hand, he now begins rapidly to spell off his information by certain

twists of his wrists, each of which imparts to the needles on his dials, as well as to those on the dials of his distant correspondent, a convulsive movement designating the particular letter of the telegraphic alphabet required.

By this arrangement he is enabled to transmit an ordinary sized word in three seconds, or about twenty per minute. In case of any accident to the wire of one of his needles, he can, by a different alphabet, transmit his message by a series of movements of the single needle at the reduced rate of about eight or nine words per minute.

While a boy at one instrument is thus occupied in transmitting to—say Liverpool—a message written by its London author in ink which is scarcely dry, another boy at the adjoining instrument is, by the reverse of the process, attentively reading the quivering movements of his dial, which by a sort of St. Vitus's dance are rapidly spelling to him a message, *viâ* the wires of the South-Western Railway, say from Gosport, which word by word he repeats aloud to an assistant, who, seated by his side, writes it down (he receives it about as fast as his attendant can conveniently write it) on a sheet of paper, which as soon as the message is concluded descends to the "Booking Office;" where, inscribed in due form, it is without delay despatched to its destination by messenger, cab, or express, according to order. The following trifling anecdotes will not only practically exemplify the process we have just described, but will demonstrate the rapidity with which the Company are enabled to transmit messages.

Some little time ago, a gentleman, walking into the reception-hall of the London office, stated that he had important business to communicate to his friend at Edinburgh, who by appointment was, he knew, at that moment waiting there to reply to it in the Company's Telegraphic Office. On being presented with the half-sheet of paper, headed with its printed form as described, he wrote his query, which, after passing through the glass window to "the Booking Office," flew upwards to the Instrument department, from whence with the utmost despatch it was transmitted to Edinburgh, and, the brief reply almost instantly

returning to the instrument, it was committed to writing, and then lowered down to the "gentleman in waiting," who thus quietly walked off with his answer, which we were informed at the office he obtained within the space of five minutes, a considerable portion of which had been consumed by himself and his friend in writing the few words which had passed between them, for, during their passage and return, the electric wires had only detained them exactly the three hundred and fiftieth part of one second!

In a dull foggy day an engine on the London and North-Western Railway, tired of idly standing still with its steam up, suddenly ran away, and, without any one to guide it, proceeded at a rapid rate towards the Euston Station, where every one who witnessed its start expected it would create an amount of damage almost incalculable: but the electric telegraph, soon overtaking and passing the fugitive, conveyed intelligence to Camden Station in abundant time for full preparations to be made there for its reception, by turning the points of the rails into a sideway containing only a few ballast waggons.

In like manner a "gentleman" who had taken for himself and his family only second-class tickets, but who with them had been comfortably enjoying a first-class carriage, was greatly astonished on arriving at his destination to see standing at the window of his carriage, almost before the train had stopped, the Company's station clerk, who very loudly said to him, in presence of his fellow-travellers, "*Mr. ———, I'll trouble you for excess of fare for yourself and party!*"

Besides the transmission of *private* messages at charges averaging, say one-fortieth of a penny per mile per word, the Electric Telegraph Company have, in central situations in the principal towns of the kingdom, established stations, whence and where information, messages, and despatches of a public character may be forwarded and received to and from all the other stations of the Company.

In each of these stations a room for subscribers has been established, in which is posted as fast as it arrives all intelligence of commercial or public interest; such, for instance, as—

Prices of Funds and Shares.	Cattle-market.
Money-market.	Haymarket.
Wind and Weather from about	Meat-market.
forty different parts of the	Coal, tallow, cotton, and iron
kingdom.	markets.
Shipping arrivals and departures.	General-Produce market.
Losses and disasters at sea.	General news of the day.
Sporting intelligence.	Parliamentary news during the
Corn-market.	Session.
Corn averages.	

It need hardly be stated that this intelligence is principally imparted to the various stations from London, where it is concentrated by telegraphic announcements from all quarters.

The "Intelligence Department," which is distinct from the "Private Message Department," is solely for supplying news to the country subscription-rooms at Edinburgh, Glasgow, Liverpool, Leeds, Manchester, Hull, Newcastle, &c.

At 7 in the morning the superintendent of the former department obtains all the London morning newspapers, from which he condenses and despatches to the several electric stations the intelligence he considers most useful to each. The local press of course awaits the arrival, and thus by 8 o'clock A.M. a merchant at Manchester receives intelligence which the rails can only bring at $\frac{1}{2}$ before 2, and which cannot by rail reach Edinburgh till $\frac{1}{2}$ past 9 P.M.

To Glasgow is transmitted every evening detailed intelligence for immediate insertion in the 'North British Daily Mail,' giving everything of importance that has occurred since the first edition of the London papers. Similar intelligence is despatched to papers at Hull and Leeds.

By this rapid transmission of intelligence, the alternations in the prices of the markets at Manchester, &c. &c., being almost simultaneous with those of London, the merchants of the former are saved from being victimized by the latter. It is true that by great exertions prior intelligence may electrically be sent by private message; but as the wary ones cautiously wait for the despatch of the Telegraph Office, it has but little effect.

At one o'clock information is sent to all the electric reading-rooms of the London quotations of funds and shares up to that hour, thus showing the actual prices at which business has been done. The closing prices of the French funds for the day preceding are usually annexed, and the state of the London wind and weather at that hour.

Early in the morning the instrument boys are to be seen greedily devouring (for, with the curiosity, eagerness, and enthusiasm of youth, they appear to take great interest in their duties) the various matters which from all quarters at once are imparted to them.

One has just received intelligence by telegraph from Ely, announcing the result of the Lynn election. Another, a copy of a 'Moniteur' extraordinary, containing the first message of the President of the French Republic to the President of the National Assembly.

Another, that "Stewart's and Hetton's were nineteen and six-pence. Gosforth eighteen shill. Holywell fifteen and six-pence. Hastings Hartley fourteen and ninepence. S Q—" market one hun. fifty one, sold one hun and three—S Q.

"Market very good—P Q."

Another, the following characteristic description of the winds and weather of Old England at 9 A.M.:—

Places.	Wind.	Weather.
Southampton	W.S.W.	Cloudy.
Gosport	S.E.	"
Portsmouth	S.E.	"
London	E.	Rain.
St. Ives	W.	Very fine.
Cambridge	S.W.	Cloudy.
Newmarket	E.	Cloudy.
Yarmouth	E.	Fine.
Lowestoffe	E.	Stormy.
Norwich	E.	Fine.
Chelmsford	N.E.	Cloudy.
Colchester	S.E.	Fine.
Ipswich		Fine.

The above description of our changeable climate, it occurred

to us, would not very incorrectly represent the present political state of Europe.

During the day telegraphic information flashes upon these boys *from the STOCK EXCHANGE*, informing them of "prices and closing prices of the funds and principal railway shares. With remarks."

FROM THE LONDON CATTLE MARKET, stating "the number and quality of beasts, sheep, calves, pigs. *Holland* beasts, sheep, calves. *Danish* beasts. With remarks."

FROM THE MEAT MARKET, stating "the prices of every description of meat, with remarks."

Also similar returns from all the other markets we have enumerated.

As fast as this incongruous mass of intelligence arrives, it is, in the mode already described, transcribed in writing to separate sheets of paper, which are without delay one after another lowered down to the superintendent of "*the Intelligence Department*," by whom they are rapidly digested for distribution either to the whole of the Company's reading-room stations, or for those lines only which any particular species of information may partially interest; such as corn-markets requiring corn intelligence; sea-ports, shipping news, &c. &c.

As quickly as these various despatches are concocted, the information they respectively contain reascends through "the lift," or wooden chimney, to the instrument department, from whence it is projected, or rather radiates, to its respective destination; and thus in every one of the Company's reading-rooms throughout the kingdom there consecutively appears, in what would until very lately have been considered magic writing upon the walls, the varied information which had only reached London from all points of the compass *a few minutes ago!* But not only does this wonderful power, which it has pleased the Almighty to develop to mankind, facilitate in a most extraordinary degree our communication with each other, and thereby materially adds to our wealth, but it affords us a proportionate increase of power to defend that property which, by integrity and industry, our nation has, under Providence, been enabled to acquire.

In case of war, our Commander-in-Chief would not only be made acquainted with information even of the smallest importance as soon as, or even before, it reached our shores, but he would simultaneously be enabled to issue orders to the troops at every station in the kingdom as rapidly as if they were all assembled on the parade before him.

In like manner the Admiralty would receive intelligence and despatch directions, which, in combination with the arrangements at the Horse Guards, War Office, and Home Office, would give to our naval, military, and civil forces a combined strength which it has hitherto been impracticable for them separately to develop.

But to whatever amount the electric telegraph, used in the manner we have described, may facilitate the commerce and strengthen the defences of the empire, there remains to be delineated an application of the discovery which, there can be no doubt, forms the most extraordinary feat which the ingenuity of man has hitherto performed.

In a corner of one of the attics in which the eight electric instruments are placed there stands a small very ordinary-looking piece of cheap machinery composed of a few wheels, giving revolution to a small cylinder, upon which there has been wound a strip of bluish paper half an inch wide and about 60 yards in length.

As this insignificant thread of paper slowly unrolls itself, the stranger observes, with feelings of curiosity rather than of surprise, that as it passes along a small flat surface it receives from a little piece of steel wire about a quarter of an inch long, and about the size of a large needle, a series of minute black marks, composed of "dot and go one,"—two dots,—two dots and a line,—two lines and a dot,—three little lines and a dot,—and so on.

Now many of our readers will, no doubt, gravely exclaim, *But who makes these dots?*

The answer in a few words explains the greatest mechanical wonder upon earth. The little dots and lines marked upon the narrow roll of paper revolving in a garret of the London Central Telegraph Station, are made BY A MAN SITTING IN MANCHESTER,

who, by galvanic electricity, and by the movement of a little brass finger-pedal, is not only communicating to, but is HIMSELF actually PRINTING IN LONDON information which requires nothing but a knowledge of the dotted alphabet he uses to be read by any one to whom it may either publicly or confidentially be addressed!!

Upon this fact comment is unnecessary. It humbles rather than exalts the mind. Of such an invention it can only be said

“NON NOBIS, DOMINE, SED NOMINI TUO DA GLORIAM.”

To supply this instrument with paper there has been invented one of the most beautiful little toys we ever beheld, consisting of two iron fluted rollers four feet long, which, by revolving against each other, draw between them on one side, and emit from the other in a shower of fantastic writhing shreds, a hundred strips of paper half an inch broad at a time.

Before leaving the attics in which the electric printing as well as the eight telegraphic instruments are stationed, we may observe that the boys who work the latter form that amount of acquaintance with the workers of the distant instruments with which they have been in the habit of communicating, that, if from any reason their usual correspondents are removed, they instantly discover by the movement of the needles that they have to form an acquaintance with a new comrade, from whom, in leisure moments, they probably soon ascertain the fate of the old one; indeed, so completely is this description of acquaintance established, that it is not uncommon to hear a telegraph boy in the London attic suddenly exclaim, as he looks with joy at the quivering vibrations of his needles, which are working say from Manchester, “*Oh! here is Bill * * * come back!*” There are, of course, however, exceptions to these kindly feelings, and accordingly two clerks who had been employed at remote stations on the * * * line were lately separated because they were constantly electrically quarrelling and abusing each other by telegraph.

The working of these instruments requires, as may be supposed, undivided attention, and accordingly there is very properly affixed to the wall of the chamber in which they stand the following notice, which we implicitly obeyed:—

"Do not interrupt the clerks while engaged at the instruments."

As the Vicar of Wakefield's most important movements in life were "from the blue bed to the brown one," so we must now request our readers to migrate with us from the attics of the Electric Telegraph Office to a low, dark, groined, 5th-of-November-looking cellar, thirty-two feet long by five in width, containing three shelves, on which are to be seen, lying in double rows, thirty-four galvanic batteries, or, to speak in more homely terms, small open troughs, five inches broad, and either thirty-two inches or twenty inches in length. The largest, weighing, when charged, 60 lbs., are called "twenty-fours," because they contain that number of pairs of plates of copper and zinc separated by a little sand, the whole being then brought into galvanic action by being sluiced with sulphuric acid and water mixed in the proportions of one of the former to twelve of the latter.

The smallest, called "twelves," contain only that number of pairs of plates.

Of these batteries it requires from four to six of the largest to be applied to one instrument to blow a message from London to Edinburgh. A single "twelve," applied to each instrument, will project intelligence to a range of four or five miles.

These batteries are connected with the eight instruments in the attics by small copper wires, which, to prevent confusion of action from contact one with another, are covered with cotton thread, saturated with a mixture of tar, rosin, and grease.

With this simple precaution, nine wires, insulated from each other, are packed in a half-inch leaden tube, in which they again descend from the instruments to the cellar region. Four or five of these pipes are there packed into an iron pipe three inches in diameter, which conducts them under the foot pavement of the streets to the termini of the arterial rail-roads, alongside of which, and in the open air, a series of lines resembling those on which music is written, composed of galvanised iron, stout enough to bear tension, and suspended by posts, have, as is well known, been constructed. Along the street pavement, at every quarter of a mile, there are cast-iron "*testing-posts*" to enable the Com-

pany's servants to examine all these wires in order to detect and remove any that require to be renewed.

Although the London police have strict orders to allow no one to impede the thoroughfare of the public, and accordingly are everlastingly mumbling the unphilosophical monotonous exhortation of "*Get on, Sir!*" "*Move on, Ma'am!*" yet it is almost impossible for any ruminating being to walk the streets without occasionally pausing to reflect not only on the busy bustling scenes which glide before his eyes, but on those which, at very different rates, are at the same moment flowing beneath his feet.

In our metropolis, there is scarcely a street which does not appear to take pride in exposing as often as possible to public view a series of pipes of all sizes, in which fire of various companies, pure water of various companies, and unmentionable mixtures, abominable to all, pass cheek by jowl with infinitely less trouble than the motley human currents flow above them. But among all the subterranean pipes laid bare before us there is certainly no one which has more curious contents than the three-inch iron pipe of the Electric Telegraph Company; and yet, of all the multitudes who walk the streets, how few of them ever care to reflect what a singular contrast exists between the slow pace at which they themselves are proceeding, and the rate at which beneath their feet forty-five electric wires are transmitting in all directions, and to a variety of distances, intelligence of every possible description!

How singular is it to reflect that, within the narrow space of the three-inch iron pipe which encases them, notice of a murder is flying to London papers, passing news from India going into the country; along another wire an officer is applying for his regimentals, while others are conducting to and fro the "price of stocks," "news of the Pope," a speech from Paris of the "collapsed poet," &c. &c. &c. In case, from the abrasion of the cotton that surrounds the numerous copper wires within the pipe, any of them come into contact with each other, the intelligence which each is conveying is suddenly confounded; in which case other wires must instantly be substituted. Indeed,

even as regards the strong galvanised iron wires which in the open air run parallel with our arterial railways, if in wet weather, in spite of the many ingenious precautions taken, the rain should form a continuous stream between the several wires and the ground, the electric fluid, escaping from the wires, is conducted by the water till it "finds earth," the best of all conductors; and therefore, instead of the intelligence going on, say to Edinburgh, it follows the axiom of electricity by selecting the shortest road, and, thus completing its circuit through the earth, it returns to London. Sometimes, instead of going "to earth," it flies back to the office in London along another wire, to which, by means of a continuous line of water or of entanglement of the two wires, it has managed to escape; in which case, the messages on both wires wrangling with each other, the communication is stopped.

It is commonly asserted and believed that many birds are killed by merely perching upon the iron wires of the electric telegraph; but at any time they can do so with perfect impunity. If, indeed, a bird could put one of his feet on the wire, and with the other manage to touch the earth, he would then, no doubt, be severely galvanised. That the railway company's men often pick up under the wires of the electric telegraph partridges and other birds which have evidently been just killed—indeed, some are found with their heads cut off—is quite true; but these deaths and decapitations have proceeded, not from electricity, but from the birds—probably during twilight or fog—having at full speed flown against the wires, which, of course, cut *their* heads off, just as an iron bar would cut off the head of any man or alderman on horseback who, at a full gallop, was to run foul of it.

In windy weather the electric wires form an Eolian harp, which occasionally emits most unearthly music. "*I say, Jack!*" said an engine-driver to his stoker, who, like himself, was listening for the first time to this querulous sort of noise proceeding from the newly erected wires along his line, "*I say, Jack! ain't they a giving it to 'em at Thrapstone?*"

When the posts and wires of the electric telegraph between

Northampton and Peterborough were being erected, an honest farmer, who for many minutes had very attentively been watching the operation, inquired of the chief superintendent to what use it was to be applied? On being informed that by its means he would in a few minutes receive at *Wellingboro'* a list of the Mark Lane prices in *London*, he evidently incredulously asked how that was to be done; and on its being explained to him that the intelligence would be sent down to him "*letter by letter*," he exclaimed, "But you don't mean to say that, besides letters, it will bring down *parcels* too?"

As the rails and electric wires are now immediately before us, we cannot refrain from observing that the two inventions, like all branches of science, not only materially assist each other, but that the former, to a considerable degree, has created the latter: for instance, it may be truly said that Mr. M'Adam materially assisted the invention of the innumerable little four-wheeled carriages which burst into existence as soon as, in consequence of good roads, it became possible for a single horse to draw a whole family. In like manner, it may, we submit, be reasonably and fairly asserted that the gradients and police of the railway have materially assisted the invention, or rather the application, of galvanic electricity to wires, which, placed along unguarded high roads, would have been practically useless.

On the outside of the Central Telegraph Station, as well as in the interior, there is an electric clock, the latter of which is worked by a small battery contained in a white jar capable of holding about three quarts, and, the pendulum being operated upon by combined electricity with galvanism, the clock requires no winding up, and would, therefore, go perpetually, or rather as long as the battery lasts; and if the Company would, instead of gas-burners, adopt the electric light, their establishment would then, *sui generis*, be complete.

Considerable instruction, with some little amusement, might, no doubt, be derived from a perusal of the variegated information, intelligence, and ordinary as well as extraordinary private

messages which have been despatched and recorded by the electric telegraph ; but the Company very properly faithfully refuse—be it important or unimportant—to unveil to any one what they consider to have been confidentially intrusted to their care.

Those, however, who have recourse to the invention often divulge their own secrets ; and accordingly here is one which came to us direct from one of the parties concerned.

During a marriage which very lately took place at ———, one of the bridesmaids was so deeply affected by the ceremony, that she took the opportunity of the concentrated interest excited by the bride to elope from the church with an admirer. The instant her parents discovered their sad loss, messengers were sent to all the railway stations to stop the fugitives. The telegraph also went to work, and with such effect that, before night, no less than four affectionate couples legitimately married that morning were interrupted on their several marriage jaunts, and most seriously bothered, inconvenienced, and impeded by policemen and magistrates, who

“ Like envious clouds seem'd bent to dim their glory,
And check their bright course to the Occident.”

On the other hand, when it is considered that young people who form imprudent attachments, instead of being effectually separated, as in old-fashioned times, by distance, can now-a-days, though four or five hundred miles apart, at any moment, by daylight or by moonlight, electrically converse with each other—in short, ask questions and give answers—it must be admitted that, although the galvanic telegraph has certainly triumphantly succeeded in stopping many matches, it has possibly, if the real truth could be known, made quite as many as it has marred.

With respect, however, to communications of this delicate nature, we deem it our duty very gravely to warn our young readers, especially those of the fairer sex, that unless London time were to be adopted—as it is—at all the electric stations, a despatch would arrive at its western destination at an earlier hour than that at which it had left its eastern starting-post ;

and thus a young lady might appear to have affirmatively answered in Devonshire an important question—say seven minutes and a half before, according to local clocks, it had actually been proposed to her in London!

In cases where crimes have been committed, the astonishing detective powers of the telegraph have already proved most valuable to the community. As, however, the numberless instances which might be cited are but endless exemplifications of the same principle, we will merely offer to our readers the fragment of one of them.

He never expected that! He had made up his mind to give her the stuff,—he had deliberately bought it,—had paid for it,—had put it into his pocket,—had driven with it to the terminus of the Great Western Railway,—had flown with it along the line to Slough,—had walked with it to the cottage.

He had already deprived the poor creature of her character, and now, on the first day of the year 1845, he had come down to her on purpose to deprive her of her life.

With affected kindness he had offered her refreshment,—had waited while, with his money, she went to buy it,—he had summoned up courage? . . . no, cowardice and wickedness . . . enough secretly to pour the stuff from a tiny phial into her glass,—he had seen her, with feelings of gratitude to him, raise the mixture to her faded lips,—he had watched her swallow the first mouthful—then another—then drink,—he had expected every instant, as she reached the drugs, to see his degraded victim drop down dead before his eyes;—he could bear all this, but he did not know that it was the nature of the horrid poison he had purchased to betray the hand that administered it. Oh! he never expected that loud, horrid, piercing, convulsive scream!

As terrified and scared he opened the door to escape, the inhabitants of the neighbouring cottages, alarmed by the frightful noise they had just heard, sympathetically opened theirs. They saw him leave the house with hurried steps,—observed him make for the Slough road, where by another party he was

observed to be "confused—to tremble—and on being addressed, to make no reply." And yet he had only done what he had deliberately intended to perpetrate:—he knew there was no rest for the wicked, but, Oh! he had never expected that shrill, fearful, haunting scream!

On reaching the station he took his place in a departing train, and in a few minutes he apparently had effected his escape!

Everybody who has travelled by the Great Western Railway knows how joyously its well-appointed trains skim along the level country between Slough and London. He no doubt appreciated the speed—valued the wings with which he was flying—more than any of his fellow-passengers. He probably felt that no power on earth could overtake him, and that, if he could but dive into the mass of population in London, he would in perfect security flow with its streams unnoticed.

But whatever may have been his fears—his hopes—his fancies—or his thoughts, there suddenly flashed along the wires of the electric telegraph which were stretched close beside him the following words:—

"A MURDER HAS JUST BEEN COMMITTED AT SALTHILL, AND THE SUSPECTED MURDERER WAS SEEN TO TAKE A FIRST-CLASS TICKET FOR LONDON BY THE TRAIN WHICH LEFT SLOUGH AT 7H. 42M. P.M.

"HE IS IN THE GARB OF A QUAKER, WITH A BROWN GREAT-COAT ON, WHICH REACHES NEARLY DOWN TO HIS FEET. HE IS IN THE LAST COMPARTMENT OF THE SECOND FIRST-CLASS CARRIAGE."

And yet, fast as these words flew like lightning past him, the information they contained, with all its details, as well as every secret thought that had preceded them, had already consecutively flown millions of times faster; indeed, at the very instant that, within the walls of the little cottage at Slough, there had been uttered that dreadful scream, it had simultaneously reached the judgment-seat of Heaven!

On arriving at the Paddington Station, after mingling for some moments with the crowd, he got into an omnibus, and as

it rumbled along, taking up one passenger and putting down another, he probably felt that his identity was every minute becoming confounded and confused by the exchange of fellow-passengers for strangers that was constantly taking place. But all the time he was thinking, the Cad of the omnibus—a policeman in disguise—knew that he held his victim like a rat in a cage. Without, however, apparently taking the slightest notice of him, he took one sixpence, gave change for a shilling, handed out this lady, stuffed in that one, until, arriving at the Bank, the guilty man, stooping as he walked towards the carriage-door, descended the steps ;—paid his fare ;—crossed over to the Duke of Wellington's statue, where pausing for a few moments, anxiously to gaze around him, he proceeded to the Jerusalem Coffee House,—thence over London Bridge to the Leopard Coffee House in the Borough,—and finally to a lodging-house in Scott's Yard, Cannon Street.

He probably fancied that, by making so many turns and doubles, he had not only effectually puzzled all pursuit, but that his appearance at so many coffee-houses would assist him, if necessary, in proving an *alibi* ; but, whatever may have been his motives or his thoughts, he had scarcely entered the lodging when the policeman—who, like a wolf, had followed him every step of the way—opening his door, very calmly said to him—the words no doubt were infinitely more appalling to him even than the scream that had been haunting him—

“ HAV'NT YOU JUST COME FROM SLOUGH ? ”

The monosyllable “ NO,” confusedly uttered in reply, substantiated his guilt.

The policeman made him his prisoner ;—he was thrown into jail ;—tried ;—found guilty of wilful murder ;—and—HANGED.

A few months afterwards, we happened to be travelling by rail from Paddington to Slough, in a carriage filled with people all strangers to one another. Like English travellers, they were all mute. For nearly fifteen miles no one had uttered a single word, until a short-bodied, short-necked, short-nosed, exceedingly respectable-looking man in the corner, fixing his eyes on

the apparently fleeting posts and rails of the electric telegraph, significantly nodded to us as he muttered aloud—

“THEM’S THE CORDS THAT HUNG JOHN TAWELL!”

Having now concluded a rough outline of the practical working of the electric telegraph, it is necessary that we should state—as an important fact on which we offer no comment—that the Company has made arrangements with all the railway companies for working their wires, excepting with the South-Eastern, and, accordingly, that the electric communication between London and Dover is worked by itself, and without connexion with the general system.

The wires of the electric telegraph from the various lines of railway, carried under the streets, and concentrated at the central station in London, transmit private messages and answers to and from the following places:—

Acklington.	Brandon.	Croft.
Alne.	Brentwood.	Darlington.
Alnwick.	Bridlington.	Derby.
Ambergate.	Brick Lane.	Dereham.
Apperby.	Brockley Whins.	Dorchester.
Ardleigh.	Brockenhurst.	Duffield.
Ashchurch.	Bromsgrove.	Droitwich.
Attleborough.	Brough.	Dunbar.
Audley End.	Broxbourne.	Durham.
Aycliffe.	Burton-on-Trent.	Estrea.
Ayton.	Calverley.	Eckington.
Barking Road.	Cambridge.	Edinburgh.
Barnsley.	Castleford.	Edmonton.
Beeston.	Chelmsford.	Elsenham.
Belford.	Cheltenham.	Ely.
Belmont.	Chesterfield.	Fence houses.
Belper.	Chesterford.	Ferry hill.
Bentley.	Chittisham.	Flaxton.
Berwick-on-Tweed.	Church Fenton.	Gateshead.
Beverley.	Clay Cross.	Glasgow.
Birmingham.	Cockburnspath.	Gloucester.
Bishopstoke.	Colchester.	Gosport.
Blackwall.	Colwich.	Granton.
Bradford.	Cowton.	Grants house.
Braintree.	Crewe.	Haddington.

Halifax.	Mile End.	Staveley.
Harecastle.	Milford.	St. Ives.
Harling Road.	Morpeth.	St. Margaret's.
Harlow.	Newark.	Stoke-on-Trent.
Helpstone.	Newcastle.	Stone.
Hertford.	Newmarket.	Stortford.
Hessle.	Newport.	Stratford.
Howden.	Normanton.	Stratford Road.
Hull.	Northallerton.	Sunderland.
Ilford.	Norton Bridge.	Swinton.
Ingatestone.	Norwich.	Syston.
Ipswich.	Nottingham.	Tamworth.
Kegworth.	Oakenshaw.	Thetford.
Keighley.	Oakington.	Thirsk.
Kildwick.	Otterington.	Todmorden.
Kelvedon.	Peterborough.	Tottenham.
Kirkstall.	Ponder's End.	Tranent.
Lakenheath.	Poole.	Trentham.
Leamside.	Portsmouth.	Tring.
Leeds.	Rillington.	Tweedmouth.
Leicester.	Raskelf.	Ullesthorpe.
Leith.	Reston.	Uttoxeter.
Lesbury.	Richmond.	Wakefield.
Lincoln.	Ringwood.	Waltham.
Linlithgow.	Rochdale.	Ware.
Linton.	Romford.	Wareham.
Liverpool.	Rotherham.	Washington.
London.	Roydon.	Waterbeach.
Longeaton.	Royston.	Waterloo Station.
Longniddry.	Rugby.	Watford.
Longport.	Sawbridgeworth.	Whitacre.
Long Stanton.	Scarborough.	Whittlesea.
Longton.	Selby.	Whittlesford.
Loughborough.	Sessay.	Wimbourne.
Lowestoffe.	Sheffield.	Winchburgh.
Maldon.	Shelford.	Wingfield.
Malton.	Shipley.	Wisbeach.
Manchester.	Skipton.	Witham.
Manea.	Slough.	Wolverton.
Manningtree.	Southampton.	Woolwich.
March.	South Shields.	Worcester.
Masbro'.	Spetchley.	Wymondham.
Melton.	Stamford.	Yarmouth.
Mildenhall.	Stanstead.	York.

CHAPTER XIV.

RAILWAY CLEARING-HOUSE.

It is a curious fact that human ignorance, and especially good honest homespun English ignorance, often produces important and highly beneficial results. "*If I had but known what I have had to contend with I would never have undertaken the job,*" is a remark which many a poor emigrant, many a weary traveller, many a journeyman labourer in every department of life, has fervently muttered to himself. The ejaculation is particularly applicable to the original projectors of our railways, who, had they but known the hydra-headed difficulties which, one after another, they would have to encounter, would most surely have kept their money in their pockets, or, in the phraseology of the vulgar, "would never have undertaken the job."

Besides the difficulty of raising money, which during the railway mania certainly amounted to *nil*, there were parliamentary difficulties, engineering difficulties, difficulties of management of various descriptions; and yet, when all these were overcome, when each railway, with its beautiful system of committee-men, secretaries, engineers, surveyors, station-masters, engine-drivers, stokers, pokers, guards, police, superintendents, artificers, labourers, &c., was fully organised and completed, and every line competent along the whole or any portion of its length to convey with safety and due attention every description of traffic, there suddenly appeared a new difficulty, which not only most seriously embarrassed, but which threatened almost to prevent, the combined action of the vertebral railways which at such trouble and cost had just been created. The difficulty alluded to was what is now commonly called "*the through traffic.*"

Even before the railway system came into full operation, it was soon found, that to conciliate, or rather to satisfy the just claims of the passenger public, it would be necessary not to harass warm "through" travellers by forcing them to migrate to cold carriages as often as, asleep or awake, dozing or dreaming, they reached each terminus of the various railway companies who, in enmity rather than in partnership, were the proprietors of the consecutive portions of the thoroughfare line.

Again, it was soon found that our merchants and manufacturers as justly insisted rather than requested that their goods and merchandise should go "*through*" to their destinations without being subjected to the delay and serious injury which were unavoidable in repeatedly unpacking and repacking them into fresh waggons. Lastly, it was found that, for cattle and horses, changes of carriages were equally objectionable. The will of the people becoming, therefore, in these instances, the law of the rails, passengers, parcels, goods, horses, and cattle, were, generally speaking, carried "*through*" without change of carriage.

But though the traveller, the receiver of the parcel, of the package, of the horse, dog, bullock, sheep, or pig, after paying for the fare, of course cared not the hundred-thousandth part of a farthing what was done with the money, yet it will be self-evident that he left behind him sources of endless vexation and almost unpreventible disputes; for not only was the paltry fare he had paid for his own conveyance, or that which he might have paid for the conveyance of a lean pig, to be divided among the proprietors of two, three, four, five, six, or seven different companies, but of these companies all excepting one would have not only to remunerate by a mileage allowance the company in whose carriage or waggon, for the benefit of all parties, the traveller, or his parcel, or his goods, or his cow, calf, horse, dog, sheep, or sow, had been carried "*through*," but an extra charge for demurrage was evidently due to the said company for every day that its carriage or waggon had been detained by the companies to whom it did not belong. The railway companies between London and York first saw the absolute necessity of their endeavouring by some arrangement to settle accounts of this description, which

daily and hourly were growing up between them ; but inasmuch as each company, from feelings of jealous independence, kept their books in a different form, dissensions arose, angry correspondence followed, until the settlement of their joint accounts was impeded by the most vexatious delays. The virulence of the disorder, however, was the means of its cure. Mr. Morison, the present very able manager and sole organiser of the new system, conceived the formation of a central office, and the idea was no sooner suggested to Mr. Glyn, the chairman of the London and North-Western Railway, than, seeing at a glance its practical bearing, he gave it the whole weight of his well-earned influence, and was mainly instrumental in the establishment of the astonishing system of minute detail which we will now endeavour very briefly to describe.

The Railway Clearing-House, which adjoins the right-hand side of the entrance-gate from Seymour Street to the Euston Station, is under the control of a committee composed of the chairmen of all the railway companies who are parties to the clearing arrangements ; the expense of maintaining the establishment being divided rateably among the companies in proportion to the extent of business transacted by it for each.

On opening a street door, which a brass plate beamingly announces to be that of the "Railway Clearing-House," the stranger sees before him a long passage, on both sides of which are hanging, as if for sale, a variety of very decent-looking hats, cloaks, and coats, which he has no sooner passed than he finds himself in a spacious hall or office 78 feet long, 20 wide, and 26 feet high, in which, at one glance, he sees seated or standing before him, at 13 parallel desks, upwards of a hundred well-dressed clerks, each silently occupied either in writing or in apparently carefully investigating that which others have written. The stillness of the scene, to which the public have no admittance, is very remarkable ; and before we enter on the subject of the avocation of those before us, we cannot help observing that, to any one who has lately had an opportunity of seeing the number of half-starved men in Paris who, with interminable mustachios and noble bushy beards, are, with depressed heads,

intently engaged in a variety of occupations, down to that of—say—painting a tiny brooch to ornament the bosom of a lady's gown—it is amusing to contrast a body of such fierce-looking warriors "*à demi-solde*" with the plain, clean, close-shorn men of business, who throughout the United Kingdom are, week after week, month after month, and year after year, unassumingly labouring in behalf of that which republicans only talk of instead of attain—a commonwealth.

The business of the Railway Clearing-House is transacted by one manager and 110 clerks. The system comprehends 47 railway companies: in short, it extends to all railways north of the Thames—from Bristol, London, and Harwich, to Aberdeen; and it contains no less than 648 clearing-house stations, by the correspondence of which with the London clearing-office the accounts of the "through" traffic of all the companies is adjudged and settled.

The aforesaid business is divided into four departments:—

First, and most important, the goods and live-stock traffic.

Second, the coaching traffic.

Third, the mileage of carriages and waggons, as also the mileage of tarpaulins for covering waggons.

Fourth, lost luggage.

Goods.—From each of the 684 Railway Clearing-House Stations which we have enumerated, there is forwarded to the London office a "daily abstract of goods" (printed in black ink), containing the invoice, the amount carted, the sums paid or the sums to pay, the undercharge, the overcharge, and the description of the traffic "*forwarded*" each day from each station to each of the other stations enumerated in the return. Of these goods the gross total is composed of a number of articles, each of which, from the station from which it is forwarded, is charged according to the established rate agreed on by the companies for "through" goods. Some of these weights are only 14 lbs., in which case they, as well as every package below 56 lbs. (termed "a small"), are charged at a higher rate.

2. From each railway clearing station there is forwarded *daily* to the London office a return similar to the above. (but for dis-

tion printed in red ink), of the description, weight, &c. &c., of goods *received* at each station, and thus from two opposite points a detailed return of the amount of goods conveyed between them is declared.

3. As soon as these two returns (black and red) are received at the London office, they are carefully examined, to ascertain if the articles returned in each are correct—that is, if the declaration of the goods *despatched* corresponds with the return of the same goods from the point at which they should have been received. About 30 per cent., however, of the number of items in these returns do *not* correspond, the difference being sometimes a few pounds, sometimes a few pence. Ten clerks are constantly occupied in checking these two sets of returns.

4. As fast as these errors are detected, a “*statement of omissions and inaccuracies*” (in one month 7000 of these statements have been transmitted) are sent from the London office to both parties for explanation, and, when returned by each with “*remarks*,” the errors are corrected according to their replies.

5. From the above accounts a division of the receipts of the goods traffic is made monthly; and as there are 4500 of these settlements (each on an average wanting $2\frac{1}{2}$ copies), about 11,000 copies per month are required. These abstracts are for the following object:—All “*through*” goods arriving in London are by agreement charged with certain terminal expenses for cartage and portage, which are about double those charged in the country. This monthly settlement, therefore, shows to every company concerned what each is entitled by mileage to receive from one or more companies,—what actually has been received by each,—and consequently the balance due from the one to the other. Hull alone, from its numerous connexions with other stations, receives on an average 200 of these monthly abstracts. Twenty-four clerks are constantly occupied in preparing them.

6. The next operation is, by a consideration of all these balances, to determine what the clearing-house, as the representative of all the creditor companies, is entitled to receive from the debtor companies. The final result of all these operations is exemplified by a monthly return forwarded by the office to each

of the forty-seven companies, showing separately to each, for each of its stations, the weights, the mileage proportions, the terminal expenses, and, lastly, the balances, whether due to it or by it, on the traffic from each of its stations to all other clearing-house stations to which goods had been sent, or from which received. The number of entries in these monthly summaries averages 11,186.

The above closes the account of the goods traffic. Any omission or errors in these accounts are corrected in those of the subsequent month, the balances being, in the first instance, always paid as declared by the London railway clearing-house.

When the balances are finally struck, a letter is addressed from the office to each company, advising it of the amount due to or by it on the traffic of the month; and, unless these balances are paid by each company within twenty-one days, interest at 6 per cent. is charged, and credited to the companies to whom the clearing-house is nominally indebted.

For the convenience of the companies a weekly notice is sent by the London office to each, informing each of the amounts of the receipts of the *through* goods traffic to which it is respectively entitled. This single operation, which enables the companies to publish their weekly receipts, employs nine clerks.

PASSENGERS.—All tickets collected at all the clearing-house stations from *through* passengers are transmitted daily to the London clearing-house, from whence, after being examined and compared with the returns of the tickets issued, they are sent back to the respective companies. From Euston, as well as from all other stations, passenger tickets for every station are each numbered separately from 1 to 10,000, and are issued consecutively, not only for each station, but for each *class* of passengers. In examining these collected tickets, which on an average amount to 9000 per day,—in comparing them with the consecutive numbers as entered in the daily Returns received from the various stations,—and in checking the consecutive numbers themselves, five clerks are employed. The railway clearing-office thus receives—

1. Return from Euston booking-office, as also from all clearing-house passenger stations, stating the number of passengers of each

class booked for all clearing stations, the portions of fares paid by each passenger and due to "foreign" companies.

2. From this account the London clearing-house prepares and forwards daily to each company a return, showing the portion of the fares received at Euston due to each respectively. The above returns are despatched on the evening of the second day.

3. The London clearing-house receives daily from every clearing station a similar return.

4. From these two sets of returns the debtor and creditor account of each company is made up, and kept separate in a book, from which a statement of balances is prepared and forwarded weekly to each company, showing the amount received on its account by the other companies, as also on account of the other companies by it, the balances due to it or by it, and the weekly balance due to or by the clearing-house on behalf of the companies. We may here observe that by the foregoing arrangements, without which the *through* passenger traffic could not possibly be practically carried out, 2,700,000 persons are annually saved the inconvenience of changing their carriage during their journey.

5. The same minute process is pursued with horses, carriages, and dogs, the tickets for which are numbered consecutively, and checked as for passengers. In this duty thirteen clerks are employed.

PARCELS.—The daily returns of the number of parcels despatched and received are checked, and the balance of receipts divided, precisely as the goods, with this addition, that a "way-bill" is sent by each train with the parcels for each station, showing the number of the parcel, the weight, address, and charge; similar bills being also sent from the receiving station to the clearing-house, thus constituting an additional check. For small parcels carried by the passenger-trains from London to Edinburgh the gross charge of 4s. is divided among four companies; small charges are often divided among seven companies; and in some cases a charge of 6d. is divided among two companies. In this duty eight clerks are employed.

At the end of the London Clearing-House three clerks are em-

ployed for the live-stock traffic, principally composed of lean stock going to be fattened, of fat cattle, pigs, sheep, and calves going to market. The rates for live stock, like those for goods, are agreed on by all the joint companies, and the returns are sent weekly to the clearing-house. The gross receipts, after deducting a small sum, per waggon, for terminal expenses, are divided, by mileage, among the companies (frequently six in number) concerned.

We have now to endeavour to explain a new branch of the department, termed "*Mileage Branch.*"

In 1848 no less than 443,604 loaded waggons were by various companies (averaging three in number) sent "*through,*" besides 267,228 sent back empty. The course of each of these waggons the clearing-house had to trace, in order to ascertain the exact time each was detained on each railway.

The number of miles for which the companies received, through the London clearing-house, payment from each other, amounted to 45,580,384.

The manner in which these extraordinary results are effected is as follows :—

At every junction of railways there are stationed men in the pay of the London Clearing-House, to take the number of all passenger-carriages and goods-waggons, as also of all tarpaulins or sheets covering waggons. These men make to the clearing-office *daily* a detailed statement of the same.

Returns are also sent *daily* from all the clearing-house stations on all the lines of railway, by the servants of the respective companies, of all foreign carriages arriving and departing from each of the said stations. From these returns the London Clearing-House is enabled to trace the course of all waggons and passenger-carriages travelling on what are termed "*foreign*" lines, and to debit and credit every company with the sums it has respectively incurred for mileage, as also what is due from and to the respective companies for demurrage per day of waggons or of passenger-carriages.

These accounts are transmitted to each company monthly.

Sheets covering waggons are in like manner all checked at

the junctions by the men placed there by the London Clearing-House, as also by returns forwarded to the office from the various stations at which the waggon stops to be loaded or unloaded; and thus the charge of one-tenth of a penny per mile for the use of each of these tarred coverings is divided according to its proper proportion among the respective companies over whose lines it has travelled! For a waggon or carriage from Edinburgh to London, mileage and also demurrage accounts are sent to four companies, and from Arbroath to London to seven companies.

Fourteen clerks are required to keep the mileage and demurrage accounts of carriages and waggons, and eight clerks to keep those of the tarpaulins or sheets.

THE ACCOUNTANT.—Lastly, in the corner of the London office, in a small elevated compartment, about four feet square, sits “the Accountant,” who keeps—

1. An account for each separate company (forty-seven in number), showing briefly the sums at their debits and credits, and the balance due to or by each.

2. An interest ledger, showing the amount of interest accruing on balances in arrear, which interest is received by the clearing-house from the Dr. company, and paid to the Cr. company.

3. By the Act of Parliament, every railway company is bound to pay to Government a duty on all sums received by it from passengers, whether on its own account or for other companies. The consequence of this is, that one company is continually obliged to pay duty for another, thus creating a debtor and creditor account for duties, which account the Clearing-House also settles monthly.

LOST LUGGAGE.—The Clearing-House, from its connexion with almost every railway in the kingdom, undertakes the duty of corresponding with all the clearing-house stations from which it receives *daily* returns respecting any unclaimed luggage left on the rails.

At the entrance of the Clearing-Office, in the corner, there is a small post-office of compartments for the letters and returns daily transmitted by the manager to each company.

The office usually receives and despatches 4500 communications per day, employing five lads to open, endorse, and arrange them.

The office is open daily from 9 A.M. till 5 P.M.

With a deep sigh we can truly say that we have now concluded a sketch of the Railway Clearing-House, which, as it gave us one headache to investigate, and another to endeavour to explain, will probably be equally afflicting to our readers.

In justice, however, to the system, we must confess that it is impossible to convey in writing an adequate conception of the infinity of details with which it has to grapple.

The number of items which in the course of a year, by the London office, are examined, traced through many returns, checked, and transferred from one account to another, exceeds rather than falls short of (50,000,000) fifty millions!

It must be obvious to any person conversant with the working of railways, that, without a centralised system of this description, so constituted as to command the confidence of the railway companies, the railway system generally would not only soon become clogged, but constant squabbles and disagreements between the various companies would ensue, to the detriment of their interests, as well as to the discomfort and inconvenience of the public.

The true object, therefore, of the London Railway Clearing-House is to enable the railway companies of the United Kingdom who are parties thereto, to work that enormous traffic, in which they have a common interest, with as much security to themselves, and with as little inconvenience to the public, as if all the associated companies were ONE; and it is evident that in no way could this important object have been effected, except by the establishment of an office which, based on principles of complete centralisation, should be—as the London Clearing-House really is—independent of each company, but under the common control of ALL.

CHAPTER XV.

MORAL.

THE few rough sketches which we have now concluded, insignificant and trivial as they may appear in detail, form altogether a mass of circumstantial evidence demonstrating the vast difficulty as well as magnitude of the arrangements necessary for the practical working of great railways ; and yet we regret to add, in their general management there exist moral and political difficulties more perplexing than those which Science has overcome, or which order has arranged.—We allude to a variety of interests, falsely supposed to be conflicting, which it is our desire to conciliate, and from which we shall endeavour to derive an honest moral.

When the present system of railway travelling was about to be introduced into Europe, it of course became necessary for Parliament and for His Majesty's Government seriously to consider and eventually to determine whether these great national thoroughfares should be scientifically formed, regulated, and directed by the State, under a Board competently organized for the purpose, or whether the conveyance of the public should be committed to the inexperienced and self-interested management of an infinite number of Joint-stock Companies. Without referring to by-gone arguments in favour of each of these two systems, and, above all, without offering a word against the decision of Parliament on the subject, we have simply to state that the joint-stock system was adopted, and that accordingly capitalists and speculators of all descriptions—men of substance and men of straw—were authorized at their own cost to create and govern the iron thoroughfares of the greatest commercial country in the world. The first result was what might naturally have been

expected, for no sooner was it ascertained that a railway connecting, or, as it may be more properly termed, tapping immense masses of population—such, for instance, as are contained in London, Bristol, Birmingham, Liverpool, Manchester, &c.—was productive of profit, than, just as, when one lucky man finds a rich lode, hundreds of ignorant, foolish people immediately embark, or, as it is too truly termed, *sink* their capital in “*mining*,” so it was generally believed that any “*railway*”—whether it connected cities or villages it mattered not a straw—would be equally productive.

The competition thus first irrationally and then insanely created was productive of good and evil. The undertakings were commenced with great vigour. On the other hand, as engineering talent cannot all of a sudden be produced as easily as capital, many important works were constructed under very imperfect superintendence; and as iron, timber, and every article necessary for the construction of a railway simultaneously rose in value, the result was that the expense of these new thoroughfares, which by the exaction of fares proportionate to their outlay must, as we have shown,* eventually be paid for by the public, very greatly exceeded what, under a calm, well-regulated system, would have been their cost. Nevertheless, in spite of all difficulties and expenses, foreseen as well as unforeseen, our great arterial railways were very rapidly constructed.

Their managers, however, had scarcely concluded their “song of triumph,” when they found themselves seriously embarrassed by a demand on the part of the public for what has been rather indefinitely termed “cheap travelling;” and as this question involves most serious considerations, we will venture to offer a very few observations respecting it.

There can be no doubt that, inasmuch as it is the duty of Parliament to legislate for the interests of the public, so it is the duty of Her Majesty’s Government to exercise their influence in legitimately obtaining for the community *cheap* travelling. But although money is valuable to every man, his life is infinitely more precious; and therefore, without stopping to inquire whe-

* See Chapter I. page 17.

ther by cheap travelling is meant travelling for nothing, for fares unremunerative, or for fares only slightly remunerative to the Company, we submit as a mere point of precedence, that the *first* object the legislature ought to obtain is, that every possible precaution shall be taken to ensure for the public *SAFE* travelling.

Now, casting aside all petty or local interests, we calmly ask in what manner and by what means would Her Majesty's Government ensure for the public *safe* travelling, supposing our railways were the sole property of the State?

The answer is not only evident, but, we submit, undeniable.

The way, under Providence, to protect the public from avoidable accidents on railways is, utterly regardless of expense, to construct the rails, sleepers, locomotive-engines, and carriages of the very best materials, carefully put together by the best workmen; and then to intrust the maintenance of the line to engineers and other men of science of the highest attainments, assisted by a corps of able-bodied guards, pointsmen, and policemen, all sober, vigilant, active, intelligent, and honest.

Now it is highly satisfactory to reflect that every one of the above costly precautions, as well as all others of a similar nature which a paternal government could reasonably desire to enforce, are as conducive to the real interests of the proprietors of a railway as they are to the safety of those who travel on it; for even supposing that the Directors take no pride in maintaining the character of the national thoroughfare committed to their charge—that, reckless of human life, they care for nothing but their own pockets—a railway accident summarily inflicts upon their purses the same description of punishment instantaneously awarded to a man who carelessly runs his head against a post. For instance, only a few weeks ago a ballast-train on the London and North-Western Railway having stopped for a moment, a goods-train behind it ran into it. No one was hurt excepting the Company—who suffered a loss of 4000*l.* by the collision. Independent, therefore, of the heavy damages readily awarded by juries to any one hurt by a railway accident, the injuries self-inflicted by the Company on their own costly engines, carriages, &c., are most serious in amount, to say nothing of the almost incalculable

embarrassment they may create: indeed, taking into fair consideration the costly results which have occurred to our railway companies by the dislocation of a bolt, the unscrewing of a little nut, or from a variety of other causes equally trifling, it may, we believe, be truly said that the punishments which railway companies have received from accidents have, generally speaking, exceeded rather than fallen short of their offences; and thus every intelligent board of directors is aware that safety in travelling is more emphatically for the interest of railway proprietors than any other consideration whatever: in short, that there is nothing more expensive to a railway Company than an accident.

It being evident, therefore, that it is as much for the interests of railway proprietors as of railway travellers that every possible precaution should be taken by the Company to prevent accidents, we have now to observe that to attain all the necessary securities there is but one thing needful—namely, MONEY. With it Her Majesty's Government might conscientiously undertake the serious responsibility of prescribing all that Science could administer for the safety of the public. Without money, what government or what individual who had any character to lose could for a moment undertake that which his judgment would clearly admonish him to be utterly impracticable? Now, if this reasoning be correct, the managers of our arterial railways were certainly justified in expecting that, if the Government required them to take every possible precaution to ensure *safe* travelling, they would, as a matter of course, assist them in obtaining the same means which they themselves would require had they to effect the same object—namely, MONEY. But instead of endeavouring to obtain for railway companies these means—or rather, instead of enabling them to retain the means which, under their respective Acts of Parliament, they already legally possessed of purchasing security for the public, Parliament, in compliance with a popular outcry for *cheap* travelling, deemed it advisable to require from railways a reduction of the tolls necessary to ensure *SAFE* travelling.

To any one who will carefully observe the practical working of a railway, it is not only alarming, but appalling, to reflect on

the accidents which sooner or later *must* befall the public if the master-mind which directs the whole concern, but which cannot possibly illuminate the darkness of every one of its details, were suddenly to be deprived of the talisman by which alone he can govern a lineal territory four or five hundred miles in length—namely, an abundant supply of MONEY. Parliament may thunder—Government may threaten—juries may punish—the public may rave ; but if the fustian-clad workmen who put together the 5416 pieces of which a locomotive engine is composed are insufficiently paid—if the wages of the pointsmen, enginemmen, and police be reduced to that of common labourers—if cheap materials are connected together by scamped workmanship—the black eyes, bloody noses, fractured limbs, mangled corpses of the public, will emphatically proclaim, as clearly as the hopper of a mill, the emptiness of the exchequer. So long as the manager of a railway has ample funds he ought to be prepared, regardless of expense, to repair with the utmost possible despatch the falling-in of a tunnel or any other serious accident to the works—in short, the whole powers of his mind should be directed to the paramount interests of the public, which, in fact, are identical with those of the Company. But if he has no funds—or, what is infinitely more alarming, in case, from want of funds, the impoverished proprietors of the railway shall have angrily elected in his stead the representative of an ignorant, ruinous, and narrow-minded policy—how loudly would the public complain—how severely would our commercial interests suffer, if, on the occurrence to the works of any of the serious accidents to which we have alluded, the new Ruler were to be afraid even to commence any repairs until he should have been duly authorised by his newly-elected economical colleagues to haggle and extract from a number of contractors the cheapest tender !

But we fear it would not be difficult to show that, in reducing the established rates of our great railways before their works were completed, Parliament has unintentionally legislated upon erroneous principles. For instance, we have already explained that the profit of a railway depends upon the amount of the population and goods which flow upon it from the towns it taps.

If, therefore, the traffic on an arterial line be but moderately remunerative, it must be evident that a branch line must be an unprofitable concern—unless, indeed, the company be authorized to levy upon it *higher* tolls than are sufficient on the trunk line. When, therefore, in the rapid development of our great national railway system it was found necessary for the accommodation of a fraction of the public to apply to Parliament for powers to make these unremunerating branch lines, the companies were certainly in theory entitled to expect the extra assistance we have explained;—instead of which they were practically informed that, unless they would consent to *LOWER* their tolls altogether, they would not be allowed to develop their system by the construction of any branch line; which is as if a tenant were to say to his landlord—“If you incur the expense of making convenient bye-roads to my farm to enable me with facility to take my crops to market, *you must lower my rent.*”

As it is undeniable that exorbitant rates, besides being inconvenient to the public, are highly injurious to the real interests of railway proprietors—indeed we have shown how enormously the traffic of the country has been increased by low charges—we would be fully disposed, not only most strongly to recommend, but, as far as it may be legal, to enforce, that salutary principle; but the insuperable difficulty of *at present* adjusting the proper tolls to be levied on the public is, that no arterial railway in Great Britain can either declare in figures, or even verbally explain, the real state of its ultimate expenditure and receipts, for the sole reason, namely, that the enterprise is not yet worked out, and that no man breathing can foretell what are to be its limits.

What has become, we ask, of the *old* London and Birmingham Railway (born only in 1836)—of the Grand Junction Railway—of the Manchester and Birmingham—the Liverpool and Manchester Railways—and of a score of others we could name? What has become of the civil, or rather uncivil, war which all these companies waged against each other; as well as against Messrs. Pickford, the most powerful carriers in the world? They have all lost the independence they respectively occupied, and, like the ingredients cast by Macbeth's witches “i' th'

charmed pot," they have "boiled," or, as it is now-a-days termed, amalgamated, into one great stock; and while this long continuous arterial line has been drawing from the public for goods and passenger traffic considerable receipts, it has been, and at various localities still is, draining its own life-blood by the forced construction of a number of sucking branch-lines, which, as far as we can see, are not likely ever to be remunerative.

For some time railway companies deemed it their interest to compete against each other, but this ruinous system was gradually abandoned and is now reversed. The two lines from London to Peterborough, after competing for several months, now divide their profits. The two lines to Edinburgh will probably ere long do the same. But besides this transmutation of competition into combination, public notice was lately given that three of the large arterial lines, namely, the Great Western, the South-Western, and the London and North-Western, were meditating an amalgamation of their respective stocks into one vast concern. On this important project, which for the present has been abandoned, we will offer a very few observations.

We believe it may be affirmed, without fear of contradiction, that the working details of a railway are invariably well executed in proportion to their magnitude:—that, for instance, in the management of the London and North-Western Railway the arrival and departure of trains are better regulated at their large stations than at their small;—that their great manufactories are better and more economically conducted than their little ones;—that the arrangements of Messrs. Pickford and of Messrs. Chaplin and Horne are better at Camden Town than at the small outlying stations;—in short, we most distinctly observed that wherever there was an enormous amount of important business to be transacted, *there* were invariably to be found assembled superior talents, superior workmen, superior materials; and that, on the other hand, at small and secluded localities, where little work was performed, inferior men, inferior waggons, horses, &c., were employed.

In the old system of travelling it was safer to drive along a lonely road than through crowded streets; old horses as well as

old drivers were deemed safer than young ones ; in fact, the more the traveller was impeded, the less dangerous was his journey. But on our railways, when once a man has tied himself to the tail of a locomotive engine, it matters but little, especially in a fog, whether he flies at the pace of fifty miles an hour, or whether he crawls, as it is now termed, at the rate only of twenty ; for, in either case, if there be anything faulty in the works, machinery, or management, accidents may occur to him which it is fearful to contemplate.

Considering, therefore, that not only the ability necessary for the general management of a railway, but the intelligence and vigilance requisite at every station and on every portion of the line are found practically to increase according to the demand, and *vice versâ*, it is evident that nothing would prove more fatal to the public as well as ruinous to proprietors than to split an efficient remunerating great railway into two or more inefficient and unremunerating small ones. A little railway, like “a little war,” is murderous to those engaged in it,—ruinous to those who pay for it ; and we are therefore of opinion that it is for the interest of the public not only that traffic should be concentrated as much as possible on large lines, rich enough to purchase management, engineering, servants, and materials of the very best description, but that these great lines by uniting together should voluntarily force themselves to exchange all paltry considerations, mean exactions, and petty projects for those great principles which alone should guide the administration of a *national system* of railways. There can be no doubt that any description of monopoly is abstractedly an evil, but if it be equally true that every inch of railway throughout the country represents an integral portion of a vast legally constituted monopolizing system, the practical question to consider is, not whether monopoly is an evil, but whether, of two evils, it would be more or less convenient for Parliament and the public to deal with *one* monopoly than with *many* ;—whether, for instance, it would be more or less easy for Government, in recommending alterations of fares, &c., to correspond solely with the directors of the London and North-Western Railway than to communicate *seriatim* with the

boards of the several companies to whom the present line originally belonged, each of which might possibly, in opposition to each other, be pursuing a different course of policy.

As the new system has created an enormous increase of traffic, so it has also, *pari passu*, developed talent proportionate to the extraordinary demand for it; and, therefore, whatever may be the imaginary dangers from a concentrated administration of our railways, we feel confident that the public have much greater reason to apprehend the inconveniences, to say the least, that must inevitably result to them from those sudden unreasonable changes of management, or rather of *mismanagement*, which are sure periodically to take place so long as every separate railway monopoly arbitrarily pursues not only its own system, but that which its restless shareholders from time to time may think proper to ordain. At all events, until the best plan of managing our great railways shall have been finally ascertained, and most especially until the unknown liabilities, expenses, and receipts attendant upon the establishment over the surface of our country of a series of iron highways shall have been accurately developed, it must be utterly impossible for any practical man to decide to what extent, if any, the Parliamentary tolls originally levied on the public ought in equity to have been reduced.

