

'Right Hayward—right my only friend; it did fail—for the first time in my remembrance—failed me. But I must leave this part of the country. There is hot fighting yet going on in America; I will enlist; anything rather than remain here; else the devil will I feel be some day too strong for me, and I shall die upon the gallows.'

'Pooh, man!' slightly answered Hayward, and at the same time pouring some liquor into a tea-cup; 'enlist—go to sea indeed! Here, take a drop of this, you will be calmer presently.'

'It would not have been,' said Hayward after a considerable interval of silence, 'it would not have been, in my opinion, much harm had the gun gone off—accidentally as it were; and as for the gallows, it would take, I fancy, a clever fellow to tell whose gun a charge of number 5 came out of. But let us drop the subject, for the present at least, and get to bed. Come!'

(To be continued.)

From Chambers's Edinburgh Journal.

GEORGE STEPHENSON.

Soon after completing his second locomotive, George's attention was drawn to the number of fatal accidents occurring in pits, from the explosion of fire damp; and to the necessity of constructing a lamp which would afford the miners sufficient light to work by, and yet do away with the risk of explosion. He set to work, experimenting in his own way, and risked his life several times in the pit before he was satisfied that he had discovered the true principle on which such a lamp could be constructed. At length he discovered that a lantern, pierced with a number of small tubes at the top and bottom, and otherwise air tight, might be burned in the foulest air without causing an explosion; and on this principle his lamp, which is in use in Northumberland to the present day, and is called the 'Geordie' lamp, in contradistinction to the 'Davy,' was constructed. It was first put to a practical use towards the close of the year 1815, the same month that Sir Humphrey Davy's discovery was announced to the world; and a long and bitter dispute afterwards arose between the partisans of Davy and those of Stephenson as to the priority of the invention. The grand principle of the Geordie lamp is the same as that of the Davy; the wire-gauze by which the latter is surrounded consisting, in fact, of nothing more than a number of minute tubes, through which explosion of hydrogen gas cannot force its way. A thousand pounds was collected by subscription, and presented to George Stephenson, in a silver tankard, at a public meeting of coal owners at Newcastle, in token of their high opinion of the value of his invention.

Not satisfied with what he had already effected in the way of engines, George invented several important improvements during the next few years in the working of his locomotive, which our space forbids us to more than mention.—Although his engines were in constant use on the Killingworth Railway for a number of years yet they excited but little attention, and was scarcely known beyond the immediate neighbourhood. In fact, the great problem at that time, with those who devoted themselves to the matter, was to construct a locomotive which would work on ordinary roads; and the idea of constructing an iron road from one town to another, was regarded as something visionary.—Mr Edward Pease, of Darlington, had seen for some time the need of opening up a route between the port of Darlington and the vast beds of coal in the Bishop-Aukland valley; and a tram road between the two points, worked by horses, seemed to him the best mode of communication. Accordingly, the Stockton and Darlington Railway Company was gradually formed; the shares being chiefly taken up by Mr Pease's own relatives and friends, the public being averse to risk their money in such a harebrained project. A bill was laid before Parliament, and, after considerable opposition, was passed in the session of 1821. George Stephenson, hearing of the projected railway, made application to Mr Pease with the view of being appointed to superintend the formation of it.—It being found necessary to make a fresh survey of the country through which the proposed line was to run; and George was entrusted with the duty. In his report thereon, he recommended several alterations and deviations from the route proposed, which necessitated an application to parliament for an amended act, in which, at Mr Stephenson's urgent request, a clause was inserted empowering the company to work the line by means of locomotive engines, and to employ them for the conveyance of passengers, as well as merchandise, if needful.—The act having been obtained, George Stephenson was appointed engineer, at a salary of £300 a year. The line was opened on the 27th of September, 1825, and was worked partly by stationary and locomotive engines, and partly by horses. The first passenger carriage was an old coach body, mounted on railway wheels; and some years elapsed before regular passenger trains were established. While the line was in the course of formation, George Stephenson and Mr Pease entered into partnership and opened a locomotive manufactory at Newcastle—for several years the only factory of the kind in existence—and, though commenced on

a very small scale, destined in the course of a short time to swell into gigantic proportions.