The great truth, however, sooner or later must appear; and as the hurricane, however violently it may blow, in due time is invariably succeeded by a breathless calm;—as the ocean waves, although mountain high, shortly subside;—as the darkest night in a few hours turns into bright daylight;—so must the present mystified prospects of our great railways inevitably ere long become clear and transparent as those of any other mercantile firm; and when this moment shall have arrived, we believe a very short time will elapse before Parliament, the amalgamated Railway Boards, and the public, will come to a creditable and amicable adjustment; for while, on the other hand, it can never be the interest of the public to prefer *cheap* to *SAFE* travelling, so it can never be the serious and fixed purpose of any body of men competent to direct the affairs of our arterial railways to exact from the public an exorbitant dividend which must inevitably create

condign punishment ; for so sure as water finds its own level will British capital always be forthcoming to lower by legitimate competition anything like a continued usurious exaction from the public. But a moment's consideration of the following facts will show that, as regards railway tolls, the public have as yet no very great reason to complain.

1st. As regards the public:—

In 1835 the fares paid by the public for travelling from London to Liverpool, at the average rate of say 10 miles an hour, were, exclusive of fees to guards and coachmen—

	£.	s.	d.		£.	s.	d.
Per Mail, outside . . .	2	10	0	Inside . . .	4	10	0
Per Coach, ditto . . .	2	5	0	Ditto . . .	4	5	0

In 1849 the fares paid by the public for travelling the same distance, at an average rate of 22½ miles per hour (the express trains travelling at about 30 miles per hour) are—

	£.	s.	d.
Per Express and per Mail trains	2	5	0
First Class	1	17	0
Second Class	1	7	0
Third Class	0	16	9

2ndly. As regards the proprietors of Railways:—

In Herapath's Railway Journal of the 30th of September last it appears that the capital expended on railways now open for traffic, amounting to 148,400,000*l.*, gives a profit of 1·81 per cent. for the half-year, or 3*l.* 12*s.* 4½*d.* per cent. per annum. Deducting the non-paying dividend lines, the dividend on the remainder amounts to 2·09 per cent. for the half-year, or 4*l.* 3*s.* 7½*d.* per cent. per annum.

After ten years' competition with railways the dividends received by the Canal Companies between London and Manchester were in 1846 as follows:—

	Per Cent.
Grand Junction Canal	6
Oxford	26
Coventry	25
Old Birmingham	16
Trent and Mersey	30
Duke of Bridgewater's (private property) say .	

The dividends received by the Grand Junction Canal for the last forty years have averaged 9*l.* 10*s.* 9*d.* per cent. per annum.

Great as have been and still are the advantages to the country of our inland navigation, it cannot be denied that the creation of railways was a more hazardous undertaking than the construction of canals. Without, however, offering any opinion as to the relative profits which it has been the fortune of the proprietors of each of these valuable undertakings to divide, we merely repeat that, considering the unknown difficulties which for some time must continue to obscure the future prospects of our railways, it is neither for their interest nor that of the public that the managers of these great national works should in the mean while be cramped by want of means in the development of the important system which it has pleased the Imperial Parliament to commit to their hands instead of to the paternal management of Her Majesty's Government.

If the present alarming depreciation of railway property continue, it is evident that decisive measures, good, bad, or indifferent, will be deemed necessary by the shareholders to prevent, if possible, further loss; and while, on the one hand, the public ought not to be alarmed at impracticable threats, it is only prudent to consider what will probably be the lamentable results of a civil or rather of an uncivilized warfare between the travelling public and the proprietors of the rails on which they travel.

In case the present reduced fares should prove to be unremunerative, we have endeavoured to show that, unless the shareholders in anger elect incompetent managers, the public have no reason to entertain any extra apprehension from accidents;—for the engine-driver might as well desire to run his locomotive over an embankment as a company of proprietors—almost all of whom are railway travellers—become reckless of their property as well as of their lives. Indeed, if railway rates were to be further reduced to-morrow, the public would, we believe, travel as safely, and perhaps even more so, than at present. The result of inadequate rates is not danger, but inconvenience, amounting to deprivation of many of those advantages which the railway system is calculated to bestow upon the country. For instance, to every

practical engineer it is well known that pace is just as expensive on rails as on the road. At present the public travel fast, and those who want to go long distances are accommodated with trains that seldom stop. If, however, it does not suit them to pay for speed, they cannot reasonably expect to have it. If railway companies, as well as the public, are forced to economise, both we believe would eventually be heavy losers by the transaction. The London and North-Western Company, by taking off their express trains, might at once save upwards of 20,000*l.* a-year, besides severe extra damage to their rails. The railways in general might reduce the number of their trains,—make them stop at every little station,—run very slow,—suppress the delivery of day-tickets,—curtail the expenses of their station accommodation,—and finally abandon a number of tributary lines upon which large sums of money have been expended. It must be for the public to determine whether, for the sake of a small saving in their fares, which after all are moderate as compared with other travelling charges, they desire not only to forego the accommodation and convenience to which they have lately become accustomed, but to arrest the development of the railway system to its utmost extent, and with its development its profits.

But, whether our railways be eventually governed by high-minded or by narrow-minded principles,—by one well-constituted amalgamated board, or by a series of small disjointed local authorities,—we trust our readers of all politics will cordially join with us in a desire not inappropriate to the commencement of a new year, that the wonderful discovery which it has pleased the Almighty to impart to us, instead of becoming among us a subject of angry dispute, may in every region of the globe bring the human family into friendly communion; that it may dispel national prejudices, assuage animosities; in short, that, by creating a feeling of universal gratitude to the Power from which it has proceeded, it may produce on earth peace and good will towards men.

APPENDIX.

ALTHOUGH in describing the character of a dull man it is customary to say of him "*that he scarcely knows his right hand from his left,*" yet, when it is considered that railway travellers are undoubtedly the cleverest portion of every community—indeed it is only very dull men or very dead ones that now-a-days travel in stage-coaches or in hearses—it is difficult to explain why millions of such travellers, highly intelligent on all other subjects, should have continued for so long a time, and should still continue, ignorant of important signals which are passing not only close on each side of, but immediately before, behind, and beneath them.

As the long dusty caravan full of human beings flying along its iron orbit skims across the surface of "merry England," its guard is continually receiving police signals—stationary signals—semaphore signals—junction signals—auxiliary signals—train signals—special signals—and detonating signals.

Every human being in the train may also see or hear them, and yet—whether for weal or woe—they are an alphabet which none of us can read—symbols which none of us can interpret—short-hand writing which none of us can decipher!

As an appropriate appendix, therefore, to our attempt to delineate the practical working of a railway, we offer to such of our readers as may be anxious "to read as they run" an Official explanation, not only of every signal exhibited on the London and North-Western Railway, but of the various orders given to the servants of the Company, for the purpose of protecting passengers of all classes from accident, injury, imposition, or insult.

It surely appears advisable for all parties that orders of this description should be made known to the public.

We annex them, therefore, without other comment than the mere statement of the fact that By Authority of the Board of Directors they have been very carefully collected—selected from the Orders of almost all the other Railway Companies—and compiled by the Company's "General Manager," Captain Huish.

✓ RULES AND REGULATIONS

FOR THE

CONDUCT OF THE TRAFFIC,

AND FOR THE

GUIDANCE OF THE OFFICERS AND MEN

IN THE SERVICE OF THE

London and North-Western Railway Company.

LONDON, JANUARY, 1849.

I N D E X.

SECTION	PAGE
1. General Regulations	161
2. Signals	162
Police Signals	162
Stationary Signals	163
Semaphore Signals—Day	164
Semaphore Signals—Night	165
Junction Signals	165
Auxiliary Signals	165
Train Signals	166
Special Signals—Newton Junction	167
3. Fog Signals	168
4. Enginemmen	169
<i>Special Regulations :—</i>	
London and Birmingham Section	176
Grand Junction Section	176
Manchester and Birmingham Section	177
Trent Valley Section	178
Bolton Branch	178
5. Guards	179
6. Breaksmen	184
7. Station Masters and Clerks	186
8. Inspectors of Police	191
9. Police	191
10. Gatemen at Level Crossings	195
11. Ballast Engines and Plate-Layers	196
12. Tunnel Regulations, Lime-Street	199
Ditto, Wapping	201
13. Bankriders	203
14. Bye Laws	204
15. Acts of Parliament	206

At a Meeting of the Board of Directors, held on the 11th of September, 1847, it was

Ordered,

That the following code of Rules and Regulations be, and the same is hereby approved and adopted for the guidance and instruction of the Officers and Men in the service of the London and North-Western Railway Company, and that all former Rules and Regulations inconsistent with the same be cancelled.

Ordered,

That every person in the service do keep a copy of these Regulations on his person while on duty, under a penalty of five shillings for neglect of the same.

By order of the Board of Directors.

MARK HUISE,

General Manager,

London and North-Western Railway.

SECTION I.

GENERAL REGULATIONS

APPLICABLE TO ALL SERVANTS

OF THE

LONDON AND NORTH-WESTERN COMPANY.

1. Each person is to devote himself exclusively to the Company's service, attending during the regulated hours of the day, and residing wherever he may be required.

2. He is to obey promptly all instructions he may receive from persons placed in authority over him by the Directors, and conform to all the regulations of the Company.

3. He will be liable to immediate dismissal for disobedience of orders, negligence, misconduct, or incompetency.

4. No instance of intoxication on duty will ever be overlooked, and, besides being dismissed, the offender will be liable to be punished by a magistrate.

5. Any person using improper language, or cursing and swearing, while on duty, will be liable to dismissal.

6. No person is allowed to receive any gratuity from the public on pain of dismissal.

7. Any instance of rudeness or incivility to passengers will meet with instant punishment.

8. Every person receiving uniform must appear on duty clean and neat, and if any article provided by the Company shall have been improperly used, or damaged, the party will be required to make it good.

9. No Servant is allowed under any circumstances to absent himself from his duty without the permission of his chief Superintendent.

10. No Servant is allowed to quit the Company's service without giving *fourteen* days' previous notice. On leaving the service he must deliver up his uniform.

11. The Company reserve the right to deduct from the pay such sums as may be awarded for neglect of duty as fines, and for rent when the Servant is a tenant of the Company.

12. Should any Servant think himself aggrieved, he may memorialise the Board; but in any such case the memorial must be sent through the head of his department.

SECTION II.

SIGNALS.

RED is a Signal of **DANGER—STOP.**

GREEN " **CAUTION—PROCEED SLOWLY.**

WHITE " **ALL RIGHT—GO ON.**

These Signals will be made by **Flags** in the Daytime, and by **Lamps** at Night.

In addition to this, any Signal, or the arm, **waved** violently, denotes danger, and the necessity of stopping immediately.

POLICE SIGNALS.

1. When the Line is clear, and nothing to impede the progress of the Train, the Policeman on duty will stand erect, with his Flag in hand, but show no signal, thus—



2. If it be necessary to proceed with Caution, the Green Flag will be elevated, thus :—



3. If it be necessary to proceed with Caution from any defect in the rails, the Green Flag will be depressed, thus :—



4. If required to stop, the **Red** Flag will be shown and waved to and fro, the Policeman facing the Engine.

5. Engine-Drivers must invariably **Stop** on seeing the Red Signal.

6. As soon as the Engine passes, the Policeman will bring his flag to the shoulder.

7. Every Policeman will be responsible for having his **Hand Lamp** in good order and properly trimmed.

STATIONARY SIGNALS.

8. On a stopping Train, or one travelling slowly, passing an intermediate Station, the Red Signal will be shown for **Five minutes**, to stop the Engine of any following Train, when the Green Signal will be turned on for **Five minutes** more, to complete the ten minutes precautionary Signal: on the Liver-

pool and Manchester Line, the Red Signal will be turned on **Three** minutes only and the Green **Five**.

9. On an Express Train or single Engine passing, the Green Signal only need be shown for **Five minutes**.

10. The Red Signal will be shown while a Train is stopping at a Station, and for **Five minutes** after its departure, when the Green Signal will be turned on for **Five minutes** more.

11. On a Train entering a long Tunnel the **Red** Signal will be turned on for **Ten minutes**, or until the Policeman shall have received Telegraphic notice that the Train has emerged from the other end, when the **Green** Signal will be turned on to complete the precautionary Signal.

SEMAPHORE SIGNALS.

DAY.

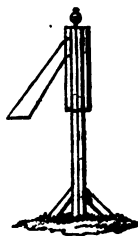
1. The Signals are constructed with either **ONE** or **TWO** Semaphore Arms.

2. The Signal is *invariably made* on the **Left-Hand** Side of the Post as seen by the approaching Engine-Driver.

3. The **All Right** Signal is shown by the Left-Hand Side of the Post being clear, the Arm being within the Post, thus:—

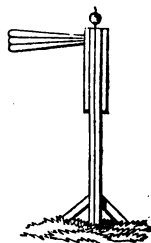


4. The **Caution** Signal, to slacken speed, is shown by the Semaphore Arm on the Left-Hand Side being raised to an angle of 45 Degrees, thus:—



5. The **Danger** Signal, always to stop, is shown by the *Arm* being raised to the Horizontal position, thus :—

When the two Arms are raised both Lines are blocked.



(*Semaphore Signals.*) **NIGHT.**

6. The Arm and the Lamp are both worked with the same hand lever, and at the same time.

7. The **All Right** Signal is shown by the **white** Light.

8. The **Caution** Signal by the **green** Light.

9. The **Danger** Signal by the **red** Light.

JUNCTION SIGNALS.

10. Every Junction is provided with Two Semaphore Signal Posts, corresponding with the two meeting Railways ; and the *Signals* for each Line are shown on the *Signal* Post appropriated to it.

11. The Signals for Caution and Danger, by Day and Night, are shown in the same way as on the Station Signal Posts.

12. The Semaphore Arms and the Lamps for DAY and NIGHT Signals at the Junctions are always set at **DANGER**, and no Engineman is allowed to pass without the Arm is lowered to **CAUTION**, or the **Green** Light is shown by the Lamp.

N.B. At the Junctions there are no **ALL RIGHT** Signals, as it is necessary in passing them to go cautiously and slow.

AUXILIARY SIGNALS.

13. At many of the principal Stations, Auxiliary Signals, worked by a wire, are placed 500 yards in advance of the Station Signal Post. These Auxiliary Signals are intended to warn the Enginemen and Guards in thick weather (when the

main Signal cannot be well seen at the usual distance) of the **Red** being turned on at the Station, and for this purpose a **Green** Signal is shown at the Auxiliary Post. Except when the Red Signal is shown at the Station, no Signal whatever is shown by the Auxiliary. The Enginemen are not to depend solely upon the Auxiliary Signals; but they may always depend on the **Red** Signal being on at the Station whenever the **Green** is seen at the Auxiliary.

TRAIN SIGNALS.

14. Every Engine with a Passenger Train shall carry a **White** Light on the Buffer Plank by Night, and every Cattle, Merchandize, or Coal Train, a **Green** Light.

15. In order to distinguish the Trains while running on the Liverpool and Manchester Branch, the Grand Junction Passenger Trains will carry **two** White Lights, and the Merchandize Trains **two** Green Lights, between Liverpool and Warrington, and the North Union Passenger Trains will carry a **Blue** instead of a White Light on the Buffer Plank of Passenger Trains, and a **Blue** in addition to the Green Light on the Merchandize and Coal Trains.

16. Every Train, after sunset or in foggy weather, shall carry one or more **Red Tail Lights**, according to the description of the Train.

17. The Guard of the Train is responsible for attaching the Tail Lamps on the last carriage or waggon, and the Engine-Driver and Fireman for placing the Lamp on the Engine. When a carriage is detached at a Junction, care must be taken to see that the Tail Light is removed, and re-attached to the Train.

18. The Tail Signal must be inspected at **every Station**; and in the event of the Train being brought to a stand on the Main Line from any cause, the Guard must take care that no one stand before the Tail Lamp, so as to prevent its being seen.

19. A **Red Board** or Flag by Day, or an **extra** Tail Lamp by Night, hung at the back of an Engine or Train, denotes that an **extra Train** is to follow.

SPECIAL SIGNALS.**NEWTON JUNCTION.**

20. By Night a **Green** Light, visible from either of the Liverpool and Manchester Main Lines, denotes that the points are open for Trains going towards Warrington.

21. When a Grand Junction Train from Liverpool is approaching the Junction Points at Newton Junction, at the same time that a Train from Manchester for Liverpool is also approaching, Signals must be given to **both Trains to stop**; and if there is any doubt that there will be danger of collision in the Grand Junction Train crossing the Liverpool South Line, the Pointman must **not** turn the points for the Line to Warrington, but must let the Grand Junction Train run past the points towards Manchester.

22. Whenever the line at Newton Junction is obstructed, or an Engine or Waggon is being shunted, the attention of the Pointmen on the Liverpool and Manchester Line must be called to the circumstance by **ringing the Bells** at the top of the Incline. **Two Bells** are fixed for the Pointmen at the Junction, whereby Signals may be exchanged between them and the Grand Junction Pointman.

23. Whenever a Train is ascending the Warrington Incline, whether for Liverpool or Manchester, at the same time that a Train from either of those Stations for Warrington is approaching Newton Junction, the Pointman will stop the **latter** until the former Train has passed the curve; he will also take care that an interval of not less than **five minutes** is allowed between the passing of any two Trains towards Warrington.

24. If, when any Liverpool and Manchester Second Class Train has arrived at the Warrington Junction, a Birmingham Train is seen coming up the Warrington Inclined Plane, the Engineman must stop, and allow the Birmingham Train to **pass before him** to Liverpool.

25. If the Birmingham Coach Train overtake a Liverpool and Manchester Second Class Train more than 3 miles distance from Liverpool, the Second Class Train **must shunt**, if there be an opportunity, to allow the Birmingham to pass.

N.B.—The same rule applies equally to Third Class Trains.

SECTION III.

DIRECTIONS FOR THE USE OF DETONATING SIGNALS IN FOGGY WEATHER.

1. These Signals are to be placed on the Rail (label upwards), by bending the lead clip round the upper flange of the Rail, to prevent its falling off. When the Engine passes over the Signal, it explodes with a loud report, and the Driver is instantly to stop.

2. The use of Fog Signals is to be in addition to the regular Day and Night Signals of the Line, which must be first exhibited.

3. Whenever an accident occurs to a Train, by which the Line is obstructed, the Guard is to go back 600 yards, to stop any Engine or Train following on the same Line, and as he proceeds he is to place on the Rail, at the distance of every 200 yards, one of these Signals; and on his arriving at the end of the above-mentioned distance, he is to place Two Signals upon the Line of Rail.

4. Should the accident occasion the stoppage of both Lines of Rail, the Guard is to send the under Guard or Fireman in advance of the Train, to place the Signals on the opposite Line of Rail to that which the Train is on, in the same order as to distance as is above directed for the Guard, by which precaution both Lines of Rail will be protected.

5. In case of the stoppage of either Line of Rail from any cause, or there being any danger apprehended in the passage of an Engine or Train, whether in Foggy Weather or otherwise, the Station Police, Signal, Switch, or Tuffnel man, is to place one of these Signals on the Line or Lines of Rail so obstructed, every 200 yards from the point of danger, until the Line or Lines of Rail are so protected for half a mile.

6. In Foggy Weather these Signals are to be similarly used whenever an Engine or Train is following, or likely to follow, too closely upon another Engine or Train, or in cases of emergency or great danger.

7. Whenever an Engine passes over one of these Signals, the Engine-Driver is immediately to stop the Train, and the Guards are to protect their Train by sending back and placing a Signal on the Line every 200 yards, to the distance of 600 yards; the Train may then proceed slowly to the place of obstruction.

8. After the obstruction of the Line is removed, the Guards, Police, or Engine-Driver, must remove all the Signals from the Rails before proceeding.

9. Each Guard, Policeman, and Pointsman, not at a Station, and all Enginemen, Gatemen, Foremen of Works, Gangers of Plate-Layers, and Tunnelmen, will be provided with packets of Signals, which they are always to have ready for use whilst on duty; and every Officer in charge of a Station will be provided with these Signals, which are to be kept in an unlocked drawer or shelf in the counter, in order that they may at all times be easy of access to all on duty at the Station: and every person connected with the Station shall be made acquainted with the place where they are deposited.

10. All the persons above named will be held responsible for their having the proper supply of Fog Signals; when one or more are expended, it is their duty immediately to apply to the Superintendent of their section for a further supply to keep up the stock as above directed.



SECTION IV.

REGULATIONS FOR ENGINEMEN.

1. No Engine shall pass along the wrong line of Road, but if, in case of accident, an Engine shall be unavoidably obliged to pass back on the wrong line, the Engineman is to send his Assistant, or some other competent person, back a distance of not less than 300 yards, before his Engine moves, to warn any Engine coming in the opposite direction, and the Assistant shall continue running, so as to preserve the distance of not less than 300 yards between him and the Engine. If dark, the man shall take

his light and make a signal by waving the same **UP** and **DOWN**, and the Engineman of the Engine moving on the wrong line shall keep his Steam Whistle constantly going, and must not move in the wrong direction farther than to the nearest shunt, where he is instantly to remove his Engine off the wrong line of Road; and it is expressly forbidden that any Engine should move on the wrong line of Rails at a greater speed than **four miles an hour**.

2. All Engines travelling on the same line shall keep **300** yards at least apart from each other, that is to say,—the Engine which follows shall not approach within **300** yards of the Engine which goes before, unless expressly required.

3. No person, except the proper Engineman and Fireman shall be allowed to ride on the Engine or Tender, without the **special** permission of the Directors, or one of the Chief Officers of the Company.

4. The Engineman and Fireman must appear on duty as clean as circumstances will allow, and every Driver must be with his Engine 30 minutes, and every Fireman 45 minutes, before the time appointed for starting, in order to see that the Engine is in proper order to go out, has the necessary supply of coke and water, and that the Signals are in a fit state for use.

5. The Front Buffer Light of a Passenger Train is **White**, and of a Goods or Cattle Train **Green**, except on the Liverpool and Manchester Section.

6. Every Engineman shall have with him at all times in his Tender the following Tools:—

1 complete set of Lamps
1 complete set of Screw Keys
1 large and small Monkey Wrench
3 Cold Chisels
1 Hammer
1 Crow Bar
2 short Chains with Hooks

1 Screw Jack
A quantity of Flax and Twine
4 large and small Oil Cans
Plugs for Tubes
2 Fire Buckets
Fog Signals and Red Flag

7. When the Engine is in motion, the Engineman is to stand where he can keep a good look-out a-head, and the Fireman must at all times be ready to obey the instructions of the Engineman, and assist him in keeping a look-out, when not otherwise engaged.

8. No Engine is permitted to stand on the **main line** (except under very special circumstances) when not attached to a Train, and the Engineman shall not at any time leave his Engine or Train, or any part thereof, on the main line, unless there be a competent man in charge to make the necessary signals.

9. No Engine shall cross the Line of Railway at a Station without permission.

10. An Engineman is never to leave an Engine in Steam, without shutting the Regulator, putting the Engine out of gear, and fixing down the Tender Break.

11. No Engine is allowed to **propel** a Train of Carriages or Waggon, but must in all cases draw it, except when assisting up inclined planes, or when required to start a train from a Station, or in case of an Engine being disabled on the road, when the succeeding Engine may propel the train **slowly** (approaching it with great caution) as far as the next shunt or turn-out, at which place the propelling Engine shall take the lead.

12. No Engine is to run on the Main Line **Tender foremost**, unless by orders from the Locomotive Superintendent, or from unavoidable necessity.

13. Every Engineman on going out is to take his **Time Table** with him, and regulate by it the speed of his Engine, whether attached to a Train or not; and when not attached to a Train, he is on no account to stop at second-class Stations unless specially ordered, or there is a signal for him to do so.

14. Enginemen are not allowed (except in case of accident or sudden illness) to change their Engines on the Journey, nor to leave their respective Stations, without the permission of their Superintendent.

15. When the Road is obscured by steam or smoke (owing to a burst tube, or any other cause), no approaching Engine is allowed to **pass through the steam**, until the Engineman shall have ascertained that the road is clear; and if any Engineman perceive a Train stopping, from accident or other cause, on the road, he is immediately to **slacken his speed**, so that he may pass such Train slowly, and stop altogether if necessary, in order to ascertain the cause of the stoppage, and report it at the next Station.

16. Where there is an accident on the opposite Line to that on which he is moving, he is to stop all the Trains between the spot and the next Station, and ~~caution~~ the respective Enginemen, and further he is to render every assistance in his power in all cases of difficulty.

17. In case of accident to his Engine or Tender (when alone) he is to send back notice by his Fireman to the nearest Policeman on duty : but if the Policeman is too distant, the Fireman is to remain stationary not less than 600 yards in rear of his Train (until recalled), showing his Red Signal until he has rejoined his Engine. (See Rule 17, page 182.)

18. Enginemen are strictly prohibited from throwing out of their Tender any small ~~coke~~ or dust, except into the pits made for that purpose at first-class Stations.

19. Enginemen with Pilot or Assistant Engines must be prepared (while on duty) to start immediately on receiving instructions from the Locomotive Foreman or the Station Master.

20. Enginemen are strictly enjoined to **start and stop their Trains slowly**, and without a jerk, which is liable to snap the couplings and chains ; and they are further warned to be careful not to shut off their steam too suddenly (except in case of danger), so as to cause a concussion of the carriages.—This rule applies more especially to **Cattle Trains**, the beasts being liable to be thrown down and injured by a sudden check.

21. No Engineman is to start his Train until the proper Signal is given : he is invariably to start with care, and to observe that he has the whole of his Train before he gets beyond the limits of the Station.

22. It is very important that Engine-Drivers use the utmost caution when shunting Waggon into sidings, so as to avoid injuring the Waggon or other property of the Company.

23. Enginemen in bringing up their Trains are to pay particular attention to the state of the **weather** and the condition of the **Rails**, as well as to the length of the Train : and these circumstances must have due weight in determining when to shut off the Steam. Stations must not be entered so rapidly as to require

a violent application of the Breaks, and any Engineman over-running the Station will be reported.

24. Enginemen and others are required to be careful in turning their Engines on the Tables, so as not to **swing** them round rapidly.

25. Engines running alone, or taking luggage or empty carriages, must not exceed a speed of **20** miles an hour without distinct orders in each case, or some urgent necessity.

26. Enginemen and Firemen are to pay immediate attention to all **Signals**, whether the cause of the Signal is known to them or not; and any Engineman neglecting to obey a Signal is liable to immediate dismissal from the Company's service. The Engineman must not, however, **trust to Signals** but on all occasions be vigilant and cautious, and on no account be running before the time specified in his Time-Table. He is also to obey the Special orders of the Officers in charge of Stations, when required for the Company's service.

27. Whenever he sees the **Red Signal**, or any other which he understands to be a Signal to stop, he is to bring his Engine to a stand close to the Signal, and on no account to pass it.

28. In addition to the usual Red Signals, the Police have orders to place **Detonators** on the Rails in foggy weather, and every Engineman, when he hears a Detonating Signal, is to bring his Engine to a stand as quickly as possible. The Enginemen also are supplied with these Signals to be used in the same manner. (*See Rule for Fog Signals.*)

29. **Ballast** Engines are prohibited from passing along the Main Line in a **fog**, except when authorised to do so under special circumstances.

30. As a further precaution in foggy weather, no Engineman is allowed to leave a Station with a Train until the preceding Train has been started at least **ten minutes**; and before starting, the Clerk in charge of the Station, or the Policeman on duty, is to give the Engineman **the exact time** when the preceding Train started, and where it is next to stop.

31. Enginemen are at all times to use great caution in **foggy**

weather, and especially in approaching Stations, from the difficulty of discerning the regular Signals until close upon them ; and they are to be prepared to bring their Engines to a stand, should it be required.

32. No Engineman is to pass from a Branch on to the Main Line until the Policeman at the Junction Points signals the Main Line clear, and in foggy weather he is to bring his Engine to a stand before reaching the **Junction Points**, and not to enter upon the Main Line till he has ascertained from the Policeman how long the preceding Train or Engine has passed.

33. To avoid risk of collision on single Lines, from the meeting of another Engine, no extra Engine, with or without a Train, is allowed to pass along the Line without **previous notice**.

34. Every Engineman is to be careful, when he passes a Station, or when the way is under repair, to proceed slowly and cautiously ; and he is also to do so whenever he sees the **Green Signal**.

35. Luggage, Coal, and Ballast Trains are always to give way to Passenger Trains by going into the nearest siding.

36. The Whistle is to be sounded on approaching each Station and level crossing, and on entering the Tunnels. **Three** short sharp whistles, rapidly repeated, must be given when danger is apprehended, and when it is necessary to call the attention of the Guards to put on the Breaks. When more than one Engine is attached to the Train, the Signal is to be given by the Leading Engineman ; and in case of danger is to be repeated by the following Enginemen, who will forthwith reverse their Engines and attach their Tender Breaks. Frequent use must be made of the Whistle in foggy weather.

37. Enginemen with Luggage Trains are to approach all stopping places at a speed not exceeding **ten miles** an hour, when within a quarter of a mile of the stopping place, and to signal the Breaksman by **two** distinct Whistles to put on his Break before the Tender Break is put on.

38. Luggage Enginemen must refuse to take up waggons of goods, if they are of a nature to take fire by a spark or hot cinder,

unless such goods are **completely sheeted**. Enginemen are to see that the cinder-plates at the back of their Tenders are in good order.

39. Should **fire** be discovered in the Train, the Steam must be instantly shut off, and the Breaks applied, and the Train be brought to a stand, the Signal of obstruction to the Line be made, and the burning waggon or waggons be detached with as little delay as possible. No attempt must ever be made to run on to the nearest water column, if it is more than **300 yards** from the place where the fire is discovered, as such a course is likely to increase the damage.

40. The movements of all Trains are under the orders of the Guard, to whose instructions as to stopping, starting, &c., the Engineman is to pay implicit attention.

41. If any part of a Train is detached when in motion, care must be taken not to stop the Train in front before the detached part has stopped, and it is the duty of the Guard of such detached part to apply his Break in time to prevent a collision with the carriages in front, in the event of their stopping.

42. Whenever a Red Board or Red Flag is carried on the last carriage or waggon of a passing Train, it is to indicate that a **Special** or **Extra Train** is to follow; and when such Extra Train is to run at night, an additional Red Light must be attached to the tail of the preceding Train.

43. Every Engineman at the end of his journey is to report to the Superintendent of Locomotive Power, or his Foreman, or to the Clerk in attendance—

First—As to the state of his Engine and Tender.

Second—As to any defect in the Road or Works, Electric Telegraph posts or wires, or any unusual circumstance that may have taken place on the journey.

44. He is also to see that his Signal and Gauge Lamps are taken into the Porter's Lodge, for the purpose of being trimmed.



SPECIAL REGULATIONS.

LONDON AND BIRMINGHAM SECTION.

45. Enginemen with Express Trains are to slacken speed round the curves at Weedon, Leighton, and Berkhamstead.

46. Whenever an Engineman approaches ~~Camden~~ Station in a fog, or whenever the Policeman at the South entrance of the Primrose Tunnel shows the Green Signal, he is to bring his Engine to a stand at ~~Chalk Farm Bridge~~, unless on his arrival there the Policeman signals him to proceed.

47. The same regulation is to be observed on his approaching ~~Birmingham~~ in foggy weather; and when the Green Signal is shown by the Policeman near the ~~new Canal Bridge~~, he is to stop at the Ticket Platform, unless there signalled to proceed.

48. Whenever the Pilot Engineman, assisting a Train from Euston, intends to run into the siding at the summit of the incline, he is to detach his Engine before arriving at the Ticket Platform, and, on approaching the Policeman at the facing points, motion to the left with his hand (by night with his hand-lamp): in the absence of this signal the Policeman is not to alter the points, but to allow the Engines and Train to pass on the Main Line.

GRAND JUNCTION SECTION.

49. All Trains passing from or to the Liverpool, Manchester, and the Grand Junction Railways at Newton, are to slacken speed so that the same shall not exceed **Five** miles an hour before passing from one line to the other.

50. Engines passing from the Chester Line to the Main Line at Crewe are to come to a stand before entering the Main Line.

Inclined Planes.

51. The Assistant Engine is invariably to return down the left-hand Line, and no Luggage Engine is to leave any part of

its Train on the Main Line unless in case of urgent necessity. No Luggage Engine is to attempt to ascend the **Sutton** and **Whiston** Inclines with a greater load than their Engines, assisted by the Bank Engines, can manage: and if any doubt exist whether the Engines are or are not able to take up the whole load at one trip, the Train must be stopped at the bottom, and the requisite number of Waggon's be shunted, and left in a **siding** and **not** on the Main Line.

52. In the event of any Waggon's being left upon or at the foot of the Incline, and a succeeding Engine coming up, such Engine is not to commence propelling or drawing the said Waggon's until the Engines which left them shall have returned.

53. No Engine, either with Passengers, Coals, or Merchandize, is to go down the Inclined Plane at a greater speed than 30 miles an hour, and no Engineman is to attempt to make up lost time in going down any Inclined Plane; and coming down **Whiston Incline**, no Engineman shall begin to increase his speed till he reaches **Huyton Quarry Station**.

54. In going down the Inclined Planes, Enginemen, Guards, and Breaksmen must take care that they have complete control over the speed of the Trains by applying their Breaks.

55. Enginemen with Trains requiring assistance up the **Whiston** and **Sutton** Inclined Planes are required in all cases to go up the bank first and let the Assistant Engine follow.

56. All Enginemen are required to give one loud whistle as they pass **Platt's Bridge**.

MANCHESTER AND BIRMINGHAM SECTION.

57. An interval of not less than **Five Minutes** must elapse between any two Trains travelling in either direction on the same line of Rails between **Store Street Station** and the **Sheffield Junction**; and on this part of the Line, all Engines, with or without Trains, must proceed at such a reduced speed as will enable the Engineman to stop almost instantaneously, if required so to do.

58. Every Train from the Manchester and Sheffield Line must

stop before arriving at the **Junction**, and wait until the Police-man in charge of the Junction Points indicates that the Line is clear. Should the Manchester and Birmingham Down Train have exceeded the proper time of passing the Sheffield Junction, and the Manchester and Sheffield Train have arrived at its proper time, or before the other is in sight, the Sheffield Train will proceed **First** to the Station.

59. Enginemen on approaching the Sheffield Junction, from whatever direction, with or without a Train, are invariably to blow the Steam Whistle as soon as they arrive within a quarter of a mile of the Junction, and they must not pass that place at a greater speed than **Five** miles an hour.

TRENT VALLEY SECTION.

60. Enginemen proceeding to the Trent Valley Line are to open their Whistles once when they arrive within a quarter of a mile of the Junctions at Stafford and Rugby, motion with their hand, or hand-lamp, as a signal to the man at the Junction Points, and must invariably slacken speed to **Five** miles an hour. Engines to or from Birmingham are to give **two clear whistles**, with an interval between them, on approaching the Junctions. The slackening of speed is especially enjoined on the Enginemen from Birmingham in case of a Train to or from the Trent Valley being in the act of crossing.

BOLTON BRANCH.

61. Enginemen having charge of Coal or Ballast Trains travelling so as to meet a Passenger Train, are not to pass any Siding or Station at a less interval than **fifteen minutes** before the time at which the next Passenger Train is due, and every Engineman must make himself well acquainted with the time of the Passenger Trains.

62. Enginemen are required to slacken speed previous to crossing the Turnpike Roads at Daubhill, Chequerbent, and Crook Street.

63. All Enginemen are directed not to pass through the

Points at the Double Road on Dean Moor at a greater speed than **eight** miles an hour, nor over the **curve** between Leigh and Bradshaw Leach Stations at a greater speed than **twelve** miles an hour.

SECTION V.

REGULATIONS FOR GUARDS.

1. Each ordinary Train on the Main Line is to have at least **two** guards, and the short Trains on the Branch Lines **one** Guard. If the Train is very heavy, additional Guards will be sent with it, at the discretion of the Superintendent.

2. Every Guard is to be at the Station from which he is to start **half an hour** before the appointed time, that he may see to the marshalling of the Carriages, and the arrangement of the Passengers' Luggage, Parcels, &c.

He is to see that he has on the Train,

1 Pair of Signal Flags and Case.	12 Links and Box.
1 Hand Signal Lamp and Box.	1 Pair of Levers.
2 Canisters of Fog Signals and Blue Lights.	1 Box for Despatches.

3. Until the Train starts the Guards will be under the order of the Station Master.

4. Every Guard is to see that his **Signal Lamps** are in a fit state for use and properly trimmed; the Senior Guard will ascertain that the Tail and Side Lights are securely fixed before the Train starts, and is responsible for their being lighted at sunset as well as during a Fog.

5. The Train, when in motion, will be under the order and control of the Senior Guard; the Passengers and their Luggage must be considered in his charge, and he will be responsible for the safety and regularity of the whole. He is to keep the time of running, and will be answerable that any Carriage which is to be left at an intermediate Station is detached.

6. With through Trains (viâ the Trent Valley) in which the whole journey is performed without change of Guard, there will be **three** Guards between London and Rugby, and the following will be the arrangements :—

The Senior Guard will run between **London and Liverpool**, and have charge of the whole service connected with that portion of the Train including the Traffic to the North through Parkside and that to Chester; delivering the former at Warrington and the latter at Crewe, to the Branch Guards there. The same on the return journey.

The Second Guard will run between **London and Manchester**, and will have charge of the whole service connected therewith, and also the road-side business in Parcels, Luggage, &c., between Rugby and Crewe. He will also keep the time between Crewe and Manchester, and make out his Way Bill for that Line.

The Third Guard will run between **London and Birmingham**, and have charge of the whole service connected therewith, and also the road-side business in parcels, Luggage, &c., between London and Rugby. He will also keep the time between Rugby and Birmingham, and make out his Way Bill for that portion of the journey.

7. When there are **two Guards** with a Train, the under Guard will ride in the Van next to the Tender. He will stand with his back to it, and keep his attention fixed on the Train, looking alternately **down** either side, and noting any irregularity in the running—any particular oscillation of a Carriage, or any signal which may be made by a Passenger.

He will be provided with the means of immediately communicating with the Engineman in the event of any circumstance arising which may render it prudent or necessary to stop the Train.

The place of the Senior Guard will be on the last Passenger Carriage, which must always be a **Van** or a **Break Carriage**, and his duty will be to look **forward** and communicate with the Second Guard on the leading Carriage.

With through Trains when there are **three Guards** with a Train, their position will necessarily be regulated by the division

of the Line to which their section of the Train is proceeding, but the duties of the Guard on the **leading** and **last** Carriage will always be as stated above, the **middle** man communicating between them.

8. On arrival of a Train at a Terminus the Guards are not to leave the Platform until they have delivered over all **Parcels** as well as **Luggage** to the Porters appointed to take charge of them, and if any article is missing they are immediately to report the same to the officer in charge of the Station.

9. Before leaving the Station the Guards are to make out a return according to a printed form, noting at the foot every circumstance of an **unusual** character that may have happened; they are also to state on this return whether all the **Parcels** and **Luggage** by the Train have been duly delivered.

10. The number of any Carriage complained of as **uneasy**, and the Division to which it belongs, must be entered on the Way Bill.

11. Should any Train **overshoot** the Water Pillar at a stopping place by the length of the Train, the circumstance must be noted on the Bill.

12. No Passenger is to be allowed to **ride outside**, without special permission.

13. Guards must keep a good look-out that no Passenger on arriving at any Station gets out for the purpose of **re-booking** by the same Train, as this is forbidden by the Regulations.

14. Guards are forbidden to pass over the **tops of the Carriages** when in motion, and any Guard doing this without urgent necessity will be fined.

15. The Doors of the Carriages on the off side are always to be **locked**, and Guards are charged to request Passengers to keep their seats in case of any stoppages on the road, except when necessary to alight.

16. **Smoking** in the Carriages and at Stations is forbidden by the Regulations. The Guard must prevent Passengers endangering themselves by imprudent exposure. In the event of any

Passenger being **drunk and disorderly**, to the annoyance of others, the Guard is to use all gentle means to stop the nuisance; failing which, he must, for the safety and convenience of all, exercise his authority, and confine him in a separate place until he arrives at the next Station.

17. When a Passenger or Luggage Train comes to a stand on the Main Line, or is only enabled to proceed at a very slow pace, the Senior Guard is to send back notice by the Junior Guard to the nearest Policeman, if within distance for prompt communication; but if too far, then the Junior Guard will remain stationary, not less than **600** yards in rear of the Train, showing his Red Signal until recalled. Should the 600 yards terminate near a curve in the Line, he is to continue on until his Red Signal can be well seen round the curve; and before starting to rejoin his Train, he is to leave one of the 10-minute Blue Light Signals by the side of the Rail. Should the Train have only one Guard, he will perform this duty.

18. Every Guard is to observe the strictest attention and obedience to all the **Signals** and **auxiliary Signals** at Crossings, intermediate Stations, Tunnels, and of each Policeman on the Line, as well as to respect all special orders which the officer in charge of Stations may think necessary.

19. In the event of accident, blocking one Line and requiring the Train to pass along the wrong Line, the utmost caution must be exercised; and no Train is to be permitted to proceed on the wrong Line without a **Memorandum in Writing** from a person in authority at the spot where the accident has happened. So liable are verbal messages to be misunderstood, that, should a verbal message be received to send forward a Train on the wrong Line, the messenger must be sent back for a written order before the Train is allowed to move.

20. Whenever a regular Train is to be followed by a special one, a **Red Board** or **Flag** is to be affixed on the rear of the last carriage of the regular Train by Day, and an additional Tail Light by Night. The Senior Guard of a Passenger Train, and the Guard of a Luggage Train, must ascertain for what purpose this Signal is affixed. He is to see that it is removed at the

proper Station, and will report the circumstance under which the Special Train is about to follow.

21. When from accident to the Train, or from any other cause, it is necessary to **secure the attention** of the Engineman, the Guard is to apply his Break sharply, and as suddenly release it. This operation repeated several times is almost certain, from the check it occasions, to attract the notice of the Driver, to whom the Red Flag or Lamp must be immediately waved as a signal to stop.

22. The Guard must not allow any Passenger or parcel to be conveyed by the Train unless **properly booked**; and if he has reason to suppose that any Passenger is without a Ticket, or is not in the proper Carriage, he must request the Passenger to show the Ticket. When a Passenger is desirous of changing his place from an **inferior** to a **superior** carriage, the Guard must have this done by the Clerk at the first Station.

23. Great importance is attached to the most **prompt delivery** of Letters, Invoices, and Despatches consigned to the care of a Guard; and any neglect in this particular will be severely dealt with.

24. Prisoners who are in charge of the Police, and persons afflicted with insanity, must never be mixed along with the other Passengers, but be placed in a **compartment**, and, if practicable, in a **carriage, by themselves**.

25. Servants and others connected with the Railway (Directors excepted) are required to book and pay their fare the same as other Passengers, except the following Officers, who travel free, and have the power to grant Passes to individuals proceeding **on the Company's business only**:-

The GENERAL MANAGER—The SECRETARIES.

Mr. BRUYERES	. . .	<i>Superintendent Southern Division,</i>
Mr. NORRIS	. . .	,, <i>Northern Division.</i>
Mr. WOODHOUSE	. . .	,, <i>Man. and Bir. Section.</i>
Mr. DOCKRAY	. . .	<i>Resident Engineer, Southern Division.</i>

Mr. PALMER . . .	<i>Assistant Manager, Liverpool.</i>
Mr. BROOKS . . .	,, <i>London.</i>
Mr. ROBINSON . . .	,, <i>Birmingham.</i>
Mr. JONES . . .	,, <i>for the Chester and Crewe Branch.</i>
Mr. BRADSHAW . . .	,, <i>Bolton Branch.</i>

For the Locomotive Department.

Mr. McCONNELL . .	<i>Southern Division.</i>
Mr. TREVITHICK . .	<i>Northern Division.</i>
Mr. RAMSBOTTOM . .	<i>Man. and Bir. Section.</i>

For the Merchandise Department.

Mr. EBORALL . . .	<i>Central Division.</i>
Mr. POOLE	<i>Northern Division.</i>
Mr. MILLS	<i>Southern Division.</i>
Mr. SALT	<i>Man. and Bir. Section.</i>

For the Carriage Department.

Mr. WRIGHT . . .	<i>Southern Division.</i>
Mr. WORDSELL . .	<i>Northern Division.</i>

Mr. MORISON . . . *For purposes of the Clearing House.*

These Passes must always be issued on the authorised printed Forms, and the reason of the Pass being granted must be entered on the Counterfoil.

SECTION VI.

REGULATIONS FOR BREAKSMEN OF LUGGAGE TRAINS.

1. The Breaksman or Breaksmen, as the case may be, must be in attendance **60** minutes before the hour fixed in the Time Bill for the departure of the Trains.

2. They are carefully to examine the loading and sheeting of the waggons before starting from each Station, to insure the protection of the goods from **rain** and **sparks**. They must also, at every Station where the Train stops, ascertain that the loading of the Trucks has not moved, and specially that it does not **overhang** the sides.

3. They are to be careful to ascertain that the axles of the waggons are properly **greased** before starting from a Station.

4. The Head Breaksman, where there are two, is responsible for seeing that the **Signal Lamps** are attached to the Train, and that on arrival they are delivered to the Lamp-man. He is also responsible to have these Lamps lighted at Sunset and during a Fog.

5. The Breaksman is to enter on his Way Bill any **delays** or **casualties**, and report the same on arrival to the proper officer. When any waggons are left on the road that should have been taken forward, the Breaksman must instantly on arrival give notice of the same.

6. The Breaksman is to receive and enter on his Way Bill such despatch-bags, parcels, invoices, and letters, as may be delivered to him, and must be very particular to deliver correctly any parcels of Goods which may be intrusted to him between roadside Stations, and to forward to their address without delay all **letters**, **despatches**, and **invoices** consigned to his care.

7. He is to examine the **labels** on the waggons, and compare with the greatest exactness the destination and number upon each waggon with those in the Way Bill. He is to notice any discrepancies in the latter, and correct any errors before starting.

8. The Breaksman is to be provided with a few spare centre chains, a crowbar, fire-bucket and rope, a case of fog signals, and hand signal lamp; also a small Red Flag and a White one—the Red Flag being a Signal to stop, and the White one to proceed.

9. Whenever a Train is stopped at any intermediate Station, or on the Line, it is the special duty of the Breaksman to see that the **contents** of the waggons are not interfered with, and that the proper **Signals** are given when the Line is obstructed. In case of a break-down or other stoppage on the main Line, he is to go back **600** yards, or until he meet a Policeman, making the proper signal with a Red Flag by day, or Red Lamp by night, or in foggy weather by placing a **Fog Signal** on the Rail to stop any approaching Train, leaving the waggons in the charge of the Engineman; if in going the above-named distance

he does not meet a Policeman, he must not leave the place until relieved. (See Rule 17, p. 182.)

10. No person is allowed to **walk** or **climb** over the tops of the waggon sheets.

11. The Breaksman is to make himself acquainted with the Time of the Passenger Trains passing all parts of the Line, and when likely to be overtaken remind the Engineman immediately to **shunt** into a siding out of the way of the approaching Train, and in passing warn the Police signal-men of their intention.

12. The Breaksmen are positively prohibited from allowing any one to **ride in the Breaksman's box**, or on the Train, without written authority; and any disobedience to this order will be punished.

SECTION VII.

REGULATIONS FOR STATION MASTERS AND CLERKS.

1. Every Officer in charge of a Station is to be answerable for the Office and Buildings, and the Company's Property there. He is also to be responsible for the faithful and efficient discharge of the duties devolving upon all the Company's Servants at the Station.

2. He is to see that all general and other orders are duly entered and executed, and that all books and returns are regularly written up, and neatly kept.

3. He is to take care that all the Servants at his Station behave respectfully and civilly to Passengers of every class, and that no gratuities from the public are received by them under any circumstances.

4. He is to inspect daily all rooms and places in connection with the Station, in order to see that they are neat and clean.

5. He is to take care that all the Servants at his Station come

on duty clean in their persons and clothes, shaved, and with their shoes brushed.

6. He is also to cause the Station to be kept clear of weeds, and have the ballast raked and preserved in neat order. He must be careful that all stores supplied for the Station are prudently and economically used, and that there is no waste of gas, oil, coal, or stationery.

7. He is to report, without delay, neglect of duty on the part of any one under his charge; and in case of complaint against any man, he is to communicate the particulars as soon as possible, so that the offender may be sent to head-quarters, if the case require it.

8. No Station Master is allowed to be absent without leave from the Superintendent of his Division, except from illness, in which case he must immediately inform the Superintendent, and take care that some competent person is intrusted with the duties.

9. Carriages and Waggon are never to be allowed to stand on the main Line, but must be placed in a siding, and at night the wheels must be securely scotched.

10. No Engine, Carriage, or Waggon, must be allowed to shunt or cross the main Line if a Train is expected, unless the proper signal shall have been previously sent back.

11. On the arrival of a Train at a Station, the Red Signal is to be shown, and continued for five minutes after the departure of the Train. In foggy weather the Auxiliary Signals must always be lighted, and used as shown by Rule 13, p. 165.

12. Every exertion must be made for the expeditious despatch of the Station duties, and for insuring punctuality in the Trains.

13. No Train is to be started before the time stated in the Tables.

14. As a general rule, Passenger Trains are to take precedence of Luggage Trains; and Goods Trains must not be started from any Station when Passenger Trains are due. This Regulation, however, will be subject to modification, agreeably to the circumstances of the Trains, the state of the weather, the weight of

the load, and the character of the Engine:—Thus, a light through Goods or Cattle Train, on a clear day or night, with a good Engine, may be started before a Passenger Train which is due, should the latter have to stop at all the Stations. Again, if, from facts which may come to the knowledge of the Station Agent, by means of the Electric Telegraph or otherwise, the Passenger Train which is due may not be expected for some time, the Agent will be justified in despatching the Goods Train, taking care in this case specially to warn the Engineman of the Passenger Train, when it arrives, informing him the precise time when the Luggage Train was despatched and where ordered to shunt.

15. On a Line like the London and North-Western, where the Traffic in Goods and Passengers is so intermingled, much must be left to the discretion of the Station Agents, but the discretionary power must be exercised with great prudence and caution. Every endeavour, consistent with safety, must be made to expedite the departure of the Goods Trains from the Road-side Stations; and no delay should be permitted unless obstruction to Passenger Trains may be reasonably apprehended.

16. In deciding in difficult cases whether to despatch a Luggage Train or not, the opinions of the Engineman and Breaksman, who must be best acquainted with the state of the Engine and Load, should be obtained, and great weight should be attached to these recommendations, but the decision on the course to be pursued will still rest with the Station Agent.

17. A Return of the Delays at each Station is in future to be submitted to the Manager, which will enable the Directors to appreciate the activity of the Station Agents.

18. The above regulations will be facilitated in their operations by the limit to which the Directors have restricted the weight of the Trains. As a general rule, no Train will be allowed to exceed forty Loaded Waggons; and whenever this number shall be exceeded, special notice will be given. When the number of Waggons to be despatched exceeds forty, thereby requiring another Engine, the load will be divided, and despatched in *Two Trains*, at an interval of *Ten Minutes*.

19. Waggon's of Merchandise are always to have precedence over Coke, except written instructions are produced to the contrary, or the Agent is satisfied, by verbal explanations, that the case is urgent, and that deviation from the rule would be expedient. When this occurs it is to be noted in the Report.

20. In order to guide the Agents in deciding on the policy of attaching Waggon's to passing Trains, the Locomotive Department will in future supply the Drivers with a Certificate of each Luggage-Engine's capability; stating the average number of Loaded Waggon's which may be attached to it, in good and bad weather respectively; and this Certificate will be considered to remain in force until withdrawn by the Superintendent of the Locomotive Department.

21. Empty Waggon's will be worked down by spare or returned Engines, as the case may be. Three empty Waggon's will be considered equal to Two loaded ones.

22. The through Trains between Liverpool, Manchester, the Midland Line, and London, which do not take up Roadside Goods, are to be pushed forward as rapidly as is consistent with safety.

23. When a Special Train has to be despatched from a Station, a Red Board or Red Flag by day and an additional Tail Lamp by night must be attached to the preceding Train.

24. An account of all unclaimed Luggage found at the Station is to be sent to the Clearing-house on a form furnished for that purpose.

25. The Clerks at the several Stations are to deliver Tickets to all persons booking their places for conveyance by the Railway, and no person is to be allowed to pass on the platform without producing his Ticket.

26. If the Guard or Station Clerk have reason to suspect that any Passenger is or has been travelling upon the Railway without having paid any Fare or the proper Fare, he may require such person to produce his Ticket; and every Passenger before leaving the Company's premises at the end of his journey is to be required to deliver up his Ticket. If any Passenger shall refuse or be unable to produce a proper Ticket, or shall commit any

other offence against the Bye-laws, Rules, and Regulations of the Company relating to Travellers by the Railway, the case shall be immediately investigated by the Chief Clerk of the Station where the occurrence may take place, who is to exercise his discretion as to the proceedings to be taken, always reporting what has been done.

27. The power of detention is to be exercised with great caution, and never where the address of the party is known, or adequate security offered for his appearance to answer the charge. When it shall be necessary to detain any party, such detention shall not continue for a longer period than is absolutely necessary, but he shall be conveyed before a Magistrate with as little delay as possible.

28. Passengers not producing their Tickets are to be required to deposit the amount of the whole Fare from the place whence the Train started until the inquiry can be made, in order to ascertain whether the Fare has been actually paid or not, and in every case the circumstances must be inquired into without delay and reported.

29. The power of detention for offences is limited to the person of the Passenger and does not extend to his Luggage, but the Luggage may be detained for the Fare in case it is not intended to proceed against the Owner for a Penalty, such Luggage being subject to a lien for the amount of the Fare.

30. As it is the *intent* which constitutes the offence, it is very desirable that the power of detention should be exercised with caution and discretion, as cases may frequently occur of persons travelling beyond the distance for which they have paid their Fare unintentionally, or even against their wish and to their inconvenience; and the right of detention is applicable only in cases of what is termed Over Riding to parties who *knowingly* and *wilfully* proceed beyond the place to which they are booked, not only without previously paying the additional Fare for the additional distance, but also with *intent to avoid payment thereof*.

SECTION VIII.

REGULATIONS FOR INSPECTORS OF POLICE.

1. Every Inspector is to **walk** over his district, and to report to the Superintendent of his division any irregularity he may detect.

2. Every Inspector is to see that the Policemen, Pointsmen, and Gatesmen in his district are at their posts—**clean** in their persons, sober, and attentive to their duty ; and to ascertain that they are **conversant** with their orders, and that the Points are in good working order, **cleaned**, and **oiled**.

3. He is to see that each Police Box has a **copy** of the standing orders relative to Police Signals and Duties, and a copy of any order specially relating to the men at that particular post.

4. Every Inspector is to have a **list** of the names and places of abode of every Policeman in his district, so that in case of need he can summon them.



SECTION IX.

REGULATIONS FOR POLICEMEN AND POINTSMEN.

1. Every Policeman on duty is to stand upon the Line **clear** of the rails, and to give the proper signal on the passing of an Engine.

2. Every Policeman will be supplied with a **whistle**, to aid in calling the attention of the next officer in communication with him to a signal ; and no signal must be considered to be received until answered by the Policeman to whom it is passed.

3. On a Train stopping at a Station after sunset, the Policeman on duty is to see that the Tail and Side Lamps are lighted and in

order, and, if not, he is to report the same to the Guard of the Train, as well as to the Clerk on duty.

4. On a Goods or Coal Train stopping at a Station, the Policeman on duty is to ascertain from the Breaksman at which Station the Train is **next to stop**, that he may inform the Engineman and Guard of the following Train. This precaution is more especially enjoined during foggy weather.

5. On a Policeman having to stop a Train, he is to tell the Engineman the cause, and then let the Train proceed, unless he has orders to detain it, in which case he is to desire the Engineman to draw on until the whole Train is well **within** the Signal Post, to admit of a following Train stopping at the Signal, without risk of collision.

6. When a Train stopping at a Station extends beyond the Signal Post, the Policeman on duty is to go back in **rear** of the Train with his Hand Signal, to a distance sufficient to ensure its being well observed by the Engineman of any other Engine that may be following.

7. This precaution, though at all times necessary, is more particularly so with the Up Trains at Weedon, Roade, and Leighton.

8. The Policeman stationed at the New Canal Bridge, near Birmingham, when he cannot discern the Signal at the Junction of the Gloucester Railway, is to show the **Green Signal** to every Engine passing towards Birmingham, and the Engineman is then to bring his Engine to a stand at the Ticket Platform unless there signalled to proceed.

9. At the junction with the Midland at Rugby—the Bedford at Bletchley—the Aylesbury at Cheddington—the Peterborough at Blisworth—the Leamington at Coventry—the Manchester and the Chester at Crewe—the Macclesfield at Cheadle, where Stationary Signals are placed, the Policeman is to keep the Red Signal always turned on to the **Branch Line**, to prevent an Engine passing to the Main Line until he has ascertained that the Main Line is clear, when he is to turn the Signal off the Branch and on to the Main Line.

Note.—The Trent Valley is henceforth to be considered the

Main Line, and the Rugby and Birmingham, and Stafford and Birmingham, the Branches.

10. Every Engineman on a Branch Line must bring his Engine to a stand in foggy weather **before** he reaches the Junction-points, and not enter on the Main Line till he shall have ascertained how long the preceding Train has passed; the **Policeman** is to give all the information required.

11. Policemen are hereby apprised that, except in cases of emergency, none but Regular Trains are to be permitted to travel in a **FOG**; and on these occasions when a Train stops at a Station, the Auxiliary Signals must always be used, as shown by Rule 13, page 165.

12. Policemen must also take notice, that, to avoid risk of collision on Single Lines, no extra Engine, with or without a Train, will be allowed to pass along the Line without **previous notice**.

13. Every Policeman is supplied with **Detonating** Signals to place on the Rails in foggy weather, and he is on these occasions to use them in addition to the ordinary Red Signal. (*See Regulations for Use of Fog Signals.*)

14. Every Policeman is responsible for his Stationary as well as Hand Signal Lamp being well **trimmed**, and showing a clear and distinct light.

15. The Policemen generally are not to allow strangers to **trespass** on the Line without written authority, and they are to report any occurrence of this nature to their Inspector. They will also respect any orders which the officers in charge of Stations may think necessary.

16. On a Policeman stopping a Train at the entrance to one of the long Tunnels, from another Train having passed within **ten** minutes, he is not to detain the Train beyond **two** minutes, but simply to inform the Engineman and Guard of the character of the Train in advance, and the time that has elapsed since it passed.

17. Should a Train issue from one of the long Tunnels, at which Police are stationed, without the **Tail Lamp** on the last

carriage, the Policeman on duty is immediately to walk back through the Tunnel with his lamp to ascertain whether a carriage has not been left behind, and, should this be the case, he is then to go on to the other end to instruct the Policeman there stationed to put on his Red Signal to stop any Engine from entering the Tunnel.

18. The Policemen stationed at Tunnels and intermediate Stations are directed to be very particular in making the Signals according to the Regulations. (*See Signals.*)

19. In all cases where Telegraphic communication is laid through a Tunnel, the Policeman at the entrance thereof is to sound the **Bell** on a Train going into the Tunnel, and the Policeman at the other extremity is to respond to the Signal on the Train emerging from it.

20. The Policeman stationed at the South entrance of the Primrose Tunnel is to sound the **Alarm** as soon as an Up Train enters the Tunnel, that the Camden Station may be made aware of the approach of a Train, and, if a Goods or Cattle Train, he is to turn it into the siding. Should it be a Passenger Train, the Policeman at Chalk Farm Bridge is to pass the Signal to the Euston Station.

21. When the Policeman at the South entrance of the Primrose Tunnel cannot distinguish the Signal at Chalk Farm Bridge, he is to show the **Green** Signal to every Engine passing towards Camden Station, and the Engineman is then to bring his Engine to a stand at the same Bridge unless signalled to proceed.

22. The Policeman in charge of the facing Points at the summit of the Incline at Camden is not to move them to allow an Engine to run into the siding, unless the Engineman motions with his hand. (See Rule 48, page 176.)

23. The duties of Pointsmen in charge of Switches are very simple, easily understood and remembered, and are at the same time not heavy, but they require great **care, attention, and watchfulness**, for any neglect may cause very serious accidents; Policemen are, therefore, warned always to be on the alert, and cautious in the discharge of their duty as Pointsmen.

24. The Pointsman is to be careful in keeping his Switches **clear** and **well oiled**; and whenever a Train has passed over, he is to see that no particle of coal or dirt has dropped within the Points, so as to prevent them from closing, and also that they are replaced in the **proper position**. He is also to try his Points before the passing through of a Train, that he may be thoroughly satisfied there is no impediment to their true working.

25. Where, from the peculiarity of the Line, it is necessary to employ facing Points, these precautions become **doubly** important.

26. Whenever, from the passage of a Train, the Points, Crossings, or Guide-rail receive injury or strain, or the rails themselves are **split** or **chipped**, the circumstance must immediately be reported.

27. In order to assist in discriminating Luggage Trains at night from Passenger Trains, the former carry a **Green** light on the Buffer-plank; but it must be understood that this is intended merely as an auxiliary signal, and is not to be **relied on** for turning a Train into a siding, which is only to be done when the Policeman on duty shall have **satisfied himself** as to the character of the Train.

SECTION X.

REGULATIONS FOR GATEMEN AT LEVEL CROSSINGS.

1. Every Gateman will be provided with Day and Night Signals, which he must keep in proper order.

2. Gates must always be kept **closed** across a road, except when required to be opened to allow the Railway to be passed.

3. Before opening the Gates, the Gateman is to satisfy himself that a Train is not in sight; he will then exhibit his Red light, and always allow the Signal to remain until the Railway is **clear** and the Gates closed.

4. If an Engine follow another within **three minutes**, the Danger Signal is to be shown ; from three to seven minutes, the Caution Signal must be exhibited.

5. In all cases, the Gateman, when signalling, is to stand on the **opposite side** of the Railway, that he may be seen by the Driver of the Train.

6. The Gatemen must make themselves well acquainted with the Signals, as laid down in **Sections 2 and 3**.

SECTION XI.

REGULATIONS FOR BALLAST ENGINEMEN AND PLATE-LAYERS.

1. When a Ballast Engine is discharging or taking in ballast, blocks, sleepers, or other materials, on the Main Line, the Engineman is to send a Ballastman back **600** yards with a red signal-flag; and this Ballastman is to remain on the look-out till the Ballast Train is ready to move, and he is to stop any approaching Train, and inform the Driver of the position of the Ballast Train. (See Rule 17, page 182.)

2. All persons in charge of Ballast Trains are to obey the orders of the Company's Agents, Inspectors, and Police, so far as relates to the time of their running on the Line; and no Ballast Engineman is to **leave a siding** in front of an expected Train, or without the permission of the Officer in charge of the point.

3. No ballasting is to be carried on in **foggy weather**, except under urgent circumstances, or by express permission.

4. Ballast Enginemen are to take particular care always to have a proper supply of Coke and Water in their Tenders, so as to prevent the possibility of any detention on the Line from deficiency; and they are also to take care to attach only such number of waggons as can be drawn with certainty, and on no account to leave their Engines while standing on the **Main Line**.

5. A Red Signal must always be stationed **300** yards back before a Rail is taken out, or any obstruction caused to the Main Line. (See Rule 17, page 182.)

6. A Green Signal must be stationed **400** yards back whenever the state of the Line requires that the Train should proceed with caution.

7. No rail, block, or chair, is to be removed in a **fog**, or during the night, except by express permission from the Resident Engineer; and in all cases, before taking out a Rail, the Foreman is to have at the spot a perfect Rail in readiness to replace it.

8. No Truck or Lorry is to be placed on the Line except for the conveyance of materials; and any Truck or Lorry so used is to be followed by a man carrying a Red Signal, at a distance of **400** yards at least. No Lorry is, under any circumstances, to be moved on the wrong Line.

9. No Truck or Lorry is to be used in a **fog**; and the wheels of Lorries must be constantly **locked** when not in use.

10. No Lorry is, under any circumstances, to be attached to the **end of a Train**.

11. Should special circumstances require the use of a Lorry in the Tunnels, or otherwise than in broad daylight, it must be followed by a man with a Red Light, and notice must be given by the Foreman to the Policeman at the entrance to the Tunnel of the time he expects the Lorry will be required in the Tunnel, that the Policeman may keep on the **Red Signal** during the whole time, and caution any Engineman entering in the Tunnel.

12. Every Overlooker is to have a **list** of the name and abode of every Foreman of his district, that, in case of accident, he may be enabled to summon them immediately to assist in any way that may be deemed necessary; and should any obstruction take place, caused by snow, frost, slips, or other sudden emergency, he is instantly to collect the required strength to overcome the obstacle.

13. The Plate-layers are to desist from work when a Train is within **400** yards, and the Foreman must order his men to move

to the side of the road clear of both Lines, to secure the men from the risk of accident by Trains running in opposite directions. If working in a Tunnel, and Trains are approaching in both directions, the Plate-layers must lie down between the two lines of way, till the Trains have passed.

14. If a Passenger Train approach within **ten minutes** of a Coal or Ballast Train, the Plate-layers must give the Signal to proceed **slowly**.

15. In the event of any Engineman neglecting to comply with the Signal to stop, or to proceed cautiously, as the case may be, the Foreman of the Plate-layers is to **report the circumstance**, in order that proper notice may be taken of it.

16. Every Overlooker is responsible that all **loose timber, stones, rails, chairs**, or other materials, as well as the workmen's tools, are removed from the road, and the Line kept clear of interruption of any kind.

17. The whole Line is to be **inspected** every morning before the arrival of the first **Up** and **Down** Train, and care must be taken that the Rails are in gauge, and the Keys driven home.

18. On learning that an **accident** has occurred, a Plate-layer is to proceed with all possible despatch to the next gang, from which a Plate-layer will in like manner run to the next more distant Plate-layer, till information of the accident has by this means reached the Station.

19. Having communicated the information, the Plate-layers are immediately to return to give their assistance.

20. Every Foreman having been sworn in as a Special Constable is required to order off all persons **trespassing** within the fences on his district, and if such persons persist in remaining he is to take them to the nearest Station, and give them into the charge of the Company's Police.

21. The Foreman is also to report if any gates which the owners or occupiers of land are required to keep shut have been **left open**, that the parties may be charged with the **penalties**, and any instance of sheep or cattle being on the **Lines or Slopes** is also to be duly reported.

22. Every Plate-layer is to make himself **only acquainted** with the code of Signals in use on the Railway, as detailed in **Sections 2 and 3.**

SECTION XII.

REGULATIONS FOR GUARDS AND TUNNEL BREAKSMEN AT LIME-STREET.

GOING DOWN THE TUNNEL.

1. The moment a Train arrives at Edge Hill, the Tunnel-breaksman, whose turn it is to go down the Tunnel, is to **examine** how many **Breaks** there are on the Train, and, before the Train is allowed to start, must be perfectly satisfied that the requisite number are in good working order, and must report to the Superintendent on duty that they are so.

2. The Tunnel-breaksman must see that the **Guard** of the Train is at his post before the Train starts.

3. No Train is, on any account, to go down the Tunnel without a **Tunnel-breaksman.**

4. Trains going down the Tunnel are never to be allowed to exceed in speed **ten miles** an hour.

5. In some instances Trains have been allowed to acquire a considerable velocity before the Breaks were applied, the Breaksman relying on the power of the Breaks to stop the Train. This practice is most strictly **forbidden**; at no period of the descent must the Trains be at a greater speed than **ten miles** an hour; the Breaks must be applied gradually, and the Breaksman must be sure at all times that he has perfect control over his speed.

6. The Guard of the Train and Tunnel-breaksman will be held **equally** responsible for the safety of the Train.

7. No Train is to go down without a Guard and one Breaksman; when the Train exceeds **ten** coaches, there must be an

extra Breaksman; if it exceed **fifteen** coaches, two **extra Breaksmen**.

8. No Train is to follow another Train down the Tunnel without an interval of **five** minutes.

9. No Train of any description is to be allowed to pass down the Tunnel without the **Signal** having been previously given.

10. Whenever, from a number of Trains going down the Tunnel, there is a deficiency of Breaksmen at Edge Hill, the Breaksman, on applying to the Superintendent of the Station at Lime Street, is to be sent up without waiting for a Train.

GOING UP THE TUNNEL.

11. The Tunnel-breaksman in going up is to take charge of the messenger. Before starting, he will take notice of the **position of the Breaks**, and in case of the rope or messenger giving way, he will be required immediately to get to the Break and put it on fast, so as to prevent the Train going down the Tunnel.

12. In a Train of **five** coaches, the Train-guard will be sufficient; but if the Train exceeds that number, there must be a Tunnel-breaksman, and for every additional **five** coaches there must be an extra Breaksman. No more than **fifteen** coaches must at any time be taken up the Tunnel at once; and any Train exceeding that number must be taken up at twice.

13. No **Waggons** are to be sent down the Tunnels without **special** permission.

14. The Station Master at Lime Street will be answerable for the **efficiency** of the Breaksman, and he, or the Assistants on duty at Lime Street, will see to the carrying out of the regulations.

15. The Station Master, or the Assistants on duty at Edge Hill, will also do the same at the Tunnel top; and before a Train is allowed to start, the Officer on duty will be required to see that the **Guard and Breaksman are properly placed**.

16. The Officer on duty is required to report forthwith to the Assistant Manager, Lime Street, any instance of a Train being

allowed to run into the Station **too quickly**, even although no damage may have ensued.

REGULATIONS FOR WAPPING TUNNEL, LIVERPOOL.

17. No person, unless in service of the Company, is allowed to enter the Tunnel without permission of the Manager or Engineer, who will give a **printed pass** to strangers, when required.

18. On arrival of each Down Train at Edge Hill, it is the duty of the Tunnel-breaksmen to examine particularly the **Coupling Chains**, the **Breaks**, and the Loading of the Waggon, **before** they are brought over the **bank head** of the Tunnel. After doing which, the senior one of them must **sign the Register-book**, for assurance that all is right, safe, and ready. The same Breaksman must then go down with the Train to the bottom of the Tunnel, taking care that they hold full and complete control over the speed of the Train.

19. Every train is to be brought to a complete stand upon the bank head, whilst the requisite number of good Breaks are **pinned down**. The Breaksmen are required not to allow the Train to attain a greater rate of speed than **four to five** miles an hour in any part of the Tunnel, or fifteen minutes in time of descending, in order that they may be able to get off the Waggon without danger to themselves, and put down or take up any of the Breaks, as necessary.

20. When a Down Train consists wholly of loaded Waggon, and there is not any Break Waggon at hand to be sent down in front, the Breaksmen are first to see that at least **one-third** of the Waggon are provided with good and efficient Breaks; otherwise they must not venture to proceed with them down the Tunnel, until the deficiency is supplied by attaching an adequate number of empty Waggon, with serviceable Breaks, from the stock in the Sidings: but the Break Waggon must, if possible, in all cases be used.

21. When a Train is composed of loaded and empty Waggon, two empty are to be considered equal to one loaded. Not more than **thirty-five loaded** Waggon may be taken down the Tunnel at any one time, and two Breaksmen must attend each Train. None but the regularly appointed Tunnel-breaksmen must ever attempt to convoy a Train.

22. Signal Lamps and Hand Lamps must be kept properly trimmed and burning. A Red Signal Lamp, lighted, must always be fixed on the rear of the last Waggon going down the Tunnel, and a Green Signal Lamp lighted and fixed upon the most conspicuous part of the front Waggon in the same Train. They must both be returned to Edge Hill by the first set up. No persons must ever leave any Waggon standing upon the Up Line within the Tunnel, nor upon the Down Line, without fixing a well-lighted Red Signal Lamp thereon, and remaining with it until removed to the bottom. The signal to **stop** must be made by waving the Hand Lamp **Up and Down**. The man on duty at the Wheel must look out for Waggon coming Down, and pass the word to the Breaksman whether or not the Line is clear; the exchange of such Signal to be made by waving the Hand Lamps **horizontally**, and then the Breaksman may **with caution** proceed. The Signal to "*come forward*" to be made by waving the Hand Lamps **round**.

23. Each set of Waggon drawn up the Tunnel to consist of not more than **six**, until further orders. The man on duty at the Wheel must examine the Endless Rope, the Messengers, the Coupling Chains, the Van Doors, and the Loads upon the Waggon, to see that all is right and safe to pass upwards, ~~that~~ ^{that} the Coupling Chains are properly hooked, that the last Waggon is provided with a good and powerful Break, and then the **same** Breaksman must proceed with the set, and look out for Down Trains, to apprise the other men in charge thereof whereabouts any Waggon are before them, to report any impediments in the Tunnel to the Superintendent or Goods Manager.

24. When the Rails on the Bank Head, or within the Tunnel, are wet and slippery, they must be sprinkled with **sand**, a large stock of which is kept constantly at the top of the Tunnel to supply the Break Waggon.

25. All Breaksmen are expected to take charge of and deliver the Despatch Bags, Parcels, &c., as sent Up and Down the Tunnel; to keep in repair the Endless Ropes, Messengers, and Drag Lines; and whenever *all* the Breaksmen are unavoidably absent from the Bank Head, the large **wooden chock** upon the Down Line, near the Tunnel Mouth, must always be put across the Rails, and a man placed in charge until the return of one of the Breaksmen to relieve him. The Gates to be closed every night before 12 o'clock.

SECTION XIII.

REGULATIONS FOR BANKRIDERS AT THE EUSTON INCLINE.

1. The Bankriders are to have the control, management, and responsibility of the **Inclined Plane** and of the Trains passing down it.

2. The Bankrider is carefully to inspect the condition of every Train, and never attempt to move it until perfectly satisfied of the **sufficiency of the Breaks**.

3. He is not to allow any **Rubbish** or obstruction of any kind to be placed near the Rails on the Incline.

4. He is to pay particular attention to the **Signals** conveyed from Euston to Camden Station.

5. He is also to keep a sharp look-out for any Signal that may be given him to stop his Train on the **descent**, and he must be prepared to bring it to a stand at any time on receiving such Signal.

6. The speed on the Incline must never exceed **10 miles** per hour, but a lower speed is necessary when the Train is heavy, or the Rails in bad order.

SECTION XIV.

BYE-LAWS.

BY VIRTUE of the powers and authorities vested in us by an Act of Parliament passed in the Tenth Year of the Reign of Her Majesty Queen Victoria, intituled "An Act to consolidate the London and Birmingham, Grand Junction, and Manchester and Birmingham Railway Companies," and "The Railway Clauses Consolidation Act, 1845," therewith incorporated,

We the London and North-Western Railway Company do hereby make the following Bye-Laws:—

1. No Passenger will be allowed to take his Seat in or upon any Carriage used on the Railway, or to travel therein upon the said Railway, without having first Booked his place and paid his Fare.

2. Each Passenger Booking his place will be furnished with a Ticket, which he is to show when required by the Guard in charge of the Train, and to deliver up before leaving the Company's Premises upon demand to the Guard or other Servant of the Company duly authorized to collect Tickets.

3. Each Passenger not producing or delivering up his Ticket will be required to pay the Fare from the place whence the Train originally started.

4. Passengers on the Road Stations will only be Booked conditionally; that is to say, in case there shall be room in the Train for which they are Booked. In case there shall not be room for all the Passengers Booked, those Booked for the longest distance shall have the preference, and those Booked for the same distance shall have priority according to the order in which they are Booked.

5. Every person attempting to defraud the Company by travelling upon the Railway without having previously paid his Fare, or by riding in or upon a Carriage of a superior Class to that for which he has Booked his place, or by continuing his Journey beyond the destination for which he has paid his Fare, or by attempting in any other manner whatever to evade the pay-

ment of his Fare, is hereby subjected to a Penalty not exceeding **Forty Shillings**.

6. No Passenger will be allowed to get into, or upon, or to quit any Carriage after the Train has been put in motion; and any person doing so, or attempting to do so, is hereby made liable to a Penalty of **Forty Shillings**.

7. Dogs will be charged for according to distance, but they will on no account be allowed to accompany Passengers in Carriages.

8. Smoking is strictly prohibited both in and upon the Carriages, and in the Company's Stations. Every person Smoking in a Carriage is hereby subjected to a Penalty not exceeding **Forty Shillings**; and every person persisting in smoking in a Carriage or Station after having been warned to desist shall, in addition to incurring a Penalty not exceeding **Forty Shillings**, be immediately, or, if travelling, at the first opportunity, removed from the Company's Premises and forfeit his Fare.

9. Any person found in a Carriage or Station in a state of Intoxication, or committing any Nuisance or wilfully interfering with the comfort of other Passengers, and every person obstructing any Officer of the Company in the discharge of his duty, is hereby subjected to a Penalty not exceeding **Forty Shillings**, and shall immediately, or, if travelling, at the first opportunity, be removed from the Company's Premises, and forfeit his Fare.

10. Any Passenger cutting the Linings, removing or defacing the Number Plates, breaking the Windows, or otherwise wilfully damaging or injuring any Carriage on the Railway, shall forfeit and pay a sum not exceeding **Five Pounds** in addition to the amount of damage done.

Sealed by Order of the Directors.

R. CREED, *Secretary*.

Seal.

Allowed by the Commissioners of Railways this Twentieth day of August, 1847.

EDWARD STRUTT,
EDWARD RYAN.

Seal.

SECTION XV.

Extract from the Act, the 3rd and 4th VICTORIA, Chap. 97,
entitled "An Act for Regulating Railways :"—

*Punishment of Servants of Railway Companies guilty of
Misconduct.*

SECTION 13.]—That it shall be lawful for any officer or agent of any Railway Company, or for any special constable duly appointed, and all such persons as they may call to their assistance, to seize and detain any Engine-driver, Guard, Porter, or other servant in the employ of such Company, who shall be found drunk while employed upon the Railway, or commit any offence against any of the Bye-laws, Rules, or Regulations of such Company, or shall wilfully, maliciously, or negligently do, or omit to do, any act whereby the life or limb of any person passing along or being upon the Railway belonging to such Company, or the works thereof respectively, shall be or might be injured or endangered, or whereby the passage of any of the Engines, Carriages, or Trains shall be or might be obstructed or impeded ; and to convey such Engine-driver, Guard, Porter, or other servant so offending, or any person counselling, aiding, or assisting in such offence, with all convenient despatch, before some Justice of the Peace for the place within which such offence shall be committed, without any other warrant or authority than this Act ; and every such person so offending, and every person counselling, aiding, or assisting therein as aforesaid, shall, when convicted before such Justice as aforesaid (who is hereby authorised and required, upon complaint to him made upon oath, without information in writing, to take cognizance thereof, and to act summarily in the premises), in the discretion of such Justice be imprisoned, with or without hard labour, for any term not exceeding two Calendar months, or, in the like discretion of such Justice, shall, for every such offence, forfeit to Her Majesty any sum not exceeding 10*l.*, and in default of payment thereof shall be imprisoned, with or without hard labour as aforesaid, for such period, not exceeding

two Calendar months, as such Justice shall appoint; such commitment to be determined on payment of the amount of the penalty; and every such penalty shall be returned to the next ensuing Court of Quarter Sessions in the usual manner.

Justices of the Peace empowered to send any case to be tried by the Quarter Sessions.

SECTION 14.]—That (if upon the hearing of any such complaint he shall think fit) it shall be lawful for such Justice, instead of deciding upon the matter of complaint summarily, to commit the person or persons charged with such offence for trial for the same at the Quarter Sessions for the county or place wherein such offence shall have been committed, and to order that any such person so committed shall be imprisoned and detained in any of Her Majesty's gaols or houses of correction in the said county or place in the mean time, or to take bail for his appearance, with or without sureties, in his discretion; and every such person so offending and convicted before such Court of Quarter Sessions as aforesaid (which said Court is hereby required to take cognizance of and hear and determine such complaint) shall be liable in the discretion of such Court to be imprisoned, with or without hard labour, for any term not exceeding two years.

Punishment of Persons Obstructing Railways.

SECTION 15.]—That from and after the passing of this Act, every person who shall wilfully do, or cause to be done, anything in such manner as to obstruct any Engine or Carriage using any Railway, or to endanger the safety of persons conveyed in or upon the same, or shall aid or assist therein, shall be guilty of a misdemeanor, and, being convicted thereof, shall be liable, at the discretion of the Court before which he shall have been convicted, to be imprisoned, with or without hard labour, for any term not exceeding two years.

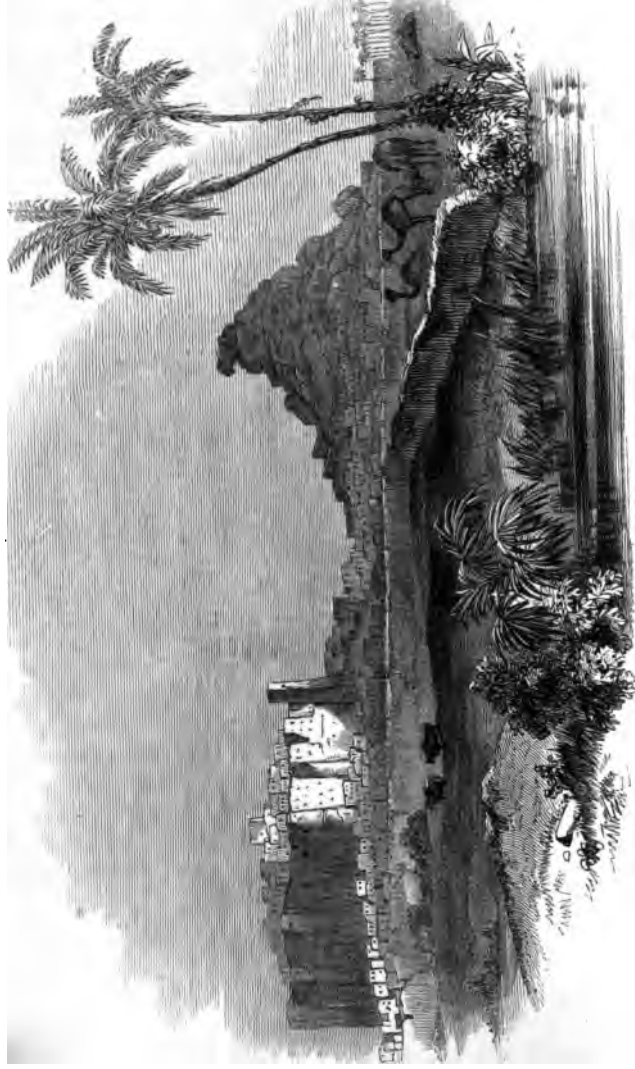
For Punishment of Persons Obstructing the Officers of any Railway Company, or Trespassing upon any Railway.

SECTION 16.]—That if any person shall wilfully obstruct or impede any Officer or Agent of any Railway Company in the

execution of his duty upon any Railway, or upon or in any of the Stations or other Works or Premises connected therewith; or if any person shall wilfully trespass upon any Railway, or any of the Stations or other Works or Premises connected therewith, and shall refuse to quit the same upon request to him made by any Officer or Agent of the said Company, every such person so offending, and all others aiding and assisting therein, shall and may be seized and detained by any such Officer or Agent, or any person whom he may call to his assistance, until such offender or offenders can be conveniently taken before some Justice of the Peace for the county or place wherein such offence shall be committed, and, where convicted before such Justice as aforesaid (who is hereby authorised and required upon complaint to him upon oath to take cognizance thereof and to act summarily in the premises), shall, at the discretion of such Justice, forfeit to Her Majesty any sum not exceeding 5*l.*, and in default of payment thereof shall or may be imprisoned for any term not exceeding two Calendar months, such imprisonment to be determined on payment of the amount of the penalty.

I,
being this
engaged as
in the service of the London and North-Western Railway Com-
pany, do hereby bind myself to observe and obey the foregoing
Rules and Regulations, which I have read (or heard read) and
understand, and all others that may from time to time be issued
for the better government of the Company, so long as I remain a
servant in it.

THE END.



TOWN OF SIWAH.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
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64
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66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100

ADVENTURES
IN
THE LIBYAN DESERT
AND
THE OÄSIS OF JUPITER AMMON.

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BY BAYLE ST. JOHN.



VIEW OF GARAH.

LONDON:  
JOHN MURRAY, ALBEMARLE STREET.  
1849.

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## C O N T E N T S.

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### CHAPTER I.

- AGREEABLE Associations of the name Oâsis — Alexander and the Oracle — Desire to visit Siwah — Difficulties of the Journey — Only one Englishman had preceded me; not a Dozen Europeans altogether — Preliminary Trip to the Arab's Tower — My Companions — Utility of the Knowledge of Arabic — Our Preparations — Donkeys — Camels — Attendants — Start for what the Iskenderanehs call the "Desert of Dogs" — Last View of Alexandria — Coast Valley — Reach Abusîr — Giovanni Sciarabati — Discussions with the Bedawîns — Life of Yûnus Abû Shayan — Ruins at Abusîr — The Arab's Tower — Temple of Augustus — Traces of an ancient City — Illustration of Strabo — Former Cultivation of the Libyan Desert — Our Tent — Night Scene — Scorpions — Hyæna — "Flying Serpents" . . . . . Page 1

### CHAPTER II.

Departure from Abusîr — High Spirits of the Party — Picture of our One-Eyed Sheikh — We reach a Tent on the Sea-shore — Value of Time in the Desert — The Character of the Sheikh begins to develop itself — Domestic Arrangements of a Bedawî Tent — Women and Children — Mess of Dates and Butter — The Well of Neffé — Filling Water-skins — Yûnus's young Wife begs us to bring him back in safety — Romantic Departure of the Kafila at Night — Pace of the Camel — And of the Donkey — Halt, and sleep in the open Air — Morning View of the Desert — Accession to our Party — Yûnus gives a parting Benediction to his Son — Second Night March — Ruins of a fortified Camp — A Saracenic Castle — Bivouac — Well of Shemaiméh — Bad Water . . . . . 10

### CHAPTER III.

Cape Glaucum of Ptolemy — Saleh makes his Appearance — Disturbed State of the Country — Forays of the Western Arabs — Murder of two of the Wâled Ali — Enfeebled Authority of the Pasha — Frightful Climate of Siwah — Deadly Fevers reported — Caravan from Derna going "to buy Corn in Egypt" — A cure for a Headache — Ruins of an Ancient City — Bivouac near the Well of Shegick — Marâbut — Desert Water — A solitary Butterfly — Storehouse protected by the Ghost of a Saint — Curious Collection of Implements — Port of Lencaspis — Imperfect

Knowledge of the Libyan Coast — Decay of the Province of Marmarica — Meet an Alarmist — Frightful State of the Country — Terror of our Followers — Ancient Vineyards and Gardens — Fertility of the Coast Valleys in former Times — Agriculture of the Bedawíns — Artificial Creation of Alexandria — Wells and Cisterns in the Desert — Moonlight Deceptions — Increased Alarm of our Followers — Account of one of our "Libyan Nights" . . . . . Page 18

#### CHAPTER IV.

Disobedience of Yúnus — Sultry Ride to El-Emrúm — Sufferings from Want of Water — The Camels are indulged in a Drink — Tricks and Deceits of our Guides — Definition of the Word "near" and the "Desert Hour" — Arabs lack the Ideas of Time, Space, and Truth — Some of our Beans confided to a man "who drank at the Well of El-Emrúm" — Well and Castle of Gemaima — Some travelling Bedawíns join our Party — True position of Gemaima Point — Observations on the Foot of the Camel — Stony Ground — Meet a Kafilá bivouacked in a Thicket — The Reubens and the Benjamins of our days — The Bedawín Camel — Vineyards of Antiphœ — Ancient Cistern — Halt at El-Gerab — Another Kafilá — Bedawín Importunities — Temperature — Rough Road — The Lesser Catabathmus — Cave — Difficult Ascent — Vision of Wells and Water-Melons — Surprise an Encampment — Wreckers — Danger of being plundered . . . . . 29

#### CHAPTER V.

Long Halt — Necessity of a new Guide — Our Bedawíns turn Shoemakers and Cobblers — Stuffing Pack-saddles — Testing Water-skins — Details on the Food of the Bedawíns — Character of the Bedawíns — Observations on their Manners — On the Camel — State of Alarm in which I found the Waled Ali — Forays from the West — Commerce in the Desert — Costume and physical Organization of the Bedawíns — Horses — Idleness — Anecdotes — The Settlement of Mudar — View of the Coast from Alexandria to Mudar, its Wells, Productions, &c. — Kassaba — The ancient Paretonium — Expedition of Alexander . . . . . 40

#### CHAPTER VI.

We leave the Coast, and strike into the Heart of the Libyan Desert — Bedawín mode of saying Prayers on a Journey — Ascent of a tremendous Mountain at night — Reach a lofty Table-land — Morning — Mirage Illusions — Troops of Gazelles — The glittering Koom of Shenénéh — The Well of Selém — Vast ancient Cistern — Visited by Bedawín Damsels — A tame Gazelle — Continue our Journey — Pursued by a Party of Robbers — Dangers of a hostile Collision — They are induced to abstain from an Attack, finding us prepared — They follow us — We march the

## CONTENTS.

v

greater part of the Night, and succeed in throwing them off our Track — Cross the Empty Valley and the Wady Ed-Delma — Reach the Well of Haldeh — Discover the Ruins of a Fortress — The Sheikh of the Well — Reports of the Manser, or band of Fifty mounted Robbers . . . Page 53

### CHAPTER VII.

March through an unwatered Wilderness in the track of Alexander the Great — The Devil's Water — Travelling by the Light of a Lantern — Lose our Way — Dangerous Predicament — Halt without finding the Path — Search for it in the Morning — "The two Crows" — At length succeed in gaining the Track — Way-side Pillars — "The Camel's Mouth" — Snakes — Grey Lady-Birds — Butterflies — Highest Point of the Range of Hills — The Valley of Diamonds — Talc — Vast Beds of Oyster Shells — Illustration of Strabo — The "Pass of the Crow" — Names of Places in the Desert — Brilliancy of the Stars — Magnificent Moonlight Scene — Romantic Gorge — Descent to the Plain . . . 65

### CHAPTER VIII.

Rationale of Bivouacking — The Hill of the Cannons — A Tree in the Desert — Approach of a Caravan — Alarm — Interview with Western Bedawins — Danger of Spoliation — The Date-Caravans — The Gates of the Milky Mountains — Architectural Appearance — Tremendous Heat — Arduous Morning's Work — Approach the Happy Valley — The "Islands of the Blessed" . . . . . 76

### CHAPTER IX.

First Interview with the Natives — Their Physical Conformation — Costume — No Smokers — Sheikh Abd-el-Sayid — Visit to the Village of Garah — Decomposition of the Rock — Its defensible character — Curious mode of Building — Unwholesomeness — We appear in the character of Healers of the Sick — Gratitude of the People — Comfortable Evening — Windy Night — Second Visit to the Village — Burying Place — Sheikh's Tomb — Ain Mochaluf — Tradition of Christian Times — Superstition — Charms — Incantations — Industry of the Oäsis — Mat and Basket Making — Cultivation of the Palm-tree — Remains of an ancient Fountain — Ain Färis — Other Ruins — Character of the People of Garah — The Wandering Blacksmith — Weapons — Wolves — Tribute to the Pasha — Disproportion between the Sexes — Women brought from Egypt — Number of Palm-trees — Trade, &c. . . . . 85

### CHAPTER X.

Affectionate Farewell of the People of Garah — A Siwahf joins our Party — Ascent from the Valley — Beautiful Sunset — Dismal Gorges — Lofty Table-land — Temperature 102° in the Shade — Nugb-el-Mejbberly — Legend of Brigand Bedawins — The Gates of the Oäsis — A Caravan of

|                                                                                                                                                                                                                               |         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Oäsians — Interview — Enter the Valley — Beautiful View — Our first Reception — Reach a Spring — Another Caravan — Halt near a Hamlet — Presents sent to us — We find we are not welcome — Their Ethnological Ideas . . . . . | Page 99 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|

## CHAPTER XI.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Push on to the Capital, Siwah-el-Kebîr — Pass the Mountain of the Dead — Description of the City of Salt — The Siwah Rabble collects — How we were stared at — Gloomy Bigotry of the People — Their Appearance and Costume — An Egyptian Trader — Visit to the Catacombs in the Mountain of the Dead — View from its Summit — Scenery of the Oâsis — Available Land of the Oâsis — The Grand Divan of Siwah — Deliberations concerning us — We are refused Admission to the Inner Town, on account of its being the Common Harâm — General Ill-treatment — A polite Sheikh | 108 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|

## CHAPTER XII.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Visit to the Temple of Jupiter Ammon — Description of the Sanctuary — Hieroglyphics — Images, &c. — Reflections — The Fountain of the Sun — The Palace of the ancient Kings — Subterranean Passages — See some Women — Their Costume — Ride to the Catacombs of Sid Hamet, and climb the Five-peaked Mountain of Edrar Abou Bryk — The tribe of "Rope-Makers" — Large Sepulchral Chambers — Civil Arab — Return to the Encampment — Popular Feeling against us — A Burial at Night — Ride across the Salt Lakes to the White Mountain and the City of the Greeks — Ruins of Temples — Catacombs, &c. — Theological Conversation — The Two Columns — Bird's-eye View of the Oâsis — Raisins, &c. — Return — Further Explorations — The Date-Market — Varieties of Dates . . . . . | 120 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|

## CHAPTER XIII.

|                                             |     |
|---------------------------------------------|-----|
| Sketch of the History of Ammonium . . . . . | 136 |
|---------------------------------------------|-----|

## CHAPTER XIV.

|                                                                                                                                          |     |
|------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Observations on the Language, Manners, Appearance, Origin, &c., of the People of Siwah — The Productions of the Place, its Commerce, &c. | 150 |
|------------------------------------------------------------------------------------------------------------------------------------------|-----|

## CHAPTER XV. :

|                                                                                                                                                                     |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| The bigoted Party make an unprovoked Attack on us at Night and fire into our Tent — We obtain an Apology — Preparations for our Return — Arrival at Garah . . . . . | 158 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|

## CHAPTER XVI.

|                                                                                                                                                                        |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Forced March to Alexandria — Sufferings from Hunger and Thirst — Various Incidents — Our Kafilâ once more in Danger of being robbed — Safe Arrival at Abusîr . . . . . | 167 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|

# ADVENTURES

## IN THE

# LIBYAN DESERT,

§c.

§c.

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### CHAPTER I.

Agreeable Associations of the name Oāsis — Alexander and the Oracle — Desire to visit Sīwah — Difficulties of the Journey — Only one Englishman had preceded me; not a Dozen Europeans altogether — Preliminary Trip to the Arab's Tower — My Companions — Utility of the Knowledge of Arabic — Our Preparations — Donkeys — Camels — Attendants — Start for what the Iskenderanehs call the "Desert of Dogs" — Last View of Alexandria — Coast — Valley — Reach Abusīr — Giovanni Sciarabati — Discussions with the Bedawīns — Life of Yūnus Abū Shāyen — Ruins at Abusīr — The Arab's Tower — Temple of Augustus — Traces of an ancient City — Illustration of Strabo — Former Cultivation of the Libyan Desert — Our Tent — Night Scene — Scorpions — Hyæna — "Flying Serpents."

WE have all, no doubt, at some period of life suffered our minds to dwell with pleasure on the idea of an oāsis—an island of verdure amidst a sea of sand. There is a sentiment in our nature which renders such an idea peculiarly agreeable in itself; and I am sure it can never be called up except in company with numberless delightful associations. In the case of the Oāsis of Jupiter Ammon, poetry and history have combined to shed their magic influence around it. Some of our very earliest notions of geography are derived at school from the classic descriptions of the Libyan Desert, clipping round with its tawny expanse the green spot of earth to which the world's conqueror, Alexander, journeyed in order to hear from a mysterious oracle the fable of his divine origin.

I had long cherished the desire to visit the Oāsis of Sīwah—now proved incontestably to have been that of Ammon—but was deterred by the difficulty of the undertaking, the imperfect accounts that could be obtained of the nature of the tract to be traversed, and the want of suitable companions. Not a dozen Europeans had ever before, to my knowledge, penetrated so far in that direction into the Libyan Desert, and only one Englishman. It appeared, therefore, at first a very serious affair. However, during a trip made by myself and a few friends to the Arab's Tower in the spring of 1847, we fell into conversation with some Bedawins on the subject, and, talking it over in the course of the summer, began gradually to look upon the excursion as very practicable. When autumn came, accordingly, it required merely the suggestion that if we delayed any longer the rains might interpose, and render the coast portion of the road impassable, to make us suddenly resolve on starting. My colleagues in this expedition were three—Messrs. H. Lamport, T. Forty, and N. Longshaw—all residents in Egypt and acquainted with the Arabic language. In making our preparations we went on the principle of taking with us as few encumbrances as possible:—one tent, a mat, the means of preparing tea and coffee, with a quantity of charcoal, a carpet-bag or portmanteau apiece containing changes of linen and various articles of utility, a number of tins of preserved meat, a sack of biscuit, a couple of cheeses, some brandy, some porter, a plentiful supply of tobacco and cigars—all these things and others were admitted, but only after due deliberation. The great difficulty was the water and the food for our donkeys, upon which animals, like true Egyptians, we determined to cross the Desert. To camels none of us was accustomed; and without previous practice it is not pleasant to mount them during a journey of seven or eight hundred miles. We were of course to be accompanied by some of these valuable creatures, which generally find food by the wayside, and never require to be refreshed from the scanty reservoirs they carry on their backs. The only attendants taken were two Arab lads, whose business it was to see after the donkeys and make themselves useful in various ways; but having no wish to travel as satraps, and knowing the importance of every mouth less in waterless tracts, we cheerfully anticipated a good deal of work ourselves. It was, moreover, a great

comfort to us that we were not compelled to look at the people we encountered through the stupid medium of a dragoman.

We started from Alexandria early on the morning of the 15th of September, 1847, and presented, I have no doubt, a pretty motley appearance. Each had taken his own precautions against the burning sun of the Desert; but, some respect for public opinion still remaining, we did not come out in all our comfortable originality until further advanced on the journey. Besides the animals we bestrode, there were six donkeys, two mules, and a pony, to carry our tent, our provisions, and the provender for our cattle, (which last item alone weighed, when complete, nearly half a ton,) as far as Abusír. A crowd of men and boys likewise accompanied us to that place—to most of them a perfect *terra incognita*;—all looking, no doubt, with compassionate contempt on their fellows who had undertaken to follow us into the gloomy depths of that savage region which they sometimes for want of a better name call the Desert of Dogs!

I shall not dwell on that day's ride. We soon passed the Necropolis, the new fortifications, the quarries of El Delcale; and having turned to take a last view of the tapering minarets and whitewashed palaces of Alexandria, with its broad port crowded with tall-masted ships, or dotted here and there by white lateen sails just swelling beneath a breeze that crisped the surface of the sparkling waters, left Marâbut island on our right, and entered a long narrow valley running parallel with the sea. It is formed by a low ridge of white rock and sand rising from the beach, and by a somewhat loftier line of hills that acts as a sort of dyke to Lake Mareotis. Here the Desert may be said to begin, although a few patches of vegetation, dependent on wells, do afterwards occur. We stopped at noon to lunch, with the thermometer at 106° in the sun; and a little before sunset pitched our tent at Abusír, known to Mediterranean mariners as the Arab's Tower.

We had now reached the real starting-point of the expedition. The most important arrangements—namely, those with reference to the guides and camels—still remained. Signor Giovanni Sciarabati, Nazír or superintendent of the quarantine station at this place, was supposed to be the fittest person to perform the duty of selection from the various candidates that might present

themselves ; and he had kindly offered to point out which among his neighbours was the least of a rogue and had cut fewest throats. From the correspondence we had had with him, indeed, we had been induced to expect to find everything ready against our arrival, so that we should be able to start next day. Matters, however, are not so managed in the East. The worthy Nazir had perhaps done his best, but that was next to nothing.

It were needless to enter into all the details of our negotiations. Suffice it to say, that after the customary display of cunning and duplicity — after quarrelling about the water-skins, about the food of the camels, about the price we were to pay — and after fifty alarming speeches about the enormous distance of the place we were going to, about the dangers of the journey, the disturbed state of the road, and the deadly fevers of Siwah — the two Bedawíns, belonging to the tribe of the Waled Ali or Children of Ali, who had originally undertaken to conduct us, and whose names we had had included in the firmân, or passport, procured from Zeki Effendi, agreed to stick to their original bargain and start with us on the morning of the eighteenth.

Sheikh Yúnus Abú Shayen and his companion Saleh deserve to be delineated by a more skilful pen than mine. I do not pretend to do justice to their characters. The reader must appreciate them himself as the narrative proceeds. Yúnus had been a man of consequence in his tribe. His worldly possessions included forty camels, three hundred sheep, and I know not how many goats ; he had stores of sesame and other grain ; and sixty thousand piasters was the price of the ornaments of his women. But there had been a dark spot in the old Sheikh's life. Arnâout soldiers had taken up their quarters at his encampment. There had been a quarrel and a fight, or a murder. Three lives were lost in or near his tent. What part he himself took does not exactly appear. He says he was absent in Alexandria, that another man was guilty. The Pasha, however, formed a different opinion. Most of his property was seized ; and he became a fugitive, hiding amidst rocks and caves. For eighteen months — such is his boast — he evaded the vigilance of "Mehemmed Basha's" myrmidons ; until in fact another man was caught and hanged for the offence. Then he began to appear again in the world, to collect the scattered remnants of his fortune. But

although the hunt after him had ceased, he never again ventured to enter Alexandria; and always lived in a mysterious sort of way in the neighbourhood of Abusír, ready at the first alarm to decamp or creep into some of the caves or catacombs which there abound.

Such was the sort of person under whose guidance we were to perform our journey; and his good conduct to us was expected by himself and friends to prove a sort of stepping-stone on his return to wealth and power. For Yúnus was ambitious, and even in the midst of his fallen fortunes looked forward to becoming at some future day the chief of one section at least of his tribe. Saleh was his cousin, a person of much inferior pretensions and quite subordinate in every respect to his great relative. We were to hire two camels from one and three from the other.

During the time we were waiting the pleasure of these gentlemen I took occasion again to examine the ruins of Abusír, upon which I do not think that sufficient attention has been bestowed by travellers. Their vast size and imposing appearance have not succeeded in drawing tourists out of the common track, although they are the only remarkable ancient remains in Egypt north of the Pyramids; and Mr. Browne—the discoverer in modern times of the Oásis of Síwah—though he must have passed them on his road, does not even deign to mention their existence. Situated, however, on the crest of a steep ridge of hills, they have always been considered as important landmarks for vessels approaching Alexandria from the west.

As soon as you have proceeded half way along the valley that leads from El Delcale to Abusír, these majestic ruins come in sight; and remain in view, often raised high in the air and thrown into fantastic forms by the mirage, during the whole remainder of the journey. At first there appears to be only one pile of buildings; but the Arab's Tower, properly so called, soon becomes distinguishable from the great quadrangular structure that rises about a quarter of a mile to the west. The tower itself is of a singular form, square at the base, then octangular, then round. It would seem that formerly the upper portion was considerably loftier than at present, and in shape like a column, but it is now broken and ruined. The base and first division

would still be perfect had they not been purposely broken to discover some hidden cavity or means of ascending to the summit, in which the searchers failed. After attentive examination, however, on the occasion of our first visit, Lamport distinctly traced the remains of a staircase, which had formerly existed on the northern face. I am disposed to think that this construction was originally intended for the purpose it now serves, namely, as a landmark. Probably also it had a light. Underneath is a chamber in the rock, with an entrance from the south; which, although I am told it was opened in modern times, I believe to be of the same period with the catacombs which are to be found on all sides.

The path from this place to the Temple of Augustus—for such is supposed to have been the nature of the other building—is along the edge of extensive quarries. The temple has a semi-Egyptian character. It is a hundred paces square, and consists at present simply of a ruined enclosure of solid masonry with two side-entrances and a pylon. The latter, which is turned due east and in pretty tolerable preservation, still rises to the height of more than forty feet, and contains numerous small chambers and staircases leading to the summit, whence a splendid view of the sea to the north and a series of desert valleys to the south may be beheld. Inland to the westward is a small half-dried lake, and to the eastward the great salt marsh of Mareotis stretches in the direction of Alexandria.

Within the temple are two openings leading to a cistern; and this, as well as several other circumstances, leads me to suppose that it was sometimes used as a citadel. There were, evidently, at one period, buildings of more than one story supported against the internal face of the wall, as lines of square holes, cut to support rafters, testify. We noticed that the western or back wall was composed in part of pieces of columns sawn into proper lengths, with the interstices filled up by cement. A squared stone facing, however, both outside and in, had formerly concealed these incongruous materials, which doubtless belonged to some building of a much more ancient date. It is to be observed that no traces of inscriptions or sculpture now appear either in the temple or in the neighbourhood, a fact partly to be accounted for by the softness of the greater portion of

the stone, the face of which is often completely destroyed. Some blocks had been much less solid than others, having actually been eaten out of the wall by the atmosphere, leaving apertures like windows. I should add that M. de Laurin, Austrian Consul-General at Alexandria, possesses a small statue of Victory and a head of Augustus in marble, found by some excavators here.

The ancient city of Taposiris, or, as some call it, Plinthine,\* occupied the whole width of the valley south of the temple. It was evidently at one time a very extensive place. Traces of large buildings of solid stone-work, among which are probably the foundations of the baths attributed by Procopius to Justinian, walls, towers, an odeion, and the lock of a canal with a double dyke, by which water from the Nile was distributed through the gardens, are to be made out very clearly, although a mere cursory glance from the brow of the hill reveals nothing but a patch of desert covered with mounds and sand. About an hour's walk from the temple, beyond the limits of the city, is a ridge of hills containing some large catacombs and a very extensive and deep excavation in which the workmen of old had commenced rooms and galleries of tolerably regular architecture. I am inclined to think this to be the precipitous place mentioned by Strabo as being near Taposiris, and resorted to at all seasons of the year by pleasure-parties of every description. It is sufficiently solitary and deserted now. Vast masses of brushwood choke up what may have once been a garden; human visitants are no doubt rare; and when I began to descend the rugged path that leads to the bottom, there was a tremendous rush of wings, and a huge flight of doves burst up on all sides as from the enchanted well in 'Don Quixotte.' I was soon left alone to pursue my examination of this curious chasm, unless I may count as companions the innumerable lizards that perpetually glanced athwart the vast rocks that encircle it, or rustled amidst the grass and weeds.

When I was more advanced in the Desert, as the series of

\* Plinthine must have been close by, on the coast. Taposiris is evidently the origin of the name of Abusír; and is expressly mentioned as not being immediately on the borders of the sea.

ruined towns we there found presented itself, many reflections occurred to me on the nature of the cultivation by which in old times they must have been supported, at least in part. The traces of water-works presented near Abusir, with what we find in old writers concerning canals that branched off down these valleys into the very heart of the Libyan Desert, may in part serve as an explanation. It will be seen, however, that I came to the conclusion that the old cultivation was supported in a great measure by water derived from springs, wells, and cisterns, dried up and abandoned during the decay of civilization consequent on the Saracen conquest, or more probably on the decline of the original Muslim enthusiasm.

Our tent was pitched on the brow of the hill just beneath the northern gate of the temple, on a small clear space, surrounded by fragments of the wall, hurled down by the unsparing hand of time. The narrow valley that stretches parallel to the coast for about fifty miles from Alexandria, and a ridge of dazzlingly white hills composed of rock and sand, lay between us and the sea. The scene, though simple in elements, was sufficiently beautiful; and we could never weary of beholding at evening the unclouded sun stooping gently to the horizon, and then assuming all sorts of fantastic shapes—now a fire-balloon, now a dome of flame—ere it descended and left us to enjoy the sweet, though brief, twilight and the gentle rays of the moon. At these times it was that the great ruin, near which we were encamped, assumed its most imposing aspect, and when the long jagged line of its ruined wall crowning the steep acclivity awakened sensations almost approaching to the sublime. I am sorry to say, however, that these are not the things which have dwelt most strongly on my memory. The social evenings, mingled with serious conversation on the conduct of our coming excursion, which we there enjoyed, will always be remembered, by me at least, with chiefest pleasure.

During a former visit one of our attendants had been stung in the little finger by a scorpion: he bound the offended part round with twine, and next day was well. On the present occasion a similar accident happened, and a new kind of cure was equally effectual. The wound was in one of the toes; and a few gashes with a penknife beneath were thought to let out the venom. At any rate,

in both cases, the inconvenience suffered was but temporary. These scorpions are found wherever there are a great number of stones that have long been undisturbed. It is very rarely that their bite proves mortal in Egypt, though I have heard that it sometimes does so.

An animal, supposed to be a wolf or a hyæna, paid us a visit one evening. A little noise frightened him, and he sneaked off faster than he came. I mention the circumstance because this was the only occasion in which we saw anything like a wild beast during the whole of our journey through a country which poets, especially those of the eighteenth century, have combined to represent as infested with monsters of every description. Some old writers have talked of flying serpents, and a former Nazir used to tell of one which he beheld winging its way from the Arab's Tower to the Temple of Augustus; but we were not equally fortunate. In part compensation the neighbourhood of Abusir is peopled with immense numbers of hawks and kites; and many small owls came out in the evening gravely to survey the strangers from the edge of the ruin.

## CHAPTER II.

Departure from Abusír — High Spirits of the Party — Picture of our One-Eyed Sheikh — We reach a Tent on the Sea-shore — Value of Time in the Desert — The Character of the Sheikh begins to develop — Domestic Arrangements of a Bedawín Tent — Women and Children — Mess of Dates and Butter — The Well of Neffé — Filling Water-skins — Yúnus's young Wife begs us to bring him back in safety — Romantic Departure of the Kafilá at Night — Pace of the Camel — And of the Donkey — Halt, and Sleep in the open Air — Morning View of the Desert — Accession to our Party — Yúnus gives a parting Benediction to his Son — Second Night March — Ruins of a fortified Camp — A Saracenic Castle — Bivouac — Well of Shemaiméh — Bad Water.

It was not until the morning of the 18th that all was ready for our departure. We had been compelled to send back to Alexandria for an additional supply of beans and water-skins; and, as will readily be supposed, our impatience was at its height. In vain we wandered about and tried to take interest in the ruins, in quail-shooting, in visiting the Nazír at his little whitewashed house, in looking at the small hamlet where the soldiers belonging to the station lived with their families. We rejoiced in none of these things, partly because we had seen them before, but chiefly because we were eager to leave all traces of civilization behind us and plunge into those vast and silent regions where only wandering hordes of Bedawíns are ever to be encountered. At length, as I have intimated, the wished-for day arrived, and we were on foot as usual before the sun, and down in the misty valley by the well to perform our ablutions—a luxury which we might not always be able to enjoy in the Desert. Four camels, with old Yúnus, soon made their appearance; and, after a great deal of bustling and shouting, all our traps, including the ponderous supply of beans and a huge bag of chopped straw, were properly distributed. Having requested to know Signor Sciarabati's commands for Siwah, we mounted our donkeys in full travelling costume; and, followed by Derwish and Saād, our attend-

ant Egyptians, who allowed themselves the occasional use of two spare animals, which we took with us in case of accidents, began to move down the valley to the west. All were in high spirits as if starting on an ordinary pleasure excursion; and there was a free interchange of cheering remarks and merry gibes. Behind us, at a little distance, came the creeping camels, urged on by two young sons of the Sheikh, who himself bestrode a steady-footed horse with a Mamlúk saddle and shovel-stirrups. At his back was slung the never-forsaken long gun, and a monster pair of pistols adorned his belt. Altogether, with his toga-like blanket, and tarboosh encircled in honour of our departure with a bright Hejazi shawl, one corner of which depended from his shoulders, with his grey beard and single eye, he looked a very picturesque old object.

We followed the valley, which here is full of shrubs, for about an hour, and then struck off towards the shore across the white ridge. Having once committed ourselves to the tender mercies of the Bedawíns, we could not expect to know the reason of all our movements; but it was not without surprise that we found ourselves ushered into a large tent close to the beach, where we were invited to occupy a kind of divan, composed of mats and carpets, that had been prepared for our reception. In any other country our guide would have taken the trouble to inform us that he wished us to be content with our day's work, that his own preparations were not quite complete, and that old Saleh, his destined companion, had not hitherto made his appearance. But Yūnus would have considered his dignity sadly compromised by so doing. He had undertaken to conduct us in safety to a certain place, and he expected all details to be left to him. The value of time he could not appreciate otherwise than by counting his skins of water in a desert without wells. As to our having a will of our own, a preference for motion or rest, that was contrary to any crotchet of his, or any independent ideas of comfort and propriety, the very thought seemed to excite in his mind a degree of comical astonishment and perplexity. A bale of goods, in his estimation, might as well have had its peculiar notions about the way in which it was stowed aboard ship. When, therefore, after sitting some time under his woollen roof, we began to show signs of restlessness, and ask a variety of what he

must have deemed impertinent questions, he seemed to get very embarrassed, and to experience feelings fluctuating between anger and contempt. So early on the journey, however, prudence dictated to him a mild course of proceeding, and he was content to put us off with small excuses and promises. In the course of the day, one of his sons, a short boy with a long gun slung over his shoulder, and mounted on a tall horse, was sent in search of Saleh. These Bedawins, by the by, as soon as they can walk, have a gun put into their hands: it is their first and only toy, and they charge and uncharge it with the same scrupulous care which they observe in their fathers.

In spite of our impatience, we did not spend an unpleasant day in the Sheikh's tent. It was a good opportunity of witnessing the details of desert life; for after a little curiosity and peeping and whispering among the various members of the family, our existence seemed soon forgotten, and everything went on as before. There were three women in the tent, unveiled, and passably ugly, and dressed in some respects like the Fellahee women, but more heavily, and with their blue shirts confined by a cord or girdle at the waist; and there were five young children, all of them nearly naked, and some rather goodlooking. The tent was a spacious one of an oblong shape, with the ends closed, but open at both sides, so that a deliciously cool breeze swept through it from the sea. It was divided, as it were, into two apartments by one of those long cradles, called *tachterwans*, with a framework cover to support some kind of awning, in which the weaker members of a Bedawin family frequently travel on a camel's back. For want of a better name I shall designate it in English as a camel-howdah. Several old guns and gun-barrels stood in it, and some bags of wool and piles of blankets completed the partition, which, combined with our politeness, was sufficient to protect the ladies from too curious a gaze. However, they cared little for us, working away at their hand-mills with which they were splitting beans, scolding the children, collecting the camels and giving them food, and performing various other domestic offices.

As it was necessary that we should eat under the roof of our guide, he offered and we accepted a bowl of dates mashed up with *samn  * (clarified butter), one of the most disgusting messes

it ever fell to my lot to taste, although, in the spirit of true Oriental compliment, some of us ate more than one handful. In short, we endeavoured to make ourselves as agreeable as possible, hoping to induce him to quicken his movements; but here we made a slight miscalculation. He accepted our civilities, smoked our pipes, and remained immoveable, coolly patching up an old wooden bowl and twisting ropes of palm-fibre for a dooloo or well-bucket of hide. At length, towards the afternoon, in token of displeasure, we abandoned the tent, which we had defiled by eating a lunch of cold ham, and repaired to the place where our traps had been deposited, near the well called, Bir-en-Neffé, situated in a terrifically hot hollow about a hundred yards off. Here we remained until some hours after sunset sitting on our mat, and turning a deaf ear to the insinuations of the old Sheikh, who, whilst expressing his displeasure with Saleh and promising to take his own four camels and buy another on the road, tried hard to induce us to wait until morning. At length, seeing we were determined to proceed, he sulkily filled four skins of water, and loaded the camels with the assistance of his young boys and two women, one of whom had a baby all the while slung at her back. The other—perhaps a young wife—interrupted her work to come to us and beseech us, in the melancholy lengthened tones which Arab women can assume at pleasure, not to extend our journey into dangerous regions, but to bring back in safety her Yúnus, without whom there was no more joy for her in this world. Such a supplication, delivered in a sweet voice, in the midst of the confusion of breaking up our little bivouac, combined with the consciousness that we were really about to enter on a somewhat hazardous enterprise, and were taking away the stay and support of this desert family, was calculated rather to revive the ideas of romance with which I had at first surrounded the old Sheikh. The sinister glance of his remaining eye was forgotten; so were his incipient arrogance, his palpable attempts at deception, and the vulgar reality of everything about him; and as we moved away by moonlight from the Bir en-Neffé, amidst parting salutations, interrupted by the whistle and the “Zah, zah!” with which the camels were encouraged to clamber over the sand-hills back towards the great valley, I found myself indulging in reflections amidst which the thought of him did not

disagreeably intrude. The scene was by no means unromantic. An undulating surface of glittering sand and white stone, covered with black patches of vegetation, stretched on either hand. Behind could be seen the dim expanse of the sea—with the sound of its ceaseless breakers poured full upon us by a light breeze. In front a steep slope sank to the level of the narrow valley that, like a vast trench, extended its undeviating line at our feet. Beyond, casting a deep shadow, rose the long low range of rocky hills that continues in persevering uniformity from the quarries of El Delcale to the east, with scarcely a variation in height or character, to the neighbourhood of Sheikh Abd-er-rahman on the west. A moon in its first quarter and a profusion of stars lighted our rugged path, or no path, along which the steady-footed camels, with their bowsprit necks thrust forward, were slowly sailing, now choosing a way for themselves, now obeying the voice of their drivers. It was not long before we reached the flat surface of the valley, and, taking a due westerly direction, began to move along it.

I may mention here, once for all, that the pace of the camel is exceedingly slow, so that in a lengthy journey it must be calculated that the caravan moves at a rate of no more than two miles and a half an hour. Sometimes it falls much below this, especially where there is opportunity for browsing; and at others, when it is necessary to push forward over a waterless country, they reach three and a half and even four miles an hour. I shall mention any remarkable variations in our pace, requesting the reader for the present to imagine us proceeding at something less than two miles and a half an hour. Very monotonous and fatiguing work it was. We rode donkeys, equipped in the Egyptian style when a long journey is contemplated, namely, with halters; and it being necessary, from our ignorance of the road, to keep in sight of the camels, we had the greatest difficulty in effecting our purpose. The obstinate brutes, little knowing what a journey they were booked for, would go a-head, so that we were constantly obliged to stop, and perhaps light a pipe, until we again saw the rear of our creeping little *kafilâ* appearing amidst the bushes, or from behind a swell in the ground.

In about two hours and a half, when we were beginning to get used to this mode of travelling, a request was once more

made to us to stop. The Sheikh was determined, if possible, to have Saleh for a companion; but he merely said generally that we stood in absolute need of another camel and another man; that he must go into the Desert the next day to find both; and that, as there was water in the neighbourhood, it was best to halt where we were. So we spread our mat a little before midnight, and, wrapping ourselves resignedly in our cloaks, slept until dawn.

September 19th.—More shuffling on the part of our guide ushered in the day. It was with the greatest difficulty we could get him to redeem his promise, and start in search of the recruit and the camel. The well talked of overnight was, according to the report of his two boys, choked up with sand. Had we not better move on another hour? No, we would not: so at length, after some scowling, he mounted his horse, and, riding slowly up the stony ridge, halted for a short time to cast a searching glance over the wide expanse to the south, and then disappeared.

We were afterwards told that there were ruins in the neighbourhood, called Munchúrah, exactly opposite the dried-up well; but I suppose they were far in the interior, as I climbed the hill, and saw nothing but a boundless undulating desert, or rather wilderness, beyond. A sandy earth, dotted at intervals of three or four feet with several dried-up ligneous plants, that serve at this season for fuel, with here and there a small patch of green bushes, is the character of the country. In the valley the vegetation is more abundant; at some places the shrubs form perfect thickets: but, though there is a giant plant, resembling in the distance a small fir, I saw nothing that could be called a tree.

Early in the forenoon Yúnus returned with a man and two camels, which latter turned out subsequently really to belong to Saleh, who was engaged in transacting some business of his own, and, finding we would not wait, had sent his beasts and a temporary substitute. Of course we were not permitted to know this, our Sheikh affecting to be very indignant with his cousin, and vowing to depart without him that very evening. We therefore pitched our tent\* when the sun became oppressive, and spent the heat of the day in a dignified repose.

\* Ruins of Abusír still in sight, bearing E.N.E. by N., at a distance of about ten miles.

About noon the old Sheikh sat down near us, and seemed to attempt recovering his character by giving a long series of instructions and a parting benediction to his eldest son. There was, in spite of a slight savour of acting, something imposing in his manner; and, willing to be pleased, I was again looking at him with respect when, catching my eye, and thinking the moment a favourable one, he hastily mumbled the concluding words of his speech, and abruptly asked if I had not an old pair of shoes to give him! A negative answer, as a matter of course, ruffled his temper; and he was soon afterwards heard cursing his firstborn most heartily, threatening, among other things, to make a kûrbeh (water-skin) of his hide. From that moment I confess my poetical ideas did positively vanish, and I looked upon the old Sheikh as nothing but an Ishmaelite who would act and must be treated pretty nearly as an enemy.

At half-past four in the afternoon we were under way, with the two new camels, three of the old ones, and the fresh man. Yûnus sent back his sons and his horse, and took, much against his will, to foot-travelling, diversified occasionally by a ride on a camel. Immediately after sunset, just as the huge falcons and hawks, that had been wheeling through the valley in keen chace of the pigeons and smaller birds that abound, were sailing towards their night-haunts, the valley narrowed to a pass, the greater part of which we found occupied by the ruins of a large enclosure with stone walls, now overthrown to the ground, but which had probably been a fortified camp. Three hours from this a dilapidated Saracenic castle, called Kasr el Amaïd, rising near the beach amidst the white sand-hills and the thickets, tempted us to ride out of our way to glance at it. There was something so solitary and mysterious about it, as it reared its ruined form near the ceaselessly rolling wave, with the stars looking through the shattered windows or between the broken battlements, as through a Gothic building on an English beach—a haunted church, or a legendary castle—that I could scarce prevail on myself to proceed without our becoming further acquainted; but it was at length determined to reserve a complete examination to our return, when we should pass by day.

Having ridden seven hours, we stopped in a narrow part of the valley obstructed with hillocks. We had made up our minds

not to take the trouble of pitching the tent during our night-halts ; so we had commonly nothing to do, on arriving tired and sleepy after a long ride, but to spread our mat, get at our carpet-bags for pillows, and lie down at once. Each person was provided, like Hassan the camel-driver, with a "cruse of water," qualified however with a little cognac ; and those who were provident generally supplied themselves before starting in the daytime with a "scanty store" of provisions in the shape of biscuit and cheese ; this served for supper. No unpacking was allowed, as the boys were as weary as ourselves, and had sufficient occupation in taking care of the donkeys. Tobacco-pouches soon came into requisition, and by keeping our helms to the wind we managed to smoke in spite of it.

This night was very cold ; and made us appreciate the full virtue of our stoical resolution. We were up early, and after a vain attempt at making coffee went over the white hills towards the sea to a well called Shemaiméh, cut in the rock, with a hollow or trough near it for animals to drink from. Here we had our first taste of genuine desert water—never shall I forget it. I would attempt to describe it, but it is indescribable. The reader must imagine what a mixture of rotten eggs, brine, and the excrement of birds with water would produce ; and he will then have a faint idea of the filthy stuff I ventured to put inside my mouth. The circumstance that our donkeys, though thirsty, had to be coaxed to wet their mouths and swallow a little, means perhaps nothing, as these animals are extremely delicate about their food and drink ; and very capricious too—one of them sometimes refusing to put his nose in the trough, insisting on having the bucket held to him.

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## CHAPTER III.

Cape Glaucum of Ptolemy — Saleh makes his Appearance — Disturbed State of the Country — Forays of the Western Arabs — Murder of two of the Waled Ali — Enfeebled Authority of the Pasha — Frightful Climate of Siwah — Deadly Fevers reported — Caravan from Derna going “to buy Corn in Egypt” — A cure for a Headache — Ruins of an Ancient City — Bivouac near the Well of Shegick — Marabut — Desert Water — A solitary Butterfly — Storehouse protected by the Ghost of a Saint — Curious Collection of Implements — Port of Leucaspis — Imperfect Knowledge of the Libyan Coast — Decay of the Province of Marmarica — Meet an Alarmist — Frightful State of the Country — Terror of our Followers — Ancient Vineyards and Gardens — Fertility of the Coast Valleys in former Times — Agriculture of the Bedawins — Artificial Creation of Alexandria — Wells and Cisterns in the Desert — Moonlight Deceptions — Increased Alarm of our Followers — Account of one of our “Libyan Nights.”

PURSUING our journey, we soon found the valley stopped up by a series of salt lakes, the banks of which were plentifully crusted with a white efflorescence intermingled with patches of purple. They were divided from the sea by the persevering line of sand-hills ribbed with rock, which here began to rise higher and project so as to form at some distance a-head of us a point covered with dazzling hillocks. It has two or three small islands lying off; and is not properly marked I think in the charts of the Mediterranean. I should say it is the Cape Glaucum of Ptolemy.

We had been driven from the valley by the salt-lakes, and compelled to ascend the southern ridge, where we had an extensive view. Near the second lake we passed some traces of ancient walls and a quarry; and having travelled four hours that morning, principally along the sides of stony hills covered with grey lichens, halted and pitched our tent at half-past ten. Here we were at length joined by old Saleh, who, without vouchsafing any explanation of his delay, came and sat outside our door, where he occupied himself for two hours in pulling a sort of phantom of a beard, which grew with the scantiness of desert

vegetation on his withered chin, and in croaking after a fashion of which he had given us a specimen at Abusir. According to his account we were entering a very unsafe and disturbed country. Every one was in arms, either with intention to rob or to repel robbery. The Bedawins of the west had become unusually audacious, and were constantly making forays on the more peaceful tribes who lived under the authority of "Mehemmed Basha" as they call the Viceroy. Only the day before, he said, two men who were tending camels had been set upon by a strong party and murdered; and he professed to have seen the dead bodies brought into the tents. Parties of this dangerous description were often to be met with, generally ranging in numbers from seven to twenty, but sometimes two or three hundred strong. Making due allowance for exaggeration, and supposing the actual outrage mentioned to be brought nearer to us both in time and place in order to alarm or discourage us, this was certainly an unpleasant prologue. We objected that such misdeeds could not be frequent, as the Pasha was feared, and never failed, in case his dominions were trespassed upon by strangers, to make with good effect application for punishment and compensation to their governments. The reply was, that in very glaring cases notice was taken, as in the recent robbery of three hundred camels at the Natron Lakes by a tribe on their way to Bengazi; but that numerous instances of complete impunity had given the robbers courage. In former times, when the Pasha was aiming at independence, and in his full glory, the Desert was almost as safe as the Valley of the Nile; but now his rule had relaxed in severity, and the old régime was returning. There appeared to be some reason in this, so we applied ourselves to the particular instance, and it was argued that, if the robbery and murder had been committed within a few days, all the country must by this time be up in arms, and the brigands, fearing the consequences, must have made a precipitate retreat, leaving the road comparatively safe. This was admitted to be a good argument for proceeding, so old Saleh, who really seemed desirous of backing out of his bargain, tried another tack; and, after hinting that we must move with loaded guns that night, began to enlarge in his accustomed strain on the climate of Siwah, which he represented as so unwholesome at this time of

year, that whoever was exposed to it inevitably caught the fever, which again was so pernicious that whoever caught it, died! Pleasant prospect this, especially as he really seemed to believe what he said, to be in great alarm, and asked us if we were magicians enough to *write cures*—that is to say, amulets. The Fatalist by profession found no remedy in his doctrines against the instinctive fear of death!

We knew before that the date-season in the oāses was considered by no means healthy, and our previous information was only confirmed by the lamentations of the timid Bedawín. A small kafila, of eight men and ten or twelve camels, on their way from Derna to Alexandria to buy grain, passed during the conversation, and added their testimony to the uncertain state of the country. We wished them far enough, for they put the finishing stroke to the alarm of our Egyptian attendants, one of whom seemed seriously to contemplate a retreat. A glass of soda-water, with a nip of brandy, insinuated under the name of medicine, brought him round, and served to give us a fresh insight into Sheikh Yúnus's character. He immediately got a headache, asked for a similar potion, exclaimed "Azeem!" ("Excellent!") and "Agaïb!" ("Wonderful!"), and condescendingly promised to drink a glass every day as a backshish.

About sunset we started and struck into the Desert, leaving the sea far on our right hand, the ridge of hills now subsiding into a plain covered with hillocks, in which the great valley that extends thus far from Alexandria is consequently lost. Our direction was still about W.N.W., so that, as we again came near the sea in a few hours' journey, we might have inferred, from this circumstance alone, that we were crossing the base of a cape or point. After three hours' ride we passed some ruins, or rather traces of old walls, just appearing above the surface of the ground. Many of these evidently belonged to houses, forts, &c.; but others, which continued for the space of an hour and a half, were nothing but great square enclosures, which I suppose to have been ancient vineyards or gardens. This place is now called Moghút, and our guides referred its origin to Alexander the Great.

After proceeding some time by the favour of a beautiful moon, Yúnus hinted at a stoppage, there being a well in the neighbour-

hood which it was necessary to visit in the morning. We found our bivouac exceedingly pleasant at first. The atmosphere was wonderfully pure, and the moon and stars shone with remarkable brilliancy. Not a sound disturbed the air, except, perhaps, the low tremulous shriek of a night-bird, the chirping of a grasshopper, or the occasional motions of our group of tired animals. This silence had a soothing effect, and we went to sleep with the impression that a thorny bush forms the best pillow in the world, a Levantine cocûla or a plaid cloak the best covering, the sky the best canopy, and Arabs, camels, and donkeys the best companions. Some of these delusions, however, were dispelled by the sharp cold of the morning and a heavy fall of dew.

September 21st.—The early dawn enabled us, as we stood shiveringly drinking our coffee, to distinguish in the distance, to the N.W., the glittering walls of a marâbut or Sheikh's tomb, on the crest of a rounded hill. This is a landmark which we afterwards found may be distinguished at a vast distance. It indicates the neighbourhood of the well of Shegick, near the coast, and the ruins of the fortress of Gobîsa, inland. Two hours over ground covered with remains of ancient enclosures—vineyards or gardens—brought us to the foot of the hill on which the marâbut is situated. Here we pitched our tent, and the donkeys were taken to drink at the distant well. They were an hour and a half absent, but returned with a large demi-john of good water. This was extremely agreeable, as we had already begun to suffer from the badness of the beverage to which we had been reduced. The contents of our *kûrbehs* had become nearly as detestable as the stuff we had so despised at Shemaiméh. The shaking and exposure to the sun seemed to have brought out all its bad qualities, besides giving it a taste of leather, in itself very disgusting. We observed, indeed, throughout the journey, that water which was tolerably good when drawn from the well acquired often a peculiar taste, as if flavoured with rotten eggs, even if preserved in bottles. It all seemed liable to assume that character. Filtering through sand would correct almost any other defect, but had little virtue in this case.

We noticed this morning a single brown speckled butterfly fluttering before us from one scrubby plant to another. It was a welcome sight, reminding one of gentler and more fertile

scenes—of green meadows and pasture-lands, of hedgerows and fenced gardens; and, striking more forcibly still

“Th’ electric chain with which we ‘re darkly bound,”

awakened some tender associations that came gushing into my mind, and filled it for a time with a not unpleasing sadness.

During our halt I walked to the marâbut, which I found to be a small square enclosure, with a whitewashed wall. In the neighbourhood was an incipient cemetery—a few Bedawín tombs, with sticks stuck up at the end, and surrounded, as usual, by an oval pile of loose stones about three feet high. The enclosure had a doorway in one corner, through which I somewhat sacrilegiously passed. Never having seen a similar place, my curiosity was fully gratified. A tomb of brick, stuccoed over like those seen in the streets of Egyptian towns, occupied the centre; whilst around, in most picturesque confusion, were spread a variety of articles committed to the care and surveillance of Sheikh Abd-er-rahman. There were tachterwans, or, as I have called them, camel-howdahs; the handmills used in Bedawín tents; several pair of the enormous Mamlúk shovel-stirrups, nearly eaten up with rust; two or three large wooden bowls used to prepare *pilau* or any other mess; small ploughs for turning up the shallow earth in the Desert valleys where the Arabs grow their scanty crops of barley; packsaddles; and various household utensils. The place, in fact, is a regular storehouse, where such things are left by people passing to and fro. If they return that way, they may resume their property; if not, it is allowed to decay, no one having the audacity to remove it, for fear of the defunct Sheikh, who would certainly punish any violation of his sanctuary with death. From all appearances I have no doubt that this ghostly guardian is quite as successful in taking care of what is intrusted to him as the living one, who, being himself perhaps in the odour of sanctity, pursues the same occupation in the neighbourhood of Abusír. The labours of the late Abd-er-rahman are, at any rate, more practically useful than those of the presiding Sheikh at Abú Mandúr, near Rosetta, who merely professes to employ himself as Conservator of the left bank of the Nile from the sea to Atfeh, and to throw back with a spiritual shovel whatever sand Eblis may

blow in from the Desert, in the vain attempt to choke up the river.

From the top of the hill I could obtain a pretty good view of the coast immediately to the north. We started yesterday from a point about two miles from the sea, and soon began leaving it at a gradually increasing distance. A general west-north-west direction, however, had again brought us near the coast. So that during a ride of seven hours we had crossed the base of the point which I now descried to the eastward from the marâbut, stretching out in a northerly direction and sheltering a small curved bay with a north-west exposure, probably a port in ancient times. If the point be the Glaucum of Ptolemy, as I have surmised, this must be the port of Leucasis, or Leucaspiis. I could not on this occasion distinguish the low white islands which I afterwards saw when on returning I attentively examined the point from the east, though time would not allow me to visit it. The coast is here lined with higher hills than those in the direction of Abusîr. They begin to rise at the termination of the salt-lakes; and the most lofty overlooks the small bay I have mentioned; whilst the extreme point appeared to be its northern spur gradually subsiding into the sea.

My impression is that the whole of the Libyan coast is very imperfectly laid down in the charts and maps hitherto published. A new survey ought forthwith to be made; and no power has more interest in undertaking it than England. Let us leave the examination of the bay of Tineh and the Pelusian mud-flats to enthusiasts or speculators—no English merchant-vessel has ever sighted those inhospitable regions; but thousands pass near the Libyan shores, and shipwrecks are constantly occurring, not so much attributable to the currents, of which everybody speaks, as to our ignorance of the coast, where I am persuaded many tolerable harbours might be found. These harbours existed and were frequented by a flourishing commerce in ancient times; and I cannot believe that they have all become useless. They were only deserted gradually, as the province of Marmarica—overrun by conquering armies and pressed upon by the wild tribes descending from the Ogdames and Nasamones of Herodotus—relapsed into the desert condition from which it had been

reclaimed by canals from Egypt and colonies from the more early civilized shores of the Mediterranean.

About four o'clock in the afternoon we started, crossed some low hills, and, proceeding still in the same direction as before, got into an ill-defined plain with rising ground at various distances on all sides. Near its commencement we saw a man with two camels to our left; and should have passed on without communicating had he not advanced to join our Bedawíns. Sheikh Yúnus, who already began to admit his ignorance of the road from the coast to Siwah, tried to make a bargain with this man to join our party with one of his camels to carry two skins of water. He did not suffer himself to be tempted, however, for he was going to Alexandria; and he gave besides a most frightful account of the state of the country, saying that nothing could induce him to come and have his throat cut in our company. According to his story, there was especial reason for alarm at the present moment. The Western Arabs had grown unusually bold; had made several incursions; and now infested all the roads. Every person we met might be an enemy. Honest people were rather inclined to get out of the way than to thrust themselves into the jaws of danger. This kind of talk began first to suggest to our two frightened followers the idea of an escort; and even the Bedawíns acknowledged that they should feel more secure with six additional guns. As yet, however, we seemed to be proceeding through a country almost completely deserted by its inhabitants. 'A solitary Bedawín, I remember, looked at us from the hills on the evening we left Munchúrah; eight wayfarers passed us at the salt-lakes; and after leaving the alarmist, when the night had fallen, we heard in the distance to our right the bleating of a considerable flock of sheep, and the shouts and monotonous chant of the men who were driving them in the direction of Alexandria.

Again, all over this plain we met large square spaces that had been enclosed by walls, of which the extensive ruins still remained. Were these spaces thus enclosed because the soil happened to be better than the rest of the Desert? Were they designed to assist some system of irrigation? Or were they merely erected as defences against wild beasts or human depreda-

tors? On one side of several of them were traces of ruins of a different character, as if these vineyards or gardens had been attached to small villas in which the wealthy inhabitants of Marmarica chose to reside at certain seasons of the year.

One thing seems pretty certain, namely, that at some period this country had a peculiar cultivation of its own, and supported numerous cities and a flourishing commerce. I doubt, however, whether, as certain writers have supposed, this portion of the Libyan Desert was reclaimed by the ancient kings of Egypt. In Alexander's time it is mentioned, by Aristobulus in Arrian, as having been "a district certainly deserted, but not waterless;" and I do not remember that this testimony is contradicted by any other classical writer. However, at a subsequent period, finding that water will fertilize any soil, men determined to reduce this unpromising tract: and it was at length covered with farms, meadows, vineyards, and gardens. It is now almost restored to its original unproductiveness, although at various points we saw patches which the Bedawins had selected wherein to sow dhourra, barley, &c. The ground was scratched with their little plough. At some places we saw remnants of the spring crop, consisting of thinly sprinkled stubble about eighteen inches high. This cultivation entirely depends on the winter rains; but in ancient times, in addition to the canals which carried Nile water and fertility into the heart of the Libyan Desert, recourse was had to wells, which, I believe, might even now be indefinitely multiplied. In the valley between Abusir and El Delcale, for example, there are numerous shadoofs, raising excellent water from wells, and supporting considerable patches of cultivation. On our return we found indeed the dhourra greatly advanced; we saw plots of onions, of tomatas, &c., shaded by date, fig, and banana trees. These scraps of vegetation, rarely more than a hundred yards in length, are tended by a few half-civilized Bedawin families, living in tents or little stone huts, and eking out in this way what they gain by cutting scrub-wood for fuel, catching quails and other birds when in season, and otherwise supplying the market of Alexandria. The wells vary in number with their industry, and seem to be opened afresh at the approach of winter.

As an instance of what might have been effected by the means

I have mentioned, I will adduce Alexandria, which is situated in the Libyan Desert, forty miles from any spot of natural fertility. The labour of man has at length converted it into a perfect oâsis. A vast body of fresh water is brought to it through deserts and salt marshes, and it is surrounded with exquisite gardens, vineyards, and green fields. Many expanses of rubbish still remain, but they are fast disappearing, and the new roads in the neighbourhood are rapidly assuming the aspect of green shady avenues. Of similar origin must have been the towns of Plinthine, Taposiris, Cynos-sema, Antiphraë, and numerous others, the traces of which now serve only as stumblingblocks to travellers in those regions.

At half-past eight we passed near Bid Gurruj, where a tomb on a pointed hill overlooks a large cistern like those at Alexandria, and most probably of ancient construction. It is dry in summer, but in winter holds good water. It lay to our right towards the sea. I must here call to mind that we saw all this part of the country in going by the light of the moon, which in these latitudes is extraordinarily deceptive. Sometimes low mounds in our neighbourhood appeared like distant lofty hills; and again ridges really at a great distance seemed close at hand. All we could learn therefore was, that after proceeding half an hour beyond Bid Gurruj we came to the end of the plain that we entered near the marâbut, and got among an intricate expanse of small hills covered with sand, and divided by narrow flat valleys. Soon afterwards we crossed a low rocky ridge, near which, we were told, was another winter well, called Ejmîna, and in an hour and a half more reached a second ridge much more lofty and rugged, covered with loose stones, and difficult even for the camels. Just on the other side of this we determined to bivouac for the night and indulge in tea. We had here to physic one of our Assinegos, who had become quite ill through sheer fright, partly caused by the stories told by the strangers we had met, partly by the horrible exaggerations of old Saleh, who seemed to take a malicious pleasure in alarming one more timid than himself. This man was by nature half buffoon and half croaker; he amused us by his monkey tricks, and annoyed us by the unfeeling delight he took in working on the mind of this poor lad, and absolutely depriving us of his services. For his own part, he

seemed a little uncomfortable at the idea of losing his camels by the attack of overwhelming numbers ; and childishly terrified by the reports of the fever at Siwah. We afterwards had great difficulty in getting him to proceed.

I shall often think of the night I spent near the well of Tanûm. Two of the party went to sleep, whilst I and Mr. Lamport sat up in an unusually social temper, and, soothed by the fragrant pipe, and a small tumbler of hot grog, occasionally replenished, conversed, despite the alarmists, with great complacency on our prospects. It was on such occasions as these that we usually compared notes as to incidents that had occurred or observations that had been made in the course of the day, and thus managed to clear up many points, and fix the result in our memories. The present, however, was, I must confess, one of the most agreeable of our "Libyan Nights." We were yet new in the Desert, and the first tumult of our impressions had hardly subsided. Our senses were wide awake to catch every characteristic of the scene, and seemed, if I may use the expression, rather balked at first by the fewness of the objects that presented themselves to their notice. Our familiar companions the moon and stars, with some brilliant meteors that gleamed near the horizon, and numbers of those heavenly rockets which, say the Arabs, are hurled by angels guarding the gates of heaven upon demons who approach too near ; a ridge of rocks to the south ; to the north a broad and shallow valley, dim with a light mist, that remained cold and dull even beneath the shining beams that were shed from that Oriental sky, and scarcely allowed the shrubs and bushes to appear athwart it ; beyond all this the sombre sea—these, with the exception of the ungainly form of a camel, as, despite its fettered legs, it went away slowly from the bivouac to browse ; our little group of donkeys, the scattered luggage, the sleeping Bedawîns and domestics, were all the objects that met the eye ; whilst there was nought to appease "the famine of our ears," as some poet expresses it, save only the shrill shriek or measured chirp of two Desert birds, and the monotonous chink of thousands of grasshoppers. But, if disappointment was the first feeling engendered, a sense of the sublime—a perception of the simplicity of nature's operations—a feeling of intense solitude—of separation from the busy nuclei round

which men congregate—and ultimately of cheerful self-reliance, succeeded. I felt my imagination kindle, and that steady, enduring enthusiasm begin to take possession of my mind, which is the necessary companion of all who encounter fatigue, and even danger, actuated by the mere thirst of knowing “how wonderfully and strangely” God’s world is constructed—what kind of people inhabit its remoter parts—and what the wilderness and the waterless desert have to say about the commerce and civilization of past ages.

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## CHAPTER IV.

Disobedience of Yúnus — Sultry Ride to El-Emrúm — Sufferings from Want of Water — The Camels are indulged in a Drink. — Tricks and Deceits of our Guides — Definition of the Word "near" and the "Desert Hour" — Arabs lack the Ideas of Time, Space, and Truth — Some of our Beans confided to a man "who drank at the Well of El-Emrúm" — Well and Castle of Gemaima — Some travelling Bedawins join our Party — True position of Gemaima Point — Observations on the Foot of the Camel — Stony Ground — Meet a Kafilá bivouacked in a Thicket — The Reubens and the Benjamins of our Days — The Bedawín Camel — Vineyards of Antiphrah — Ancient Cistern — Halt at El-Gerab — Another Kafilá — Bedawín Importunities — Temperature — Rough Road — The Lesser Catabathmus — Cave — Difficult Ascent — Vision of Wells and Water-Melons — Surprise an Encampment — Wreckers — Danger of being plundered.

HAVING watched until the moon went down, three hours after midnight, we slept for a short time, and wakened to the regular business of the day. Whilst our traps were being loaded, old Yúnus came up and asked us whether he should not throw away the remainder of the water which had been brought from the Bir en-Neffé. We should reach Gemaima, he said, after a short ride. The answer he received was, "Keep the water;" but, by one of the acts of disobedience he occasionally indulged in, he immediately turned it all out upon the sand; and then, with characteristic inconsistency, wanted to stop half an hour after we started to get a fresh supply at the well of Tanúm, which, however, on examination turned out to be dry.

The valley in which we now found ourselves was exactly similar in character to that between Abusír and the salt-lakes. Its direction was at first W.N.W., and then changed to N.N.W., skirting a small curve or bay, both points of which were visible. The eastern extremity is marked by a pointed hill, occurring after a piece of low shore, where the white line of hillocks subsides. From the sea all this coast must have a very dismal uniform appearance, as the hills in the interior are pretty nearly

of an equal height. Here commences, however, a rather loftier desert ridge, through which we went, crossing valleys that lay in a N.N.E. direction, until, rising over a rough rocky ridge, we again sighted the Mediterranean, and descended into another burning seaboard valley. From the summit a large patch of white sand-hills, that looked like heavy smoke beneath the fervid rays of the sun, which were reflected in a strange manner, was indicated to us as Gemaima: it occupied the extreme end of the valley; but we determined not to attempt reaching it. We were now indeed extremely exhausted from the heat of the sun and want of water, though we had been only four hours in motion, and were glad enough to reach, in a hollow of the white rocky barrier between the valley and the sea, a square well, cut deep down, and containing an abundant supply. The first bucketful taken from the surface was extremely agreeable to the palate; but as soon as the well was disturbed it gradually acquired more and more of that indescribable taste which will ever prevent us from forgetting the wells of Shemaiméh. The donkeys, though they had not drunk for twenty-four hours, seemed little inclined to quench their thirst; but the camels, poor creatures, having abstained since we left Abusir, and being children of the desert, crowded round the shallow trough cut in the rock, and, thrusting down their long necks and snake-like heads, drank eagerly; whilst old Saleh, indulging in a queer chant, rendered more odd by the loss of a few teeth and the presence of a quid inside his lower lip, and broken by a series of conventional grunts, most industriously worked the *dooloo*, and supplied them till they were satiated. The quantity they drank was enormous; though I cannot confirm the account contained in that 'Authentic Narrative,' so interesting and even awful to children, of Captain Riley's sufferings in Africa, where we are told that one camel imbibed, after twenty days' abstinence, the enormous quantity of sixty gallons. However, I think the skin bucket, containing perhaps a gallon or a little more, must have been filled eight or ten times, on an average, for each animal, and their stomachs evidently swelled in bulk.

I shall here mention that all this time we had no very definite idea of the point at which we were to turn off from the coast, and strike into the interior of the Desert. This was a matter we left

to the Bedawíns, who themselves did not appear to have quite made up their minds. For the last day or two they had talked of turning off at Gemaima, and would probably have done so had they met a proper person to act as guide. In that case they would, no-doubt, have followed the road by which we returned. Failing in meeting the guide, they now pretended they had always meant to pursue the coast-road for some distance more, and promised us a kind of paradise called Mudar, in which, among other things, delicious water-melons were to be enjoyed. As, however, these water-melons had before been attributed to a place *grayeb* (near) Gemaima, we did not allow our thoughts to dwell too much upon them, though we began to be perfectly aware of the elasticity of this said word *grayeb*, which in the Desert means any distance, from one hour's ride to three or four days' travel, just according to circumstances. I may here mention that, at the outset of the journey, Saleh used to be very positive about distances, telling us exactly to half an hour how long we should be in performing them; but at last he was driven to confess that the "Desert hour" was very different from the Alexandrian one, that there was no definite number of them in the day, and that they had short hours and long hours as it suited them.

It has been observed with some severity that Arabs, to whatever degree civilized, have no idea of time, space, or truth; and I cannot much object to the observation. Even in Egypt, among persons in business, they seldom divide their days into hours, contenting themselves with vague approximations to sunrise, noon, and sunset; they have no term in common use expressive of any definite amount of distance; and there is no general appreciation of a man's word. I do not mean that they are an utterly faithless people; but they are not impressed with the moral obligation to truth. "Liar" is a playful appellative scarcely reproachful; and "I have told a lie" a confession that may be made without a blush!

Whilst we were enjoying our "keyf"—a word descriptive of the most perfect state of indolent wellbeing—Sheikh Yúnus went in search of one of the men who "drink at the well of El-Em-rúm," in order to confide to him a certain portion of the beans we had brought for our donkeys. This was to serve the double

purpose of lightening the camels to enable them to carry more water, and of securing a provision against our return. Having succeeded in his object, the Sheikh reappeared with some women who shouldered the beans and carried them over the hill. Not being yet acquainted with the punctuality of these transactions in the Desert, I confess I had strong doubts of ever seeing the bags again; but from what I afterwards observed of the depositary—among other things, the fact that he was completely unarmed—I suspect him to have been a kind of saint.

Half an hour before sunset we started, proceeding still along the valley. The ridge of hills which bounds it on the south is much more lofty than any we had hitherto seen, being probably four or five hundred feet high or more. Its sides are rugged and stony, yet with bushes here and there. An hour brought us to a large expanse of sandhills, white as driven snow, and dotted with copses quite sloping up the valley. In the midst of this we were told is a well of excellent water, called Bir Gemaima, whilst a gorge in the hills opening immediately above leads to the ruins of the corresponding castle in the interior, which I had an opportunity of visiting on our way back. On the present occasion it was getting dark, and we were in a hurry to proceed.

The white sand had turned aside the path, which now went along the northern slope of the ridge, covered here with comparatively luxuriant vegetation, even in many places with perfect thickets. The ground was torn up in a most extraordinary fashion by the torrents that escape in winter from the numerous rocky gorges that serrate the edge of the range; and our *kafila* found some difficulty in winding along. We had been joined at El-Emrúm by four men, a woman, and one camel; so that we made rather a respectable figure, as to numbers at least. During the night the woman generally rode the camel, which had perhaps been brought for her use, and at length, stalking away ahead, drew her party off; and we separated for a time after a civil "Peace be with you!"

An hour from Gemaima we passed another well, called Et-Terbíyat, from which a man brought us a bucket of the best water we had hitherto tasted. This occurs at the point where the range of hills, turning round to the northward, crosses the

valley, and, running to a considerable distance out into the sea, forms a point, which we saw to the west when we first entered the valley before reaching El-Emrûm. It is not very lofty, but has steep sides and a bluff termination. I see on the maps a projection called Gemaima Point, but not in this place. Norrie lays it down at least thirty miles too much to the east.

A steep rocky ascent brought us on the top of the range, which we here found to form an extensive table-land, the first we had come to. It was flat and covered with loose stones, very uncomfortable for our animals, at least for the donkeys, the spongy foot of the camel being equally well fitted for this kind of travelling as for moving over sand, although I believe naturalists tell us that a special provision has been made for the latter case only. All I can say is, that, from what I have seen and heard, the ground which the "ships of the desert" have usually to traverse is very far from consisting of yielding sand. There are expanses of such a character in Africa, and perhaps in Arabia; but there is at least as much stony desert as sandy. In the present instance the ground was thickly dotted with numerous arenaceous plants, so much of the colour of the camels, that, when these animals went astray, it was difficult even with the aid of the moon to discover them at any distance. Here and there were patches of bushes of various extent and density. Some of them were armed with formidable thorns, which occasioned great inconvenience to us as we forced our way through them. In a considerable thicket of this kind we found a large drove of camels grazing; and fifteen Bedawins, in their white burnouses, squatting in a circle on the ground, enjoying pipes and gossip. They had come from some place thirteen days to the west, and were going "down to buy corn in Egypt," like the sons of Jacob of old, and were, probably, nearly all of one family. We frequently afterwards met similar kafilas of unladen camels; and their drivers were almost always young men, the Reubens and the Benjamins of our days. In the old times the difference was that they went with asses; now camels alone seem used for this purpose.

The number of these animals that come annually to Alexandria on the same errand must be very great. All the Bedawin tribes on the coast, as far as Derna, send regularly once a-year for grain; and the roads in the neighbourhood of the

Shúnah are often dangerously crowded with large droves of half-wild camels, which go rushing furiously along, astonished at the noise and new objects around, and regularly clear the path. The Bedawin camel is much smaller than that used in Egypt, owing probably to the life of privation it leads. Accustomed to the enormous height and gigantic limbs of the town-pampered beasts, when I first saw the genuine "ships of the desert" I took them for mere colts. It is true that they are of prodigious strength compared with their size.

We had left El-Emrúm at about half-past five in the afternoon, and travelled a little more than five hours at rather a rapid pace. Just before halting for the night we passed the traces of a city called Assambat, which in some respects answers the description of ancient Antiphræ. The enclosed pieces of land to be found on all sides were very probably the vineyards that produced the wretched wine, in great part composed of salt-water, for which the place was celebrated among the wits and comic poets of antiquity.

Half an hour after we started next morning (the 23rd) we came to a large patch of gigantic wild sage, now in seed, and a copse, at the mouth of a narrow gorge which afforded us a sight of the sea. In this gorge is said to be a well called Gosambal. About two hours more over the same table-land, which is three or four hundred feet above the level of the sea, and covered at intervals with hills, brought us to Sheikh Mahmúd, a marábut, on a small eminence with several tombs around. Beneath it, near the road, is a half artificial, half natural cistern in the rock, with a small square mouth, but widening as it descends. It is said to contain water in the winter season, and I have no doubt dates from ancient days.

In an hour and a half more we approached the edge of the table-land, and halted in sight of the sea. In the neighbourhood was a well called El-Gerâb, at which our donkeys went to drink. The report was that the water was very sweet, which made us regret we did not get a fresh supply. Our *kúrbehs* contained nothing but a filthy infusion, almost impossible to swallow. Necessity, it is true, had been the mother of a desert filter, which was partially successful.

The halt at Bir el-Gerâb will always be considered by our

party as rather a memorable one. It was on this occasion that we shut the door when the steed was stolen. With due consideration for our healths we had provided a certain quantity of brandy, carefully decanted into a number of large tins, which had been rather unceremoniously pitched into a bag by "uncle Yúnus," as the boys with grim civility called him. We here found that the solder could not stand the heat, and had gently given way, allowing about two quarts of the precious liquid to trickle forth and bedew the sands of the Desert. A great deal of activity was accordingly displayed in putting what remained into some bottles which we had emptied of beer, and many excellent resolutions to be moderate were expressed.

A small kafilá of unloaded camels passed us here on its way to Alexandria to buy corn. Some women that accompanied it seemed disposed to be familiar, and one of them asked for bitters to put on her nipple to assist in weaning her child. It is another characteristic of the Arabs to beg for everything they see, or that they think you may possess, to take it without thanks, and rarely to offer a return. Not perhaps that they are absolutely ungrateful, but they are absorbed by the pleasure of possessing what they desire, and are generally too poor to make an acknowledgment. We never scarcely met a Bedawín in the Desert—to say nothing of the acquisitiveness of our friend Yúnus—without having a request preferred, sometimes, it is true, in a tone that might have meant command. On one occasion, I remember, we were importuned for powder. There had just been something like an alarm; danger seemed thickening around us, and our supply was by no means large; so we replied that we were wayfarers, and required what we had for our own defence. "If it please God, then," said a grim-looking desperado, "you will die upon the road!"

In spite of our little misfortunes we enjoyed our rest at this place exceedingly. As I have said, the tent was pitched near the edge of the table-land, from which was visible the beautiful blue sea unchequered by a single sail, and a long glittering white point to the westward running out some five or six miles. The air was rather cooler than we had been accustomed to, as there was a slight north breeze, and the thermometer did not rise in the tent above 82°. It is true that the contrast now between

night and day was greater than it was at Abusír, where we never had it lower than  $72^{\circ}$  at sunrise, or than  $79^{\circ}$  at sunset, whilst it only once rose to  $93^{\circ}$  at noon, and was generally between  $85^{\circ}$  and  $88^{\circ}$ . Since that time the temperature of the morning had sunk as low as  $65^{\circ}$  and  $68^{\circ}$ , whilst at mid-day it was sometimes up to  $91^{\circ}$ . I must observe that these figures give little or no idea of the terrific heat to which we were subjected during some of our rides, and in particular places. We seldom exposed the thermometer to the sun, but it once rose at Abusír to  $128^{\circ}$ , and I am persuaded that at various points even along the coast the heat was still greater.

At about half-past four we moved in an oblique direction towards the sea, descended into one of the usual coast valleys near a well called Grawí, and immediately afterwards began crossing a series of small rugged ridges, forming the base of what is called in some charts Praul Point. The sun set as we ascended the loftiest of these: but we obtained a glimpse of Gatta Bay, and the black rock that rises above the water at its eastern extremity. As night deepened, the road became difficult and dangerous; the ascents and descents were steep, and covered with loose stones, whilst the valleys were either of the same character or obstructed by prickly thickets. Nothing was easier than for either man or beast to miss footing; and to miss footing was a sure introduction to bruises and fractures. We were reminded of this by an increased number of the white bones of camels that are scattered here and there over the whole of this great caravan road, if road it can be called. These bones, glittering in the moonlight, if they did not act exactly as a *memento mori*, certainly impressed us with the idea that the camel that carried our water, or the now diminished store of our more potent creature comforts, might possibly come down.

At length we reached in safety what appeared to be a plain or valley divided from the sea by a low line of eminences over which we heard the ceaseless rolling of the waves. Here we encountered a most extensive collection of low thorns and prickly bushes. It was indeed seriously feared that we should come off second best in the combat with this countless host of foes; but some by dismounting, others by very scientific navigation, managed to evade the dangers threatened by the dastardly claws

which were stretched forth in the darkness of the night to wound us. Whilst making our way along, we saw some forms moving ahead, two camels and two men, the latter bobbing down every now and then to look along the ground and ascertain whether we were friends or enemies. This was a Desert dodge which we also had learnt to practise.

A narrow pass, or rather cutting, introduced us to another plain, in which we bivouacked after five hours' ride under the protection of some bushes. When morning broke we found that the remainder of the plain was occupied with the ruins of a great city, above which, at a distance of about five miles, rose a steep range of hills with a level summit—the Lesser Catabathmus of Strabo—glittering in the rays of the morning sun, and seeming vastly more lofty than it really was. The eminences towards the sea, near our bivouac, Forty tells me, were covered with pottery; and as we proceeded, mounds of rubbish, something like those in the neighbourhood of Alexandria, made their appearance. The foundation of massive walls, of round towers, of fortified gates, &c., evinced that this had been a place of no small importance in its time. They continued until we reached the bottom of the bay, opposite a line of breakers with two black rocks at either end, lying, say three miles off the shore, and pretty correctly placed in Norrie's chart.

I rode with Lamport to visit a great cave, of which we could see various entrances in the precipitous face of the ridge ahead, but somewhat to the left of our road. After having got entangled, however, in the rocky ravine that led to it, we found that we should lose the kafila if we persevered; so, abandoning our intention, we climbed up part of the face of the ridge, and descried our camels and the rest of the party at a great distance, turning off towards a steep gorge. It is no difficult matter, however, to overtake camels, and we soon came up with them.

A quarter of an hour more spent in struggling with the difficulties of the ground, stumbling over loose stones, scrambling over rocks—all the while dragging our donkeys after us—whilst the camels now and then stopped, and looked wistfully about, as if in complaint that they should be urged up so steep an ascent, brought us to the crest of the range, from which we looked back over the broad bay sparkling in the morning sun, and smooth as

may be, with the exception of the undying breakers on the out-lying rocks; and over the ruin-strewn plain or valley we had traversed, bounded by a low ridge of hills to the south, beyond which a succession of other wide valleys, in which the ridge forming Praul Point, a black horizon, gradually subsides, stretched towards the south and south-east. The Catabathmus, which forms with its northern extremity the Ras Kenais of the present day, runs inland with a wall-like face as far as the eye can reach.

As I have mentioned, we had made five hours in the course of last night. This morning we had a much more severe ride to perform over a stony table-land, continually ascending, and gradually becoming covered with hills, with here and there a patch of lofty barley-stubble, grown by the Bedawins for their horses. The sun became exceedingly powerful as the day advanced; and we more than once proposed to stop and seek the shelter of our little tent. We were hurried on, however, by the promises and encouragements of our guides, who now declared the same well *grayeb* (near), which had been so by their account for three days, and enlarged on the luscious water-melons, better than those of Brulos, which had been flying like phantoms before us for the same space of time. But as noon approached, and Yúnus seemed uncertain of his direction, finding it necessary to ascend a steep hill to survey the ground, we began to doubt in wells and disbelieve in water-melons. We were tired and thirsty, and the donkeys were perfectly knocked up. However, as our exhausted *kürbehs* contained only about a couple of quarts of filthy liquid, which I dare not call water, we made up our minds to push on, dragging the weary animals by their halters, and at length reached the edge of the ridge, and obtained a view of a great bay. A steep frowning promontory formed its western limit; at the bottom was a large patch of white sand; beneath our feet a plain, about a mile broad, stretched to the sea. Descending cautiously the rocky slope, we at length descried on the near side of the white sand the tall pole of a shadoof, which evinced the presence of cultivation, and cheered the close of a sultry stage of more than seven hours by the hopes of some refreshment.

At half-past one we halted near a little Arab cemetery, occupying the summit of a swell that screened us from the observation

of the inhabitants of the little dip or valley called Mudar. Leaving them to unload the camels, we pushed on to the first shadoof, which we found deprived of its rope. It now became evident that we had taken the little encampment by surprise; men and boys were running to and fro in the fields, some driving off donkeys, camels, sheep, and goats; others hastening to snatch their guns, whilst others advanced towards us. No doubt, the sudden appearance of a party of Europeans marching direct into their valley must have given rise to strange surmises in their minds. Perhaps they at first took us to be the forerunners of some detachment of the Pasha's troops; but they soon recovered from their alarm, and discovered both the fewness of our numbers and our unmilitary aspect. The first that came near cried in a gruff voice, "What do you want?" "Water," we replied. "Give us money," was the answer; upon which, seeing the necessity of acting with firmness, we informed them distinctly that we would not *buy water*, but that anything else we wanted we were ready to pay for. By this time we were surrounded by a dozen or so of ruffianly-looking fellows, who, perceiving that we had not come fully armed, talked loudly and insolently, and seemed half disposed to fall upon us and strip us on the spot. They now evidently took us for persons escaped from some vessel that had run ashore: and being, like most of the Arabs on this coast, direct heirs of the Nasamones, that is to say, professional wreckers, looked upon us as lawful prizes. However, one of them at length thought it advisable to ask us whether we came by sea or land, from Alexandria or from any other direction. We told them that we were travelling with camels from Egypt under the guidance of two Bedawins who must be known to them. The names of Yûnus and Saleh produced a good effect, and, when we added that we had a firmân from the Pasha, all idea of hostility seemed to be at an end. We were still looked upon, however, with suspicion, and no attempt at civility was made. We returned to our encamping ground without procuring water, and were compelled to drink the filthy stuff that remained in the skins, and which in hopes of better things we had avoided all the morning. Meanwhile, a great deal of kissing and hand-shaking and parleying went on between these people and our guides; and it was tacitly understood that a halt of some considerable length was to take place.

## CHAPTER V.

Long Halt — Necessity of a new Guide — Our Bedawíns turn Shoemakers and Cobblers — Stuffing Pack-saddles — Testing Water-skins — Details on the Food of the Bedawíns — Character of the Bedawíns — Observations on their Manners — On the Camel — State of Alarm in which I found the Waled Ali — Forays from the West — Commerce in the Desert — Costume and physical Organization of the Bedawíns — Horses — Idleness — Anecdotes — The Settlement of Mudar — View of the Coast from Alexandria to Mudar, its Wells, Productions, &c. — Kassaba — The ancient Parætonium — Expedition of Alexander.

OUR party was by no means unwilling to enjoy a prolonged stay at Mudar; for although at the outset of the journey we had moved leisurely enough, during the last few days we had worked rather hard. Since leaving Sheikh Abd-er-rahman we had been in motion thirty-two hours out of seventy; which, considering that we had all been long subject to the enervating climate of Alexandria, was no small feat. I have already alluded to the state of the thermometer. It was often exceedingly hot, so that one hour in the day was more fatiguing than two or three at night. The ostensible objects of the delay, however, were our poor beasts, which began to find some difference between plying from Pompey's Pillar to Cleopatra's Needle, and trudging along the Libyan Desert with an insufficient supply of bad water.

Having now reached the place where we were finally to leave the sea, and shape our course across the trackless wilderness for the little spot of fertility towards which our desires carried us, that roguish individual Sheikh Yúnus freely confessed that he did not know the road, at least by night, having only traversed it once, twenty-seven years before, with the expedition of Hassan Bey. It was accordingly determined to hire a guide, recommended by Yúnus, named Wahsa, who was also looked upon as of some importance as an additional *gun*. He did not make his appearance at first; so that, had we been inclined to start, we should have been compelled to wait his pleasure.

As I have said, the best possible intelligence was soon established between our guides and the Mudaris, whilst we were let alone, or merely stared at as curiosities. The time was passed in considerable idleness—our labours being confined to one brief stroll, and to urging on the dilatory Bedawins to make the proper preparations. These gentlemen passed the greater part of the halt in mending their shoes, if the complication of old fragments of leather in which they shuffled along deserves that name. This was an occupation that gave them a good deal of trouble, and during our journey had to be renewed at least once a-day. Whilst we were traversing stony tracks, indeed, the party was generally minus one, who had stayed behind to cobble his *babouks*. It is worth noticing that nearly all the Bedawins wear these slippers, which, being loose and without heels, may partly account for their dragging and ungainly walk, so different from the free and bounding motions one would be inclined to attribute to the sons of the Desert. They may be thought necessary to protect their feet from the stones; but I suspect they are worn more for ostentation than for use. Our Egyptians almost always went barefooted.

Stuffing packsaddles also gave our people some employment; but they evinced an extraordinary aversion from the most important piece of business, namely, mending and testing the water-skins. In this respect they seemed obstinately resolved to trust to chance—partly from their natural indolence, partly because they knew that the sound skins would carry water sufficient to prevent the human members of the party from absolutely perishing, and partly because old Yûnus was evidently bent on knocking up our poor donkeys. Throughout the whole journey he exhibited a most inveterate dislike to dispense water to these unoffending creatures, and never did so without some explosion of ill-temper and spite. Whether he was annoyed at our having adopted this means of conveyance instead of camels, or whether he thought it beneath his dignity to carry water for asses, does not appear. Certain it is that he was always for reducing these poor beasts, accustomed to the luxury of two drinks a-day, to the short allowance of Desert-donkeys, namely, a bellyful once in forty-eight hours.

I must not forget to record that, as soon as we were settled, an inquiry was made about the famous water-melons, which turned out to be unripe and uneatable. The other productions of the place were "filfil," what we call "pepper-pods," and excellent onions, of which last we procured a quantity at a price a little exceeding the Alexandrian. It has been stated that the Bedawin abhors vegetables; but this is a mistake. He can rarely procure them, but, when he does, relishes them exceedingly. The inhabitant of the Desert is very much in the position of a mariner. His provisions must not be liable to spoil, and must go in a small compass. He is not by any means a carnivorous animal; but lives chiefly, so far as my experience goes, on milk, cheese, bread, and dates. The milk may be either that of the camel, the sheep, or the goat; the cheese is generally soft, white, and very salt, brought from Egypt; the bread seems to be most commonly of wheat, ground into coarse flour by the women with their hand-mills, and is unleavened. Sometimes they condescend to *dhourra*, or maize. Whenever possible they dip their bread in oil, and almost always moisten it with water. The dates are eaten under a variety of forms; occasionally in tarts with a thin, tough underpaste; but chiefly either mashed into a hard mass, with or without the stones, and frequently prepared with butter; or dry, as they are exported to Europe. Rice is sometimes seen in a Bedawin tent; but it requires too much cookery to be a staple article of food. If they have an opportunity, however, awful is the quantity they will demolish! The same observation, indeed, will apply to any food they can get without trouble or expense. As to meat, which they rarely indulge in, they absolutely gorge like boa-constrictors when it does come within their reach. But their flocks and herds are too valuable to be slaughtered, except on especial occasions; and, being an eminently pastoral people, they find little resource in the chase. At Mudar some boys brought quails, which they had snared, to our tent-door for sale; they will pounce upon a field-hen like a cat on a sparrow; and they sometimes entrap gazelles. It is very rare, however, for them to use their guns; powder is too precious an article. On one occasion I broke the wing of a great falcon; an old Bedawin begged him of me, cut his throat with the Muslim

formalities, devoured him, and pronounced him excellent. I never heard of their taking the trouble to fish.

The Bedawin is by no means an uninteresting study ; but I do not think he has ever been done complete justice to. Some writers have idealized him ; whilst the generality represent him as constantly engaged in depredation, robbery, and murder. For my part, if I am ever invoked to "fly to the Desert," I shall disregard the voice of the charmer, but not precisely for fear of finding too "rude" a tent or of having my throat cut. Some of the finest minds of modern times, dissatisfied with the results of our elaborate civilization, have yearned towards the life of glorious freedom which the pastoral nations are supposed to enjoy ; and their fascinating declamation has induced me more than once to cast a longing glance in the direction of the Desert. But it is a curious anomaly to find intellect passionately regretting a life in which all the conditions necessary for its development are wanting. The wild Arab may often be a man of great energy and keenness ; but a life of privation invariably narrows the mind. Follow him through the occupations of the day, and you will find him incessantly engaged in trifling and degrading duties. I hold it almost impossible for a man to be perpetually dodging at the flank of a camel, grunting, and whistling, and chanting, and giving vent to all sorts of guttural unmeaning sounds, without lowering himself towards the brute he tends. The horse is a noble animal ; it suggests ideas of beauty and may inspire attachment ; but to explain any affection for a camel we must resort to the philosophy of the man who kissed his cow. I have accordingly seen no traces of the existence of such a feeling. On the contrary, I think the camel is just attended to sufficiently to supply its absolute wants, and no more. It is systematically starved, to accustom it to further starvation. It is often overloaded, and ill-treated by stripes and otherwise ; and during a halt is tied up with anything but regard to its comfort. In fine, the intercourse between the Bedawin and his constant companion is by no means calculated to develop any kindly feelings. We hear talk of the resignation of the camel ; but no one can look on its features without thinking that, if it were not physically incapacitated for war, it would soon leave off bearing burdens. When not convulsed with rage, it almost always wears an expres-

sion of pain or anxiety. It is extremely rare that one of these animals allows itself to be either loaded or unloaded without uttering cries of anger. They seem made for moving on perpetually in suffering and toil; indispensable to man on account of their vast strength and powers of endurance; and repelling sympathy by their hideous form.

The Bedawin then finds no redeeming advantage for his mind in his communion with this unhappy creature. It is true that, when fairly mounted on its back in the midst of a broad plain, he goes on, on, as steadily as a ship with a fair wind—he may seem to have leisure for meditation; but approach him, and you will find that he is humming, “for want of thought,” some unharmonious air, or watching the horizon, either in hope of discovering a landmark, or in fear of descrying a fellow-creature.

This allusion to the distrust felt by the inhabitants of the Desert, one of another, reminds me to defend the Arab against the charge of living upon plunder so freely preferred against him. I wish his accusers would remember their political economy. They would soon be led to confess that, for a nation occupying a vast extent of unproductive country, robbery must be an abnormal condition. If they depend in the slightest degree upon the earth for support, they must cling to it, watch it, study it, court its favour. A new pasturage or a new well-spring—not a new quarry to fly at—must be the object of their search. Herds and flocks, besides, are not convenient companions on a predatory excursion; and if left behind, would, in the state of society these writers suppose, be infallibly pounced upon. The fact is, that the Bedawins are divided into large tribes, which again are subdivided into small clans, if I may so call them. The latter vary in size with the copiousness of the wells they frequent, and are connected by ties of blood as well as the irrevocable bond of bread and salt. The former are almost equivalent to nations, as, for example, the Waled Ali and the Harâbi. They are often at war, and of course look to booty as well as fighting: but if any outrage be committed by one member of a tribe upon another, or by one clan against another—as must sometimes be the case—it is looked upon as much in the light of a crime as a breach of the criminal laws of a civilized country. It may be that there is no means of redress but by force. If Abimelech's servants take away

Abraham's well,\* appeal must be made to the spear if remonstrance fail ; and then a feud ensues, which is naturally the source of much disturbance, but which remains an exceptional case.

As to the state of alarm in which the Waled Ali were found by us, it arose not from the habitual disorganization of their own society, but from their being at that time subject to hostile inroads from a fiercer and more independent tribe on the west. Some Chedorlaomer was making his foray. The frequency of these national quarrels, and the knowledge also that want or caprice may drive any men who have arms in their hands to acts of violence, naturally create a little uneasiness if a large body appears in the distance ; but we almost always found that our safety was not left to the accident of superior force, but that Nature, as was to be expected, had provided for the permanent existence of this pastoral people, by knitting them together, somewhat loosely it is true, in the bonds of fellowship. It will be understood, however, that any sympathy that may have been felt was excited by our guides. By the majority we Kafirs should have been looked upon as lawful prize.

I have now only to allude to an idea that seems entertained by some that the fertile countries of the East are regularly made a spoil of by the children of the Desert. They have sometimes, it is true, ravaged districts of Egypt, for example. Most of the villages were formerly roughly fortified, and even the inhabitants of the towns relied more on their walls and gates than on their numbers. To this day the Bedawins excite a traditional fear ; and it is believed that, whenever the country may happen to be politically unsettled, they will take advantage of the circumstance, and "come down like the wolf on the fold." But, in such an exceptional event, they would be only obeying the impulse deeply implanted in all barbarians, to take advantage of the dissensions of civilized nations, and exchange their life of misery and privation for one of pleasure and plenty. This is the way in which the affairs of the world have been from time immemorial managed : but that the conquerors or marauders who have at long intervals issued from the forest, the steppe, or the desert, to

\* "I have digged this well" (Genesis **xxi.** 30) is the first recorded enunciation of the true theory of property. -

scourge or to renew the vitality of the world, were wont to gain any regular subsistence in that way is an evident absurdity.

It may be said that the Bedawins rob the caravans; but whoever knows the timidity of commerce will argue, from the fact of its being constantly carried on in the Desert, that it enjoys an average security. It is true the merchants generally move in considerable numbers, and have often an escort; but the largest caravan could be easily crushed if the Arabs were such keen freebooters as they are represented. In reality, travellers of every description, though not exempt from casualties, are in ordinary times tolerably safe in the Desert. They are naturally expected to put themselves under the protection of the tribes through whose territory they pass, and to pay a small sum, which in effect is only equivalent to our transit-dues. Many of the quarrels that take place originate in some dishonest refusal on the part of a caravan to satisfy the demands made on them.

One word on the appearance and character of the Bedawin. He wears generally a coarse shirt confined by a belt, with a pair of drawers underneath; but his most important article of clothing is the huge blanket, either white or striped with brown and black, which he disposes in a variety of picturesque folds round his body; sometimes allowing it to fall to his heels like a Roman toga, at others tucking it up above his knees; sometimes covering his head as with a hood, at others throwing it back. By night, when in repose, it serves for a bed and covering; by day, for a tent. Sometimes, but chiefly in the West, the burnoose is worn in addition, or instead. I never saw a Bedawin with a regular turban; but now and then he dons the variegated Hejazi shawl. More commonly they content themselves with the tarboosh, and more commonly still with the white skull-cap. Nearly all of them wear, either attached to their head-dress or hanging round their necks, some kind of amulet sewed in a piece of leather. Of course whoever can afford it carries a gun with a long barrel, now generally of European manufacture, fastened to an Arab stock, often by means of complicated twists of wire. A fixed bayonet is not at all unusual; whilst the spear appears to be nearly abandoned, at least in the Libyan Desert. Large ornamental pistols, of doubtful efficiency, with leathern pouches for

shot and powder, and a murderous-looking dirk, give a finishing touch to the costume.

The Bedawíns with whom I have come in contact are not much of an equestrian people. They are too poor to keep many horses, which with them are mere luxuries, but seem very proud if they do possess any. Once or twice we met a couple pacing gravely over the Desert, evidently thinking a great deal of their own importance. Camels are a much more common mode of conveyance; but the established system is to walk. Riding at all is a mark of distinction. Yúnus might often be seen sawing away at the top of the water-skins or the bean-bags; but Saleh was rarely allowed by his great cousin thus to play the aristocrat.

The Arabs of the Desert are generally a well-made race, with complexions of various degrees of darkness. One tribe on the Libyan coast are exceedingly fair, quite different from their neighbours. I have been told that they attribute to themselves a Teutonic origin, and once actually claimed Austrian protection on the ground of their being the descendants of the crew of a German vessel wrecked on the coast, in confirmation of which they produced a piece of an old manifest, carefully treasured up. In general the Bedawíns have long faces, with rather prominent cheek-bones, small keen eyes, high noses, and pointed chins, with little beard. Their countenances are often expressive of good-humour, dashed with a clownish cunning. The elders and chiefs of the tribes affect a haughty bearing, liable to degenerate into arrogance; and the whole race, more or less, is beset with the sin of pride, which seems the fast companion of indolent poverty: for the Bedawin, though certainly poor, and constrained to occupy himself, is not, properly speaking, industrious; he avoids as much as possible to labour with his hands, especially in any menial capacity; and our great Sheikh used absolutely sometimes to snort with indignation when any extra piece of work fell to his lot. This feeling is not usually accompanied with what we call independence, and often allies itself with meanness. Both Yúnus and Saleh used to come creeping in the darkness of the night to pilfer any little things they wanted, not only from us, but from our poor donkey-boys.

Before finishing this miscellaneous talk about the Bedawíns I must mention the contrast that exists between their manner in

the Desert and in great cities. When they enter Alexandria they are like Yorkshiremen in London, frightened and cowed; just like a dog, say the Iskenderanehs, who has got into a strange quarter among strange dogs. Every cock can crow on his own dunghill; and the timid Egyptian finds it is now his turn to bully. Our boys, who were in a state of tremor during the whole journey, no sooner got within the gates than they gratuitously insulted the first of the hated race they met.

Two wags on opposite sides of a bazar will rub their palms together as if twining silk-yarn, crying out every now and then, "Shid, shid!" (pull, pull). The Bedawin approaches with his gun on shoulder: all the people exclaim "Wati, wati!" (stoop, stoop); he does so, looking up for the imaginary thread, and creeping along; "Lower, lower!"—he almost crawls along the earth, until the laughter of the Alexandrian wits reveals the truth, and, muttering "You are making sport of me, are you?" he slinks away. When they venture into a shop they are always quizzed and imposed upon.

Let us now say a few words about Mudar itself. Formerly it was a place of much greater importance than it now is. Up to 1819 it formed the headquarters of the Waled Ali, whose chiefs were in that year compelled to remove to the Baharah, in order to be more within reach of the authority of the Pasha. We saw about twelve tents and as many shadoofs, with some small houses of rough stones. In addition to the productions I have already mentioned, dhourra is grown by the Mudaris as well as barley. The chief riches of the inhabitants, however, consist in camels, asses, sheep, goats, and a few oxen. The importance of the place is in part derived from its being used as a resting-place for caravans on their way from Siwah. This was the paradise of old Saleh, who would willingly have terminated his journey here, and began again to croak fearfully, in which employment he was assisted by all the dismal spirits in Mudar—the great majority. According to them we were going to enter on a desert infested with robbers, in which our throats were sure to be cut—a consummation which many, by their gibing looks, seemed to consider very desirable. Derwish and Saād were of a different opinion, and anxiously watched the effect produced upon us by these terrific stories, seeming much surprised that we

did not at once resolve to retrace our steps. As if further to increase their terror, our guides advised us to load our guns with ball that evening, even the encampment at Mudar itself having no good reputation. We performed the operation in public, though somewhat doubtful of its necessity.

A brief review of the country we have hitherto traversed will not be here out of place. In the scanty accounts which have fallen under my notice it is briefly dismissed as a level plain; writers generally seem to intimate that it is an expanse of sand; and our enterprising countryman Browne, who in this case must have written from memory, says expressly that "the coast is plain," and that, except in the neighbourhood of Alexandria, "the soil is generally smooth and sandy." What an erroneous impression these words are calculated to produce may be learned from the foregoing pages. The truth is, nearly the whole country is covered with rocky hills, gradually increasing in elevation, until those we crossed before arriving at Mudar reached the height, I believe, of a thousand feet. Smooth plains do certainly intervene, and many flat valleys, but these are not by any means denuded of vegetation. They are sometimes stony, but are generally covered with a sandy soil, and there is no place destitute of some traces of verdure. I made no list of the vegetable productions of these regions, but know that the commonest species are salt-worts, samphires, &c. At some points the ice-plant is to be seen, and what appeared to me a kind of wormwood, with sea-lavender, and fifty other different plants of the same class. Here and there was a little brown grass, which after the winter rains, no doubt, becomes green and covers the ground. Between Abusir and the salt-lakes we saw some Spanish broom, and in many places met with luxuriant thickets of lively green bushes. They have often good stout branches, sufficiently large to serve for the pegs with which the Bedawins fasten burdens on their camels; they denote a comparatively fertile soil, and appear to be cleared away sometimes to make room for a crop of barley. Thorns and prickly shrubs are plentiful at many points. Extensive patches of wild sage, about four or five times as large as that in our kitchen-gardens, occur here and there.

Perhaps the most remarkable feature on this coast is the line of low white hills that stretches along the whole distance, except

where it is broken through by the spurs of the inland ridges that usually run parallel with it, forming a long narrow valley. In some places it is dotted with bushes, but at others is perfectly barren. At a distance the appearance is as of mere heaps of sand, but a closer inspection shows that this only covers the surface or fills the hollows of white rocks, in which almost all the wells we met with are cut—as at Abusír, Neffé, Munchúrah, Shemaiméh, Shegick, Tanúm, El-Emrúm, Gemaima, El-Ge-ráb, and Grawí. In two cases the sand had blown in and choked the wells, whilst, with one exception, all the watering-places we saw, either in going or returning, that were excavated in a different kind of rock, were properly cisterns, dry in summer, and filled only by the rains of winter. Of this character were Sheikh Mahmúd, El-Amín, and the ancient reservoirs near the ruined fortress of Gemaima, some miles south of the perennial spring; and also by the accounts of our guides Bid Gurruj and Ejmina. The exception was the well of Ghúkah, which is sunk very deep in the plain on the eastern side of the Catabathmus, about eight miles inland. Probably the white stone of which the coast barrier is composed is porous and allows the water of the sea to filter through, or rather sucks it up; but it is a curious circumstance that even far inland we found a piece of this same kind of rock accompanying the few wells we met with or passed near,—Shenéneh, Selém, Haldeh. At Gemaima the well was in the midst of a patch of white sand, ribbed with rock, and occupying the centre of the valley; and at Mudar, where were at least a dozen wells, one of which contained very sweet water, the shadoofs and the meadows and fields depending of them were all situated in a piece of sunken ground on the east side of a very large extent of the same formation.

We did not meet any encampment between Abusír and Mudar; but I have no doubt that a few were concealed in the recesses of the hills; and at El-Emrúm our people knew where to find the shepherd to whom we intrusted our beans. It is customary in barbarous countries to keep as much off a high road as possible. Several kafilas passed us, both in coming and going, on their way to or from Alexandria; and once or twice we had the company of a few travellers whose destination we did not know. I have mentioned a small party that joined us with a camel the

evening we left El-Emrúm. We parted from them on the road ; but when we halted for the night, possibly not liking the neighbourhood of the Mogrebbyns, or Western Arabs, who were encamped at Assambat, they came and requested permission to sleep near us.

Not a single four-footed animal except a gazelle and a hare was seen by us, either in going or returning, unless we count one or two small rats, a tortoise, a chameleon, and legions of lizards. Birds were in plenty—crows, quails, red-legged partridges, field-hens, water-wagtails, hoopoes, larks, sparrows, and wrens, besides some of which we did not know the names. Numerous pigeons appeared among these varied feathered citizens of the air in the valley that stretches from the salt lakes to Abusir ; where they were chased by keen little hawks and great soaring falcons and kites. White gulls now and then scudded the surface of the waves ; and on our way back we saw numerous flocks of geese flying in their quaint array far up in the air, and screaming at the approach of a shower, or settling on the plain, where sportsman's gun, I imagine, seldom disturbs them. A few brown butterflies, immense numbers of grey lady-birds, some splendid death's-head moths, either attracted notice by their associations or their beauty ; whilst horse-flies, mosquitoes, common flies, and—must I mention them?—tykes, shaken off by the camels, frequently tormented us.

I now regret that circumstances did not permit me to trace this coast a little farther, and visit the ruins which occur at Kassaba, and at the place which geographers call Bareton, of which latter we heard nothing at Mudar. At Kassaba we were told there are ruins : and I think there are two Kassabas, one near the sea and one inland ; for when at Selém, thirty miles on our way from the coast, on my mentioning the name, one of our guides pointed N.W., and asked if we wished to see the place, as if it was near at hand.

Bareton is supposed to be identical in position with the ancient Parætonium, where Alexander, after his interview with the ambassadors from Cyrene, turned off in the direction of the oâsis, leaving behind, I imagine, the three hundred splendid chariots he had received as presents. All ancient authors concur in representing him to have immediately entered on an expance of *moving*

sand, without hill, tree, or permanent tumulus as a road-mark. The character of our route was very different; but when at the well of Selém, above mentioned, we did see in the distance to the west a vast plain, over which columns or perpendicular clouds of sand were moving, driven by the wind. It is possible, therefore, that at the outset Alexander's guides took him through a desert like that described by ancient authors, and that they may have lost their direction, and when they reached the hilly country have entered the wrong pass, and wandered about in the extraordinary labyrinth that we found, until the providential interposition of two crows delivered them from their disagreeable dilemma.\*

Parætonium is famous on another account. When Antony, after the defeat of Actium, fled with Cleopatra to Libya, he landed at this port; from whence he sent his "lass unparalleled" to Egypt, whilst he retired to a melancholy desert with only two followers.

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\* The critical Arrian weighs and rejects the testimony of Ptolemy, the son of Lagus, who attributes the salvation of Alexander to two "hissing serpents;" and adheres to the more rational account of Aristobulus, who patronizes the two "black crows."

## CHAPTER VI.

We leave the Coast, and strike into the Heart of the Libyan Desert — Bedawîn mode of saying Prayers on a Journey — Ascent of a tremendous Mountain at Night — Reach a lofty Table-land — Morning — Mirage Illusions — Troops of Gazelles — The glittering Koom of Shenénh — The Well of Selém — Vast ancient Cistern — Visited by Bedawîn Damsels — A tame Gazelle — Continue our Journey — Pursued by a Party of Robbers — Dangers of a hostile Collision — They are induced to abstain from an Attack, finding us prepared — They follow us — We march the greater part of the Night, and succeed in throwing them off our Track — Cross the Empty Valley and the Wady Ed-Delma — Reach the Well of Haldeh — Discover the Ruins of a Fortress — The Sheikh of the Well — Reports of the Manser, or Band of Fifty mounted Robbers.

WE stayed about twenty-eight hours at Mudar, and, having thus refreshed ourselves, started at five o'clock on the afternoon of the 25th of September; and issuing from the narrow slip of plain land between the hills we had descended the day before and the beach, entered a broad valley, formed by a backward sweep of the high ground, which to the east and west advances far into the sea, forming two bluff promontories, and enclosing what I believe in the charts is called Port Mahada. The great patch of white sand, from which the water of the Mudar wells seems to distil, stretches a great deal to the west, occupying indeed the whole bottom of the port or bay. The part of the range of hills which we were leaving behind us was far less steep than that to our left, and directly in front, which indeed appeared at a little distance to be perfectly unbroken and precipitous. The line of its summit was level like a wall; and we began to puzzle ourselves with conjectures how we were ever to get to the top. Our impatience was not soon gratified; for we were compelled to zigzag slowly across the valley, which was cut up by a most extraordinary network of ravines and watercourses, now approaching the sea, now receding, then again facing towards it, then wheeling about, but preserving a general W.S.W. direction.

All this time our Bedawîns and the new guide—as entering on

a journey of more than ordinary difficulty and danger—were occupied in saying their prayers piecemeal with unusual assiduity. There is something curious in the mode of praying adopted by these people whilst travelling in deserts where time is of consequence. Instead of stopping the *kafila*, and spreading the carpet, and sticking the spear in the sand, and fettering the camel—instead of forming a picture for Horace Vernet to paint—our uncouth companions went about the affair in a much more business-like way. Walking a little forward, they knelt down and complied with the form of mock ablution with sand—laying their hands flat on the ground, passing them along their arms, over their face, round their necks in a fixed order, and then going through a few evolutions. By this time the camels were moving ahead, or were straying or loitering, and required direction or encouragement. So the conclusion of the ceremony was adjourned, and the necessary duties were attended to. Then the prostrations and kneelings were resumed at a more advanced spot; and so on, three or four times, until their consciences were satisfied and the sun went down.

The interval was brief between the coming on of darkness and the rising of the moon, which had just passed her full, and, shining through a wonderfully clear atmosphere, enabled us to avoid, whilst she magnified to appearance, the dangers of our road. Two hours of toil brought us at length to the foot of the range of hills at a point at which they were to all appearance inaccessible. Here we again turned towards the sea, and, having passed the mouth of a gloomy gorge, began to climb a rugged incline, covered at first with huge loose stones that gave way beneath our feet nearly at every step. As we proceeded the ascent became steeper and steeper, and our progress more and more slow. Stoppages were frequent. The camels, heavily laden, seemed unwilling to move; and paused every now and then to turn their long necks and look wistfully around, as if seeking a better path. But better path there was none. On either side, as now appeared, a deep and rugged ravine descended, sometimes in rapid slopes, sometimes in sheer precipices; and it was up a kind of spur thrown out between these that we were to escalate this frightful mountain. For some time our progress, though slow, was sure. The camels, encouraged by the

shouting, and coaxing, and whistling of old Saleh, gradually worked their way up until they came to a kind of slippery staircase of rock that led to the very brow of the range. Up this they at first refused to go, moaning and complaining at the hard task set them, and turning a deaf ear to entreaties and stubborn flanks to the stick. So, without any further experience, we had ample reason to deny that

“ *Mute*

The camel labours with the heaviest load.”

Meanwhile we sat down to rest from our wearisome walk, and to contemplate the dark valley beneath, surrounded by a semicircle of frowning hills and the opaque expanse of the sea. A few points only, touched by the moonlight, relieved the sombre monotony of the scene. All around was dark, rugged, and inhospitable. No light or other sign of human habitations cheered us. The little settlement of Mudar, nestling in its own snug hollow, alone intervened between us and Abusir, whilst above our heads were the confines of a vast plain that stretched we knew not how far, for aught we knew a hundred and fifty miles without water or fixed inhabitants. Something we had heard, it is true, of a spring that had of late years bubbled up in the midst of the waste, and it was on this new-born well, that might have been stifled by the sands in its infancy, that we depended for crossing the Desert without suffering the horrors of thirst. The supply we carried with us was scarcely sufficient for three days' economical consumption, and we had to look forward to five days' travel at least before reaching that little van-guard of the oasis called Garah. But this slight uncertainty, this dash of peril, rather heightened the pleasure with which we entered on the journey; and, instead of wishing to linger in sight of the sea, we were anxious to leave it far behind, and be once for all in the midst of the Libyan Desert.

The physical obstacles, therefore, that we encountered at the outset were rather trying to our impatient tempers, and we gladly hailed the moment when we saw the tall ungainly form of the first camel, swinging its huge burden to and fro in its exertions, begin the slippery ascent. One after another, the steady brutes, not however without complaint, ventured on the dangerous ground, which had evidently been of late fatal to some of their pre-

deceivers, for several white skeletons gleamed in the moonlight on either hand. Had the leader fallen, all would inevitably have been rolled down the side of the hill, to the imminent danger of our little band, some of whom the struggling creatures would most probably have overwhelmed. Fortunately, however, the ascent was accomplished without accident, and our little *kafila*, after winding along the edge of a steep precipice that descended into the ravine on our right, entered at length on a flat stony plain. The guide now turned our head, if I may so express myself, to the W.S.W., and, directing his course by the stars, began to steer across this trackless expanse for the promised well. On accordingly we went for several hours, stumbling and staggering, afraid to mount, lest our beasts should miss their footing and fall, and yet scarcely able to pick our way amidst the loose and pointed fragments of rock that encumbered the ground. Both shoes and feet suffered severely that night; and though a clearer space occasionally intervened, we were glad to stop a little before midnight and bivouac. A sound sleep, in spite of the cold and damp, prepared us for next morning's work, which we began surrounded by the illusions of mirage, that is to say, by imaginary lakes and islands breaking the otherwise level horizon, which only by degrees revealed itself in all its naked monotony as the sun rose higher in the heavens.

I had often heard and read descriptions of the Desert as a "sea of sand," but we now found ourselves in what might almost be called a "sea of stones," with, it is true, here and there at wide intervals a patch of bushes, and the contorted form of the ligneous plant called *shûa* dotting the ground. This plant exhales a strong odour something resembling rue, and is cultivated in pots at Alexandria on that account. In the Desert its more tender extremities serve as food for the gazelles, small troops of which were now and then seen browsing out of gun-shot. As we approached, they raised their heads and appeared to listen and watch, but the result of their examination was never, it seemed, encouraging, for off they invariably went, cocking up their tails, at first gently trotting, but by degrees lengthening their steps, then bounding, scudding, flashing along, as it were, over the vast level, now huddling together, now spreading into a long irregular line, seeming at times to outstrip the sight, but coming again in view,

flitting away swiftly like uncertain shadows, until at length they faded into nothing; as a prolonged echo, after quivering through the air, subsides into a faint murmur, and dies away in the distance. On one occasion a mother and its fawn lingered to nibble a green shrub, and our Bedawíns began to manœuvre to get a supply of fresh meat, one crouching down, and another advancing obliquely; but the cautious creature took the alarm and made away with her young charge in double quick time. I may here remark that the agreeable musk-like smell of the excrements of these animals is doubtless derived from the aromatic plants on which they feed.

As day advanced our attention was attracted to a brilliant speck on the horizon, glittering like the summit of a snow-clad mountain, or a peak of silver. It turned out to be a *koom*, or hillock of white sand, with a well in the neighbourhood, called Shenéneh. We left it some distance to our right, and made direct for another white spot, said to mark another well, and visible at a distance of two hours, half way up a well-defined slope in the Desert immediately ahead. This was the first variation in level that had occurred since we ascended the table-land, and was therefore gladly hailed as promising a somewhat less monotonous road.

It was near midday before we reached what had appeared a mere milky spot, which turned out to be a cluster of mounds of white stone and sand. We saw a human form from a distance on the top of one of these, but when we approached it had disappeared, and no trace of it or the well at first presented themselves. A sound from beneath the earth, however, directing us, we discovered a little channel cut in the flat surface of the rock, and at the bottom a hole large enough to allow passage for a man of ordinary size. It was evidently made for the use of the inhabitants of the Desert, and not destined to admit the respectable rotundity of civilisation. Some of our party, therefore, declined to explore, and trusted to the report of the more active.

We descended, guided by the voices below, into a dark passage which led to a spacious subterranean chamber cut out of the solid rock, and about thirty yards square. The roof was pretty even, and the walls were perfectly smooth, and covered with those rough marks and figures which, when first noticed by tra-

vellers on all the rocks and monuments of this part of the world, were thought to be the alphabet of an unknown language. They are now, I am told, known to be the distinctive marks of the various tribes of Arabs who may have sojourned a while in these regions. The floor of this chamber was covered with mounds of clayey soil, evidently allowed to gather by neglect, so as nearly to choke up the springs. Of these there were two, at the bottom of deep holes: one in a dark corner, the other in the centre, exactly underneath a square aperture in the rock made for the double purpose of admitting light, and of letting down buckets when the rains of winter have filled the whole cistern. Two boys, who seemed to be there watching for the water as it oozed up, gave us to drink from their skin bucket. The taste was muddy, but it was cool as if it had been iced. The cave itself, though at first agreeable after the burning atmosphere above, we soon found to be too chilly to stay in. It is almost unnecessary to add that this place must date at least as far back as the time of the Romans, and was probably one of the stations as now on the caravan-road to the oâsis. If properly cleared out it might yield a large supply of good water, whereas when we passed there was barely sufficient for four of our donkeys. The others made a hole in what we had brought from Mudar, whilst the camels, of course, abstained.

On ascending from this cave we found that the party had been joined by a number of Bedawin women and children, from a neighbouring encampment. No men, however, made their appearance, which fact afterwards received a probable explanation. One damsel was rather pretty, and very obliging. Seeing that there was some difficulty in setting up our tent in the hard ground, which seemed an agglomeration of particles of stone, she seized the mallet, and, with great dexterity, soon got through the work, and drove the pegs at which our two Arabs had boggled, and then went her way without waiting for *backsheesh*. The act was one of simple kindness, *sans arrière pensée*, unless we choose to suppose that the wench took a pride in showing her superiority in the arts of desert life. It appeared that this party had come for the purpose of assuaging their thirst, but, above all, of enjoying the coolness of the cave or cistern; for they all descended amidst great shouting and laughter, and stayed some time below.

When they came up, we were making our meal; and, whilst looking with contempt on most of our good things, they cast covetous eyes on the precious biscuit, fragments of which that fell to the ground were snatched up and eagerly devoured. Our gallantry might have induced us to make them a present of some, but stern reason forbade.

The Arethusa of the well of Selém—she, namely, that drove the pegs—had a tame gazelle, which, though professing to be very fond of, she asked us to buy. We declined doing so, alleging our inability to carry it; but she said it would follow us like a dog, and be not so easily tired. Probably she expected it would soon return to her side. At a subsequent period we met the same gazelle and its owner in another part of the Desert, near the sea, and inquired its price. We were told ninety piasters, nearly a pound sterling. These animals, indeed, are difficult to be procured, and sell for a large sum in Alexandria, whither this one was bound. I noticed that its mistress, when tired, mounted a camel, and carried it in her lap. Perhaps it will not be out of place here to mention that a very young gazelle, that unfortunately had its leg broken, was once given to me by Lamport, and that I have succeeded in rearing it in my courtyard in Alexandria. The Bedawins who took it bandaged the injured limb so well that, though for a long time lamed, it scarcely now retains even a mark to reveal the accident it encountered.

The well of Selém, which supplies water to a tribe of seventeen guns, is distant twelve hours' journey, or about thirty miles, from Mudar, as nearly as we could make out, in a W.S.W. direction by compass. There is at first neither track nor bold landmark on this vast expanse; but by night our guide shaped his course by the stars, whilst in the morning he had the assistance of the glittering Koom of Shenéneh. The country, when once we reached the table-land, had no remarkable feature, except its extreme flatness, and the circumstance that it is strewn over, and in many places encumbered, with loose pieces of sandstone resting on a clayey soil mixed with sand. The vegetation is similar in character to that on the coast, except that it is more scanty and stunted, and that the *shúa* is in greater abundance.

We were in the saddle again at half-past three; and, rising over the ridge, got into a country covered with low hills.

Whilst quietly jogging along over them, we suddenly became aware that something out of the way was the matter by the shouts and gestures of our Bedawins. Looking in the direction they indicated, we saw a party of eight men, seven of whom were armed with guns, advancing at a short run over the hills to our left, and a little in our rear, from the direction, in fact, of the encampment to which the women and children I have mentioned belonged. They were instantly pronounced to be robbers; and their mode of approach was certainly most suspicious. The very fact of their lying close whilst we were so many hours in their neighbourhood without paying a visit, and then suddenly showing themselves in this manner, was judged, apparently with reason, to be a sufficient proof of their evil intentions. At any rate, especially when we saw them getting their weapons ready, there was ample justification for the word which immediately passed round to load with ball; after which the camels, which had been slightly scattered at the first alarm, were again collected and put in motion, whilst we followed, prepared to face about before the pursuers overtook us, and summon them to halt and reveal their intentions. These preparations did not escape their notice, and they visibly slackened their pace, so that it was some time before they came sufficiently near to answer the hail of old Yúnus, who had been meanwhile making great show of his weapons, fresh priming and examining the lock of his gun, and seeing that his pistols were in fighting order. Saleh also pulled his meagre beard with considerable energy, begged a pinch of Frank powder for his single but large pistol, and loosened his poniard in its sheath. As for Wahsa, our new guide, who had a camel at stake, he also made warlike demonstrations; whilst our poor Arabs looked very peaceable and woeful. They evidently expected to have their throats cut in a few minutes, and wore visages corresponding.

Matters, however, were not quite so bad as all that. Whether we showed too good a countenance, or whether our Bedawins had libelled those "who drank at the well of Selém," I cannot determine. Certain it is that the so-called hostile party halted at speaking distance; a parley ensued, and, after some time, we were favoured with the information that this armed detachment had come out to offer for sale a single *ihram* or

blanket, price seventeen piasters. We were glad to accept this pacific interpretation of their movements, and Yûnus made the purchase. A capital bargain it was too. The piece had evidently been woven in the tents, of Desert wool, and was striped tastefully with black. We should have been very glad to procure a similar one all round to protect us against the cold of the night.

This little adventure being over, we pursued our journey, not however without many broad hints of approaching assassination from our still frightened Arab lads, who inferred, from the ambiguous direction taken by the Selémities at parting, that, finding us at present well prepared, it was their intention to fall upon us at night. Their idea under the circumstances did not appear unreasonable, as we saw these doubtful characters at intervals until nightfall keeping nearly in a line with us, though at a gradually increasing distance.

At a quarter past four we descended from the ridge of hills we had been crossing in a S.W. direction from Selém, into a remarkably flat valley that lay athwart our road, forming a trench, as it were, called Wady Fâragh, or the Empty Valley. Its sides resemble the steep banks of a river, with a level line of summit, and here and there in its centre rise hills with precipitous sides, exactly the same height as the surrounding land, and looking like islands left dry by the receding waters. This valley evidently extends a great distance S.E. and N.W. We crossed it again on our return more to the east; and on neither occasion could we detect any change in its character.

We had now entered upon a tract of country somewhat different from that which we had hitherto traversed—a series, namely, of small, level, stony plains, ending, as in the Wady Fâragh, in steep descents, and divided by smooth valleys interspersed with isolated hills, or islands as I have called them. By moonlight especially, these hills, with their scarped sides and regular forms, reminded one strongly of a vast system of fortifications, like those of Alexandria; and even by day there seemed no comparison so apt for many of the crumbling eminences amidst which we passed as bastions and earthworks. Some of the sharpness of their forms, however, was taken off by the detritus accumulated at their base, which suggested the idea that the soil of the valley was entirely formed of contri-

butions washed down by the rains. Much of the substance of the hills seemed to consist of hardened mud, and it is to be supposed that large masses of this have yielded to the influence of time, and been gradually spread over the valleys, raising their level and leaving the more solid sandstone in its present extraordinarily denuded state. The soil thus formed has, in many instances, been turned to account by the Bedawíns. Some time after sunset we halted to wait for the moon in a valley called Wady Ed-Delma, amidst the stubble of a field that had been sown with barley the previous winter; and both camels and donkeys found some occupation for their teeth.

It will be difficult to convey an idea of the pleasure with which I look back to these little halts, affording as they did a most welcome interruption to the monotony of a ride of several hours at *kafila* pace. On this occasion we found ourselves, though beneath a brilliant canopy of stars, in almost total darkness, at the bottom of a shallow basin, of which we could scarcely distinguish the dim outline; and, sitting down here and there upon the ground, proceeded to enjoy the luxury of a pipe, whilst anxiously watching the eastern quarter of the heavens for the coming luminary that was to light our path through the labyrinth of hills and passes in which we were engaged. Perhaps the slight sentiment of the probable neighbourhood of danger, in the shape of prowling Bedawíns, contributed to heighten the enjoyment of our halt, which was not, however, of long duration, for, soon after the moon had risen, and enabled us dimly to distinguish objects near at hand, we were again in motion, journeying nearly in a south direction up a valley flanked as usual by apparent fortifications, which led to another stony table-land. We were now near the proposed place of stoppage, and, having made a sharp descent, came upon a flock of sheep and goats. After a few words with the shepherds, we proceeded about a quarter of a mile in search of the well of Haldeh. We only found, however, the traps of some Bedawíns, covered with a blanket, and abandoned to the honesty of passers-by. Here we spread our mat, and lay down to sleep, with our fire-arms, as in duty bound, within reach in case of a surprise.

Early dawn found us in a broad shallow valley, with openings on several sides. A few tents appeared to our right, and directly

in front the customary white patch that announced the presence of a well. On reaching this we were surprised to find the place strewn with ruins, evidently belonging to some structure, once of importance. The only European traveller who had preceded us on this road, our countryman Browne, says nothing about them, and must have passed them at night. In his time, probably, the spring that now bubbles up and supplies the great cistern did not exist. Indeed we learned from the Bedawins that Haldeh had only recently become a fixed station, as formerly it depended on the rains of winter; whereas now one of the thin veins of water that trickle beneath the surface even of the Desert had broken into it. Very likely the feeble current had only been checked for a time by an overwhelming weight of sand, and, accidentally bursting forth, had been assisted by the removal of the obstruction, and coaxed into regularly supplying a few dozen *kúrbehs* a-day, even in summer. Three hundred people, with their flocks, are said regularly to drink from this well, not to speak of the kafilas that may resort thither on their way to or from the coast.

The ruins were manifestly those of a fort built in ancient times to protect the waters, and to a certain extent command the road to the oâsis. I did not examine the cistern, as there is no regular descent, as at Selém; but it is evidently very spacious. Over the mouth, which is cut in the rock, there was formerly a great round tower, built of massive stones, and standing at the north-west angle of a considerable solidly constructed square building, from the corners and sides of which there radiated to some distance irregular walls, thrown out evidently for the purpose of preventing an enemy from bringing too great a front to bear upon the garrison. There were no traces of a moat: the precautions taken being sufficient against the Desert tribes, to overawe whom the fortress was intended. The whole structure is overthrown almost to the ground; many of the fine large squared stones are honeycombed by the atmosphere, and others have been used to form the Bedawin tombs which crown one of the two white mounds that rise near the well.

I believe that there existed in ancient times, both Greek and Roman, a regular series of strong places, extending from the confines of Egypt to the oâsis, and possibly beyond, wherever

water could be procured, in order to protect and assist the caravans. At what period they were erected I know not. Those along the coast may seem to have been superfluous whilst the country was an inhabited province filled with towns; but it was probable that there was always some danger from the wandering tribes that hung upon the flanks of the narrow strip of cultivated land: at any rate, that there was a line of wells protected by forts appears indubitable. Our guides had a sort of theory that every permanent station on the coast had a corresponding castle with a cistern some miles inland, as Munchúrah, Kasr el-Amáil, Shemaiméh, Gobisa, and Gemaima. Kassaba is a common name to give to the ruins at such places, because they generally consist of four bare walls.

The water in the well of Haldeh has a cold stony taste and a milky look. It does not rise immediately under the mouth of the cistern, so that it is necessary for one man to scramble down in order to fill the bucket, which another hauls up. This bucket was simply a piece of sheepskin, with the edges roughly sewed to a kind of hoop. It belonged to a sheikh, who has the superintendence of the well, and whose person and flocks are protected by the sanctity of his character. He was a stout, well-made, dark-skinned fellow, with a simple, good-humoured expression of countenance, and worked cheerfully to water our camels and donkeys. He entertained us, as did every one we met in this road, with the exploits of the *Manser*, which means a band of sand-troopers, if I may use the expression, engaged in a foray. A party of fifty horsemen from the West were, he told us, to be met with on our road, and would most probably relieve us of some portion at least of our luggage. They had last been heard of in the neighbourhood of Garah, and were said to have been guilty of considerable familiarity with the flocks and herds of the Waled Ali. He admitted, however, that the country was up in arms against them, and that by this time they might have beaten a retreat. For himself he felt no fear, belonging as he did to the class of Marábuts, and being venerated by both sides. How often do civilized invaders respect the temples and altars of their foes?

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## CHAPTER VII.

March through an unwatered Wilderness in the track of Alexander the Great — The Devil's Water — Travelling by the Light of a Lantern — Lose our Way — Dangerous Predicament — Halt without finding the Path — Search for it in the Morning — "The two Crows" — At length succeed in gaining the Track — Way-side Pillars — "The Camel's Mouth" — Snakes — Grey Lady-Birds — Butterflies — Highest Point of the Range of Hills — The Valley of Diamonds — Talc — Vast Beds of Oyster Shells — Illustration of Strabo — The "Pass of the Crow" — Names of Places in the Desert — Brilliancy of the Stars — Magnificent Moonlight Scene — Romantic Gorge — Descent to the Plain.

WE had now before us, we were told, a very arduous march of several days, during which we should meet neither well nor encampment, and be entirely dependent for subsistence on the water we carried in our kûrbehs. It was necessary, therefore, to take a good supply; to be very economical; and to push on with increased energy. The slightest delay might be productive of suffering; whilst any considerable impediment thrown in the way of our uninterrupted progress would certainly lead to very disastrous consequences. It was to insure the kafilâ against accidents of this sort that the new guide had been procured at Mudar: for were we once to deviate from the road, we might wander about in search of it until our water and provisions were exhausted. Wahsa had been, according to his own account, twenty—that is to say, a great many times—to Siwah; and we committed ourselves unhesitatingly to his guidance.

Having well filled the skins with the cold white water—that looked as if mixed with lime—we left Haldeh and its ruins after an hour's halt. The Europeans of the party, buoyed up by their excitement, were high in spirits and pressed cheerfully on; but Derweesh and Saâd followed with hanging heads, and gloomy, dissatisfied countenances, looking like sheep going to the slaughter, whilst even the Bedawins seemed not at all confident of their safety. The alarm of robbers, which had been raised the even-

ing before—the unsatisfactory accounts of the Sheikh of the Well—the difficulties and dangers of the road itself—combined to fill them with anxiety. However, on we went at a rapid pace, nearly southward, up a long valley, or furrow, in the Desert, with many openings to the left filled with Moyet-Eblis, or The Devil's Water, which is the name given by the Arabs to mirage illusions. Heaps of stones at very short intervals marked the road, which it would otherwise have been impossible to keep, so utterly devoid of character were the low hills, or rather undulations, among which we soon found ourselves. Having continued ascending and descending until near noon, we were right glad to encamp in a little copse and seek the shelter of our little tent, where the thermometer stood at 96°.

It is difficult to convey an idea of the pleasure which these midday halts afforded us, especially in a tract of country consisting of a monotonous expanse without the grandeur of a level plain—exhibiting always a limited, undefined horizon—and covered for the most part with loose stones. Here and there a small patch of stunted shrubs springs up from a spot to which the winter rains have washed down a little soil; but although the camels browsed willingly on the tender green extremities, our donkeys went snuffing about in vain for something to suit their palates. On the coast, they greedily devoured the grey lichens, I remember, that covered the ground at some places; but here this resource failed them: and, as not a single blade of grass ever showed itself, they were always obliged to wait for their periodical supply of beans and chopped straw. This was given them by the boys in nosebags immediately on our arrival at a camping ground; whilst we four set to work merrily to put up the tent. No true traveller expects to have all this done for him. Half the enjoyment would have been destroyed if other hands had laboured whilst we sat lazily by. When the tent was up with the door to the north, each procured his carpet-bag and his cloak to form a temporary divan—a tin of preserved meat was opened—the biscuit-bag was visited—a few raw onions, bought at Mudar, were added as a relish—a single bottle of porter, to be diluted with water into four good tumblers, was got ready—the tin-plates were cleaned; and the frugal meal commenced. Lucullus never relished his innumerable dishes as we did this humble fare. Though we had no picturesque pros-

pect before us, every accessory of the scene was romantic. The very fact of our having created for ourselves, for a moment, a home in the midst of the Desert, gave a zest to all our comforts. No living creature was near that did not belong to us. Our beasts of burden were dispersed here and there. The Bedawins sat in a group apart; our donkey boys enjoyed the shade of the tent on the outside. It was as if we had landed on a little uninhabited island in the midst of the ocean, and had covered it for the first time with life.—But the signal for departure is given. The hours have flown rapidly by.—Down with the tent—out again into the blazing sun—gather the camels—pile up their burdens—and away!

We again started, this time late in the afternoon, and having rounded a hill on the left and crossed the bed of a winter's lake—a broad level expanse of hard-baked white mud—proceeded in a general southerly direction until dark. The road is here marked by little heaps of stones placed at tolerably regular distances; so that Wahsa thought he could advance without danger by the help of a lantern. He might as well have attempted to steer across the Atlantic with the same assistance. Presently there was an uncertainty in our movements: sometimes we went to the right, sometimes to the left; then came a pause; and another hurried move; a halt; and then a confession that we had lost the track, and had, perhaps, entered the wrong valley. This was not at all a pleasant announcement. True we could not be very distant from the right path; but each step might take us farther away, and every hour lost now, promised an hour of privation to come. We sat down accordingly; and watched with some anxiety the motions of the lantern as it flitted here and there over the country. At length the Bedawins returned, and, without saying a word, collected the camels and began driving them on in a westerly direction. We were soon climbing a steep declivity, at the top of which we once more came to a stand-still, and found that the proper course had at length been determined on, namely, to wait for the rising of the moon. Our reflections during this halt could not be very satisfactory. There we were crowded together on a little, barren, waterless spot, in the midst of darkness, with nothing but silent hills repeating one another in an endless succession of resemblances around, ignorant in

what direction to move, with every chance of choosing the wrong one, far removed both from the coast, and from the little speck of verdure towards which we were steering. What if we could not regain the road; and, attempting still to proceed, were to get entangled in an inextricable labyrinth? Alexander the Great, it is true, when he lost his way in the same region, was rescued by miraculous interposition. Was there any likelihood that we should be equally favoured? As to making a disgraceful retreat, guided by the compass toward the sea, it was abhorrent to our thoughts, involving as it would have done the total failure of the expedition. So we sat silently down, and managing, under cover of our cloaks, to light pipes or cigars in spite of the strong north-east wind that went roaring by over hill and dale, waited with patience for the result.

At length the moon rose above the black, undulating horizon, and cast its pale deceitful light upon us. The word was now given to drive on the camels; but it was evident no new discovery had been made. The Bedawins spread themselves on either side hailing each other, or rather barking now and then in imitation of the jackal to communicate their whereabouts. It was difficult to prevent a feeling of awe from stealing into the mind. These strange sounds struggling with the furious blast—dim forms flitting here and there—the solemn motions of the group of camels—the beams of the moon revealing no distant object—a world of unsubstantial shadows—the known and possible danger—all united to act powerfully on the imagination. The conduct of the Bedawins was by no means reassuring. Our inquiries as to the result of their endeavours were met by brief, evasive answers, or sulky silence. They evidently attached more importance to the accident that had happened than we at first did, probably from having some traditions in their minds, more fresh and palpable than our classical ones, of—how *kafilas* that have strayed as we had done, have perished of starvation in the howling wilderness. After wandering about for some time, we were once again compelled to give up the search and halt on a bleak stony ridge for the night. Here we huddled together on our mats, endeavouring to keep off the cutting wind by a line of zembils and carpet-bags; and suffering intensely from the cold. Fatigue, however, caused us to sleep, and we

woke in the morning drenched by a heavy fall of dew, and shivering like aspen leaves.

Wahsa now went back in search of the road, whilst Saleh and Yúnus, after leading us some distance ahead, each took a separate direction. We remained on a slope, at the foot of which the skeletons of several camels told that the place had been a disastrous one to former travellers. I noticed here the excessive clearness of the atmosphere, showing the forms of our Bedawins as they gained the summits of distant hills, and making them appear almost close at hand. The sound of their footsteps too, as they came running back to announce the fruitlessness of their search, and compare notes, resounded afar over the Desert.

Whilst in this state of suspense we saw two crows wheeling in the air for some time, and then taking a south-west direction. Had we been in an age of superstition, we should have considered this a sufficient indication, and have followed these kind guides, the descendants possibly of the birds which, on a similar occasion, and very near, says tradition, the point at which we had arrived, extricated Alexander the Great from the horrors of the pathless wilderness. Had we obeyed the augury we should not have gone wrong; but we did not yield to the suggestions of our imaginations, and waited for the return of Wahsa, who had certainly taken the best method of repairing his mistake. The stupid obstinacy of our Bedawins, however, had nearly made matters worse. Instead of remaining where they were, or choosing some conspicuous spot for a halt, they drove their camels down into a little patch of vegetation to browse, and, as I have said, each went his way, giving us full leisure to reflect on the utter sterility of this country, in which neither tent nor well is to be found, and which is probably never trodden by the foot of man, except on the line marked out for the caravans, in the course of ages.

At our suggestion a gun was at length fired for Wahsa's information, but the sound did not reach him. As time wore on, I became impatient, not to say uneasy, and, ascending an eminence, at length discovered a human form moving rapidly to and fro at an immense distance; so I constituted myself into a landmark, and soon had the satisfaction of seeing the guide make straight in my direction. On arriving, he seemed exhausted with

fatigue, blessed my eyes ("Salâm ala eynak!"), and abused old Saleh, who he said ought to have guessed that, unless some one of the party showed himself, he should never have been able to rejoin us.

He now took us in the direction the crows had indicated, and it was not long before we fell into a well-defined track along a broad shallow valley. From this point onwards we were rarely out of sight of a double row of piles of stones, raised by the industry of successive caravans. Without their assistance indeed it would be impossible to keep the road, amidst the labyrinth of hills through or rather over which it passes, making no account scarcely of natural difficulties, up and down the steepest slopes in a direct line as nearly as possible as the bird flies. Some of these marks consist of five or six large flat stones, placed on one another so as to form a rickety column; others are great heaps, in some instances six or seven feet high. I believe that in most of the deserts which are traversed by caravans, and where materials are to be found, this benevolent practice of marking the road for future travellers exists. It is a tradition, however, mentioned in the Kitâb el Gemân of Shehab-ed-dîn, that the Berber race were always unwilling to adopt it; and I believe that the people of Siwah—an offshoot from this stock—have never contributed to render the road to their oasis obvious and easy. The Arabs, on the contrary, are very particular in performing this sacred duty.

All this region is covered with low flat hills, rising like islands out of a level plain, and scattered in front of long ranges, with occasional breaks, allowing one to see on either hand other expanses of country, with isolated hills of the same monotonous character, rarely differing in height, and, like those between Selêm and Haldeh, bearing a great resemblance to fortifications. At about half-past ten we issued into a plain, at the entrance of which the termination of the right-hand range, although not remarkable in appearance, bears the name of Húsham el Gâoud, or "The Camel's Mouth." Beyond this we halted, among some of the stunted shrubs, that afforded a welcome opportunity for our camels to browse, and the existence or absence of which in this generally barren wilderness often determined us to abridge or prolong our morning's ride. During the halt we were re-

minded that our course lay now southward, for the thermometer rose to 100° in the tent. The air, however, was occasionally stirred by cool puffs of wind that lasted about five minutes, and somewhat revived us. Our poor donkeys were the worst off, and came hobbling, in spite of their fettered legs, to get under the scanty shade of our tent, in the cords of which they perpetually entangled themselves, to the great peril of its stability. They were now necessarily on short allowance of bad water, and were visibly knocking up.

All the bushes in this part of the Desert were covered with a white snail. I noticed several dozens on a plant not more than a foot high. The earth is thickly strewn with their shells, which have the peculiarity of a peak over the opening, divided from the rest of the shell by a ridge raised about the eighth of an inch. It is said that some of the inferior Bedawins, who are generally unburdened with the scruples of the civilized Muslim, eat these snails. The Egyptians make fun of them on this account, and quote similar facts to prove that they are an accursed race. They tell a story to the effect that two hungry Bedawins once found a cow that had died of disease, and, having been long without tasting flesh, made a hearty meal on the best parts. The period of digestion became the period of doubt and repentance, and, going to a holy Marâbut, they laid the case before him, expecting to get their consciences eased. "My sons," said the saint, "you have committed a great sin——" They would not allow him to proceed further, but exclaimed, "If it be a sin, we have eaten; and if it be not a sin, we have eaten. *Duffer fee eynak!* (An ass's hoof in your eye!)" and went their way in high dudgeon.

At this encampment we were covered with an immense number of grey lady-birds; and on the way from Haldeh a few brown butterflies had fluttered across our path. A grey snake also, of the species common at Garah and Siwah, and reported to be extremely venomous, wriggled along the sand in the neighbourhood of a little extempore tent, which the Bedawins had rigged, with their guns for poles, their blankets for coverings, and our bags of beans and other traps to keep down the corners. This reptile I believe emerged from our provision basket, into which I was about to put my hand.

In the afternoon of this day I believe we reached the highest point of the great range of hills and series of table-lands along which we had been travelling from Mudar. For a time we could catch a wider glimpse than before of the surrounding country; but the line of stone-heaps we had hitherto faithfully followed soon led us into a valley surrounded with precipices of calcareous formation. The sides generally descended sheer down, and along the base were scattered fragments that had gradually given way from above. On either side opened glens and passes, obstructed by mounds and hills, which sometimes wore the appearance of tents, at others of houses, at others of ruined forts. The cliffs were generally of a reddish hue, but intersected with long white bands. As we advanced, with the sun ahead, this valley assumed an extraordinary appearance. All the ground began sparkling, as if strewed with a profusion of precious stones; and I easily understood how such a sight might have suggested to an imaginative Arab the gorgeous idea of that Valley of Diamonds where Sinbad once found himself pining to death amidst inestimable treasures. Here, as there, not a vestige of vegetation presented itself; but the ground was covered with innumerable fragments of talc, as well as pieces of oyster and other shells that glittered and twinkled, and blazed with a silver light over a vast expanse as they caught the sloping beams of the sun.

I may as well mention here that a little further on, at a place we passed during the night, and noticed only on our return, the road had been cut or worn through an immense bed of gigantic oyster shells, which seemed to form three fourths at least of the substance of the lofty banks on either side. These fossils are to be met with in greater or less quantities all the way to Siwah, where many of the rocks are nothing but huge agglomerations of shells. I was the more particularly interested in noticing the fact, because Strabo quotes a passage from the geographer Eratosthenes, in which it is stated that near the temple of Jupiter Ammon and along the road to it, vast quantities of oyster and other shells are found, from which the inference is drawn that the Mediterranean Sea formerly extended so far inland.

All the points of the hills overlooking the road were marked by the little columns of flat stones I have mentioned: and by

their assistance we managed to keep the direction along the centre of the series of basins of which the valley is formed. We now learned that we were descending toward the plain by what is called the *Nugb el Ghrâb*, or The Pass of the Crow, a name which may possibly have some connexion with the story of the journey of Alexander, and his miraculous extrication from difficulties. The names of places in the Desert are not often changed; and if we wish to give a reasonable explanation of a poetical legend we may, without difficulty, suppose that when the illustrious traveller lost his way it was because he missed this Pass, which appears to be the only one by which a descent can be effected to the plain. When at length his guides hit upon the right valley, and mentioned it as The Pass of the Crow, we can easily imagine how the tradition took its rise. Peter Pindar has explained the whole philosophy of the thing.

A little after sunset we came to a steep declivity, down which it was necessary to force the camels into a lower part of the Pass. At the bottom we halted three or four hours to wait for the moon, in a position sufficiently romantic and uncomfortable. A north-east wind, cold and cutting, came whistling over the tops of the hills and seemed to be sucked down into the hollow, where we sat on the chilly stones wrapped in our cloaks, or lay prostrate to snatch a brief spell of sleep. On all sides perpendicular masses of rock reared themselves, black and frowning, looking like a vast ruined wall encircling us; whilst overhead the Milky Way spanned the heavens, and all the constellations shone with a brilliancy known only in the East, and, I may add, in the Desert. At about ten the moon lifted up its slightly depressed orb over the vast pile of rocks, and we were soon again in motion, right glad to escape from so bleak a spot. A few hundred yards a-head, after passing a narrow defile, an extraordinary scene burst upon us. Whilst the irregular line of rocks continued close on our left, we suddenly beheld to the right a great chasm; and beyond, glittering in the moonlight, and clothed by it, no doubt, with yet stranger forms and more gigantic proportions than nature had afforded, a huge pile of white rocks, looking like the fortifications of some vast fabulous city, such as *Martin* would choose to paint, or *Beckford* to describe.

There were yawning gateways flanked by bastions of tremendous altitude ; there were towers and pyramids, and crescents and domes, and dizzy pinnacles, and majestic castellated heights, all invested with unearthly grandeur by the magic beams of the moon, yet exhibiting—in wide breaches and indescribable ruin—evident proofs that, during a long course of ages, they had been battered and undermined by the hurricane, the rain-shower, the thunderbolt, the winter-torrent, and all the mighty artillery of time. Piled one upon another, and repeated over and over again, these strangely contorted rocks stretched away as far as the eye could reach, sinking, however, as they receded, and leading the mind, though not the eye, down to the distant plain below. In vain did our eager glances endeavour to ascertain the limit of the descent to which we had so abruptly come. The horizon was dissolved in a misty light ; but stars twinkling low down, as if beneath our feet, showed that we were about to abandon, once for all, the great range along the summit of which we had toiled during so many nights and days.

A gorge, black as Erebus, lay directly across our path ; and we had to make a detour to the left in order to reach the place where it is practicable for camels. Here there was a pause ; for again the generally patient beasts hesitated, and moaned and backed, and drew up their long necks and huddled together ; as well, indeed, they might. The declivity was steep, and filled with heavy shadows. Precipices hemmed it in on every side ; and here and there we could distinguish a huge fragment of rock standing, like a petrified giant, in the way, and catching perchance on its bare scalp some stray beams of sickly light. But down we did go ; the camels, when once the impetus was given, carried forward by the weight of their burdens, yet keeping their footing with admirable sagacity ; we, almost in the same manner, each leading by the halter his long-eared mounture. In truth it was a picturesque scene :—partly lighted by the slanting rays of the moon, partly buried in broad masses of shade, and only requiring a few Bedawin heads appearing from behind the jagged rocks, and the flash of a gun or two, to make it worthy of the pencil of Salvator Rosa. According to our guides, some probability existed of such an illumination

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taking place ; and our imaginations were thus supplied with materials to work on as in the solemn hush of that romantic night we scrambled, slid, staggered, almost rolled down.

A series of sloping plains and rapid descents, with an occasional rise, led to the bottom of the pass ; where we bivouacked for the night. To our left the range of hills had receded out of sight ; whilst that to our right, which here and there exhibited the most fantastic shapes, sometimes of fortresses, sometimes of pyramids surmounted by sphinxes' heads, stretched away in rugged grandeur to the south-west. In every other direction opened a plain, above which the dim forms of detached hills showed themselves at intervals.

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## CHAPTER VIII.

Rationale of Bivouacking — The Hill of the Cannons — A Tree in the Desert — Approach of a Caravan — Alarm — Interview with Western Bedawíns — Danger of Spoliation — The Date — Caravans — The Gates of the Milky Mountains — Architectural Appearance — Tremendous Heat — Arduous Morning's Work — Approach the Happy Valley — The "Islands of the Blessed."

IT must not be supposed from my silence hitherto that camping and bivouacking were very easily managed matters. Every halt during the whole journey was preceded by a discussion amongst ourselves, and a negotiation with old Yúnus, to whose discretion we were obliged sometimes to submit, knowing that in the desert the interest of the camels must not be wholly overlooked, and that it is important for their sakes to choose a resting-place near some of the unfrequent patches of vegetation with which the beneficent hand of nature has sprinkled the road. However, we were often compelled to exert our authority to bring up the *kafila*, which seemed at times to be endowed with something like perpetual motion; and then we had to encounter grumblings, mutterings, vellëities of rebellion, and predictions that, by tarrying in these arid places, considering our scanty supply of water, we should all perish of thirst. But the best of the joke was, that on other occasions we had to hurry the old gentleman on; for he would loiter and loiter, and seemed inclined to halt almost as soon as he had started; and then we were punished with ironical mutterings that we should reach Siwah that very night, and so forth. Yúnus was hard to please, being, in fact, determined not to be pleased. Arrogant, self-willed, opinionated, he seemed to have made up his mind either to be absolute master or to cause us to suffer all the inconveniences which an unwilling servant can inflict. On the present occasion we were compelled to be extremely peremptory in order to obtain a little sleep, although it was more than an hour after midnight.

Before sunrise we were on foot, and should soon have been ready to start had not a small insurrection on the part of the grumpy Yúnus taken place. The circumstance is too characteristic to be passed over. Though not, as the reader may guess, inclined to luxury, we had brought with us a small supply of coffee, with which we occasionally indulged ourselves before starting, though often content with a piece of biscuit and a pipe. To Yúnus, as the head man, we always offered a cup at first, which he obstinately refused to accept. The reason was, that we always drank it without sugar, as all Orientals do, and expected him to do the same. But he seemed to have got it into his head that no Europeans drink *bitter coffee*, as the Arab expression has it, and that we *secretly* put a lump into each of our cups, omitting his. This he regarded as a dire offence; and he actually deprived himself of a great enjoyment, rudely refusing it indeed, to testify his displeasure. Whenever we seemed disposed to treat ourselves he always threw obstacles in the way. On the present occasion his ill-temper over-mastered him, and he upset the water just as it was about to boil. This was rank rebellion, and it was necessary to give him a good setting down. He saw he had gone too far, and swore "Wallah el Azim!" he had only emptied the coffee-pot because Derweesh had filled it from a bad skin! We accepted the apology, and allowed him to reboil the water. There was a conflict of evil passions in his breast, as he crouched over the fire; and he scowled abominably at us, throwing out muttered threats to our frightened boys, who believed him capable of leading us into an ambuscade, and entreated us by their glances even now to turn back and regain their beloved land of Egypt.

This incident over, we moved along the base of the line of white and red cliffs to our right, and crossed the mouth of several glens, all cursed, like the rest of the range, with sterility; while the plain to our left was thickly strewed with hills wearing at a little distance all sorts of strange shapes—as pyramids, gate-entrances, bridges, and tents. One of them, which we reached about an hour after starting, is called Garah el Madáfah, "The Hill of the Cannons," from having on its summit two large masses of rock shaped exactly like pieces of artillery with their carriages. This hill is estimated by the Bedawins to be half-way between Haldeh and Garah. Most of the eminences in this

tract of country seemed formed of loose piles of crumbling materials, but have generally on their summits huge solid masses of rock.

It is difficult to acquire an idea of the exact formation of a country by traversing it once in a direct line at a rapid pace, sometimes by night and sometimes by day; but from what I could gather, I should say that there is a general rise all the way from the sea to a point some hours to the north of the entrance of the Nugh el Ghrâb. It did not appear to me that the bottoms of any of the valleys we traversed were lower than the level of the great table-land that stretches from above Mudar to the well of Selém. At this well, as the reader will have noticed, began a series of flat-topped ridges, intersected by flat-bottomed valleys, at first parallel, but afterwards running irregularly in all directions. The general level seemed gradually to increase in height, whilst the hills, which were at length all detached like islands, become lower and lower. On reaching the Nugh el Ghrâb, the character of the scenery changed—as might naturally have been expected at a place where, in a few hours, we were to descend from a height which we had been several days in gaining. The pass opens nearly to the south; and leads down the rugged sides of a range of hills or mountains, that extends north-east and south-west into an immense valley or basin, which no geologist has ever explored, but which would, doubtless, yield up some curious secrets if properly interrogated. From what I subsequently observed, I am led to believe that the great calcareous range we had traversed, bends round on either hand, and completely embraces the plain covered with detached hills we were about to steer across. This, however, is conjecture.

We proceeded, gradually leaving the ridge, and engaging ourselves amid the islands scattered over the plain. These likewise, at length, became fewer and fewer; and at last we saw only the tops of some distant and lofty ones near the horizon. We were now traversing uneven and stony ground with little hollows here and there, and small ups and downs. Scarcely anything like verdure presented itself. Sometimes there was a small patch of stunted bushes; and now and then four or five camels might be seen thrusting down their small snake-like heads to one green shrub. In the course of the day, however, I remember

we came to a shallow basin, ten or twelve feet below the general level of the plain, under one of the bluff sides of which we saw a solitary tree of elegant shape. Presently afterwards a few clumps of a similar kind made their appearance and refreshed our eyes, unaccustomed to the sight of arborescent vegetation. We had not, indeed, seen anything in the shape of a tree since leaving Alexandria; and therefore even when we found that what we saw were only huge thorns, we could not take our eyes off the green of their leaves. Our animals too seemed all joyous at the sight, and we could with difficulty restrain them from crowding under the thin shade cast upon the burning ground and improvising a halt. The name given to this species of thorn by the Arabs, was Dalagh. Its gnarled trunk was covered with gum: the branches were numerous, tortuous, entangled, and abundantly armed with a long white spike. They were covered with bunches of small yellow flowers.

We halted at half-past ten. The heat was so great this day, that the thermometer about noon rose to 100° in the shade; and this too with a strong wind blowing in gusts that nearly carried away our tent. Soon after the stoppage we descried some objects in motion a-head, which created the usual interest and excitement. Pipes were laid aside and guns taken up. For aught we knew the *Manser* might be coming down upon us. It soon appeared, however, that a large caravan was approaching. Still there might be cause for alarm. To what tribe did these strangers belong? If hostile to the Waled Ali a collision might take place. Presently we beheld a number of armed men advancing a-head of their camels. Our tent, no doubt, had attracted their attention, and roused their curiosity, perhaps excited their alarm. They came on cautiously as towards an enemy, with their muskets half presented. One of them at length detached himself and drew near us, keeping a little out of the direct line, possibly to allow his companions an opportunity of firing in case of necessity. He was a strapping giant, above six feet high, with a fine open countenance, high Roman nose, and reddish complexion. I could not help admiring the appearance of this young lion as he crept along, slightly bending, with his gun thrown forward, gazing at us with eyes, in which distrust and curiosity were amusingly blended. As he approached, Yúnus, who had more of the

tiger in his composition than the lion, went with the same precautions to meet him ; and we heard them both, with the infernal suspicion, perhaps necessary in the Desert, bring their weapons to full cock ere they came to close quarters. A moment afterwards, however, hand-shaking and embracing succeeded ; and the whole party coming up, our little encampment was soon filled with a set of ruffianly-looking young fellows with skull-caps, that had been white, pulled nearly over their eyes, with brown blankets wrapped closely round them, and tucked up in marching trim, and shoes of various colours, in various degrees of dilapidation : many had daggers and pistols in their belts, from which were suspended shot and powder purses, with an amulet or two, and all were armed with long guns, some with the addition of bayonets.

Now began a prodigious number of mutual inquiries, all in cut and dried phrases, after one another's health, each of the new comers thinking it necessary to ask at least ten times of each of our companions how he did. The most satisfactory answers were invariably given, but the anxiety and solicitude of these kind people were not easily soothed. They seemed really afraid that some peculiar source of sorrow might be suppressed through mere delicacy. Exquisite display of the finest feelings of the human breast ! I wish I had not detected certain covetous glances at various articles of property ; and that this affectionate meeting had terminated in any other manner than a general cry for drink, and a rush at our water-skins. They were but ill supplied for their journey. Improvidence or poverty, or both, had presided over their arrangements. I could only see about five small *kúrbehs* distributed among the thirty or forty camels that crowded past laden with heavy bags of dates. However, the thirsty souls were not unreasonable ; they were made to understand that we could not satisfy the wants of the whole party ; and we only spared two or three draughts of water to those that seemed the heads of this band of youths, among whom he who had advanced to reconnoitre was the chief. We received in return for our limited civility a small pile of fresh dates of excellent quality ; and the information that there was no fever reported at Siwah. The party, which came from some point on the coast to the West, had only been as far as Garah

where they had obtained their winter's provision of dates. They were goodnatured but rough customers: I should not have liked to have encountered them beyond the range of Yúnus's bland eye.

In the afternoon, not long after we had struck our tent, we met another date-caravan, and went through the same process of recognition. They were accompanied by a kind of saint who communicated his blessing to our Muslim followers. At sunset we stopped and had a nap. At about an hour before midnight, however, we were again in motion, and proceeded at a rate far beyond the camel's usual pace for more than three hours, passing the hard white mud bed of a dry lake and ascending a series of steps or successive small plains one above the other. The whole party walked, driving the donkeys on ahead, without any fear of their wandering; for by this time they had become quite accustomed to the camels and did not like to be out of their company. On the other hand the camels, which at first seemed quite uneasy at seeing these little animals trotting round them, and were thrown into disorder whenever they crossed their path, had also been tamed, so that there was no difficulty in pushing rapidly along by the dim light of the moon. It was calculated that during this march we made much more than four miles an hour.

We spread our mats at a quarter past two, but climbed once more into the saddle at half past five. We now discovered that we were on the flanks of what are called the Gour-el-laban, or the Milky Mountains, and approaching a kind of gateway that yawned near its summit. To the left was a vast detached rock, as usual in this part of the country presenting the appearance of a citadel with huge round towers and ramparts rising in artistic confusion one above another. In front opened a narrow pass, whilst to the right, as it were a stupendous bastion was thrown out from a great range of hills, or rather mass of rocks bearing in the low morning sun a most extraordinary resemblance to an imperial city with domes and towers and palaces more vast and imposing than the Alhambra or the Vatican. Of course most of these appearances were optical illusions; but all the rocks in this country wear a remarkably architectural appearance. I am unwilling, not having been able to make correct observations, to give an estimate of their height; but for fear of conveying an exaggerated idea I will roughly guess them as at least five or six

hundred feet from their immediate bases, which rest upon the summit of a great ill-defined range of hills very considerably higher. The Gour-el-laban when seen from the top of the White Pass on the opposite side of Garah at a distance of about thirty miles, form a bold feature in the horizon and seem comparatively near, so that the pass and the rocks on either hand can be distinctly traced.

Well, having passed through the gates of the Milky Mountains, on we went, cheered by the announcement that Garah, the vanguard of the Oäsis, lay at our feet, down a great valley surrounded by frowning rocks, and said to abound in robbers, our fingers on the triggers of our guns, our eyes on every pass as it opened, and at length safely emerged into a grey gravelly plain, the hills all of calcareous formation, receding again to the right, and detached rocks showing themselves above the horizon, like vessels at sea, to the left. As yet we could see nothing to cheer our eyes, except one or two clumps of thorn trees; but these we had beheld the day before amidst the most sterile tracts. The hills curved round a little in front and then stretched away lost in a sort of misty light. Sometimes we thought we could distinguish the dim feathery summits of palm-trees nestling at the foot of the range down at the edge of the sloping plain; but if so it was athwart a silvery veil of mirage that glittered in front and extended in little fragmentary patches on every side. The morning was excessively hot, and inured though we were to the rays of the sun, the ride of nearly seven hours after a broken night appeared unusually wearisome. Our poor donkeys had been three days on a miserably scanty supply of water, and were beginning to refuse their food. We endeavoured to ease them as much as possible by toiling along on foot, dragging them after us, but even then some of them with difficulty advanced. Exhausted with thirst, we stopped the camel that carried the now empty skins, and managed to squeeze forth about a quart of warm, turbid, and red liquid which we tried to persuade ourselves was better than nothing. A dozen long ears were instantly pricked up, and Saleh, who carried the can, was regularly chased by the weary brutes.—But their lot is to suffer. There was too little for them and for us. Besides, were there not refreshing springs and delightful shady resting-places ahead? Push on, push on, the Happy Valley is close at hand.

At length we reached it, rising suddenly over some rounded hillocks, and finding ourselves on the edge of a steep cliff that descended like a wall at our feet. We here had a good view of the desert island, to the shores of which we had so suddenly come. It is a level plain bounded apparently by precipices of various height falling sheer from the raised ground on every side. Several majestic palm woods stretch their heavy masses of sober foliage across; whilst numerous smaller groups or clusters of four or five trunks, or clumps in untrimmed savage luxuriance, are scattered over the whole surface. Sand-streaks here and there intervene, with a few salt pools, surrounded by a white efflorescence like driven snow, and small patches of verdure, and little glades. Three or four huge rocks rear their giant forms in a line nearly from west to east like the fragments of a great wall that might formerly have divided the Oâsis in twain. On one of these to our right appeared the village of Garah, rising above the palm-trees, and bearing a striking resemblance at first sight to an old ruined castle of feudal times. The far off rocky amphitheatre that lifts high its craggy summits glittering in the sunshine, to look down upon this tranquil valley, and the intensely blue sky overhead, united to give beauty to the scene, and excite in our breasts, by the vivid contrast of barrenness and fertility, life and death exerting their sway beneath the infinite emblem of immortal serenity, mingled emotions of wonder and delight.

I should not envy the feelings of one who, after traversing the frightful solitudes of the Libyan Desert, chequered only by a mockery of vegetation, could express a cold disappointment at beholding the Oâsis of Garah. What more can be desired? There are trees and there are human habitations bursting on your sight in the heart of the wilderness; and though you cannot see you can feel the presence of pleasant fountains of water. If you are a painter, endeavour to represent the softly pencilled outline of this simple yet admirable prospect—those frowning distant piles of craggy peaks, the irregular wall of white cliffs which nature has reared around the Oâsis itself, those little nooks that retreat on either hand, the stately columnar trees which in every variety of group crowd at your feet, the bold masses of rock thrown here and there among them, the decrepit

village on the hill, and above all the ineffably pure atmosphere that reveals or bestows the sharp brilliant clearness which every form, every line, every mass presents; and if you fail in conveying a true idea of this enchanting scene, confess that your skill as well as your imagination is at fault, and do not blame those who, perhaps equally unable to fix these beauties upon canvas, made amends by painting all the Oases in one short simple phrase:—"The Islands of the Blessed!"

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## CHAPTER IX.

First Interview with the Natives — Their Physical Conformation — Costume — No Smokers — Sheikh Abd-el-Sayîd — Visit to the Village of Garah — Decomposition of the Rock — Its defensible Character — Curious Mode of building — Unwholesomeness — We appear in the Character of Healers of the Sick — Gratitude of the People — Comfortable Evening — Windy Night — Second Visit to the Village — Burying Place — Sheikh's Tomb — Aïn Mochaloof — Tradition of Christian Times — Superstition — Charms — Incantations — Industry of the Oâsis — Mat and Basket making — Cultivation of the Palm Tree — Remains of an ancient Fountain — "Aïn Fâris" — Other Ruins — Character of the People of Garah — The wandering Blacksmith — Weapons — Wolves — Tribute to the Pasha — Disproportion between the Sexes — Women brought from Egypt — Number of Palm-Trees — Trade, &c.

WE had hastened forward, each eager to catch the first view of the long-wished for valley. The camels and our attendants, however, soon came up, and gathered on the brink of the precipice. It now became a question how we were to descend. A gorge at some distance to the right seemed to afford every facility we could desire, but it would have taken us, weary as we were, an hour perhaps to reach it over the rough, broken ground that intervened. So, casting about, we at length discovered what a besieging party might have called a practicable breach. Down this we scrambled, animals and all; and soon were trampling through a little grove. The delight experienced on such occasions is indescribable; but if I might be allowed to reverse the common order of comparison, I would say it resembled the feeling of a reader who, after wading through a whole volume of dreary misanthropic sentiments, comes suddenly upon a passage full of tenderness and beauty. Our eyes, that had grown dizzy with gazing on sand and rock, rock and sand, from the rising up until the going down of the sun, now fed passionately on the verdure that drooped into natural arcades on every side; and we slowly wended our way in the silence of unutterable satisfaction to the halting ground.

This was under the eastern side of the village, at the foot of

the hill, on a little plain surrounded by precipices and groves. We did not see any sign of inhabitants; and sought at once the shelter of a palm-clump. By this is meant an impenetrable cluster of short trunks, with long pensive branches shooting out close to the ground; they generally have the aspect of a round mass of foliage, fifteen or sixteen feet high, and twenty or thirty broad; but over some of them two or three feathery heads wave aloft in the air, supported on their gracefully inclined stems. By cutting away some of the lowest boughs we succeeded in forming a most agreeable sheltered nook; and spreading our cloaks on the sand, lay down to enjoy the unaccustomed luxury of an impervious shade. We should have been perhaps more comfortable in one of the groves we had traversed, but the Bedawins had preferred the neighbourhood of the village. However, there was no cause to complain. Our bower was as delightful as if it had been formed of asphodel; whilst on all sides the scorching rays of the sun beat down upon the parched ground, over which the victorious palm vegetation rose here and there. Numerous ligustrous plants, and the rich green "aghoul" (*hedysarum alhagi*), covered the little inequalities, and served to bind the otherwise inconstant soil.

The first living being we saw was a half-negro-looking boy, who came suddenly upon us, and walking boldly up, saluted each of us with "Maïk Salâm!" ("With thee be peace!") Whilst giving the salutation he extended his right hand to every member of the party in succession, and then laid it respectfully on his breast. By degrees several other lads and a man made their appearance, and went through the same formalities; which done, they squatted down in a row, and examined our appearance with as much curiosity as we did theirs. In manners they were grave and decent. White or brown shirts, with long loose sleeves, and *takiahs*, or thin linen skull-caps, usually worn under the tarboosh, formed their costume. It was impossible not at once to recognise a mixed race. I suppose we subsequently became acquainted with nearly every inhabitant of Garah; and all seemed to have the same undetermined physiognomy. Some were almost perfect blacks; others had the retreating forehead, the depressed nose, and projecting lower jaw of the negro, with a pale sallow complexion; others, again, presented an insignificant

collection of features, small flat foreheads, little irregular noses, high cheek bones, diminutive eyes, and thin lips. All were nearly destitute of any sign of a beard. Our visitors exchanged a few words with one another in a disagreeable squeaking jargon, which we afterwards found to be a dialect of the Berber language; but all understood Arabic, and when we politely offered them pipes, as politely explained that they did not smoke. We found the same sobriety in this respect among all the people of this family. It partly arises from the strictness of their belief, partly from poverty. Some privately indulge in snuff.

Presently, a little dark-complexioned man, wearing a turban, and in all respects better dressed than the others, presented himself, followed by two boys, one bearing a basket of fine dates, the other a red earthen brock of slightly brackish water, stopped up by a handful of palm-fibres, to keep the contents cool. This was Abd-el-Sayid, the sheikh of the village, who seemed equally civil and obliging in his manners with those over whom his paternal authority extended. A conversation ensued, in which we endeavoured to gain information about the place, and to explain the reason of our visit in a satisfactory manner. The latter object, however, was difficult to compass, as the worthy man's ideas were rather limited. We found it indeed necessary to abstain from very forcibly insisting that we had no views of business or revenue in going to Siwah. He could not conceive why any but people connected with the government should undertake such a journey; and we afterwards found that all the curiosity we expressed about ruins and catacombs was understood to mean that we were in search of treasure.

We naturally passed the day in rest. Towards evening, however, I went with Longshaw to visit the village. It had been anticipated that some difficulty would be made about admitting us; and there was certainly a little hesitation in the sheikh's manner when, on the announcement of our intentions, he gave directions to a man to conduct us. But hospitality prevailed over suspicion; and we approached this curious stronghold. It is situated, as I have said, on one of a line of large detached rocks that stretches across the valley. The appearance of these rocks and of numerous others scattered here and there in the Oâsis suggests the idea that a portion of this tract was formerly

on a level with the table-land around, and that in a long series of ages a great part has been decomposed and dispersed. On the right hand of the path which leads in the direction of Siwah this process is evidently going on with great rapidity. There are signs of the operation of some agent which eats into the rock, principally towards its base, detaching large portions, leaving them isolated, and then perforating them in various directions, forming natural caverns and arches, and at length bringing them down into a confused mass of ruins. In several instances there were large masses shaped like pears, twenty or thirty feet broad at top, and only three or four at bottom. Catacombs had been cut in various places by the old inhabitants; and these are in many instances opened and half-eaten away.

I believe the valley of Garah is not entirely surrounded by precipices, although it had that appearance from every point we visited. There must be an opening to the eastward into the great desert, whither the detritus of the decomposing rocks is most probably carried by the wind. The isolated masses I have mentioned will soon disappear in great part. The village hill itself is eaten into on every side; and large masses have given way long since it was selected as a building site. Houses in whole or in part have gone down in ruins, leaving fragments of palm-rafters still projecting. This is more especially observable on the south side, where the winding pathway that leads to the gate ascends.

The gateway is of stone; but the gate itself is formed of several rough-hewn pieces of the palm-tree tied together, and swinging on hinges of camel-hide. It is somewhat difficult of approach, well commanded, and might easily be defended against an irresolute enemy. Within, the path is steeper than without, and is covered by a wall on the right, and the catacombed rock on the left. It leads through a low, narrow entrance into the principal street or passage, which is nothing but a dark tortuous crevice, partly formed by the living rock, partly by the walls of the lower tier of houses, whilst the floors of the upper ones, consisting of palm-rafters laid close together, constitute the roof. In most places, as we crept onwards, we could feel a kind of divan, or seat of stone or mud, running along on either hand. There are only two openings by which the light of day penetrates into

this curious pile, one at an angle to the west, and containing a deep well of brackish water, inferior to that in the well outside, another in the centre, called the market-place. In the streets none but the people themselves could find the way except by the aid of a lantern. The whole village is exceedingly dirty, and the atmosphere perfectly stifling. We were indeed by no means surprised to hear that the inhabitants never exceeded forty persons, although, from the number of houses, there appeared to be room for a much greater population. As at Siwah, it is the custom, when the son of a family takes a wife, for the father to build him a dwelling on the roof of his own, and so on until there are several stories, not communicating internally, but from without, by means of flights of mud steps or ladders. This is the reason why Garah originally became a heap of little habitations covering nearly the whole surface of the rock, and now for the most part consists of unsightly ruins. Of late, of course, no fresh additions have been made, there being so many empty houses. The upper ones are nearly all roofless. No attempt at repair is visible; but the unwholesome wretches kennel in the decrepit pile, amidst rubbish and all kinds of filth. The air is heavy, clammy, and unpleasantly hot. How indeed can the refreshing breezes that fan the rest of the valley penetrate through loopholes scarcely larger than the bung-hole of a cask, or through those dismal crooked ways, which seem twisted on purpose to exclude it? The market-place by day is a perfect furnace, receiving the scorching rays of the sun, and without the least attempt at ventilation. It is impossible that such a place can be healthy; and we must not, therefore, wonder if the inhabitants are few and sickly-looking. Their poultry live with them in their houses, their goats scramble over the roofs as over the neighbouring rocks, and of course do not contribute to increase the salubrity of the air. What other impurities might have been seen aloft I know not; but the whole live stock of the Oāsis is evidently confined within the walls at night; and I remember that, as we were starting, an ass, imprisoned in the highest of the round, tower-like huts, at the eastern extremity of the village, thrust forth its head, like that in Lucian, from a window, and brayed a long farewell to its Egyptian kindred!

Fever is of course prevalent in this den. A poor fellow was

brought to us as we sat smoking on a clean mat spread for us in the centre of the market-place. Half the population crowded round to explain his ailment; which was, however, pretty clear in itself. He had been five years subject to intermittent attacks; and we were expected to lay our hands upon him and heal him. We had not the stoicism to announce that he was far beyond our unscientific aid; and a harmless prescription, that might afford some temporary relief, procured us the good will of the whole village. I shall often think again, not without emotion, of my jocund friend, Longshaw, descending like Hope amidst this moiety of a little nation—all united by the ties of blood—and with one wave of his pill-box lighting up their countenances with joy and gratitude. Nor will the circumstance ever by me be forgotten, that next day we could scarcely defend ourselves from a medical fee, in the shape of what to all appearance was the last fowl in the village, which the poor people wanted to force upon our acceptance.

On our return to the tent, we found that Lamport and Forty, instead of satisfying a selfish curiosity, had superintended the preparations for our first supper in the Oâsis; and were ready to give us a hospitable reception. Two stewed fowls, and a large wooden-dish of thin cakes of dhourra flour cooked in oil, were the contributions made by Sheikh Abd-el-Sayid to the repast, to which were joined from our stores several handfuls of broken biscuit, and the ever-grateful tea-pot that on this occasion dispensed its blessings with an unlimited liberality only to be accounted for by an inexhaustible supply of hot water. The fragrant pipe succeeded; and the evening would have passed in perfect repose, had not a violent storm of wind arisen, and more than once swept the tent from over our heads. It was only during a prolonged halt, as at Garah and Mudar, that we indulged ourselves in this shelter at night; but, inured as we were to sleeping under the canopy of heaven—too lofty and comprehensive a covering, by the way, to excite all the comfortable sympathies of one's own bed-curtains—we still determined not tamely to yield to the attacks of Boreas, and at length succeeded in giving sufficient stability to the tent, which however wavered and flapped, and bent and moaned over our heads all night beneath the furious blast. A whole legion of mosquitoes besides,

were driven in for shelter, and assaulting our legs, unprotected by boots and straps, and less weather-proof than our hands and faces, soon covered them with blood. Sleep, however, we did, in spite of all annoyances—a sound hearty sleep, which only weary travellers experience;—and were up again early in the morning ready to make the best of the little time we had for becoming acquainted with the Oäsis.

I first made a sketch of the village from the summit of a rock to the north-east; and then went with the rest of the party on a second visit to the interior. This was a much more ceremonious affair than the other; and there was even some talk of admitting us into the Sheikh's house. The good man, although we made no request to that effect, seemed to think we desired to satisfy our curiosity, and promised spontaneously to treat us to coffee on his own private divan. This would have been equivalent to introducing us into the harim in Egypt; and prejudice triumphed over hospitality. When the critical moment arrived the good man had disappeared. We sat expectant some time on a clean mat chatting with the people, and changing a dollar for one of them, as an especial mark of politeness. Meanwhile there was great bustling about and whispering, and show of mystery. At length one of the poorest men came and offered as an alternative to ask us into his sister's house. There was an evident expression of fear in his face lest we should accept; so we relieved his mind by saying it was necessary we should return to the tent. Knowing as we did the strength of the prejudice these poor people had striven to overcome, it was impossible to feel in the least offended.

Forty and I now got a guide to take us to a place which the natives counted among the curiosities likely to interest a stranger. On our way, close under the village, we noticed a little burying-place with about twenty graves. A couple of Sheikh's tombs, little round whitewashed houses, were the only religious edifices conspicuous in the Oäsis; although we did hear a man calling to prayers from the roof of one of the houses, which may probably therefore be a kind of mosque.

A walk of about half a mile along the foot of the precipices which bound the valley, brought us to a little glen, or rather nook, enlivened by a few trees and shrubs, with some tufts of

grass. At the extremity we observed a deep trough or basin, containing about two feet of exceedingly clear water, supplied from a large upright crevice in the rock, into which I entered. It had all the appearance of being artificial; and turning short round, seemed to lead into the very bowels of the mountain. The water, sweet and cool, was trickling in large clear drops from the slimy sides, and seems never to fill the basin to overflowing. But, said our guide, in former times a full stream gushed forth, and ran with a rapid current down towards the centre of the valley, where it formed lakes and vastly increased the fertility of the place. Some earthquake had either choked the way or diverted the water. This account found the more credit with us, as we could trace the semblance of a dried-up stream proceeding from the crevice down the glen and across the plain, until it was lost among the palm-trees. No doubt the cessation of this supply has produced a great effect on the prosperity of Garah; and it is the more to be regretted, as the water which we tasted was exquisite, whereas all the wells have either a salt or a bitter taste. The people of the place throw back as usual the origin of this at least semi-artificial fountain to the time of the Christians; but have no idea how long ago it ceased to dispense its bounties. Probably the accident happened at a comparatively recent period; and may be repaired by another convulsion of nature.

Whilst returning from Ain Muchaluf we had a mysterious communication from our guide. It seems that a few days previously his harim had been entered, and the *habara*, or black silk wrapper, of his daughter secretly purloined therefrom; so to us he applied for advice and assistance under the circumstances. What could we do but recommend him to appeal to the patriarchal authority of the Sheikh? This, however, would not serve his purpose. He imagined us to be possessed of certain supernatural powers, by which we could not only heal the sick, but penetrate the mysteries of iniquity. Magic and medicine are indissolubly connected in these people's minds. In round terms, therefore, he begged us to *write a paper* and discover the thief. I was not so much surprised at the man's superstition as I might have been had I come direct from England. I have seen ladies of European extraction in Alexandria, when their minds were

perplexed about their love affairs, send for a magician, who, on payment of one piastre, made certain mystic marks on a piece of paper, and foretold exactly when their lovers would visit them ; and though day after day the prediction proved false, yet the delusion was not destroyed, and the same mummary was repeated with the same success. We could not, therefore, be very much provoked by the poor fellow's mistake, though we were somewhat so by the obstinacy with which he persisted in his demand after we had assured him of our incompetency to comply with it.

It is worth observing that in the East, as elsewhere, the exercise of the magical art is considered anything but respectable, and that to call a man a magician is a serious affront. Heretics and unbelievers are supposed to be the greatest adepts on account of their familiar communion with the evil one. Some Muslims, however, follow the lucrative and idle trade ; but they are always, I believe, Moggrebbis, men from the West, that is, from Fez and Morocco. Even in the Alf Leileh-wa-Leileh, as related at least by the storytellers of the coffee-houses, all the magicians introduced come from the West ; and both in Alexandria and Cairo there are many individuals of this race who gain their livings by divinations, incantations, writing love-charms, &c. However, I have never heard of anything remarkable, even as a coincidence, being performed by them ; and am disposed to think, from all I have seen, that they are the most vulgar impostors imaginable. Some tourists speak of them in a mysterious sort of way as if they really possessed supernatural powers, or at least extraordinary ingenuity ; but there is a tendency, even in the most virtuous of this class of writers, to accept with easy good faith the interested exaggerations of their dragomans, and the waggish confidences of idle European residents. In my intercourse with the natives of Egypt I have found that the belief in magic is almost universally spread ; but so is the belief in miracles worked by saints dead or alive. It is not, therefore, necessary to suppose that the popular opinion often receives any corroboration from accident or the operations of an occult science. Hundreds of women with the curse of sterility upon them pay ineffectual visits to the tombs of fruit-giving Sheikhs, but the number of votaries never diminishes. In like manner hundreds of treasure-seekers, or victims of robbery, apply to the Moggrebbis for information, without success ; but

the delusion still continues, and trade thrives. Some of the more prudent of these wise men of the West undertake only to prophesy of the distant future. I once had my fortune told in one of the bazaars for the small sum of ten paras, about one halfpenny, by a little old man in a grey felt cap. He first asked me my mother's name, then my age, then the month in which I was born, and proceeded to make a kind of mumbled calculation, in which the three facts I had put him in possession of constantly recurred. The result was that I was, firstly, to be very rich; secondly, to marry a handsome woman; and, thirdly, to be the father of a large family of children. To ensure the fulfilment of the second part of the prophecy I made the acquisition of a love-charm, written on a long slip of paper in black and red ink, for ten paras more.

Having consoled our honest guide as well as possible for his disappointment, we returned to the tent. I had, however, in the meanwhile planned another expedition to explore what I thought must be some ancient remains, situate in a distant grove of palm-trees. The same man agreed to accompany me, and after a short rest I started, passing round the south side of the village and taking a westerly direction. On the path we met a number of donkeys—all most diminutive—laden with dates, palm-branches, and provender. The men or boys who accompanied them looked at me with curiosity, but without rudeness, and asked no questions respecting me, although, as I afterwards learned, they had been out all night at the extremity of the valley, and had not heard of the arrival of strangers. We passed through a tract covered with rushes, which afford great scope to the industry of the inhabitants. They make excellent round and square mats, and *zembils*, or baskets. The latter, which are in great request for carrying the dates, are no doubt a source of some profit.

On all sides also grew the “*aghoul*,” or *Hedysarum Alhagi* of Linnæus—of a bright-green colour, chequering the white sand. It is of immense utility in the Oâsis; donkeys and camels feed on it both fresh and dry; and they seem to collect an immense stock for consumption during the hot weather. Both here and at Siwah we constantly met droves of dwarf donkeys staggering under huge heaps of it. They generally cut it, collect it in square bundles, and leave it to dry like hay in the sun. It serves also the purpose of manure for the palm-trees, being

placed, towards the end of October, in little trenches round the roots, after which a stream of water is turned upon it. I have never noticed in any other country this care bestowed on the cultivation of the palm.

In about three quarters of an hour we came to the skirts of a large date grove, and my guide halting told me we had reached the term of our walk. At first I could distinguish nothing but a large piece of open and uneven ground; but he soon drew my attention to the remains of a vast wall that had formerly enclosed an oval space one hundred paces in its extreme length. The action of the air had almost completely decomposed the upper surface of the stones, but I soon found that the wall had been constructed with large square blocks. There was an opening at either extremity, but nothing seemed to reveal the character of the building. My guide said it was the remnant of an ancient fortified village that had been built on the same plan with theirs, and I cannot guess what else it could have been. Near at hand were some trenches eight feet long by two broad, lined with brickwork in tolerably good preservation. They were now nearly filled with rubbish, but as I was told had often been cleared out in search of treasure. My guide watched my face anxiously as I examined them; and in the childish voice peculiar to his race, told me of the labours that had been undertaken on the chance of finding one of those pots of gold which haunt the imaginations of all Orientals. In a few minutes more he gave me an illustration of the magical power of gold, the bare hope of finding which triumphs over an indolence not to be conquered by any rational incitement to industry. Close by, under the shade of a beautiful clump of palms, was what appeared at first sight a mere pool of pellucid water. The name of Aïn Fāris attracted my notice; and on attentive examination I saw that it must have been an ancient fountain, as about a foot below the surface was the mouth of a broad circular well lined with excellent solid masonry in perfect preservation. In front of this was a square cistern, some sixty or seventy feet each way, the walls of which, having been more exposed to the action of the atmosphere, were honeycombed and ruined. Two or three conduits that had in ancient times been cased with stone still drew off the water. A beautiful clump

of palm-shrubs, with three or four lofty trunks, drooped over the fountain, whilst the margin of the cistern was fringed with luxuriant vegetation. A long vista between the groves led the eye to the castellated village of Garah, which may be descried from almost any point of this little Oäsis. A man with a donkey-load of dates came up whilst I was viewing the scene, and entered into conversation with my guide. He seemed quite puzzled to know what brought me there ; and I have little doubt he suspected I was a magician from the West on the look-out for treasure. He was one of a party of two or three that had been out for some time on the borders of the desert gathering an inferior kind of date which grows quite wild, and is used as food for donkeys and camels.

I asked what was the measurement of the well, and was told that some Siwahis had once cleared it to the depth of four fathoms, and a large heap of black soil, mixed with fragments of pottery, was indicated to attest the truth of the assertion. On that occasion the water gushed forth much more plentifully, but laziness and the Garah people are dear friends, and no attempt was made to keep the source clear. " We are poor wretches," was my guide's humble confession, " and have not the heart to undertake anything new." He gave the same answer when I asked why there were here no pomegranates, no bananas, no grapes, as at Síwah. They had not the courage to attempt a garden, and were content to pass their lives in growing dates and weaving baskets to export them in.

I returned by very nearly the same path I took in going, my guide, who seemed to understand that I was in quest of information, becoming by degrees more and more communicative. He first showed me near the foundation before mentioned a hollow in a rock, where there were some traces of fire. This, he said, was the station generally adopted by a kind of travelling blacksmith, who, once a year, makes a tour among the Bedawin tribes. His business was to mend guns, make knives, &c., and he stays a few days at Garah, principally employed in fabricating a peculiar kind of saw-knife for cutting dates or " aghoul," which is the constant companion of these people. The form of the blade is that of a small segment of a circle, with the straight side serrated ; the wooden handle is about a cubit in length.

I asked what means of defence in the shape of fire-arms the inhabitants of Garah possessed, and was told only two guns which belonged to nobody in particular, being generally entrusted to the most expert. They sometimes use them to shoot crows, which are considered a delicacy ; but they never waste powder on the numerous wolves and jackals which come down from the mountains at night to feed on the fallen dates. These predatory animals are allowed to return unmolested to their haunts unless they happen to fall into the traps sometimes laid for them. I suppose that in case of an attack of Bedawins directed against their village they would use these guns ; but not to resist robberies of the produce of their trees, to which they quietly submit, preferring to apply for redress to the Sheikh-el-Arab, from whom they generally succeed in getting some kind of compensation. We saw moreover one or two spears in the hands of the Garah folks ; and their date-knives are no doubt on a pinch converted into weapons. Altogether they are a simple, humble, and hospitable people ; very obliging and very unenterprising, and have narrowed the circle of their wants to accord with the limited range of their industry. Those with whom I spoke freely acknowledged that much might be done in the way of improvement, especially by the introduction of new trees and by clearing out the wells ; but why should they trouble themselves ? They had enough for their absolute support, and felt no desire for more. The fact is their isolated position in the midst of the desert seems to have completely discouraged them and broken their spirit, especially as it deprives them of the advantages of civilized society and active communion with the world without protecting them from oppression. Three hundred dollars are yearly exacted from these miserable creatures by the Pasha's government. It is said that there are only generally forty souls in the village. According to my guide's account, however, the numbers must have been greater at the particular moment at which we arrived ; as there were twenty-two children in the village, of which fifteen were male. This disproportion between the sexes always exists at Garah ; so that a great many men are compelled to lead a life of single-blessedness. Sometimes a *fellaha* girl is imported from the valley of the Nile, as was the custom of some of the desert tribes of old—" His mother took

him a wife out of the land of Egypt" (Gen. xxi. 21). Occasionally they procure a female slave from Siwah. The people of the latter place are too proud to give their daughters in marriage to a Garah man, who is looked upon as an inferior being. I was amused with the simplicity with which my companion stated the existence of this opinion, and with the tacit acknowledgment he made that it was not so very erroneous after all.

Property in the valley of Garah consists almost entirely of date-trees. Of these there are fourteen hundred, unequally divided amongst the heads of families, some of whom possess above two hundred, whilst one or two are masters only of twenty-five. There are nine wells; four tolerably copious ones to the west of the village, and five much choked with sand to the east. Besides the above-mentioned trees, which are regularly counted and cultivated, numerous wild clumps rise here and there, bearing an inferior fruit, used as food for camels and asses. I could not make out that, with the exception of the rushes already noticed and the "aghoul," these poor people receive anything else from their soil. Formerly they had large water-melons; but indolence has induced them to abandon the use of this agreeable fruit. In exchange for their baskets and their dates—the crop of which is good only on every alternate year—they procure a little wheat from the Bedawins, who bring it from Alexandria or Cairo, and also *samné*, "clarified butter." Their other wants are supplied by the caravans which pass periodically between Siwah and the land of Egypt, stopping at Garah on their way. Upon the whole, the contemplation of their state produced a mixed feeling of pain and pleasure, caused by the observation of many amiable qualities associated with profound and unresisted misery. Had they been like savage nations unconscious of their plight, we might have congratulated them on their indifference; but they seemed perfectly aware of their condition, and spoke to us with the whining resignation of a people that has seen better days, but does not choose to exert itself to behold them again.

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## CHAPTER X.

Affectionate Farewell of the People of Garah — A Siwahí joins our Party — Ascent from the Valley — Beautiful Sunset — Dismal Gorges — Lofty Table-land — Temperature 102° in the Shade — Nugb-el-Mejebbery — Legend of Brigand Bedawíns — The Gates of the Oásis — A Caravan of Oásians — Interview — Enter the Valley — Beautiful View — Our first Reception — Reach a Spring — Another Caravan — Halt near a Hamlet — Presents sent to us — We find we are not welcome — Their Ethnological Ideas.

ON the afternoon of the 1st of October we were again ready to start. Our little caravan collected round the well; and the villagers, some of them bearing light spears, came out to behold our departure and bid us farewell. The skins of water were slung across the unwilling camels—to bring which near the well a great deal of manœuvring was necessary—and we began to move. Then came a general explosion of polite sentiments—"Maâk salaam!" (with you be peace!) was the unanimously expressed wish of the whole population, as they one and all touched our hands and then laid theirs to their breasts. There was nothing of that cry for "backshish" which disgusts one in an Egyptian village; but the sheikh waited with decent patience for our present, and received it with becoming and not undignified gratitude. I must mention that we now found our party increased by a Siwahí who happened to be at Garah, and seized on this opportunity of returning safely to his native place. We were not displeased with his companionship, as it seemed probable he might assist in spreading a good feeling towards us among his countrymen on our arrival. He was armed with a gun and a date-knife; with which latter he distinguished himself by chopping up a snake that imprudently showed itself in the path.

We slowly made our way across the valley, which was covered with sand-heaps and low brushwood mingled with palm-trees and clumps. Before reaching the pass that leads up to the general

level of the desert we plucked some delicious blue dates from a tree loaded with fruit to refresh us ere we entered on the arduous part of our journey. The ascent was difficult; but, when once achieved, brought us to a pretty level grey gravelly plain, across which we went at an accelerated pace until after nightfall. The sunset this evening was particularly beautiful. During about a quarter of an hour we rode under a canopy of rosy clouds that stretched from horizon to horizon, and seemed to increase gradually in splendour until, suddenly fading, "all was grey." During our journey over the desert we seldom noticed that the beginning and close of day displayed any peculiar brilliance of colour. I remember once, however, observing, when the sun was just dipping beneath the horizon, that four or five columns of beams, if I may so express myself, rose against a saffron ground, widening by degrees and exhibiting all the variegated tints of the rainbow. In about an hour more we came to the foot of the range of hills which, as I have said, overlooks the valley of Garah, and began to ascend a series of horrible gorges by starlight. The darkness was so great that we could distinguish nothing but huge black masses of rock on either hand; amidst which for some time we threaded our way with considerable labour and at imminent risk. It was scarcely possible for a desert-ride to be more romantic or impressive; for, in addition to the actual perils of the steep and uncertain path, were those pictured to us by the panic-struck Bedawins, who now maintained more stoutly than ever that in these apparently uninhabited solitudes there were roaming wild and desperate men who, at any moment, might be expected to pounce upon us from behind some overhanging rock. However, we proceeded until a quarter past eight, when, after a five hours' ride, we picked out a tolerably smooth place among the stones, and lay down until three hours after midnight. The moon then lighted our way until dawn, by which time we had ascended another pass and reached a broad plain or table-land. As the first streaks of light appeared above the horizon we could just distinguish far below the immense tract of country we had traversed; but before the sun came to our aid we could see nothing in our rear save the near horizon following closely on our footsteps, and ahead and on all sides nothing but one scarcely deviating surface. We continued until we had made

rather more than six hours, and then rested until the heat of the day had subsided. The thermometer at this elevated spot reached 102° in our tent. On account of the hardness of the ground, we found at first so much difficulty in driving the pegs, that we had a great mind to give up the job. But the prospect of a few hours' release from the torrent of light and heat poured down upon that arid plain made us persevere; and at length we had the pleasure of creeping under the friendly canvas and breathing a comparatively cool atmosphere. These were usually the most cheerful moments of the day; and I confess that, in common with the whole party, I never recur with greater delight to any incidents of our journey than to our mid-day halts, during which, after a frugal dinner—naturally the first care—we smoked our pipes, wrote our journals, repaired any disasters that might have occurred in the previous twenty-four hours to our costume, and made our provision for the succeeding ride, sometimes concluding with a nap, sometimes with a tough discussion. When the hour came—usually about the *asser*, between three and four o'clock—each man packed up his carpet-bag, the tent was taken down, and off we were again in a very short time after the word of command was given.

From three o'clock to sunset we proceeded across the same table-land; but at length perceived several chasms opening on either side and in front of us. One of these proved to be the descent towards the lower country. We had at length traversed the ridge that separates Garah from Siwah; and as soon as we had disengaged ourselves from its outworks and the spurs it throws forward, we were promised a view of the Gates of the Oäsis. The pass we now entered was called Nugb-el-Mejebbery, and had a tradition connected with it. Some time ago, it is said, a party of fifty brigand Bedawins determined to waylay a caravan on its way from the coast. In order to take it more completely by surprise, they piled up fifty small heaps of stones right across the valley, and lay down waiting for their prey behind them. The caravan approached at first unsuspectingly, but either the bandits fired too soon, or were descried from the top of the rocks; for the ambushade failed, a desperate conflict ensued, and the honest men got the upper hand. The piles of stones still exist, and the Nugb even now bears an ill reputation;

so that, when we halted at the coming on of total darkness, our guides grumbled exceedingly because we insisted on treating ourselves to a cup of tea. They feared that our little fire might draw down upon us the attentions of heaven knows how many cut-throats. However, such was not the case. The valley remained as silent and peaceable as when we entered it. Not a single gun gave forth its enlivening flash. The stars rising in lustrous splendour over the path we had quitted seemed the only objects in motion; and we were suffered to sip our Congo and smoke our gebeli in quiet. A sound sleep prepared us for the exertions of the succeeding day, and an hour and a half after midnight the signal was given to march. A small plain and another descent occupied us until near sunrise, when the fresh breeze that blew upon our cheeks seemed to bear the fragrance of vegetation with it. We were soon, indeed, among the copses of Om Eaymé, consisting of huge clumps of bushes growing out of piles of sand, and extending it appeared for several miles to our left. Here we stopped and made a cup of coffee, our guides, indefatigable in raising false alarms, declaring it dangerous to proceed except by the light of day. This time we suspected them of a desire to browse their camels. The sun, however, soon showed itself over the great range of hills in our rear, and then came the order to march, and then a rapid ride over a little billowy ridge, and then our first sight of the mountain which frowns over the entrance of the Oäsis.

To our right the customary limestone hills, with all their variety of form, swept round in a semicircle, thrusting out in front of us a long point, at the extremity of which, rising like the body of a great cathedral, was the long-expected Om-el-Yús. Appearing from behind this on the horizon, above the edge of the plain, and stretching far away towards the left, like a distant snowy range, was the dazzlingly white sandy desert, which has rolled its swelling waves to the confines of the Oäsis, but paused there, leaving that fertile spot of earth between it and the foot of the great hilly, or rather mountainous, tract which from thence extends to the sea.

Though accustomed to the illusions of the desert, we had no idea, on first beholding the gigantic form of Om-el-Yús, of the distance that yet remained for us to traverse; on we went, hour

after hour, determined not again to halt except within the limits of the Oäsis. We had perhaps never before experienced so great a degree of heat, and certainly this day's work promised to be the most fatiguing we had as yet gone through. Whilst toiling along over the plain that seemed to lengthen as we advanced, a number of objects appeared in the distance emerging from the mirage. After some hesitation they were pronounced by our Bedawins to be a caravan. There was the usual uncertainty and anxiety expressed, it being no extraordinary thing for members of adverse tribes to meet on the road to a common market like Siwah and come to blows, the strong endeavouring to plunder the weak. Our approach, however, seemed also to alarm the strangers; they too paused, but at length slowly drew near and dispatched four unarmed men to meet us. Our Siwahi companion, on this, gave up his gun and went forward. Amicable relations were soon established. There were seventy or eighty camels, and some thirty people of the Oäsis on their way to Alexandria with dates. Those that came up saluted us politely, and sent us some of their fruit. Had we been more distant from our destination we might have sought some further communication with them, but as it was we were too anxious to arrive.

We at last rounded the corner of the huge rock, that rose sheer from the level plain, and turning to the west, gained an extensive view down the long-wished for valley, which seemed to descend in a regular gentle slope from where we stood, bounded on the north by the lofty red and white limestone range, on the south by the shining undulations of the desert. On the edge of the latter, at some distance ahead, stood a solitary mountain, with five conspicuous peaks, near which we soon distinguished three small conical hills, rising in a line at equal intervals above a grove of palm trees. Farther to the west, as we afterwards found, but appearing at first on the same plane, several huge detached square rocks broke the horizon.

The rough ground on which we now entered bore a great resemblance to a ploughed field; but was soon discovered to consist almost entirely of hard earth mixed with salt. To our left stretched an immense reedy expanse, terminating in a salt lake, beaming brightly in the sun, and with banks covered by a dazzlingly white efflorescence. This lake stretched a great way

ahead, and seemed to divide a small patch of cultivation at the entrance of the Oäsis from the central tract, which we could see beyond, crowded with palm-groves. We had not been long within the valley ere we beheld a tall black running across the fields to greet us. He pressed our hands, and in a simple and affectionate manner welcomed us to his country. Farther on, two or three other dark skins met us with a drove of diminutive donkeys, and instantly offered to be of any assistance in their power. Our poor asses seemed highly delighted at the society of their kindred, and after a journey of between three and four hundred miles attempted with astonishing vigour to gambol with their new friends. Wiser than they, however, we knew that a bellyful of water would do them more good than an exchange of mute civilities. Our supply was not quite exhausted when we reached the Oäsis; but just then the camel that carried it took it into its head to bolt, which it accordingly did with awkward agility, until it succeeded in casting loose the skins, and spilling their scanty contents on the ground. We accordingly proceeded under the guidance of one of these obliging blacks to a spring not far from the edge of the salt lake. Here, in the midst of a pool filled with reeds and rushes, bubbled up some tolerably sweet water, of which we and our animals drank an ample supply.

Old Yunus now gave us another sample of his disobedience, by refusing to bring the camels to the neighbourhood of the spring, alleging as a reason the swarms of mosquitoes that buzzed about it. We overtook him at no great distance, and halted under the shade of a palm clump at half-past one, having been for twelve hours nearly uninterruptedly in motion. The latter part of the day had been exceedingly warm, as the calmness of the atmosphere was only disturbed by occasional hot blasts of wind from the south-west after we entered the valley.

As we reclined under the scanty protection of the palm-clump another caravan of Siwahis passed in the distance. Three or four of the men came to join our party, and one, who appeared to be the only smoker, enjoyed a pipe for a few minutes. Up to this time there was nothing to forewarn us of the reception we were to meet with. All these people were civil and respectful; and when we reflected on their manner and on our excellent treatment at Garah, we somewhat precipitately bestowed on this

beautiful place the title of "The Happy Valley." We gazed around with infinite pleasure on the scenes which opened on every side. Rugged hills in one direction, undulating deserts in another; here green and fertile plains; there salt lakes, sparkling like fields of half-thawed snow. All these things seemed floating in pictorial minuteness before us—so clear was the atmosphere, so vivid the light that fell in shining streams on every object around. The beauty of southern scenery, its peculiar characteristic, consists chiefly in the sharpness of its outlines. Perhaps the misty, indefinite background of an European landscape—the mingling of earth with sky, the blending of distant colours, the haze that envelops far off mountains, the clouds that lower on the horizon or roll athwart the heavens, present more materials for a painter; but I doubt whether the eye can receive keener pleasure than from the sight of a country like that in which we were arrived, where nothing seemed to exist that could intercept the fierce embraces of the sun.

An hour's ride in the evening through salt marshes, fields, and groves brought us to another spring, near which we determined to pass the night. It was on the westerly border of a great palm-grove, round the north of which we had come, making a long circuit to avoid the salt-marshes. When we halted it was already twilight, and we could see nothing around us but a small hamlet, a little plain, dense woods on every hand, and to the south, boldly pencilled against the sky, the village of Gharmy on its lofty rock. For my part I was glad enough of a stoppage, as I began to feel burning thirst and other symptoms of approaching illness. We pitched our tent on a little hillock, and were soon snug enough, in spite of the wind that arose on the coming on of darkness. During all the time we were at Siwah, and at its little dependency Garah, we noticed that no sooner had night set in than there was a rush of cool air from some direction, generally from a northerly one, into the valley.

The people continued tolerably civil, and the inhabitants of a neighbouring village brought us some enormous onions, delicious yellow dates, and a few pomegranates, with a small kind of cake, as a present. Whilst we sipped our tea, and congratulated one another on our safe arrival, they sat outside, partly conversing with us, partly among themselves, and evidently much puzzled

by our arrival. Few of them had ever seen a Frank before, whilst some said they remembered two or three having been there about the time of Hassan Bey Shamashurghi in 1819. These must have been the Baron Minutoli, Linant Bey, M. Drovetti, and Colonel Boutin, who all visited the Oâsis on the occasion of its conquest by the above-mentioned general, trusting to the security which was likely to follow a recent invasion. Since that time no European had ever visited this secluded spot.

Our speculations on these subjects were interrupted by the clatter of horses' and donkeys' hoofs, and we were soon surrounded by a crowd of Sheikhs and great people from Siwah-el-Kebir itself. Greybeards and white burnouses came crowding pell-mell through the darkness, and a pyramid of inquisitive faces was soon piled up at the doorway of our tent, in the full glare of the lantern. If they thought us as queer-looking as they themselves certainly were, I excuse them for the looks of piggish astonishment which they interchanged as they squatted down for some time, jabbering together like monkeys in their outlandish jargon. It was somewhat doubtful whether the visit was intended for Sheikh Yunus or for ourselves. The former was honoured with the first attentions of these important personages, who catechised him closely on his motives in bringing us thither, and seemed not at all satisfied with his explanations. It soon appeared very plainly that we were by no means welcome. They cast upon us the eye of suspicion, and wrapped themselves up in the mantle of distrust. Without being uncharitable, we may suppose they wished us anywhere but in their territory; and if I may judge by their faces, it was not for lack of silent invocations that our eyes were not trodden out, and that our beards remained undefiled. However, though manifestly perplexed and uneasy, they seemed inclined at first to make the best of a bad bargain; and one of them, who seemed to be exercising an admitted rigour or to discharge a special duty, drew near and questioned us with constrained politeness, but pretty closely, and delivered our answers to the ill-looking mob outside. They were evidently quite surprised at the familiarity with which we spoke of the positions of various spots in the Oâsis, especially the ruins; and seeing that we occasionally referred to a book, asked if all these things were down in a register. Not being able to comprehend our real object,

they seemed floating between two suppositions: one that we were treasure-seekers—the other that we came to prepare a new, perhaps heavier, system of taxation. In neither character were we likely to be regarded with great good will. After some conversation, they asked us for our passport, which being in due form, gave them something to think about. Still, on leaving us that evening, they had clearly not quite made up their minds as to how they should act. The firmân enjoined one thing, but their bigotry and suspicion counselled another. Our safety, then, depended on the result of a conflict between fear and malice in the minds of a set of fanatical barbarians, almost deprived of intercourse with the rest of the world, who believe Christians to be the vilest of God's creatures, and whose ethnological ideas represent us English as a degraded race without a home, wandering about the ocean in ships—the French as a people of blacks, dwelling, like Troglodytes, on a great mountain, in caves and holes in the rocks! Most of their ideas of the Nasára are derived from the antiquities of their own Oäsis, which is full of small catacombs, looked upon by them as the abodes of the beastly nation that preceded them.

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## CHAPTER XI.

Push on to the Capital, Siwah-el-Kebír — Pass the Mountain of the Dead — Description of the City of Salt — The Siwah Rabble collects — How we were stared at — Gloomy bigotry of the people — Their Appearance and Costume — An Egyptian Trader — Visit to the Catacombs in the Mountain of the Dead — View from its Summit — Scenery of the Oâsis — Available Land of the Oâsis — The grand Divan of Siwah — Deliberations concerning us — We are refused admission to the inner town, on account of its being the common Harím — General ill-treatment — A polite Sheikh.

I WAS not well the next morning; and indeed during my whole stay in the Oâsis suffered from a slight dysentery, which did not, however, prevent me from moving about and exploring, though I in part attribute to it some of the incompleteness of my researches. We left our ground at half-past eight o'clock, and made for the nearest of the three conical hills I have before mentioned. This proved to be Gebel-el-Mouta, or the Mountain of the Dead, which, as we approached, appeared to be perfectly honeycombed with catacombs. Their entrances were arranged in lines along the face of the hill, looking like the windows of a ruined building. I have scarcely ever seen so curious a sight as this <sup>here</sup> rock hewn into a sepulchre. There was once a proposal<sup>el</sup> to build a pyramid near London full of passages and recesses<sup>we</sup> to receive the thousand a week that go to their last account. Here was the idea in some sort realized. From top to bottom, on every side, were the chambers of the dead perforated in the imposing mass before us; and as I afterwards found, the excavations have been carried towards the centre and even through and through.

Leaving this interesting object to our right we pressed on towards the great salt-meadow intersected with brooks, that stretches to the north of the town, and serves as a halting-ground for the caravans that arrive from the desert. A great number of camels and Bedawins now occupied it: but passing these, we

advanced at once to Siwah-el-Kebir itself; and having crossed a ditch or stream, encamped in an irregular triangle on the north-east side, formed by an enclosed palm-grove at our backs; a wall, through a break in which we had passed, on our right; and another wall in front, over which the huge form of the town or castle, with its innumerable loop-holes or windows, reared itself. Near the left angle of this open space were some houses forming a kind of suburb.

Siwah-el-Kebir, or Siwah the Great, as the capital of the Oásis is called, constitutes a most remarkable object in itself; but it is difficult to present an idea of it by words. From our tent it wore the appearance of an immense castellated building or citadel, with very lofty perpendicular walls flanked by buttresses or towers; and with houses appearing over the battlements rising tier above tier to a point where a cluster of one or two small buildings crowns the whole, and may be thought to resemble a watch-tower or keep. A great number of dwelling-places are clustered round the base and spread on all sides; but these are only looked upon as suburbs. The construction of the town is peculiar; but though the objects of defence are well answered they do not appear to have been chiefly considered in the plan, which flowed from the singular character and manners of its inhabitants. The site originally chosen was the summit and sides of one of two pointed hills, or rather masses of rock, that rose direct out of the level plain. This hill seems to have been first covered with a mass of closely-packed houses, with narrow streets or lanes between. As the population increased, the irregular octagon was not spread far and wide around, but began to ascend aloft into the air—house upon house, street upon street, quarter upon quarter, until it became a beehive and not a town. The Siwahí architects appear not to have seen that light was good: how a single ray can penetrate into any of the inner buildings it is difficult to understand. The outer ones have little square windows disposed triangularly. In most parts of the place the streets are covered over, as at Garah, and of course pitch-dark even by day, so that any one who is about to enter, as naturally takes his lantern as if he were sallying forth after gunfire in an Egyptian city. It was amusing to see our Bedawíns thus providing themselves in the midst of some of the most bril-

liant days I have ever witnessed. On what system the passages of communication are arranged I cannot tell, as we were not permitted to ascertain: all I know from my own observation is, that house is leaned against house, and story raised above story, round the central rock, to a great elevation, and that the backs of the outer buildings, regularly corresponding, form a vast wall encompassing the city, of the height of more than a hundred feet. Several houses have been begun outside and carried up to different points; these produce the effect of flanking towers; and, with the nine entrances resembling very small postern-gates, ascended by steps, help to give to Siwah the appearance of a fortified place, which indeed it may, to a certain extent, be considered. Near the northern extremity is the chimney-like minaret of a mosque, from which the Muezzin at stated hours, not exactly those prescribed in the Muslim ritual, pokes out his head, like a London sweep, and calls the faithful to prayers. The wall is not quite regular, being in some places much lower than in others. There are open spaces in the town; and in one of them the Divan is held; but the greater part appears to be a mass of closely-packed houses, divided by corridors that probably wind spirally round the central rock.

The cause of this singular mode of building was, that when the son of a family married, his father, according to immemorial custom, built him a house, not in the suburbs or by the side of his own, but on the top: every succeeding generation did the same, as though this barbarian people had determined to imitate the Tower of Babel and climb the skies. They stopped short, however, within reasonable limits; the great grandson of a defunct constructive genius perhaps deeming it safer to occupy the lower rooms left vacant by his forefathers than to be thrust aloft into the air to the dizzy height which some have attained, and so the accumulative process at length ceased, after having carried the pinnacles of the place to a vast height. It is probable that successive generations push one another up and down as the stories become vacant, so that whilst in one pile of buildings the chief of a long line is at the bottom, in another he is at the top!

You must know, moreover, that not among the Spartans was marriage held in higher honour than among the people of Siwah. Neither bachelor nor widower is allowed to dwell permanently

within the walls or to remain on a visit after sunset. As soon as the young men reach a certain age they are driven forth to build themselves dwellings in the suburbs; and when a wife dies, sentence of expulsion is forthwith passed on her disconsolate partner; for this reason it is that on every side numerous houses exist, but especially towards the north, where there is a regular quarter round the base of the second conical hill. The shape of this hill is curious; it is filled with excavations and catacombs, and rises in strata of diminishing extent until, at the top, a huge mass of stone appears, to a fanciful eye, in the form of a lion couchant.

I have already hinted that Siwah is built of fossil salt, or rather earth in which salt is mixed in great proportions, sometimes more than half, and this circumstance, curious in itself, becomes the more so from the fact that, as long ago as the age of Herodotus, the people of these regions built their dwellings of the same material, and that the Father of History, for recording this among other incredible facts, gained the name of the Father of Lies.\* It was extremely interesting to us to detach portions from the walls that rose on every side, and to see, on breaking them, the pure salt white and sparkling within, whilst without, of course, dust and dirt and heat had imparted a greyish hue. I imagine that, as at Garah, rafters of the palm-tree enter plentifully into the construction of the whole pile.

Whilst we sat under the shade of the garden wall smoking our pipes and leisurely contemplating the scene that presented itself, we became the objects of the unintelligent curiosity of the bees or rather drones of the hive before us. Up they came, strutting with that air of monstrous arrogance which no one who is unsteeped in the treble darkness of Muslim pride can assume, to gaze at the new comers. There was no salute, no expression of welcome; we had got into an atmosphere of intense bigotry. During our morning's ride we had already felt the change. No hands were extended to press ours, no peace was invoked upon our heads; every face on the road was averted, every eye scowled in hatred, every lip curled in scorn. The curses, however, that were no doubt heaped upon us as we passed were expressed in

\* Pliny (v. 5) mentions an oasis in which the people built their houses of salt.

their own frightful jargon, and did not therefore offend our ears except by the unmusical succession of sounds.

Well, as I have said, the Siwahí rabble collected around us, and we were soon the objects of an universal stare. Had they laughed at our appearance I should have forgiven them: four such guys as we were had never before surely entered their territories. One sported a nightcap surmounted by an old grey hat much the worse for wear, and a brown holland suit, which at starting scarce contained his portly form, but now hung loose about it; another had decked himself out in a tarboosh and an indescribable summer coat; the brows of a third were surmounted by a huge turban, and he was wrapped in a flannel jacket, in which, according to the necessities of the journey, he had slashed innumerable extempore pockets; whilst your humble servant was overshadowed by an enormous truncated cone formed by a beaver hat with a brim six inches broad, and a white linen covering stretched tight over from the crown to the outer edge. True that there was some attempt at respectability in the shape of clean shirts and trousers, but these could not conceal the fact that we had been knocking about for nearly three weeks in the desert, generally *sub divo*, and always too fatigued at our halts to pay much attention to the toilet: as to shaving, nobody ever thought of such a thing; our faces, too, were burned black with the sun, and several noses were regularly skinned.

But the Siwahís—"May misfortune come to them!"—did not see the comical side of the question. We were Christians, infidels, dogs, had made our appearance under suspicious circumstances, and claimed the protection of a hated authority. Nothing therefore but a vague fear of consequences prevented them from stoning us to death on the spot. I am persuaded that our arrival had been the theme of conversation all night, and that the most fanatical of this fanatical brood had been holding forth on the necessity of giving us a warm reception, whilst the more liberal and timid had counselled our being treated with silent contempt. Be this as it may, they came in sullen silence to gaze at us, and generally went away with looks of gloomy hatred: even the boys eyed us over with the gravity of men, and we made the remarkable observation that neither on this occasion nor on any other did a single smile illumine their sombre features.

Most of the rabble before us were men of middle size and slender make, with sallow complexions and small unmeaning features. As at Garah there were some of a half-negro cast of countenance, besides a number of real blacks, who by the way were often good-humoured, and deigned sometimes to distend their mouths with a grin and show us their white teeth. These are for the most part slaves employed as household servants. Of course not a single woman mingled with the crowd. The usual dress was a white or brown shirt descending nearly to the ankles and furnished with long loose sleeves, and a white *takiah* or linen skull-cap. Very few wore the more expensive tarboosh, but some had a *litham* or scarf of checked blue and white cotton cloth thrown over the head with one end depending in front, whilst the other was wrapped round the chin, hiding part of the mouth and cast back over the left shoulder: this head-dress is rather becoming and graceful, and has long prevailed among certain nations of Northern Africa. Leo explains the custom by saying that the mouth, as the aperture that received food, was a part that propriety forbade to be left uncovered.

Whilst we were interchanging stares with our uncivil hosts a turbaned man came up in a blue shirt, and we at once recognised the Egyptian. He proved to be an Arab merchant from the Saïd or Upper Egypt, engaged in the grain trade. We learned that he crossed the desert once every season with a supply of wheat, rice, and beans, which he disposed of in small parcels, as the arrival of the Bedawins to buy dates brought a few dollars into the hands of the Siwahis. He smoked a pipe with us and seemed inclined to be useful in giving information, though somewhat in awe of his customers.

I walked this morning to Gebel Mouta to amuse myself by exploring the catacombs. A man who observed me taking this direction shouted to me to come back, but I affected not to hear and pursued my way; he was occupied with a drove of donkeys and did not follow me. There was nothing particular in any of the excavations to reward my search. The largest was about sixty feet in depth, and composed of several vaulted chambers, with a choked-up well and some side rooms and passages lighted by long loopholes from the main apartments. Bones and even human hair were scattered about, but there were no hieroglyphs.

phics or paintings except a few ornamental scrolls in blue and red. The curiosity of the hill consists in the extraordinary number of these receptacles of the dead crowded into so small a space. The greater part of the substance of the mountain seemed to have been hewn away. I cannot understand how Browne, who was so many days in the Oâsis, could have written that this hill contains only about thirty catacombs, when the most cursory glance from any point of view reveals an immense number of entrances: his mistake as to the general dimensions is more easily accounted for, as he may have grown weary of examining chamber after chamber.

I ascended with some difficulty to the top, which is nearly pointed, and obtained a splendid view of the whole Oâsis. Magnificent palm groves waved their feathery summits at my feet for an extent of several miles. Beyond these, to the east and west, were the snowy salt-marshes and the shining lakes; whilst in the latter direction the great square form of Edrar Amelal, or the White Mountain, with the conical hills of Kamyseh and Amoudein, closed up the valley. Southward, as far as the eye could reach, were waves of sand that sometimes rose into hills; and to the south-east the five-peaked mountain I have before mentioned reared its solitary form. I strained my eyes in the direction of Om Beydah, or the Temple of Jupiter Ammon, which I knew lay near the foot of a picturesque village on a hill that towered over the palm-trees due east, but could not discover what I sought. Near at hand the town of Siwah, and a little farther on the companion rocks of Sid Hamet, formed bold features in the scene; and to the north the long unbroken range of red limestone hills bounded the view. Om el Yûs could also of course be seen, like a giant watching over the entrance of the valley.

It is difficult to convey an idea of the pleasure I experienced in viewing the prospect that developed itself on all sides around me. It could scarcely have possessed more elements of the beautiful. The verdure, the lakes, and the arid hills may be found elsewhere, and be deemed to afford contrasts sufficiently striking; but perhaps here alone are added in such close juxtaposition the glittering desert and the snowy fields of salt looking like vast glaciers just beginning to melt beneath that sultry clime.

In addition to this view, which may be obtained with little variety from almost any of the hills I have mentioned, many details of the scenery of the Oäsis are extremely pleasing. I never wish to enjoy prettier walks than some of those we took during our stay. There is generally a garden-wall or a fence on either hand of the lanes, with pomegranate-trees bursting over it in redundant luxuriance, and hanging their rich tempting purple fruit within reach of the hand, or the deep-green fig-tree, or the apricot, or the huge ragged leaf of the banana, or the olive, or the vine. The spaces between these are not left idle, being carpeted with a copious growth of bersím and lucerne that loads the air with its fragrance, and is often chequered with spots of a green light that steals in through the branchy canopy above. Sometimes a tiny brook shoots its fleet waters along by the way-side, or lapses slowly with eddying surface, rustling gently between grassy banks or babbling over a pebbly bed. Here and there a rude bridge of palm-trunks is thrown across, but the glassy current frequently glides at will athwart the road. At one place there is a meadow; at another, a copse; but on all sides the date-trees fling up their columnar forms and wave aloft their leafy capitals. Occasionally a huge blue crane sails by on flagging wing to alight on the margin of some neighbouring pool; the hawk or the falcon soars or wheels far up in the air; the dove sinks fluttering on the bough; the quail starts up with its short, strong, whirring flight; and sparrows, with numerous other small predatory birds, go sweeping across the fields. Sometimes you may observe the hard-working black turning up huge clods with his mattock; asses are driven past laden with dried "aghoul;" files of camels move along in the distance on the borders of the desert. From some points the castellated capital is descried down a long vista, or the village of Gharmy rises aloft on its inaccessible rock, or the majestic fragment of the sanctuary of Ammon, which has so bravely stood the brunt of ages, may be seen still standing erect in the midst of its silent glade.

The available land in the Oäsis consists of a piece of ground about five miles long and three or four broad, situated in the centre of a long valley, that extends for sixteen or seventeen miles, nearly in an east and west direction from Om el Yus to

Edrar Amelal; and of some small dependencies or colonies, one at the eastern entrance called Zeitún, others, as Kamyseh and Beled-er-Rum, or the City of the Greeks, lying in a cluster at the extreme west. It must always be kept in mind that the central and principal division is nearly insulated by great salt-lakes and marshes, which in some places intermingle with and penetrate the patches of fertile ground, so that it is difficult to say where one ends and the other begins. Many of the springs of the Oäsis are quite salt, whilst others may be called sweet. The latter rise by the side of the former and flow in the same direction; so that, for example, of two brooks that intersect the encamping ground north of the city, one is potable and one quite briny.

On returning to the tent I found that our relations with the people of Siwah had undergone no amelioration, indeed rather the contrary. From what we could learn, they were in a state of great excitement about us; and the Sheikhs, in divan assembled, were deliberating on the course of conduct they were to pursue. Through the medium of Sheikh Yúnus we had made a formal demand of assistance from these people in the shape of a supply of donkeys to carry us about on our excursions, whilst our own weary and jaded beasts were allowed to rest. The first communication we received in reply was a demand for our *finnân*, which we sent in. It was evident that "we dare not" waited upon "we would" in the minds of these people, and that fear alone prevented them from at once ordering us off. According to the accounts we received there was a stormy debate in the divan. Some were for disregarding the passport altogether, and refusing us all aid and assistance; others voted that we should be granted part of what we demanded. On one point, however, all seemed unanimous—we were not to be allowed to enter the city.

Of course, had the people of Siwah been perfectly agreeable, we should have indulged ourselves with a walk through the streets of their queer-looking abode; but as the wish to see it had had no influence in inducing us to undertake the journey, and as we had already inspected a village—on a smaller scale it is true, but similar in construction—we were not sorry that the wisacres of the place chose to exhibit obstinacy on this point rather than on

any other. What we feared was that they would throw in our way the same obstacles as in that of former travellers who wished to see the temple of Jupiter Ammon. We were none of us antiquarians, it must be confessed, and had rather made this ruin an excuse than an object of our journey; but to have been turned back without being permitted to behold it would have been exceedingly mortifying. I think we took the best way to compass our ends by assuming comparative indifference on this score, and affecting to insist on admission to the town. We demanded, however, what they were resolved not to grant. They looked upon the place as one vast harim. People of their own nation, as I have said, if unmarried, are jealously excluded at night, so are strangers of every description; and we were told that the streets were full of women employed in carrying water, grinding corn, or performing other offices connected with their domestic affairs. Had this statement been made to us at first, we should perhaps have thought it proper at once to acquiesce in their decision. At any rate we should not have felt angry with them. It was the insolence of the rabble, and the tergiversation and uncertain conduct of the Sheikhs, combined with their incivility in refusing to come out and hold a conference with us, since they would not permit us to come in to them, that raised our indignation.

The decision of the Sheikhs was finally communicated, and it was this: that we should be supplied with donkeys and guides, and allowed to visit any part of the Oäsis, but not permitted to enter the gates of the city. Punctuality and faithfulness in carrying out this compromise would have left us no cause to complain; but during our whole residence we were subject to a variety of little annoyances which I may as well mention here, but which went on increasing in proportion as the bigoted party gained the ascendancy. In the first place, the children cursed us at a distance, and now and then sent a stone in our direction; the demeanour of the people was ostentatiously uncivil; and if we took a walk in the neighbourhood of the gates, we were surrounded by a mob that kept talking *at*, not *to* us, and tried to excite one the other to drive the Nasára back to their tent. If a single one among them had plucked up courage to strike a blow, I have no doubt it would have been the signal for a massacre. On one occasion the fanatics despatched us an order, which we of

course disregarded, not to stir from our encamping-ground ; and when, annoyed by their ill treatment, we announced our intention of entering the town in spite of them, they collected armed with guns and spears, and loud threats to put us to death if we attempted it. We were not sorry that they expressed their feelings in this explicit manner, as we should not have felt justified in complying with their prejudices unless there was a certainty that we should otherwise incur a risk disproportionate to the object to be attained.

Our endeavours to procure provisions were almost always unsuccessful, and we should have very probably been starved out had we not had our own supply to fall back upon. One of the few civil Siwahí sent us, it is true, a bowl of rice cooked with oil and flavoured with red pepper, and there was a constant influx of pomegranates and dates. I remember also that we procured, during our stay, two doves, eleven eggs, and a basin of oil, with some unroasted coffee ; but our desire to buy a sheep was frustrated by their refusal to take the Pasha's money. Every transaction was accompanied with impediments of some description, and it required the greatest patience and firmness to bring anything to a satisfactory conclusion.

After the resolve of the high and mighty Sheikhs of Siwah had been communicated to us, we were waiting patiently for the means of beginning our researches when a visitor was announced. We received him among our carpet-bags and baggage piled at the back of the tent. He was a broad-faced pale man, with a good-humoured expression ; wore a tarboosh, a white burnoose, and sported a small blunderbuss. Apparently he was an ambitious character : at any rate, however, he was a polite one, for he sat down and made a speech full of elegant compliments, divided into firstly, secondly, thirdly, and lastly, and containing the reasons why he disapproved of the inhospitable manner in which the Sheikhs seemed inclined to treat us. It turned out that he himself was only an ex-Sheikh, having abdicated, not like Sylla because he was satiated with glory, but, like other great men, because he could not help it. It appears that he had received an appointment from the Pasha of Egypt as one of the head men of the place, and had once possessed a firmân to that effect ; but the other Sheikhs had refused to acknowledge him,

pushing their audacity so far as to tear up the parchment. He was biding his time, and meanwhile reigned supreme in a little suburb. We certainly met with no other really polite man in this outlandish place, and his civility continued unabated to the end. Most of the presents we received came from him. The donkeys we did at last procure were his. Among his other attentions he ordered a black fellow, not a negro however, who it was said bore the office of showish or policeman of the town, to attend on us during our stay, which he did. I suspect this sable gentleman was dignified with an official title, in order, if possible, to soothe our wounded feelings.

In spite of the good-will, however, of Sheikh Yusuf, things did not go on so smoothly as we could have wished. Towards evening, it is true, when it was too late, three donkeys at last came; but as they would not have sufficed, even if they had made their appearance in time, for four people, we were not at all satisfied, and sent them back rather gruffly. We did not know then that these were not official donkeys, but furnished by Sheikh Yusuf, who was really ashamed of the inhospitality of his countrymen. As is usually the case, the vote of the divan in our favour, being carried only by a small majority, was completely unattended to when any active assistance was in question. The only service it rendered us was to give us a certain freedom of action, and enable us to move about with some security.

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## CHAPTER XII.

Visit to the Temple of Jupiter Ammon — Description of the Sanctuary — Hieroglyphics — Images, &c. — Reflections — The Fountain of the Sun — The Palace of the Ancient Kings — Subterranean Passages — See some Women — Their Costume — Ride to the Catacombs of Sid Hamet, and climb the Five-peaked Mountain of Edrar Abou Bryk — The Tribe of "Ropemakers" — Large Sepulchral Chambers — Civil Arab — Return to the encampment — Popular feeling against us — A Burial at Night — Ride across the Salt Lakes to the White Mountain and the City of the Greeks — Ruins of Temples — Catacombs, &c. — Theological conversation — The Two Columns — Bird's-eye View of the Oâsis — Raisins, &c. — Return — Further Explorations — The Date Market — Varieties of Dates.

ON the morning of October the 5th we at length determined no longer to allow our visit to the Temple of Jupiter Ammon to be deferred, and the whole party was about to start on foot, when two donkeys and as many men, one of them the civil showish, made their appearance. I and Longshaw mounted them, Lamport and Forty preferring to walk, and we set off. Our guides took us into a narrow winding lane, between two low walls, of the usual material, namely, earth mixed with salt. These enclosed gardens, filled with palm and other fruit trees, and carefully cultivated likewise in the interspaces; presently a lazy brook bordered our way, and, further on, it became a swift gurgling streamlet. During our ride we observed no traces of hamlets or detached houses, but on emerging from the first palm-grove came to some broad fields in which a number of blacks were at work. It appears that these were the slaves of the great men. The instrument they used was of a curious shape, the handle being long and straight, and the iron as broad as an English spade, brought round so as to form an enormous mattock. The labourers threw the clods between their legs, so that they had their work before them instead of behind.

After crossing the open fields, in an easterly direction, we

entered another vast grove, and soon came under the south-west side of the village of Gharmy (the Agremieh of Hornemann and the Siwah-el-Sharjeh of Minutoli). It is situated on the summit of a lofty precipitous rock—the houses hanging over and piled up as in Garah. Possibly in the palmy days of the Ammonian state it was covered with the fortified palace of the ancient kings ; but I cannot bring the detailed account of Diodorus into any reasonable agreement with the present state of the locality. He speaks of a sort of town, surrounded by a triple wall, one enclosing the palace, another embracing the temple, and a sacred fountain with the habitations of the women ; a third containing the military force. Now if the ruins of Om Beydah are those of the celebrated temple, and there is no good reason for doubting that they are, the second enclosure alone must have included a very large portion of the most fertile territory ; and the third, if proportion was at all regarded, taken in the whole grove. I am disposed to think it more probable that there were three independent enclosures, in which case Gharmy might have been one, the present Siwah a second, and the Temenos of the temple a third. However, this is a question not perhaps to be settled at present.

Three or four hundred paces to the south of the village we at length observed a dark mass of ruins rising on a slightly elevated platform of rock, in the centre of an open glade. We knew at once that this was the object of our visit, and leaping from our saddles, pressed forward with beating hearts to the spot. A few strides over broken fragments of rock and formless ruins placed us beneath the shadow of the vast blocks which, probably many thousand years before, had been upraised to form the roof of a sanctuary in which one of the most venerable oracles of ancient times was wont to pronounce its sententious decisions.

The remains of the temple may be described in a few words. The first object that strikes the eye as you approach is one side of a ruined gateway, standing immediately in front of the fragment of a chamber, which appears much smaller than it is on account of the vastness of the blocks that form the roof. Around the base of this elevated portion of the ruin are heaped up in picturesque confusion huge masses of calcareous stone, several fragments of the shafts of columns, and two or three capitals of

alabaster, whilst the surface of the ground on all sides is covered with excavations, pieces of walls, and other indications that of yore there must have existed a considerable pile of buildings on this spot.

From the traces still remaining I should judge that the temple was enclosed by a wall of immense thickness, nearly four hundred feet from north to south, and rather more than three hundred feet from east to west. Towards the south-east angle a considerable portion may be easily made out, based on the rock and composed of large blocks of stone. Whether there was a second or inner enclosure I could not ascertain, but am inclined to think that the interior was filled up by a variety of chambers and buildings, possibly the residences of the priests, as several holes dug by the natives in search of treasure admit one to a view of solid foundations of walls and small chambers at various points. Probably some idea of the plan of the ancient structure might even now be obtained by carefully clearing away the accumulated rubbish.

As I have intimated there was a central apartment or sanctuary about fifty feet in length and sixteen in width. Of this only the northern end still remains. Its construction was peculiar. The side walls, nearly six feet in thickness, were built of comparatively small blocks, whilst the roof consisted of long beams of stone, if I may so express myself, twenty-seven feet in length, and four in breadth and depth, stretching from side to side, and projecting a little beyond the walls so as to form a kind of cornice on the outside. Three of these are still aloft, and I counted the fragments of ten more strewed about, which enables us to calculate pretty correctly the original length of the apartment. Most probably this was the sanctuary of the building, the place where the oracles were delivered. If I may judge from the ruins of Beled-er-Rum, which seem a modern imitation of the original building, I should say that the gateway was united to the body of the sanctuary by thin side walls, pierced with windows through which light entered. The person who wished to consult the oracle most probably penetrated no farther than this spot, whilst the priest, stationed at the farther end of the apartment, in the deep shade of its Druidical roof, delivered the mysterious responses of the god.

A few feet from the north end of the sanctuary is the eastern side of a massive stone gateway with perpendicular jambs. It is covered with hieroglyphics and figures in a style that may be said to partake both of intaglio and rilievo, as also are the walls of the chamber itself. In the roof are the representations of eagles or vultures, with outstretched wings, flying one behind the other, on a ground interspersed with stars. It appears that all these were originally painted blue and red, as traces of these colours still remain. There are fifty-five lines or rather columns of hieroglyphics on the west side of the chamber, and fifty-three on the east. Underneath are processions of figures with tablets above their heads.

Among the heap of ruins round the fragment of the gateway, many of which are covered with hieroglyphics, is to be found a block of stone, having on three sides sculptured representations of an ugly personage with ram's horns. I will not decide whether or not this was meant for the Krioprosopic Zeus, but confess my curiosity was somewhat raised on catching a glimpse of the hideous face through the crevices left between the enormous fragmental masses beneath which it is buried. I experienced some difficulty in getting down to it, but, by sitting in a constrained posture, succeeded in making a sketch. I endeavoured also to copy some of the hieroglyphics, but from my want of knowledge and practice could do nothing worth while. The important tablets, moreover, are so high-placed that they could not be taken except by means of a scaffolding or ladder; neither of which, considering the state of our relations with the people of the Oâsis, was to be thought of for a moment. I saw a cartouche high up on a portion of the gateway, but, although blessed with pretty good eyesight, could not make out the letters with sufficient certainty to copy them. As to the figures of gods or kings, or heroes with their various emblems which ornament the whole surface of the walls, they can scarcely be explained without the assistance of the inscription. It may be worth while to mention that the camel occurs as a hieroglyphical character, as well as a bird resembling the ostrich.

My description of the remains of this celebrated temple is brief, perhaps unsatisfactory. The truth is, that to say anything very interesting about it would require an amount of architec-

tural and antiquarian knowledge which has not fallen to my lot. For my part, moreover, I do not pretend to have been able to make more than a cursory examination, just sufficient to convince myself that I was really standing amidst the ruins of a temple wherein rites were once performed as ancient in origin as those of Dodona, perhaps on the very spot where Alexander first heard himself assured of his divine parentage. Around me all was ruin and decay. One single fragment only of this vast building was uncrushed beneath the heavy foot of time. Tablets in an unknown language stared at me unmeaningly from crumbling walls. Figures of almost forgotten races—probably of unrecorded dynasties—developed themselves in stately files. I should have liked to come after darkness had descended upon the earth, and the sun's too powerful glare no longer revealed all the mournful devastation around; what time by the moon's uncertain beams in the heavy shade of the palm-woods that would keep up an incessant murmur as of spirits talking in the air, I might have built up again in imagination this antique fabric. I might at least have allowed my thoughts to wander back to the traditionary period when mystic, perhaps dreadful rites, were performed within this now unhallowed fane, when processions of grave Hierodouloi moved through its sombre halls and galleries, when oracular voices muttered along its ponderous roof, when wealthy caravans halted at its gates to acknowledge or to implore protection against the dangers of the waterless desert. I might have been able to picture to myself the tumult and dismay that was created in this tranquil spot of earth by the intelligence that in the distant land of Egypt an army of fifty thousand men was collecting to destroy their temples and their idols, and smite their priests and their kings with the edge of the sword, and carry off their sons and their daughters into captivity. Solemn rites were no doubt then performed within these now silent walls; and cries of frantic piety rose amidst those vast groves. And when Cambyzes' mighty armament was shipwrecked on the sea of sand upon which it had too daringly launched, what cries of joy were raised! what sounding of cymbals and beating of drums! what glances of triumph lit up the eyes of aged and timid priests! how much more gallantly did stout young heroes sing the song of defiance and tell admiring

damsels what deeds of valour they would have done in their country's cause!

But neither these nor any other pictures was I allowed leisure to paint. The impatient showish and his companion who drove the donkeys were hurrying us away; and as we did not know how long the lull might continue at Siwah, and observed a suspicious group of people on the outskirts of the palm-grove, we thought it best to glance over as much as we could without dallying. We accordingly proceeded south along the banks of a little winding stream, and plunging into a delightfully cool grove, soon reached the Fountain of the Sun. It is a very deep and remarkably clear pool; in ancient times enclosed with masonry, fragments of which still remain. Tradition says that the water, which has a slightly bitter taste, is hot at midnight and cool at midday. We tried its temperature and found it at half-past nine o'clock in the morning exactly the same as the surrounding atmosphere, namely, only 84°. The surface is continually covered with bubbles, which rise from the bottom and give the pool the appearance of being in an almost continual state of effervescence. The spot is exceedingly beautiful; a little hollow as it were in the grove, with a translucent and yet disturbed expanse of water, the remains of the broken fountain strewn upon the brink and half concealed by a growth of rushes and reeds twined with wreaths of creeping plants—the works of art shattered and moss-grown—the spring gay and laughing as ever—reminding one of the ruin of the body and the enduring youth of the mind. A small stream takes a gentle leap over a diminutive barrier and goes whispering on its way through a shadowy bed towards the mouldering temple. We lingered some time at this place, now looking at the shred of sky reflected in the busy waters; now at the blue sky itself; now at the fruit-trees that pressed in tangled luxuriance around; and now at the long vistas that opened on all hands between the palms like the aisles of a great cathedral.

The accounts which the ancients give of the Fountain of the Sun are remarkably uniform. All describe the variations of its temperature in nearly the same language; and I have no doubt that their observation was perfectly correct. Ammonium was for a long period a place comparatively easy of access, and

travellers were constantly going and returning. On questioning the natives of Siwah on the properties of this fountain, I found it impossible to extract anything from them; but the Bedawins had heard of its regular change of temperature from hot at midnight to cold at midday. A stay of ten minutes did not of course enable us to verify the tradition; but the fact of our thermometer remaining unaffected by immersion in the water would seem to indicate that it is a hot spring. Probably it may be very hot at night and comparatively cool in the day. As I have mentioned, the water supplies a little stream, which taking a northerly course and being joined at a little distance by another, runs towards the temple, where it is lost, being used up in irrigation, or absorbed in a marsh that extends to the foot of the remains of the old enclosing wall. Herodotus mentions that the water of the fountain was used to fertilize the gardens; but adds that it was only at midday, at the time of its greatest coolness, that it was allowed to reach them.

We had heard of some other ancient remains in this neighbourhood; but though we peered over the fences, made of dry reeds, ornamented with a delicate creeper, and asked all sorts of questions, we could not discover any traces of them. After proceeding down the beautiful shady lane a little farther, we returned, and made some ineffectual researches to the westward. We found nothing but palm-groves and meadows.

Returning by another path towards the village of Gharmy we searched about among the orchards at its eastern base, and discovered the traces of some extensive stone building; but I could not make out any form. A few large blocks remaining entire suggested the idea that the outworks of the fortress might have extended thus far. We approached as near as we could to the entrance of the village, but were warned off. The walls seemed to contain several hewn stones of enormous size that may have belonged to an ancient Anmonian structure, perhaps the palace of the kings. I regretted not being able to examine the interior of this village, which most probably contains some curious remains. One of the Siwahí informed me that in the court of the chief sheikh's house was an opening like that of a well, leading to a subterranean passage said to communicate with Gebel Mouta. By his account, if such a passage really exist, I should

say it contains catacombs on either hand ; for he compared it to a street, having the houses of the Christians on either hand. A different informant told me that he had discovered a subterranean passage in one of the tombs of Gebel Mouta leading into the bowels of the earth ; and that he had gone along it for some distance, but was afraid to prosecute the search. We may therefore perhaps take it for granted that the existence of these communications is generally credited in the Oâsis. Another underground corridor is reported to lead from the same village of Gharmy to the ruin at Om Beydah. It may be as well to add that I was told of the existence of extensive excavations in the hill on which the town of Siwah is built. The house on the summit moreover is said to be supported by the roof of a building something similar in character to the great temple itself. It is not at all improbable that the remains of an ancient town are concealed under the comparatively modern Siwah el Kebîr.

In one of the lanes in this neighbourhood we met three women, one white and two black ; they unanimously covered their ugly faces as we approached with their checked melayas. Excepting one other in the neighbourhood of Siwah, these were the only women we saw during our stay. There was nothing particular to distinguish them from the Egyptians ; they had nose-rings and armlets twisted of brass wire.

In the afternoon I again started on an exploring excursion, mounted on a lame donkey. My object was to examine the two hills that rise in company out of the borders of the desert about a mile south of Siwah, and bear the name of Sid Hamet. On the way I passed near the forbidden gates of the town, and through what may be called the eastern suburb. I had now an opportunity of observing the appearance of Siwah from the south, and found that it preserved the same character of lofty walls covered with irregularly placed "wind-holes." Along the base of the rock that impends over it were to be seen the openings of numerous catacombs, like those in Gebel-el-Mouta.

There was nothing remarkable in the hills I had come to visit to reward my trouble ; they were steep masses of rock with several caves cut in them, used sometimes for dwelling-places, as appeared from the marks of fire. My guide told me that these were the houses of "The Ropemakers," who were not Siwahis.

Perhaps some wandering tribe, that employs itself in this branch of industry as a chief means of livelihood, may occasionally take up its abode here, resembling in character that degraded race of people that in Egypt professes at least to support itself by making brass rings, and leads a nomadic life among the palm-groves in tents.

From Sid Hamet I proceeded, leaving on my right a small fortified barrack that formerly contained a garrison of Egyptian troops, and took an easterly direction along the mingling limits of the desert and the Oüsis towards the mountain called Edrar Abou Bryk, which rears its five red peaks on the top of a great rounded swell covered with white sand blown up from the plain below. This mass of stone is so vast and solitary, like a cluster of pyramids, that I thought myself almost at its feet at starting; but I was more than an hour working my way towards it through the heavy sand. To my left were the dense palm-woods with numerous clumps at their outskirts; to my right the undulating and hilly desert rising gradually in the distance. Here and there were a few cabins of date-branches, the refuge at night of the men and boys who watch the melon-trenches that occur on all sides. It is a curious sight to see the bright green snake-like stalks and broad leaves of this beneficent plant with its gigantic fruit spreading over the parched surface of the sand. The trenches are dug in order to reach the richer soil below. A similar practice is observable in the neighbourhood of Alexandria, especially on the road to Aboukir.

On reaching the foot of the hill I alighted and toiled up on foot; it was a much more fatiguing undertaking than I had at first anticipated, and I was more than once compelled to avail myself of the assistance of my guide. Just as I reached a glen between two of the peaks the sun set behind the White Rock at the end of the valley, and bathed in golden light for a moment the road to the Oüsis of Augila. I beheld the hills and the desert, and the fields of salt and the groves, tinged with a rosy hue; and then the fleeting twilight of these latitudes rapidly came on and passed and deepened into darkness. I was enabled, however, to distinguish at my feet the deep glade of Om Beydah, in the midst of which rise the solemn and deserted ruins of the Temple of Ammon.

There was barely time for me to penetrate into the two catacombs I had come to visit. They were oblong chambers, each about twenty feet in length and eight or nine high. The roof of one was still supported by two rows of small square pillars cut in the rock; in the others the pillars had been removed, but the rough capitals still remained attached to the roof. In the centre of that which was highest on the side of the mountain appeared the choked up mouth of a well, said to lead to a lower chamber that had formerly been opened in search of treasure. There was nothing in either at all remarkable, except their solitary position. Probably some great man had been buried there for distinction's sake, as Edrar Abou Bryk is the only mountain within the limits of the Oâsis that does not appear to have been used as a common cemetery.

On my return I met a young Arab from the West settled in the country; he accosted me very civilly, talked freely, and insisted on my accepting one of two large water-melons which he was bringing home. It had become very dark, and the road, which lay through lanes and groves, took me past a small hamlet, the lights of which twinkled through the trees. At another, named Minshieh, not far from Siwah, my new acquaintance left me, after I had refused a very pressing invitation to enter his dwelling and partake of the evening meal.

When I reached the tent I found that the excitement among the Siwah people was gradually increasing; it was evident that, if we stayed much longer in this inhospitable place, we should do so at considerable risk. Our Bedawins had been threatened, and our donkey-boys, who ventured to the gates of the town, taken by the throat and insulted as being the servants of Christians.

Whilst we were at supper we heard a great commotion in the town; discordant shrieks and yells burst forth, and red lights flashed across the windows and glared upwards through the few open places that appear to exist within the walls. This was almost the only indication of a common life that had proceeded from the sombre pile before us. A great part of the population was evidently on the move; and we soon understood that a death had taken place, and that a nocturnal procession was hurrying the corpse to the grave. During nearly the whole night the howlings and lamentations continued, but they gradually sub-

sided into an occasional shrill scream, and at length the vast fortress relapsed into complete repose.

Early next morning I again procured a donkey, not lame, it is true, but little larger than a dog, and possessed of a curious habit of sidling along as if there were a contest between his tail and his head which should be first. My object was to proceed to the western extremity of the Oāsis and visit the ruins I had heard of in that direction. They put me this time in charge of a black, who was as talkative as the Siwalis are taciturn, and who contrived, before long, to turn the conversation to religion, and to tell me most good-humouredly that Christians and Jews are allowed the enjoyment of wealth in this world, but that hell-fire is prepared for them in the next. He did not say this by way of denunciation, but stated it as a fact with which I must be acquainted. I could not help wishing that the task of "dealing damnation round the land" should be left to this unenlightened wretch; and that the wise and the pious of my own country would think it better befitting them to widen rather than to contract the sphere of divine mercy. My sable theologian, however, did not allow me much time for such impertinent reflections, and confidentially expressed his willingness to profit by my intimacy with Satan. He was in love with a dark-skinned nymph, whose various charms he described with all the freedom of unsophisticated nature, and begged of me to write him an amulet which should constrain her affections. In vain I professed my inability. He could not believe I had bartered my soul without a good consideration, and evidently thought that nothing short of the possession of the powers of incantation and the wand of the magician could compensate any mortal for remaining without the circle of Islam.

I can only give an idea of the scene that presented itself after passing the cultivated part of the Oāsis, by comparing it, as I have already done, to a vast plain covered with half-thawed snow. The path, or causeway, wound its serpentine length along the centre of this, now bordered with purple patches, now cut up by streaks of water. Here and there, at first, were little islets, with a cluster of tall palms or a few clumps. A hut appeared in one or two places, and I saw several persons attending to the plantations. As I was riding along I heard a shrill voice very

far overhead salute me with the epithet "Nazarene!" (Christian), and looking up beheld a grinning black working his way up the trunk of a tall palm-tree, some sixty feet in height. A brief dialogue was interchanged between my guide and him in a tone between a whine and a scream, during which I endeavoured by digging my knees into my donkey's side to get on. The progress we made, however, was very slow; but at length the great salt-lake or marsh spread out unbroken to the feet of the mountains on one hand, and to the borders of the desert on the other. The reverberation of the sun's rays from its surface was exceedingly disagreeable to the eyes, and I was eager to arrive at the foot of Edrar Amelal, or the White Rock, that rises like a fortress, square, massive, and frowning, at the extremity of the valley. It was true that no shade could be expected, but, at any rate, there were patches of verdure promising to afford an agreeable contrast to the glaring expanse through which I was forced to pick my way. The black showed no inclination to expedite the motions of the refractory animal I bestrode; so it persevered in its peculiar mode of progression—that is to say, advancing sideways or with sudden jerks.

Patience, however, at length had its reward, and I arrived at the Rock, which is nearly precipitous on all sides, whilst the summit is perfectly level. I could distinguish no way of ascent, but my guide asserted that he had once had the curiosity to climb aloft. Not far to the west rises the equally isolated conical hill of Kamyseh, between which and Amoudein, or the Two Columns, there is a narrow pass containing the ruins of a hamlet, and a field or two watered by a small stream that flows into the salt morass and is lost. The hill of Kamyseh is filled with an immense number of catacombs from its base to its summit. I visited several, but all were small, and, though neatly cut, contained nothing of interest. Numerous large caves are to be found in the base.

Beyond these rocks the valley again opened; and to the left, just on the edge of the white sand, which here rose like a bank, covered at intervals with thickets of bushes resembling the hazel, appeared a large and dense wood of trees, principally olives intermixed with apricots and pomegranates, but no palms. Towards this I proceeded along the banks of a stream, to visit the ruins

that were said to exist at Beled-el-Kamyseh. I found, however, nothing but the remains of thick stone walls, now forming part of a donkey-shed. A man dwelt in a small hut close at hand, probably as a guard to the plantation; but there were no signs of a village. I gave a piastre to my guide to buy some pomegranates; and he slipped behind me as I went away, and returned with about a dozen, which I have reason to believe he had plucked, keeping the money to himself.

In a field near the wood of Kamyseh I noticed the spine of a camel fixed on the top of a pole; and near at hand the horns of a goat. These were set up as charms, to protect the plantations from the evil eye. I afterwards noticed the same thing all over the Oâsis; and I remember also seeing the skull of a camel at Garah above the door of a house, just as the civilized people of England nail a horseshoe. In Egypt the usual charm used is an aloe-plant.

I returned by the side of the stream, over the ground I had already traversed, until I came on a line again with the hill of Kamyseh, which reared its catacombed sides direct out of the plain. In front was the prolongation of the hill of Amoudein; whilst to the left stretched the valley, bounded, and at some distance once more obstructed, by isolated, conical hills. At the foot of Amoudein was an insignificant ruin of brick, probably a convent in Christian times, but so dilapidated as scarcely to be worth even a passing glance. Turning to the west, I proceeded about a mile in the direction of Beled-er-Rum, or the City of the Greeks, and soon came in sight of the ruin for which it is remarkable. It stands in the midst of the valley, which is here almost completely barren. A few melon-beds, at wide intervals, and some wild shrubs alone enlivened the stony waste around. In general form and mode of construction it very much resembles that of Om Beydah; but is evidently an imitation of a much more modern date, and has no inscriptions or sculptures of any kind. There remain erect the gateway, facing the north, and a portion of a chamber or sanctuary, with a roof of five solid beams of stone rather smaller than those of the Temple of Ammon. The ruins of this chamber form a mound about sixty feet long; near the southern extremity, about twenty paces distant, is a hillock of stones and sand, with a hole at bottom opening into a passage

broken through the solid foundations of some other portion of the building, probably in search of gold. I got down into the passage, and worked my way to its other extremity, and out by a small aperture, but found nothing to reward my search. There are very clear traces of an enclosure having once existed round the temple. I may mention that the gateway is joined to the body of the edifice by side walls, each containing a small window, square without, but lengthening downwards within, so as to throw the light upon the floor.

This fragmentary temple was the farthest point to which I proceeded westward; and I could not help sitting down awhile under its antique shelter, and, giving the reins to my imagination, allowed it to carry me to the palm-dotted plain of Gegabe, the once mysterious lake of Arashieh, and the distant Oäsis of Augila. For a time I regretted not being able to penetrate farther into the Desert; but the knowledge that the few travellers who have ever reached those regions have found nothing to reward their curiosity soon consoled me, and I turned to reflect with great complacency on the fact that I was the second Englishman who had ever reposed within the solitary ruin of Beled-er-Rum!

My impatient black guide scarcely allowed me leisure to make a rough sketch of the ruin; but warned me constantly that time was passing, and that if we tarried long we should not reach home before darkness came on. I at length remounted my refractory donkey; and the brute sidled away towards Amoudein. On the way I met a man carrying a load of cucumbers, one of which he insisted on my accepting. I did so without much difficulty, pleased to find that bigotry was almost entirely monopolized by the inhabitants of Siwah-el-Kebîr.

Having regained the pass I have before mentioned, I left my donkey and my black to roll on the grass beside the clear, gurgling brook that shoots its eddying waters towards the salt-lake beyond, and climbed up the hill of Amoudein to have a good view of the Oäsis. About three or four hundred feet from the base I was stopped by a line of precipices, beneath which I sat down for some time to sketch a sort of panoramic view of the valley, including Edrar Amelal, near at hand on my right, and Om-el-Yus in the distance on my left. Between these two points, on various planes, appeared the salt lakes, the little islands scattered

here and there, the great palm-groves, the three conical hills of Sid Hamet, Siwah, and El Mouta, the castellated village of Gharny, the five peaks of Edrar Abou Bryk, and the long line of white waves of sand. To the left of my position there was an opening in the limestone-hills, with a hamlet near which, as I afterwards learnt, were some vineyards, producing a large supply of grapes, from which are made tolerably good raisins, consumed principally in the Oâsis.

The hill of Amoudein is composed of calcareous rock full of immense numbers of fossil shells, principally oyster-shells; in that of Kamyseh I noticed no fossils, but the layers of stone alternated with thin veins of hardened mud streaked with yellow. I may here mention, by the way, that Edrisi makes the obelisks of Alexandria, commonly called Cleopatra's Needles, to have been brought from the neighbourhood of Siwah.

I returned late in the afternoon to the tent, when I learnt that, after some negotiation, permission had been obtained for us to visit the hill that impends over the town. Of this permission we availed ourselves, and found that the base was covered with houses, some in ruins, others inhabited, forming a suburb under the superintendence of our friend Sheikh Yusuf. Half way up the face of the hill are some large caves, catacombs or quarries; but without inscriptions or ornaments. In one of my rides I remember seeing on the other side the entrances of numerous chambers, which we did not visit. The principal interest of this stroll was that we obtained a view into the interior of the enclosure on the north of the town, and under the walls of which we were encamped. It appeared to be the Shoonah, or Date-store; and consisted of a vast open space covered with innumerable heaps of dates, white, blue, and brown, divided by walks. Close by was a white marâbut, or tomb of a sheikh, under whose protection the fruit is left. There seemed to be a considerable stock waiting for exportation; and we learned that at this season there was a great demand for camels, sufficient of which were not to be got. There are reckoned to be eighty-six thousand date-trees in the Oâsis, watered and profitable, and between four and five thousand camel-loads are annually exported. The best dates are worth eight dollars a load at Siwah, and about double that amount in Alexandria. Four kinds were mentioned to us—the

Sultani, long blue ones, not yet quite ripe; the Farayah, white ones, of a kind said not to be grown in Egypt, and all exported; the Saïdi, or common date, eaten by the Arabs; and the Weddee, good only for camels and donkeys. The last kind, I believe, grow on the untrimmed palm-clumps that spring up here and there of their own accord. No doubt there are other varieties with well-defined differences. Some yellow dates, of which a basket was sent to us as a present, were much less elongated than any others I have seen, with more flesh in comparison to the size of the stone, and very luscious.

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## CHAPTER XIII.

## Sketch of the History of Ammonium.

SUFFICIENT materials have not been handed down to us by history for tracing back with any certainty the oracle of Jupiter Ammon to its origin. There is reason, however, for ranking it amongst the most ancient of those sacred spots on which the great God of the heathens was supposed to make mysterious revelations of the future, by the mouths of inspired priests or prophets, to the world. I am disposed to think that most of the oracles were established in places characterized by some remarkable natural phenomenon, which suggested the idea of the presence of the divinity. It is improbable that any of them were derived from the arbitrary choice of a designing priesthood; and it is not even necessary to suppose that any hypocrisy, except of that class which seems to ally itself easily with fanaticism, had much to do with the construction of the responses that were given forth.

I set aside at once the idea that there was any connexion between the oracles of Dodona, Delphi, and Ammon. They appear to have been of totally independent origin; and the attempt made to mingle their histories by the Egyptian priests is calculated only to throw confusion over the subject. If it be true, however, that a similar institution at Thebes was an importation from Ammonium, this fact would tend to prove the immense antiquity of the Oracle which for so many ages uttered its enigmatical predictions on the now ruin-strewn glade of Om Beydah.\* Diodorus,† however, attributes its foundation to Danaus the Egyptian.

There is a question among geographers whether the oâsis of Jupiter Ammon‡ can be said to have been situated, as Pliny and

\* See the interesting remarks of M. A. Maury in his Note on Creuzer's 'Religions of Antiquity.'

† S. xvii. c. 50.

‡ I must give due justice to Rennell's 'Geography of Herodotus,' in which

Mela place it, in Cyrenaica, or in the province of Marmarica. Properly speaking, it was beyond the southern limits of either; and ought to be considered as a separate country. From the remotest antiquity indeed until the present time it seems, from its very position, to have had a constant tendency to independence. Very imperfect accounts have reached us of its ancient political condition; but we know that, at its first appearance in history, it was a state governed by a king, having a peculiar form of religion and possibly a peculiar language. From several slight indications in ancient writers I am led to believe that the oâsis of Siwah was the principal island of a kind of desert archipelago, obeying a common king. Several of the minor dependencies have been re-discovered in modern times. Of these Garah is one, a valley towards Arashieh a second, the neighbourhood of Lake Arashieh itself a third, and a place on the road to the Fayoom named Bahrein a fourth. At all these places remains are found, something similar in character to those at Siwah; and our Bedawins informed us that to the south and south-west, at several days' journey, were two more green islands, inhabited by a dark-skinned race, and abounding in ancient remains. Near Siwah itself are numerous little spots, some with, some without traces of ancient buildings which may formerly have supported a village or even a little town. We know, by the observation of the coast, how completely the fertility of a country may be destroyed by neglect. Possibly many formerly productive spots have changed completely into desert, whilst others have been concealed beneath the sands.

If this idea be correct, we can no longer be surprised at the reports that are handed down of wars being carried on between the Ammonians and Ethiopians. A cluster of islands such as I have described would have supported, with the assistance of commerce, a very considerable population, and invested the dynasty, to which the kings Clearchus and Libys belonged, with far more importance than is generally allowed it.

The origin of the Ammonian people is entirely wrapped in obscurity. The ancients tell us they were a mixed colony of

the identification of Siwah with the Oâsis of Ammon was completed before the publication of any materials but Browne's very cursory and imperfect account.

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Egyptians and Æthiopians,\* founding the idea no doubt on the same phenomenon that is now observable, half the people presenting a negro character, the rest being comparatively light coloured. The traditions represent a close connexion as existing between the oâsis of Æthiopia and Egypt; but the genuine Pelasgic mythology has been too much mixed in more modern times with that peculiar to the banks of the Nile to enable us to distinguish what may be really Libyan in the story of Andromeda, daughter of the king of Æthiopia, exposed to be devoured by a sea-monster at the instigation of the oracle of Ammon,† of the halt of Perseus at the temple on his way to encounter the Gorgon, and of the visits of Hercules when marching against Antæus and Busiris.‡

The god called Jupiter Ammon is generally represented as *Kriprosopic* or ram-faced; but there is reason to believe that this was not the original form of the god of the Ammonians. Quintus Curtius, who no doubt copied the materials of his grandiloquent description from the best authorities, distinctly says that the god was represented in the shape of the *bezil of a ring*, and was ornamented with emeralds and other gems. As an incidental confirmation of this, I may mention that the Arab historian Makrizi speaks of emerald mines in the neighbourhood of Siwah. Diodorus gives nearly the same account, although he does not specify the exact form of the god. It is added that the representation, whatever it may have been, was carried about in a sort of boat gilded and adorned with silver cups depending on either side,§ by eighty priests, who seem to have affected to receive an impulse from the idol itself which determined the direction in which they were to go.|| This reminds one of the Egyptian Welis, whose bodies have all sorts of caprices, refusing to be carried down certain streets, so that six strong bier-bearers even by taking a run cannot succeed in overcoming their obstinacy.¶ The god of Ammon, then, by exerting a similar influence, seems to have made a regular progress through the palm-groves of the Oâsis before retiring to the temple and giving the sought-for oracle. A crowd of women and girls followed chant-

\* Herod. ii. 42. See the note of Creuzer.

† Apollodor. ii. v. § 3.

‡ Arrian, iii. 2.

§ Compare Thirge, *Res Cyrenensium*, p. 296. Compare the engravings.

|| Diod. Sic. xvii. 49.

¶ See Lane's 'Modern Egyptians.'

ing rude ditties: *patrio more inconditum quoddam carmen canentes*.\*

The rudeness of the form of the original image of the god is favourable to the great antiquity of the Ammonian religion. How it became mixed with the complicated Egyptian and Greek mythologies, and how the ram-faced divinity came to take its place by the side of the primitive *bezil*, it would be difficult to trace. Certain it is that the mixture has been made, and that great confusion is the result. It has been suggested that the worship of the god Amoun or Ammon only became known in Greece at the epoch of the foundation of Cyrene, about the year 648; and that after that time the legends which connected him with the Olympian Zeus were invented. In the time of Herodotus† the Ram-headed figure had been introduced; and it was always considered by the Greeks and Romans to be identical in character with their Jupiter or Zeus, though different in form—

———— stat sortiger illic  
Jupiter, ut memorant, sed non aut fulmina vibrans,  
Aut similis nostro, sed tortis cornibus Hammon.‡

One of the most obscure events connected with the history of Ammonium is the attempted invasion of Cambyses. The vastness of the army he put in motion for the purpose proves that the Libyan state was much more powerful than is commonly supposed. It started from Thebes, passed the Great Oāsis, and after seven days' journey perished utterly in the desert, most probably from having taken an insufficient supply of water.§ We have no other record of any military expedition having been sent in ancient times against the kingdom of Ammon, which seems on the contrary to have always preserved a prudent neutrality, content with a flourishing commerce and a reputation of peculiar sanctity.

Siwah, or Ammonium, has always been a great commercial station in the route of intercourse between Egypt and the states of Northern, Western, and even Central Africa. The periodical passage of immense caravans, which found it necessary to halt

\* Quint. Curt., iv. 7, 29.

† iv. 181.

‡ Lucan. Pharsal., ix. 512-514.

§ Herod. iii. 26; Diodorus, Fragment.

and refresh themselves by the side of its glittering streams and beneath the shadow of its vast groves, no doubt contributed to enrich the inhabitants, who carried on also a trade in their own productions both with Egypt and Cyrene. I do not agree with those, however, who derive from this the religious celebrity of the place.\* There are many Oases, but there was only one Oracle in the desert; and Delphi and Dodona, equally celebrated, owed certainly nothing to commerce. It is worth mentioning that the first report of the existence of the Niger river that reached Europe came from some people of Cyrene, who, in an interview with Clearchus, King of the Ammonians, had heard of the discovery made by certain Nasamonian travellers.

It soon became the custom, both in Greece and Asia Minor, to consult the oracle of Ammon with reference to the result of any important enterprise. Croesus, King of Lydia, once sent to ask advice as to whether he should undertake a Persian war. The Elians were particularly celebrated for their veneration of the Libyan god. Pausanias mentions a temple raised to his honour at Elis, where upon a tablet were engraved the questions that had been sent for solution to the oracle, the answers of the god, and the names of the deputies who went with them. We find several traces of the worship of Ammon at Athens; and it must not be forgotten, that when Cimon was lying off the coast of Cyprus (B.C. 449), meditating the conquest of Egypt and the overthrow of the Persian empire, he sent some friends to the oracle charged with a secret mission. What its subject was has never transpired; but when the messengers entered the temple, the god, without listening to their questions, ordered them to return, saying "Cimon is already with me!" They returned accordingly, and found that about the time when the god spake to them the great general had expired.†

That the Spartans, on account of their connexion with Cyrene, should come to have a peculiar veneration for Ammon is not at all surprising. They had a temple dedicated to him;‡ and often sent to consult him on the subject of wars or colonial establishments. Between King Libys, moreover, and Lysander, there

\* See Heeren on the Ancient Commerce of Africa.

† Plutarch. Cimon, c. 18; Thirge, *Res Cyrenenses*, p. 296.

‡ See Pausan. iii. 18; Cicero de *Divin.*, i. 42.

was an hereditary bond of hospitality, of which the latter on one occasion endeavoured to avail himself in an improper manner. We have the record of two journeys of Lysander to the Oâsis. The first was when, finding his popularity diminish at Sparta, he thought it wise to remove himself out of the way for a while, and accordingly set sail for Cyrene, from whence he made his way probably by the usual caravan road to Ammonium. During his absence the Thirty Tyrants of Athens were overthrown. On a subsequent occasion, when he was intriguing for the sovereignty, and had in vain endeavoured to corrupt the Delphian Pythoness, he started off once more for Ammonium, trusting to the friendship of King Libys, after whom his own brother had been named, and to the influence of money. The god of Ammon, however, was always celebrated for poverty; his servants were not in the habit of making the temple a treasury, but preserved the primitive simplicity of early times.\* Lysander failed accordingly, and the priests sent deputies to Lacedemon to accuse him. He was absolved; and the Libyans, on leaving, said—"We will judge with greater justice when you come to establish yourself in Libya"—for there was an ancient oracle to the effect that the Lacedemonians were one day to inhabit that country.† I will add that Ammon was adored at Asbystis, or Pallene, with as much respect as in the Oâsis itself, and that the god is represented as saving it from being stormed by a direct and miraculous intervention.‡

The Thebans had also a great veneration for Ammon, arising from their having sent a colony to Cyrene. They possessed a temple and a statue of the god, dedicated by Pindar himself.§ The poet likewise wrote an ode to Ammon, and sent a copy of it to the priests. The beginning only has been preserved;|| but in the time of Pausanias it existed entire, engraved on a three-sided column at the altar erected by Ptolemy, son of Lagus, to the Libyan Zeus.

We now come to the event which has, perhaps, contributed more than any other to the celebrity, in modern times at least, of the Oâsis—I mean the visit of Alexander the Great. The details given of his journey by classical writers are few; and Diodo-

\* Lucan. *Pharsal.*, ix. 119.

† Plutarch, *Lysand.*, c. 20, 25; Diod. *Sic.*, xiv. 13; Cornel. *Nep. Lysand.*, § 3.

‡ Plut. *Lysan.*, c. 20. § Pausan., ix. 16. || Schol. *Pind. ad Pyth.*, ix. 69.

rus Siculus, Arrian, Quintus Curtius, and others, do little more than reproduce the same facts. We are told that, after having put the affairs of Egypt in order, Alexander took it into his head to rival the exploits of his ancestor Hercules, and pay a visit to the oracle of Ammon. None of the ancient historians make any statement as to the number of people he took with him, but they sometimes talk as if he was accompanied by an army. I doubt, however, if this was the case. Certain it is, that the preparations made for the journey do not seem to have been on a very large scale. There were only taken camels and skins sufficient to carry water for four days.\*

Alexander marched along the coast, by the same route that we followed, as far as Parætonium, finding water in the wells, but encountering no cities. It was at a subsequent period, as I have before observed, that that desert country was colonized and invested with artificial fertility. During the first portion of the journey the army encountered none of the frightful difficulties which, in those times as in ours, the timid Egyptians † represent as existing. At Parætonium (which travellers have thought they recognised as Bareton, a name I could hear nothing of at Mudar) Alexander met ambassadors from Cyrene, ‡ coming to him with propitiatory presents. It appears from Strabo that the usual point at which caravans turned off from the sea for the Oïsis was Apis, a hundred stadia to the east. This place, which is called a village by Strabo, in whose time the celebrity of the oracle had declined, is designated by Scylax as a city. The difference may be accounted for by the immense falling off in the number of travellers. I am inclined to place Apis somewhere in the position of Mudar, the existence of which is almost entirely owing to the passage of the outward-bound caravans, the return ones now taking a shorter cut, and which would now have been of some considerable importance had it not been destroyed some years ago by the Pasha, and its inhabitants removed to the Bahárah.

It was at Parætonium, however, a few miles to the west, that Alexander, after having taken in a supply of water, left the coast

\* Quint. Curt., iv. 7, § 29.

† Hæc Ægyptii vero majora jactabant. Quint. Curt., iv. 7, 28.

‡ Diod. Sic. xvii. 49.

and struck into the desert. It is possible, as I have suggested in another chapter, that he may have crossed a small tract of sandy country before joining the route we followed; but it is more probable that most of what we read in his historians about the frightful moving sands in the midst of which he found himself, is the production of fancy. The idea the ancients had of a desert was an expanse of fine moving sand, sometimes in a state of quiescence like a calm sea, at other times rolled into billows, and thrown up in clouds by the wind. Such is no doubt the case in some parts of the Libyan desert; and, except on the rocky ridges, it is not uncommon to see the sand driven along the surface of the desert like a light spray or filling the whole atmosphere with a vast mist. According to Arrian this is the case on the road from Parætonium to Siwah, when the south wind blows; but I did not see sufficient sand to justify the description. As to the extensive plains or table-lands that occur, I have already described them. It is not inaccurate to compare their appearance to a sea—not, it is true, of sand—but of stones. There are seldom any landmarks to assist the traveller, who, as of old, directs his course by the stars,\* or by the little heaps of stones piled up at intervals by successive caravans for the purpose. At some points it is perfectly correct to compare the caravan to a ship looking out for land—*terram oculis requirebant*. There is really no tree, no vestige of cultivated soil.†

According to the most probable account Alexander was eight days traversing the desert. At the end of four of these, during which the party must have moved at a royal and dilatory pace, the water in the skins was exhausted and the horrors of thirst began to be felt. A copious rain, however, came on and restored strength and courage to the despairing expedition. They now, it appears, found out that they had lost their way, and seem to have wandered about in uncertainty for some time. I have already mentioned that, from the nature of the country, the monotonous character of the hills, and the labyrinthine windings of the valleys, it is very difficult to maintain a direct line in traversing this country: we ourselves missed the track during a whole night, for the same reason. On account of the existence of the

\* Arrian, iii. 2, § 2.

† Quint. Curt, iv. 7, 29.

heaps of stones, which seem to be of modern date, our guide was enabled to repair our misfortune with ease; but Alexander, as the chroniclers of his exploits inform us, was reduced to depend on the miraculous interposition of a crow, or two crows, or a flight of crows. The rational interpretation of this fanciful story has been given in a previous page. There is every probability that the denominations of places in the desert, when once given, do not easily change;\* and I have no doubt that many of the various "*Nugbs*," or Passes, which occur on the caravan road to Siwah, had acquired the name they now bear long before the journey of Alexander. One of the principal of these *Nugbs* is the only way by which it seems possible to descend from the tract of hilly country, or rather the great range of hills interspersed with table-lands that extends thither from the sea, into the nameless valley, or basin filled with detached rocky hills, lying between that range and another called the Milky Mountains. This *Nugh* is called the Pass of the Crow, and because it ultimately led Alexander out of his difficulties, may have given rise to the tradition which says, "the crow showed him the way."

Let us now trace the further progress of the conqueror. At the end of the eight days he reached certain cities of the Ammonians, which I am inclined to identify with Garah, at that time no doubt one of the most important of the desert Sporades of which the Libyan state was made up. It is true that we performed the same distance in little more than fifty hours of actual travelling, but we pushed on at times at a rate much exceeding the usual caravan pace. Besides, the Bedawins who accompanied Alexander only filled their *kürbehs* for four days: this was about what they would do if they looked forward to a five days' march, as they prefer being pinched a little towards the end to overloading their camels. The additional time expended was owing to the leisurely movements at the outset and the loss of the track.

A hundred stadia before reaching the cities of the Ammonians Alexander came to a bitter lake. Now, at the northern foot of the Milky Mountains during the night previous to our arrival at Garah, we crossed the bed of a dried-up lake at least a mile in extent; this may be the very spot.

\* See some of the curious discussions in Forbes's '*Geography of Arabia*.'

Diodorus Siculus represents Alexander as passing in one day's journey from the cities of the Ammonians to the principal Oāsis. We took two days, but caravans sometimes perform the distance in one; and it is probable that the impatient traveller left the principal part of his train behind and pushed on with a few attendants to the capital.

It is needless to transcribe the rapturous and exquisite descriptions found in the Greek and Roman historians of the scenery presented by the Oāsis at the time of the visit of Alexander. From its beauty even in its present degraded state, we have a right to infer that their language rather fell short of than exceeded the reality. They mention the palms, the olives, and the other fruit-trees that abounded in the Oāsis, and dilate upon its salubrity as a place of residence. I have no doubt that the fevers which now infest the place are caused entirely by the neglect which allows the collection of stagnant and fetid water that ought to be used up in irrigation.

As is the case at present, there were several villages in the Oāsis: indeed the people seem to have lived in scattered hamlets amongst the trees; whilst the kings, the priests, and the rich families dwelt in fortified places. There is every probability that at both the eastern and western extremity of the valley there were numerous little dots of verdure; but the palm-groves seem always to have been confined to the centre island. The lakes were probably in the same state then as now. The salt was much esteemed and was sent in baskets to Egypt as presents to the kings and the great dignitaries. Even the Persian monarch had his table supplied with salt from this distant spot.\* On the Fountain of the Sun I have already made some observations.†

The interview of Alexander with the priest in the sanctuary of the temple at Om Beydah was perfectly satisfactory; and the son of Philip went away with a good excuse for asserting his divine origin and wearing the tortuous horns of Ammon. Some person, jealous of the honour of the servants of the oracle, has endeavoured to explain away the whole circumstance by saying

\* Athen., ii. 74. See a curious passage in Synesius (Epist. 147), on the Ammonian salt.

† See Herod., iv. 181; Diod. Sic., xvii. 10; Quint. Curt., iv. 7, 29; Arrian, iii. 2, § 2; Pomp. Mela, i. 8.

that the prophet, as he stood in the gloomy depths of the sanctuary, began to address Alexander in Greek, and meaning to say "O Paidion!" "O my son!" said, "O Pai Dios!" "O son of Jupiter!" If this be the case, as a French commentator remarks, the solecism of an African priest intoxicated a madman full of genius with vanity, and led to the melancholy fate of Callisthenes.

The Macedonian returned to Egypt by the same way he came, and then continued to prosecute his Asiatic conquests. At the death of Hephæstion, however, he remembered the oracle of Ammon, and sent to demand permission to pay him divine honours. This was refused, but the rank of a hero was assigned to the deceased favourite.\*

After the age of Alexander we lose sight for some time of the kingdom of Ammon: there is every reason to believe, however, that its celebrity increased, and that many of the temples, the traces of which may now be found, bearing something of a Doric character (as, for example, that at Beled-er-Rum), were built during the period that intervened before Siwah suffered the fate of the rest of the world and fell under the dominion of the Romans. It does not appear, however, that this people ever looked with any great respect on the oracle, believing rather in the auguries of birds, or the inspection of entrails, and in the Sibylline leaves. They were too political, moreover, to allow their magnificent scheme of universal conquest to run the chance of being checked by the decisions of a foreign deity speaking through the mouth of a barbarian priest, who might not be venal, in the depths of a desert. The progress of the sceptical philosophy had also something to do with the disrespect into which this and other oracles gradually fell. When Cato of Utica, if Lucan's representation be at all correct, visited the Oâsis, he was urged by his friend Labienus to enter the sanctuary and question the future. He however refused, saying he did not believe in the peculiar presence of God in this particular locality: his seat was the earth, the seas, the air, the heaven, and virtue.

*Jupiter est quodcumque vides, quocumque moveris.*

When such speculations as these began to be indulged in, the

\* Arrian, vii. 2.

fate of the oracle was sealed, and not very many ages afterwards it must have grown dumb. At length Christianity flew across these deserts as a bird flies across the wide seas, alighting on every fertile spot on its way, and the fane of Ammon is said to have been consecrated to the Virgin Mary. Of its fortunes during the succeeding periods we know nothing except that many monasteries arose within its limits, and that exiles were often sent thither by the Roman emperors. It continued, however, to be a great commercial mart until the neighbouring countries of Egypt, of Marmarica, and Cyrene began to relapse rapidly into barbarism. Synesius, Bishop of Ptolemais, gives a melancholy description of the ruin of the last-mentioned province in the fifth century—the overthrow of churches, the pollution of grave-yards, the castles razed to the ground, the flocks and herds driven off. The same destruction fell upon Marmarica, principally accomplished by the desert tribes which from time immemorial had occupied the less fertile parts of the country, and which seized on the first favourable opportunity of rooting out an exotic civilization from their land. In all these misfortunes no doubt the kingdom of Ammon shared, losing moreover immensely by the diminished number of the caravans, perhaps their total cessation for a time. The latter seems probable from the circumstance of the Arab historians mentioning traditions of the re-discovery of all the Oäses by people who had wandered from Egypt. When caravans did pass to and fro from east and west probably they for a time adopted the coast road.

This brings me to the curious passages contained in the Arabic historians with reference to the primitive condition of the Oäses. They speak of them as abounding in marvels such as are described in the most imaginative tales of the 'Arabian Nights.' They fill them with palaces, and circuses, and magic mirrors, and pinnacles on which brazen birds were stationed as guardians of the cities. In their poetical language all this must be taken as a description of the most flourishing times of Ammonium. They all agree with Herodotus in ascribing the original colonization of the place to "the Coptic kings;" but according to Makrizi that obscure people the Berbers soon came and joined them. For a long period the two races lived harmoniously together, and were united by the bands of marriage. Civil feuds, however,

at length broke out and constant fights took place, so that the population rapidly decreased, the Berber element getting the upper hand: to what period of history this refers it is difficult to decide.

When Mousa, son of Nossier, in the time of the Ommyyades, had conquered Egypt (A.D. 708), he attempted to reduce the Oâsis, but was so valiantly repulsed that he came back and said the walls and the gates of the city were made of iron. Tharic ben Zayad, the invader of Spain, made a second unsuccessful attempt two years afterwards and told the same story to explain his defeat. It is probable that it was at this time that the population consisted of the relics of the Ammonian race and a strong infusion of Berbers. This people, if we can accept their traditions in the place of more certain information, were descended from the Philistines, and paid a peculiar veneration to the memory of Goliath, after whom one of the mountains near Siwah was named. It is possible they had a Phœnician origin. However this may be, mixed with the Ammonians, they professed the Christian religion, and made a long and valiant resistance to the Muslim invasion. It is not until A.D. 1150 that we find the Koran triumphant and the seat of an Imam established within sight of the venerable remains of Om Beydah.\*

In the fifteenth century we find Siwah at a very low ebb indeed, the Berber population having dwindled down to six hundred, whilst the other tribes had, no doubt, diminished in an equal or greater proportion. The place was celebrated for its emerald and iron mines, but had become subject to fever and infested with noxious animals. Its fertility, however, continued unabated: it exported dates, raisins, figs, and jujubes; and Makrizi relates that he saw there an orange-tree as large as an Egyptian sycamore, producing fourteen thousand oranges every year.

From this period forward Siwah decreased in importance, and was allowed gradually to acquire a complete independence and to constitute itself into a sort of rude republic. In this state it was found by our enterprising countryman Browne when he rediscovered it in modern times. But Mohammed Ali acquiring

\* See Langles, *Mémoires sur les Oâsis*, d'après les Auteurs Arabes.

power in Egypt, and infusing a good deal of destructive vigour into the administration, one of his subordinates, Hassan Bey Shamashurghi, planned and obtained permission to carry out an invasion, and, in 1819, burst like a thunderbolt upon the Oāsis, defeated its inhabitants, profaned their inviolate city of salt, counted their trees, and saddled them with a tribute. An account of the expedition may be found in the first part of an illustrated publication in imperial folio, begun many years ago by M. Jomard from the papers of M. Drovetti, and intended to be entirely devoted to the Oāsis of Siwah. Unfortunately it remains to this day unfinished. Our guide, Sheikh Yūnus, accompanied Hassan Bey, and gave us his account of the affair. He said there were two hundred Egyptian horse, three guns, five hundred Bedawins, and seven hundred camels to carry water. The march only occupied fourteen days by the same route that we took from Alexandria. When they arrived, the Bedawins, who hate the Siwahis and felt themselves well backed, did nearly all the work with their swords and guns. Thirty-two natives and only three Arabs were killed. Since that time Siwah has been regarded as part of the Pasha's dominions, although his authority has often been slighted in matters of detail. About three years ago, encouraged by their distance from the seat of government and the difficulty of the roads, they had much relaxed in the punctuality with which they paid their tribute, and a body of forty horse with a number of Bedawins came from Cairo to bring them to their senses. On this occasion heavy additional contributions were levied, and the Egyptian troops, who encamped within a fortified barrack commanding the town, which was moreover kept in awe by a battery of one gun, made themselves very unpopular. The principal Sheikh, moreover, was sent away as a hostage. In about eight months the troops withdrew, having inflicted what should have been a salutary lesson on this headstrong and bigoted people; but it does not appear that their spirit is much subdued. The revenues of Siwah are now farmed by a native merchant of Alexandria for a sum of ten thousand dollars.

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## CHAPTER XIV.

Observations on the Language, Manners, Appearances, Origin, &c. of the People of Siwah — The Productions of the Place, its Commerce, &c.

It will readily be imagined that, during the short time I stayed in the Oāsis of Siwah, I was not able to collect materials for a complete account of the people. We cannot read as we run, nor gather statistics and traits of manners like pebbles by the highway. It requires much patient study to understand the character of the smallest tribe of men, and we must live for a long time in the midst of them to collect anything really valuable on their habits and modes of life. There was a time when I was more rash and confident; but I have come a good deal in contact with travellers of late in a country with which I am tolerably familiar, and have remarked that even the shrewdest make three mistakes in every four observations. Thus I have learned to be more cautious than of yore.

It is really indispensable to know something of the language of a people if you would form anything like a correct opinion of them. I am aware that this is an original idea which will not find favour with the modern traveller; but I nevertheless maintain it to be perfectly correct, and am much less positive in my opinions of the Siwahis than I should be if I were able to penetrate within that other and more familiar and domestic circle of thought which finds expression with them in their dialect of the Berber. This is the language they curse in; and there is a great deal to be learned of the character of a people from the manner in which they break the third commandment. They pray, however, in Arabic; at least they have no translation of the Koran; and indeed their language, whatever it may formerly have been, is not now written, except in ordinary letters, and that but seldom—no great loss to them, by the way, for not one in a thousand can read.

I began a small vocabulary of Siwahi words, but did not get very far with it. Had I been aware at the time of the scanty knowledge possessed of this language, I should have endeavoured to be much more complete. The following will serve as a specimen :—

|                                                          |                                         |
|----------------------------------------------------------|-----------------------------------------|
| <sup>2</sup> Aman . . . . water.                         | <sup>4</sup> Awgeed . . . . a man.      |
| <sup>4</sup> Anou . . . . a well.                        | <sup>3</sup> Tultee . . . . a woman.    |
| <sup>3</sup> Tagillah . . . . bread.                     | <sup>2</sup> Fucht . . . . the sun.     |
| <sup>2</sup> Jerdun . . . . wheat.                       | <sup>2</sup> Jeree . . . . the stars.   |
| <sup>2</sup> Teenah . . . . dates.                       | <sup>2</sup> Agmar . . . . a horse.     |
| <sup>2</sup> Teswatet . . . . a date-tree.               | <sup>2</sup> Zeit . . . . a donkey.     |
| Edrar . . . . a mountain.                                | <sup>4</sup> Shâl . . . . a town.       |
| <sup>2</sup> Alghum . . . . a camel.                     | <sup>2</sup> Agbin . . . . a house.     |
| <sup>1</sup> Bunduk (Ar. Bendo-<br>giyeh) . . . . a gun. | <sup>2</sup> Tabragh . . . . tobacco.   |
| <sup>2</sup> Toksil . . . . a knife.                     | <sup>3</sup> Timseeh . . . . fire.      |
| <sup>1</sup> Sad (Ar. Asayeh) . . a stick.               | <sup>4</sup> Usaghuz . . . . writing.   |
| <sup>4</sup> Zurabeen . . . . a shoe.                    | <sup>1</sup> Lugalim (Ar. Galim) a pen. |
| <sup>4</sup> Kyazut . . . . a fowl.                      | <sup>4</sup> Dahan . . . . oil.         |
| <sup>4</sup> Giddee . . . . sand.                        | <sup>4</sup> Tibber . . . . gold.       |
| <sup>4</sup> Geer . . . . a boy.                         | <sup>2</sup> Amelal . . . . white.      |

In this brief vocabulary, which I give exactly as I wrote it under the shade of a palm-clump at Garah, from the answers of our escort of four men from Siwah, the words marked 1, are imported from the Arabic; those marked 2, are to be found in various vocabularies of the Berber dialect; those marked 3, occur in a list of Ghadamsee words written by Taleb Ben Musa bel Kasem; while those marked 4, appear to be entirely new: at any rate I have not yet been able to find them after a careful search through all the vocabularies that have come in my way. We may presume, however, that they are correctly written, from the circumstance of the remainder of the list being so completely confirmed by other documents. I will add that there is a probability that the word "Om" prefixed to many of the names of places in this part of the Libyan Desert, as well as in Egypt, may be Berber, although the Arabs explain it to mean "Mother." According to them, "Om-el-Yus" is "the Mother of Yus;" "Om Beydah," "the Mother of Beydah;" "Om-es-Soghayer" (as the Bedawins call Garah), "the Mother of the Little One;" "Om Eaymé," "the Mother of Eaymé." These names, they

say, indicate the tombs of female Marâbuts; but I believe them to be misled by the similarity of sound. There seem some other words used by the Arabs of the Libyan Desert, which, as far as I know, are peculiar to them: Garah, *pl.* Gour, means a mountain or hill; Gaood, is a camel; and Nugb, a pass. Gebel is never used except in the sense of a desert; all the hills in the neighbourhood of the Oâsis are called either Edrar (pure Berber) or Garah.

A great many of the words in common use are imported wholesale from the Arabic;\* and I have no doubt that the latter language is daily gaining ground. Most of the people seem to speak it more or less: they would otherwise be unable to carry on their intercourse with the Bedawîns who come and go and wander hither and thither, and have no leisure or patience to learn this unharmonious gibberish. I repeatedly asked the Siwahi words for day and night; but could get nothing but Arabic. M. Drovetti says that the Siwahis have an unwillingness to reveal their language to strangers, which he infers to be the case because they used Arabic in speaking to him, but not among themselves. I should not have thought it necessary to draw so refined an inference from the fact that they addressed him in a language which they thought he would understand, and not in one of which they knew he was ignorant. I noticed, on the contrary, that those of whom I inquired words seemed rather to be flattered than otherwise, and showed an alacrity to satisfy me quite unexpected, considering their reluctance to allow us to examine the country.

Traces of the Berber language still linger about Damanhour in the province of Bahârah. This was told me by Linant Bey, one of the Europeans who visited Siwah under the protection of Hassan Bey. I remember myself talking once with a Levantine just returned from that neighbourhood, and he said that the women of the villages employ a peculiar language called, I suppose from its barbarous sound, the language of birds! Few men

\* It has been observed that the letter *t* is both prefixed and affixed by the Siwahis to Arabic words in order to appropriate them; but my informants said *bunduk* for gun, not *tabunduk*. See 'Vocabulaires appartenant à diverses Contrées de l'Afrique,' published by M. Jomard; and the valuable Grammar and Dictionary of Venture.

comprehend anything of it; and their wives, therefore, can conspire amongst themselves against them in their very presence without being understood. My informant could only cite *tumtee*, which he translated, but I believe by guess-work. I wrote *tultee* at Siwah for "woman," but in all the vocabularies of Berber, brought from various parts of Africa, I have been able to consult, *tumtoot* occurs with this meaning. I may add that M. Kienig gives *tultan* for "woman;" but I am positive the Siwahis said *tultee*. As, moreover, *an* in this language is the plural termination, the difference may be merely one of number.

I will just allude to the opinion which has been put forward to the effect that the Berber language bears a strong affinity to the Coptic. It is supposed that in ancient times all the dialects spoken in Northern Africa were cognate; and that the Berber race in all the changes of their fortunes have preserved much of the ancient forms of speech. A careful study of the dialect spoken in Siwah might throw considerable light on this question, as the spot nearest to Egypt is that where most traces of its ancient language ought to be discovered. We must not, however, as I have hinted, expect to find a pure dialect among these people. On the contrary, Arabic has usurped the place of a great portion of the ancient tongue; and I have no doubt that the slaves, from time to time imported, have exercised some influence in modifying phrases and introducing words.

I have already noticed the mixture of races at Siwah. The pure Berber type is difficult to be made out, but, I think, occurs in greatest perfection among the mob of Siwah-el-Kebir itself. The inhabitants of the other villages are different in expression and physiognomy, bearing an affinity with the Bedawins, with whom they have probably intermixed. They are said to be much despised by the *canaille* of the capital, just as the Garah people are despised by the general body of the Oäsians. A large proportion of the population is composed of blacks, some slaves, others free. Herodotus makes the place inhabited half by Egyptians and half by Ethiopians.

The genuine Siwahí is of a slender make, sometimes tall and stooping, but generally middle-sized. He does not appear to be active or energetic, although capable of undergoing great fatigue. Numbers of them go every year to Egypt with the date caravans,

and seem to support the journey as well as the Bedawins themselves. The man that accompanied us on our march from Garah to Siwah was a miserable-looking, knock-kneed fellow, but he shuffled along with considerable vigour. He was an inhabitant of the capital, and, like the rest of his countrymen, sallow and small-featured, but lacking the expression of gloomy bigotry which lowered upon most of their faces. A few thin tufts of hair sprout upon the unhealthy cheeks of this ill-favoured people.

I do not know whether any one has attempted to identify the Berber race, as well as language, with the ancient Egyptian; but if such be the case, no assistance, at any rate, can have been derived from a comparison of their physical characteristics. Without entering into detail, I may remark, that at the first sight of a Siwahí we miss the smooth brow, the contemplative eye, and finely-formed though heavy mouth of the old people who drank of the waters of the Nile. To find a reminiscence of these you need not go out of Egypt, where you may often see *fellaha* girls carrying loads upon their heads, and with their blue coverings arranged down the sides of their face, so as exactly to resemble the head-dress of the Sphinx. The more you examine their physiognomies likewise, the more impressed you become with the resemblance; and the idea must suggest itself, that in the agricultural population of Egypt there exists much of the blood of the ancient race, of which the Copts are usually put forward as the only representatives. The *fellahs*, though perhaps slightly mixed, are nothing but Copts converted to Islam.

I believe, however, if we knew more of the language and the internal life and modes of thought of the Siwahís, we should find stronger reasons for affiliating them with the ancient race than can be derived from their personal appearance. It is true that some of their customs have changed; they do not now build temples or bury their dead in catacombs; but, as in the days of Herodotus, they may be said to dwell in houses of salt, and of course receive the same modifications as of yore from the fact of depending almost entirely for subsistence on their date-crops and the passage of caravans. In some respects Siwah is still, as formerly, the St. Helena of the Libyan desert.

We had often heard, before our arrival, of the sickliness of Siwah, especially in autumn, and various reasons were assigned

for it. Some said it was entirely caused by the dates, others by the winds, and others by the bad quality of the water. As soon as we had leisure to observe, however, the true reason suggested itself. The town is surrounded by sluggish streams, or rather moats, along which a fetid current creeps at a funeral pace, and by standing pools covered with a heavy green mantle. The exhalations of these must charge the air with malady, and as the rooms of the houses are close and small, their inhabitants are, no doubt, fully prepared to receive the infection. This is probably the cause why, with their heads muffled in the *titham*, the Siwahís look like so many Lazaruses, with the grave linen still about them. I did not see a single man who appeared old, whilst all looked worn and haggard. The children, especially, all seemed as if just turned out of a hospital. The whole population are subject to intermittent fevers. Sore eyes also are very common, probably attributable to the saline particles which must be carried about by the wind.

Some old writer, in describing the Oäsis, forgets the springs, and will have the vegetation to be supported entirely by the dews of heaven. It is certain that there were heavy falls of dew during our short stay. At sunrise the thermometer generally stood about 64°, rising to 92°, 95°, and 105°, a little after noon. The air was seldom perfectly still, warm blasts being common in the day-time, whilst at night there was usually a violent northerly wind. Not the slightest resemblance of a cloud was seen. We asked about rain, and were told it rarely fell—a fortunate circumstance, as otherwise their earth and salt houses might melt down some day like a snow-ball at the approach of spring. Slight shocks of earthquakes are said to be very frequent, and to render the flow of water from the springs more copious. A large part of the wall of the town had fallen in, probably from some recent shock, and men were employed repairing it.

As to the mode of life of these people, it seems quite agricultural, and I could not learn that they manufactured anything but baskets and mats. Formerly they grew indigo, but seem entirely to have abandoned this profitable branch of production, for which they had so excellent a market in Egypt, nearly all their care being now devoted to the culture of dates. About their modes of procedure I could learn nothing, except that, contrary to the usage in

many other countries, they both water and manure the trees. Most of the woods or groves are surrounded with walls chiefly composed of salt-earth, with fences of reeds, with a camel's bone stuck here and there as a charm. In many places there are orchards, nay perfect gardens, much more beautiful than those of Rosetta—the apricot and the olive, the pomegranate and the banana, intermingling their leaves and branches at the feet of the palm-trees, which in some places rise to a stupendous height, and contribute, with the variegated tints of their trunks, their leaves, and their fruit-clusters, to increase the pleasure of the eye. I have mentioned the beds of *bursim* and lucerne that here and there occur. I believe the Siwahs also grow a little barley, dhourra, and perhaps wheat, but the greater part of what they consume comes from Upper Egypt, whilst their rice is brought from the Wah. Among the vegetables produced are onions, some of them really magnificent. The evening we arrived one was brought as a present, quite five inches in diameter. The cucumbers are large but watery, and the melons insipid. I must not forget to mention that the oil of Siwah is quite famous in this part of the world. We could learn nothing of their mode of preparing it, but from what we saw believe it to enjoy too good a reputation. It is not, however, bad. We brought back, as a present to the Nazir of Abusír, a small skinful, which was highly appreciated. Our Bedawíns also procured a supply, which served them as sauce to everything they ate upon the road.

The live stock of the Oāsis does not appear to be very extensive. For a long time we were under the impression that there was but one cow among them all; a few others, however, afterwards made their appearance. They have some fowls, goats, and sheep; and a great number of little asses. These diminutive creatures are constantly employed carrying dates, which they would eat off their backs were not their necks kept straight by two flat pieces of stick crossed on each side. Several of the Sheikhs ride on horseback; and I believe that some Siwahs possess camels of their own, though the Bedawíns supply the greater number of those employed in exporting the produce of the place.

I wish I were able to give a completer idea of the manners of this secluded people than I have done, but am unwilling to draw

upon my imagination. It would require much better opportunities of observation than I possessed. Perhaps a closer acquaintance might have induced me to soften the harshness of my sketch of their character. I will now add, that to strangers of their own faith, though always jealous and suspicious, they do not seem particularly inhospitable; and that those who visit them on business seem to be supplied with provisions at the public expense—in other words, are allowed to take as much dates from the store as they can eat.

Though tributary to Egypt, Siwah is still in many respects a republic, governed by its own laws and customs. The Sheikhs, I believe in number twelve, are raised to power by the suffrage of the people; and probably receive a formal confirmation from the Pasha, but are removed without ceremony in case they commit any unpopular act. Their authority is by no means absolute. They are compelled to carry on their discussions in the presence of the people, who often intervene with spear and gun, like true Jacobins, to overawe them, and prevent any obnoxious measure being carried into effect. The Sheikhs, on the other hand, may sometimes league together and establish a kind of oligarchy by means of their armed slaves and followers. All these characteristics of their government I infer from what went on in the place during our stay with reference to ourselves.

Probably there are no more curious facts to learn about this remarkable people than those connected with their treatment of women, as we have seen they are extremely jealous, and have allowed this feeling completely to determine their mode of life. In order to keep their wives and daughters sacred from the gaze of strangers, they have shut up themselves and them in a huge structure, which may be called the common harim of the Oäsis, and is governed by regulations almost as strict as the haräms properly so denominated. I do not know at what age young men are excluded at night, but suppose it is as soon as they can shift in any way for themselves. Widowers are turned out as well as bachelors. I have mentioned that at Garah the men outnumbered the women. It may be proper to add that there was one Laïs in the village: at Siwah there were several, living in retired houses by themselves among the palm-trees.

## CHAPTER XV.

The bigoted Party make an unprovoked attack on us at night, and fire into our Tent — We obtain an Apology — Preparation for our Return — Arrival at Garah.

ON the evening of October the 6th everything was ready for a start next day. We had failed, it is true, in procuring a good supply of provisions, but there were no hopes of better success in a longer delay. There never was a place so meagrely provided as the Oāsis of Siwah, at least if we may judge from our own experience. In addition to what I have already mentioned, all we could get was a little hard bread, very black and gritty, which we had baked for us in the town, at an exorbitant price by the by,\* and a small quantity of dried meat. The first was made from wheat sold by the Egyptian trader I have before mentioned; the second we procured from some Bedawíns who were not prevailed on to sell it without some difficulty. It was chopped into small pieces, and as they clawed it out of a skin with their hands, looked by no means inviting. However, when fried, we found it, though very salt, not at all unpalatable, which the reader may attribute, if he pleases, to our good appetite. The Moggrebins, who came on pilgrimage along this road, generally bring with them jars of oil for sale whereby to defray their expenses; but in the oil they keep meat for their own consumption, for which reason small pieces are sometimes found in the common eating oil bought in the market.

We also got some beans and a little chopped straw for our donkeys; but it seemed highly probable that there would be famine in the caravan before it reached Alexandria. Our stock

\* Our boys also got a supply for themselves, and we should all probably have had enough had not Yúnus and Saleh pilfered the greater portion in the most impudent manner before we had been three days on the journey. I can scarcely give an idea of the audacious dishonesty of these two individuals. Suffice it to say that, had we not kept up a good watch, we should have been pilfered of everything. The bread and biscuit we were at length compelled to distribute in our carpet bags.

of biscuit was seriously diminished, and only seven or eight tins of our European preserved meats remained. There was a small bottle of anchovies, and a diminutive jar of bloater paste. Our coffee was exhausted, our sugar ran low, in spite of a small addition we here obtained ; also the soda powders : and there were not quite two bottles of brandy. A vague report had reached us that some *araki* was distilled from dates at this place, and we tried to procure some ; but although the Showish made himself very busy in the matter there was none forthcoming. It is true the supply of tobacco still looked respectable, but none of us seemed to like the idea of living on smoke. It was extremely lucky for us that the Siwahis as a body refrain from the fragrant weed ; we should otherwise have had plenty of visitors. Some few take snuff, and fewer still chew like the Bedawins. However, I believe our boys managed to buy a small quantity of tobacco for their own consumption.

On the whole we thought it advisable to determine on practising the strictest economy, and on making a kind of forced march. On our outward journey we had employed nearly twenty days, whereas fifteen, and sometimes thirteen, was the time taken by the caravans. It is true we were delayed two days at Abusir, and that we chose to stop one day at Mudar, and nearly two at Garah. Besides, we were not then inured to desert travelling, as now we were. There was a possibility, therefore, that we might perform the distance in less time than the swiftest caravan. We resolved at any rate to try, and it will be seen that we succeeded.

I dare say the reader will not be displeased on being admitted to a view of our domestic arrangements, as illustrated by this evening's proceedings. Our little tent was divided by imaginary partitions into four apartments, each permanently allotted to one of the party. A mat, now somewhat ragged, was spread on the floor, and served to ward off to a certain extent the cold that struck upwards at night from the salt earth. Around the foot of the tent-wall were spread a variety of articles, carpet-bags, and cloaks, arranged as divans, shawls, hats, guns, pipes, gazelle-skins stuffed with tobacco, bottles, tin cups, &c. A large demi-john, filled with water for ordinary consumption, stood outside the doorway ; and swinging in various directions were our in-

valuable flasks, with shot-belts, powder-horns, and so on. The lantern hung half-way up the pole, to which the Bedawin guns were now tied.

It will readily be imagined that, as soon as we were comfortably bestowed in our respective places, pipes were lighted all round, after which an amicable discussion arose as to whether it should be "grog" or "tea," two inestimable luxuries not to be enjoyed on the same evening. The vote having been given for the latter, Derweesh and Saad, who had been heard through the canvas astonishing the weak minds of the Bedawins by accounts of the "fast" life they led in Alexandria, received orders to light the fire, to boil the water, and to skim it, for at Siwah a thick scum always rises to the surface as soon as it begins to warm. Our kettle was nothing but a tin can, employed for a variety of purposes, none however more important than this. Well, a cheerful blaze was soon lighted up, and the two lads crouched down to it, spreading out their blue shirts to keep off the wind that came sweeping along as usual, howling amidst the palm-groves, and threatening at every moment to bear away our shivering little tent. By this flickering light we could discover our patient donkeys still weary, after four days' rest, hanging their noses in melancholy companionship together close along the wall of the plantation near at hand; and the surly Yúnus casting ever and anon towards us a sinister glance from his remaining eye; and the good-tempered Wahsa showing his white teeth, and old Saleh mumbling and shaking his long thin beard—all three crowded round some mess of their own making; and we could dimly see the camels at no great distance either holding their heads erect or working their way here and there in spite of their fettered legs; and in the background the huge dark mass of the town of Siwah rising in sullen silence against the sky.

It will readily be believed that, in spite of the few causes of displeasure that existed, we fully enjoyed our last evening in the Oäsis of Siwah. We had achieved the object for which we had undertaken our journey; had received, moreover, unexpected delight from the contemplation of a country far more romantic and beautiful than we had been led to expect; and were now about to return towards the place which we must regard for a time at least as our home. If other thoughts presented them-

selves—if, in the depths of the African Desert, we yearned towards a distant land of which we were all proud to be sons—if each in the recesses of his own heart pronounced names and called up forms which must be loved as long as remembered, we were not, therefore, the less happy. Man is so framed that a shade of sadness gives a finer touch to all his pure enjoyments. There is something cruel and inhuman in a mirth which shakes off all communion with sorrow. We are naturally swayed by contending emotions. Regret tempers the selfish ardour of hope; hope deprives regret of its bitterest pang; and glances of pleasure never gleam so brightly as through the medium of a tear.

Our conversation that evening was not of long continuance. One by one we stretched out to repose in anticipation of the labours of the next day, and a general silence soon prevailed. The fire had gone out, our guides and attendants had sought shelter from the wind in little nooks formed by the zembeels and bean-bags, and the whole encampment would probably have been soon wrapped in slumber, had not the report of a gun close at hand among the palm-trees aroused us.\* It was pretty evident that some evil-disposed person had crept up behind the wall and taken a shot at the Nasára; luckily he could not aim, and was too cowardly to try his fortune a second time. However, Mr. Lamport, who was the first to understand what was going on, put out the lantern at once, for there was no knowing how many ruffians were prowling about anxious to make a target of us, and we quietly waited events, making our preparations in silence to resist any attack unless of overwhelming numbers. Presently a crowd of people were heard coming with loud cries from the direction of Siwah, and we could soon distinguish the name of Yúnus several times repeated. It appeared that his friends within the city had heard the report, and being aware of the feeling that existed against us, because we were Christians, and against him for bringing us, had come out to see what was the matter. They expressed great sorrow at what had taken place, and some of them resolved to remain all night in the neighbourhood of the tent. We now understood that there was a large party at Siwah, who, if they had their will, would massacre us.

\* The Bedawíns and our boys always maintained that two shots were fired, but we heard only one.

at once; and unpleasant reports reached us that twenty-four individuals had leagued together to waylay us on our return towards Garah. However, sleep being absolutely essential, we arranged our carpet-bags so as to protect us as much as possible, in case half-a-dozen slugs should intrude into the tent, and soon forgot the incivility of which we had been the objects.

In the morning there was of course great talk of last night's affair, but as talking would not mend matters, we thought it better to reserve speculation till we were on the move, and hastened our departure. As usual, however, the Bedawins had left a great part of the arrangements to the very last; and it was, moreover, only when everything else was ready that our bread arrived from the "bakery." It was eight o'clock before we could get all our traps into the zembeels, and the zembeels on the camels. Of these animals we had seven, five from Abusír, one from Mudar, and one purchased by Yúnus for seventeen dollars at Siwah. Three, however, were quite sufficient for our traps: Wahsa's camel being laden with dates on his own account, and our guides also engaging in a little speculation in oil and fruit.

We at length shook the dust off our feet and left this inhospitable place, after saying farewell to the black Showish, who was one of the few civil persons we had met with, and sending our respects to Sheikh Yusuf. We had not gone above a mile through the palm-groves when a breathless messenger came up to beg us to stop, for the Sheikhs were coming out in a body to have an interview. We halted in a shady spot, rather annoyed at the delay, but curious to know what these people, after keeping themselves out of the way so long, now wanted with us. Presently up they came almost at a run—a row of old fellows tucking up their white burnouses, puffing away, shaking their beards, and sweating like bulls. They had evidently been frightened by our departure, thinking it to be on account of the attempt at assassination the previous night, and were beginning to reflect on the consequences of the reception they had given us. They speechified and palavered some time, and faintly expressed a desire that we should return. We said very little to them, except that we were not at all satisfied with our treatment. We acknowledged, however, our obligations to Sheikh Yusuf, who really seemed vexed, and would have treated us to another edition of firstly, secondly, thirdly, and

lastly, had not Yûnus interrupted him, and laying his hand on his shoulder, told him it was of no use talking, the point essential now being, that we should get back in safety, which we were not likely to do if their people were resolved to lay an ambuscade for us. "We don't want words," he said, "but deeds. If you are sorry for what has happened, send us a dozen guns (*i. e.* men with guns) as an escort." They assured him that nothing should befall us, and we left them looking at each other under the tree.

When we reached the eastern extremity of the Oäsis some men employed in the fields gave us a few parting curses, at which we were rather surprised, as the country people had been hitherto civil. Without pausing to inquire the reason, we proceeded a little farther and stopped for our first frugal meal on the homeward journey. Whilst we were discussing it, a horseman came riding up the valley towards us; he wore a white burnoose and a tarboosh, and had a gun and fixed bayonet slung at his back, seeming, indeed, to be altogether the most respectable individual we had seen. He turned out to be Sheikh Mansoor come out to make his separate excuses, and talked very big about answering for our lives with his own in case we would return; promising, too, that we should be allowed to enter his quarter of the town, and so on. But we had had enough of Siwah, and left him in the midst of his tardy apologies. For a short time longer the valley, with its green islands, its lakes, and its hills, remained still in sight; but our track soon turned northward, and as we moved, the beautiful scene seemed to fly swiftly away behind the gigantic rock of Om-el-Yus, which in a few minutes hid it from us, most probably for ever. As if by magic we found ourselves again transported into the realms of desolation; on every side there was nothing but rock, sand, sky, and light, and yet we felt none of that horror which some travellers have affected at the bare sight of the desert. The air was pure, our spirits were buoyant; we were glad to escape from a land inhabited by so inhospitable a race, and we looked forward, not without pleasure, to enjoying some of the comforts of civilization in less than a fortnight.\*

\* Om-el-Yus, by compass, is exactly east of Edrar Amelal, and N.E. of

This day we rode, in a general E.N.E. direction, for ten hours, and halted near the copses of Om Eaymé some time after night-fall. The cold was very great, and next morning we found the thermometer down to 58° at half past five, when we started.

Having traversed a valley strewed with large pieces of flint we reached the Nugb-el-Mejbber, and ascending to the table-land that forms the summit of the ridge dividing Garah from Siwah, proceeded in an easterly direction. In the course of the morning we saw some men running behind us, and their numbers being magnified by the mirage, our Bedawins took it into their heads that we were pursued. They accordingly prepared an ambuscade behind some hillocks, but it soon turned out that the new comers were a slave and three household servants of Sheikh Mansoor, sent as an escort, or rather as a guard of honour to appease us. They said there had been great dispute in the town about us after our departure, and that there had even been a fight between the moderate and the fanatical parties.

Our mode of travelling was now far less agreeable than that adopted in going. There was no moon, and we were compelled therefore to keep moving almost without a pause all day. We thus missed entirely those comfortable stoppages when we had time to set up the tent and divide the work by a rest of five or six hours. These formed some of the most agreeable parts of our outward journey, and, indeed, more than counterbalanced all the fatigue we experienced; their influence even was more than momentary. Our affections for particular localities are of rapid growth, and take root immediately wherever pleasing sensations have been experienced. Thus every spot that had been the scene of one of these delightful halts was remembered and gladly recognized on our way home. "Here was the tent, and here the donkeys were tethered, and here the Bedawins reared an extempore shelter;" these reminiscences, however faintly they resemble those we cherish of places where strong feelings have developed themselves, were quite sufficient to relieve for a time the monotony of our forced march. We contrived also to snatch some agreeable moments in one part of the country, where a few thorn bushes occurred here and there, by hurrying on ahead and enjoying the

Edrar Abou Bryk. The distance between the former two is about sixteen miles; between the latter two, say seven.

thin shade they afforded. A projecting ledge of rock sometimes proved still more useful, and we would stretch ourselves out, light our pipes, and make ourselves comfortable until the little *kafila* came in sight.

The scenery on these occasions was often sufficiently striking to interest the eye, sometimes even beautiful. Brilliant tints often presented themselves in a variety which we could scarcely expect mere barrenness to assume. In the midst of such scenes a group of camels moving slowly up forms a picturesque object enough; but I could not help observing how erroneous are the ideas of most painters as to the appearance which a caravan usually presents. There seems to be a tradition among them; they habitually bring in their camels following each other in a long unbroken file, just as they are to be seen in the streets of Eastern towns, where, that they may not quite block the way, the tail of one is tied to the nose of the other. In the desert, where they are allowed to take advantage of any scrap of vegetation that may occur, they are urged on—at least such was the case in every instance that came under my notice—in irregular droves, sometimes spreading over a wide extent. Those entrusted with their guidance are constantly obliged to be on the watch to collect them if they scatter too much, now whistling, now grunting, now crying “*Zah! zah!*” plying the stick or hanging on by the tail as by a rudder. I have mentioned in a former page that the camel roars and complains when he is either loaded or unloaded; I will add, that he otherwise exhibits great indocility. To make him kneel, the drivers are obliged to emit the guttural sound “*Cheh! cheh!*” about fifty times, to beat his shins and hang upon his neck; and when they have him down, to stand upon his bent knees whilst they remove any article they may want. He often struggles furiously to get up.

To return. The table-land we were traversing was almost perfectly level and barren. We rested for an hour or so in the burning sun at midday, and then proceeded. This evening, although we were on an extremely elevated spot and very far from water, the air was filled with a light mist, the origin of which we could not ascertain. We proceeded, slightly diverging to E.N.E., by the aid of the lantern, until 7 p.m., when we halted, after having travelled that day eleven hours and a half.

*October 9th.*—We were off this morning, as usual, by half past five, and turning N.N.E. came in sight of the Milky Mountains, nearly thirty miles distant, immediately after entering Nugh-el-Abiad, which we had ascended by night in coming. It is a pass remarkable for the whiteness of its rocks, and is strewn with shells, petrifications, and talc, intermingled with small black stones that appear to be of volcanic origin. This day began our serious quarrel with Sheikh Yúnus. We had clambered down the steep descents which had given us so much trouble during our outward journey, and having reached the lower table-land that leads to the edge of Garah valley, determined to push on and arrive as soon as possible at the date-trees. Our so doing, without asking the old gentleman's advice, displeased him excessively, and we could see by the scowls with which he left us, after moving by our side for some time and endeavouring to play off the stale device of "robbers ahead," that he would, if possible, make us feel the full weight of his indignation. On we went, however, for several hours over the plain, and at length reached the valley, and descending soon found ourselves beneath a huge clump loaded with fine fruit. Here we made a delicious meal, and when we were satisfied advanced to Aïn Fāris to give the donkeys a drink. From this place we made our way to the western side of the village, which we were as glad to reach as on the first occasion; and, throwing ourselves down in the shade, determined to have a good rest that day, as, although we reached at half past twelve, we were not to start until the following morning.

When Yúnus came up, he could not keep down his ill-temper, and we had a regular row with him, which ended in his threatening to go away with his camels and leave us to make our way back to Egypt as best we might. As this arrangement would have suited neither of us, mutual concessions ensued; but it was not to be expected that very agreeable feelings should exist in our minds towards the surly old wretch.

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## CHAPTER XVI.

Forced March to Alexandria — Sufferings from Hunger and Thirst —  
Various Incidents — Our Kafilâ once more in danger of being robbed —  
Safe Arrival at Abusîr.

ON the morning of October the 10th, having added two baskets of fresh dates and *one stewed fowl* to our provisions, we bade farewell to Sheikh Abd-el-Sayed and started from Garah at 7 A.M. At midday we reached the bottom of the Gour-el-Laban Pass and halted under the shade of a precipice for about half an hour, whilst the camels, in order that no time might be lost, went on ahead. We soon regained the lost ground by a gallop over such a road that it was a miracle some of us did not get a break-neck fall. This was the system we adopted throughout the rest of the journey.

In the pass we noticed an immense number of petrifications, fossil shells, pieces of coral, &c., interspersed with vast quantities of black stones, some as large as the fist, others as small as split peas. They appeared to have been strewn there by a volcano. Mr. Forty made a collection of various specimens; but did not succeed in bringing the whole back in safety, as the Bedawîn maliciously threw a great portion out of the baskets. For my own part I have never had a propensity to collect curiosities, and omitted even to bring back a piece of alabaster from the temple of Jupiter Ammon as a relic.

We crossed the Milky Mountains during the afternoon and halted for the night at their base, having made eleven hours. During this ride we passed the bed of the dried lake I have before mentioned. It is of considerable extent, and the edges are strewn with innumerable small black stones like those in the pass above.

*October 11th.*—We started at half-past five, and having travelled thirteen hours halted in the Nugb-el-Ghrâb, well wearied out. This was the first night of the new moon that cheered the

latter part of our path by the pale light of her thin silver crescent. The cold was excessive at this bivouac, and prevented some of us from sleeping. I remember having to leave the shelter of the row of zembeels to catch two rascally donkeys that had strayed away into the valley, and informed us of the fact by a distant bray.

*October 12th.*—This day we ascended the great pass of the Crow, and retracing our steps almost exactly along the old road passed Hooshm el Gâood, and halted after eleven hours' work near the place where we had formerly lost our way.\*

*October 13th.*—Six hours and a half brought us to Haldeh. I and Longshaw pushed on to reach the well, and found the shepherd vigorously watering his sheep and goats. With the assistance of his confederate below he filled and refilled a large skin bag stretched on a hoop and used as a trough, with astonishing rapidity. The sheep approached three or four at a time, drank a little, and went away of their own accord, although this is a luxury they only enjoy once in two days. Yûnus, on coming up, put a stop to this proceeding, rightly inferring that the water was scanty, and that the man had begun to draw it only on getting sight of us in the distance. There was scarcely enough left to afford us a small supply and water our animals, which had to go without wetting their lips for the next two days. The Marâbut seemed at first a little sulky at being scolded; but was restored to contentment by our purchasing a sheep for fifty piastres, having it killed, and giving him the head. To show his gratitude, he informed us that a body of seventy mounted robbers were hovering in the neighbourhood; and it was instantly surmised that, having heard of our presence in those regions, they had come for the very purpose of waylaying us. Possibly it was this intelligence that determined Yûnus not to return in the direction of Mudar.

From Haldeh accordingly we took a north-east by east direction, different from our route in going; but fell in, in less than three hours, with the Wady Fâragh. Here the Bedawins, who had not tasted fresh meat for a long time, resolved to stop and

\* From Garah to Gour-el-Caban, nearly eight hours, our direction was N.N.E.; from thence to Nugb-el-Ghrâb, about fifteen hours, N.E.; up the Pass, North; then again N.E.; and then nearly North.

cook. We made no objection, and old Yúnus was soon at work, cutting up the carcase with a sort of hatchet, of which the cutting part was not above an inch and a half wide, and was curved like a gouge or auger; and putting it into an earthen pot that now made its appearance. A large fire of dried wood and camel's dung was soon kindled; and very shortly four plates covered with huge gobbets highly peppered were set before us. I shall say nothing about the tenderness of the meat; suffice it to remark that we did succeed in tearing it to pieces with our teeth and swallowing some pounds, all the while anathematizing old Barabbas, *alias* Yúnus, who thought more of quantity than quality, for picking out a big old ram.

*October 14th.*—This day we started at 6 A.M. and soon got on a level stony plain, covered with millions of white snail shells. An hour's rest was granted us at noon, after which we went along again, cursing the monotony of the road. At length it seemed likely to become varied and interesting enough; for eleven men made their appearance coming down upon us in a long line finger on trigger. We performed some martial manœuvres, but did not like the aspect of things. Our guides all seemed to feel queer; and Wahsa absolutely looked impressive. Yúnus, who after all did not lack courage, went to meet the new comers with his gun thrust forward as usual; and the approaching party dispatched a herald to explain their intentions or ascertain ours. The greeting was by no means friendly. There was no shaking of hands or embracing; and these two interesting objects stood looking at each other like two wild cats that have met on the branch of a tree, neither liking to spring first. At length the others came up and one of them turned out to be a friend of Yúnus, who seemed to be pretty universally known in those parts. So amicable instead of hostile hugs took place; and eleven ill-looking ruffians mixed with our caravan crying out for dates and water. After examining our guns and donkeys with the eyes of connoisseurs, and evidently regretting that the duties of friendship prevented them from stripping us to the skin, they stopped behind and relieved us of their company, at which we were not sorry; for although of course we felt very heroic, it seemed not advisable to fight against such odds. Five or six other men coming in a different direction rather confirmed

us in this idea. We stopped not far from a solitary tomb on a small mound at a little past six, having been on the move eleven hours.

In the afternoon of this day a cluster of hills appeared on the horizon in front, to the left of our track. These were pointed out to us as rising near Mudar; and in fact occupy the base of Ras Kenâis.

Next morning we were in the saddle before sunrise and soon parted with Wahsa, who left us to return to his own encampment. I ought to mention that our party had been further increased at Siwah by a poor invalid Arab who had started from Egypt on a visit to his brother at some place far to the west, and was now on his return with a fever about him.

In about an hour we passed some gulleys, and coming unexpectedly to the end of the table-land, obtained a sudden view of the sea. We were equally delighted at the prospect with the Greeks in the Anabasis; and soon recognizing Gatta Bay, found that we were nearly eight hours nearer Alexandria than when we left the coast on our way out. We descended at 7 A.M. the steep sides of the Catabathmus, called by the Arabs Medower-er-Rokbah; and at 9 A.M. reached the well of Ghookah, sunk in the level valley. It is deep, and two men were employed drawing the rope over a roller to water a herd of camels that was halting in the neighbourhood. We stopped an hour and a half, and then proceeded east-south-east along a valley parallel with the sea, but farther inland than that we had followed in coming. At 3 P.M. we passed the well or rather cistern of El-Ameer, cut in the solid rock and dry in summer. Near sunset we came up with a large caravan going to fetch wheat from Alexandria; and halted awhile, after which we proceeded in company until 8 P.M., having made eleven hours of actual travelling that day. The cold being intense, we determined to abandon our Spartan hardihood this night and to set up the tent.

I have often, in the course of this volume, had occasion to mention the going down of the children of the Desert into the land of Egypt for wheat; this is now a regular practice. Every autumn the young men of each tribe gather all their spare camels and travel many hundreds of miles in order to bring back a few sacks of grain to eke out the produce of the unkindly soil of their own valleys. All the markets on the banks of the

Nile are at that time filled with wild-looking men, who bring blankets, woven in their tents, from the wool of their flocks, or dates from the Oāses, or more commonly good round dollars, to give in exchange for what they require. The sons of Jacob, it will readily occur to the reader, brought money only for the purchase of wherewith to relieve the famine that had fallen on their people.

It not unfrequently happens that a great scarcity permanently displaces the head-quarters of a tribe. There has been a tendency of late years among many of the Bedawins to draw nearer and nearer to the frontiers of Egypt; and some of them have even built houses on the limits of the valley of the Nile and taken to cultivation. Travellers in Egypt may, without trouble, convince themselves of this fact on their way to the Pyramids of Gizeh, the monopoly of the exhibition of which they will find in the hands of a village of Bedawin agriculturists: but it is a mistake to suppose, as some seem to do, that this is an abnormal case. The confines of the whole province of Bahârah, especially near Damanhour, have been invaded in the same manner. Sometimes the process of transition from the nomadic to the stationary state is but half gone through; tents and stone or mud houses are found intermixed. Probably the wandering instincts so deeply implanted in this race may never be wholly uprooted, and at some future day they may again take to the desert. On one occasion, "Abram went down into Egypt to sojourn there; for the famine was grievous in the land;" and I have no doubt the difficulty of finding subsistence in their old haunts had much to do with bringing the Bedawins to attempt settlements in Egypt.

These were the speculations that suggested themselves as we looked forth from our tent-door and saw by the last rays of the setting moon some thirty or forty Bedawins occupying, in circular groups, the slope of the hill, whilst nearly a hundred camels were browsing around. The aspect of the country was like that of a vast heath or down stretching away on all hands in immense black undulations. Being sleepless in spite of fatigue I went forth and stood apart for some time. It was curious to observe how rapidly the bustle subsided—the men disappearing one by one as the evening meal was concluded, and stretching themselves among the baggage to sleep; the camels kneeling

down to rest, but continuing for a long time to keep up a tremendous chumping. By the light of the stars I could at length distinguish nothing but our tent, as it shook, and trembled, and strained on its cords beneath a strong north wind; I retired late under its shelter. On rising I found that our friends had moved off long before daylight. With the usual improvidence of Bedawins they had lingered and loitered during the beginning of their journey; and now, being short of provisions, were compelled to make sixteen hours a day.

*October 16th.*—We proceeded over an undulating plain; the day was windy and cloudy, and we soon saw showers approaching, and heard their footsteps pattering on the hollow-sounding desert. Several flocks of white geese flew over head before and during the rain. In less than four hours we had passed the ruins of Kasr Gemaima, and halted about seven or eight miles from the sea on a line with the well of El-Emrúm. This was the place where we had left a supply of beans for our donkeys; and we had to wait for them to be fetched as well as whilst the poor animals went to drink.

During this halt I returned on foot to the ruin above mentioned. It was formerly a massive quadrangular stone tower with two lower rooms, one probably serving as an entrance-hall: it is about thirty paces square, and the wall must have been at least ten feet in thickness. It was built of large hewn stones, most of which are now weather-worn and shattered. There are no traces of inscriptions or architectural ornaments. From its position on the crest of a steep hill overlooking the road we came by, I should think it was erected for the protection of the caravan-road to the Oāsis, as well as that to Cyrene. Outside on the west is a vast cistern cut out of the solid rock, with a narrow opening at top and widening gradually as it descends. To the east is a square cistern like that at Selem, broken in at one corner. The entrance is nearly choked up with a carob-tree; but I managed to get down and astonish a huge number of frightfully ugly lizards and a black scorpion that slunk into its hole at the sight of a Frank. In one corner was the mouth of a well choked up with great stones.

I am of opinion that there were anciently two roads through this province: the upper and more level by which we returned,

frequented, I suppose, by caravans only in winter, when the rock cisterns under the protection of the forts were full of water; the lower one following the windings of the coast, where there are undried wells at all seasons of the year. I could not help, whilst contemplating this ruin, giving way once more to a feeling that had often been aroused in the course of the journey—one of regret, namely, at beholding the triumph of desolation and the unequivocal signs of the victory of barbarism. And I was confirmed in the idea which must present itself to all who transgress the boundaries of the narrow circle of our young civilization and expand their view over the senile regions of the earth, that “there is a tide in the affairs of men;” that we advance and retreat, never reaching the goal towards which we tend, and slipping back sometimes even when we fancy we are progressing. Let those who still dream of the perfectibility of the human species go to the Libyan desert and turn up its soil, and they will find the skeleton of a civilization now as much extinct as the mammoth or the mastodon.

I returned to my companions and found preparations making for a grand repast. We had a small tin of *ox-tail soup*, which it was proposed to dilute with water, mix with biscuit, and warm over a fire of camel’s dung. What was said was done; and we enjoyed our meal excessively. Our donkeys at length returned, after six hours’ absence, with the beans and their bellies full of water. The man who had acted as our store-keeper also came for his present; and, having settled with him, we started, and managed to make four hours more that evening at a rapid pace.

We were off on the 17th very early, and moved nearly all day in sight of the Marâbut, Sheikh Abd-er-Rahman. We had been lately enlivened by the sight of a hare: during this ride we saw a field-hen and a tortoise. Towards evening we sighted the Salt-Lakes; but left them to the north at night.

*October 18th.*—Early this morning we crossed over a ridge of hills, and coming to the eastern end of the Salt-Lakes, soon entered the long valley that leads without a break to Alexandria. We watered at one of the wells of Shemaimah and then proceeded to Kasr-el-Amayd, the Saracenic structure we passed at night on our way out. It is a four-sided building, with a square tower or ring projecting from the centre of each face. The entrance is

low, and formed of thin blocks of red granite: it looks southward, and is placed in an arched niche, over which there is an inscription beautifully preserved, explaining that this castle was built by Ahmed-el-Tahír-el-Yasmurí, under the orders of Bibars, Sultan of Egypt, whose arms appear beneath in the shape of two lions rampant. Similar ones occur on a bridge at Cairo, attributed to the same monarch. All the rooms within are arched. There are two stories; and I am told that this building is conspicuous at a great distance out at sea, although it is not usually mentioned as a landmark.

Leaving this place we pushed on for Abusír, which we reached after a hard ride at about seven o'clock, having travelled in the last two days twenty-two hours and a half. The worthy old Nazir seemed overjoyed to see us. The news of our having been shot at by the Siwahís had travelled to him, gaining volume as it proceeded, by some caravan; and he was rather surprised at finding the party with the full complement of legs, arms, and eyes! He was sharp enough, however, to understand that a good meal would be the best way of bidding us welcome and expressing his sympathy; and so he bustled about with right good will to prepare a supper.

Next morning we started for Alexandria, and, excluding a stoppage at the springs half way, made the distance in less than eight hours. Our poor donkeys seemed to know that they were near their journey's end, and went most willingly, so that we came into the Minsheyeh in capital style, very ragged, very dirty, very much burnt, and very hairy, much to the surprise of our friends who expected us to be devoured by the cannibals.

We got out of Siwah in the year of our Lord one thousand eight hundred and forty-seven, on the seventh day of October, about eight o'clock in the morning, and reached Alexandria at four in the afternoon of the nineteenth, having been therefore twelve days and eight hours on the journey, or one hundred and thirty-two hours and thirty-five minutes of actual travelling. Our first sentiment on completing this journey was of course one of pleasure; but a feeling of natural regret began soon to steal into our minds. We had grown accustomed to the free and wild ways of the Desert; and seemed scarcely to breathe so freely amidst streets and houses. The moments of keen enjoyment we

had experienced came back upon us with full force, invested with all the enchantment of distance; and although doubtless no one of us ever seriously contemplated setting up a tent as a permanent habitation and plunging amidst all the disagreeable realities of Arab life, yet there are times, perhaps, when we could wish to realize the idea of the poet, who says:

“ Oh! that the Desert were my dwelling-place,  
With one fair Spirit for my minister!”

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I AM indebted to the kindness of David L. Price, Esq., a chemist of distinguished abilities, for the following analysis of the water of Siwah:—

“ The water, which was brought to this country in a well-secured wine-bottle, emitted on being uncorked a very perceptible odour of the gas known as sulphuretted hydrogen, and which was made manifest on applying the usual test for the same. Its presence may be attributed to a small quantity of organic matter, which had subsided in the bottle, having undergone decomposition. Compared with other waters (I will select the water of the Thames before it reaches the vicinity of London), it has a greater density, which I have found to be 1·0015, whereas the Thames has a density of 1·0003, thus indicating that it holds a larger amount of solid matter in solution. I have found that 100 parts of it contain 0,23950 (the Thames water 0,032932) of solid constituents: of these, 0,1615 are common salt. It might be inferred from this large amount of common salt, that its taste would be saline, which is however not the case, it being of a very agreeable and somewhat sweetish nature. The remainder of the solid matter is composed of potassa salts, sulphate of lime, carbonates of lime and magnesia, silica, and a small quantity of organic matter.”

THE END.

*Map of the Author's Route . . . the end of the book.*

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PREPARING FOR PUBLICATION, IN FOLIO,

**TWELVE VIEWS,**

FROM SKETCHES TAKEN ON THE SPOT,

TO ILLUSTRATE

MR. ST. JOHN'S JOURNEY IN THE LIBYAN DESERT  
TO THE OÄSIS OF SIWAH.