The necessity of additional means of transit for goods between Liverpool and Manchester had long been felt, and frequently discussed by those interested in the matter. The Mersey and Irwell canals were at this time the sole means of conveyance between the two towns. The rates were preposterously high; the time taken to perform the journey averaged thirty-six hours; and the means were so inadequate to the necessities of the time, that the Liverpool houses were frequently blocked up with cotton, while the mills in Manchester were all standing idle for want of it. In the year 1824, the question took a tangible shape: a committee was formed, a prospectus issued, a shareholder opened, and George Stephenson was unanimously appointed engineer; though it was still a question whether the projected line should be worked by steam or horse power. Even those most in favour of steam ridiculed the idea of conveying goods and passengers at a greater speed than nine or ten miles an hour; all except Stephenson himself, and he was requested by his own party to keep his 'absurd' views to himself.

We have no space left to detail the incidents connected with the passing of the bill and the formation of the line, for full of interest as they are, they are matters of general railway history. The line was eventually completed, in spite of the opposition of land-owners and canal-owners, and the wild forebodings of Mrs Grundy. The grand difficulty at Chat Moss was triumphantly overcome, through the ingenuity and perseverance of Mr Stephenson, although the greatest engineering authorities of the day had given as their opinions that it would be impossible ever to make a firm road over its treacherous depths. Still the great question, what system of traction should be used on the new line? remained unsettled. Most of the directors were in favour of working by means of stationary engines, placed at certain distances, about a mile and a half apart, along the entire length of the line; and George Stephenson, earnestly as he advocated the superior advantages of the locomotive, found few supporters, even among his best friends. Beseated on all sides by twenty discordant schemes, the directors at length offered a prize of £500 for the best locomotive-engine, the chief conditions being, that it should be able to draw twenty tons after it at a speed of ten miles an hour, and that the engine and tender should not weigh more than six tons. Mr Stephenson and his son immediately set to work, and the product of their united skill was the celebrated *Rocket*. The engines heretofore built by George Stephenson, and at work on various colliery lines, did not, as a rule, average a speed of more than six or seven miles an hour, though they were capable of running nine or ten miles an hour on pressing occasions. The only difficulty in the way of obtaining a greater speed lay in the fact, that steam could not be generated in the boiler fast enough, nor in sufficient volume, to work the machinery with the necessary amount of force. The difficulty was overcome by introducing into the *Rocket* a multitubular boiler, in invention claimed by several individuals, but now first worked out to a really practical issue by the Messrs. Stephenson. The multitubular boiler consists of nothing more than the old cylindrical boiler, pierced through its entire length with a number of small copper tubes, through which the hot air from the furnace passes into the chimney, causing the tubes to present a large heated surface to the water inside the boiler, by which means an almost indefinite quantity of steam may be generated. It is a matter of notoriety that the *Rocket* won the prize, and obtained a maximum speed of twenty-nine miles an hour on the opening day. This decided the question; not another word was heard about stationary engines; and the result of that day's trial may now be seen in the vast iron web in which England is entangled from end to end.

We have hitherto followed George Stephenson step by step in his career as fully as our space would allow; but now that we have reached a point in his history from which the future lies broad and pleasant before him, abounding in wealth, fame and friends innumerable, we must hasten onward with rapid steps.

Within ten years of the day on which the Liverpool and Manchester line was opened, nearly the whole of the principal towns of England, were supplied with railway accommodation, though this was not effected, even after the success of the Liverpool line was a fact patent to all, without much absurd opposition from large landowners, and even from the corporate bodies of several considerable towns. To nearly all the most important of these lines, George Stephenson acted as engineer; thus, in the course of two years alone, 321 miles of railway were constructed under his superintendance, at a cost of about £11,000,000 sterling. By this time he had taken up his residence at Tipton House, near Chesterfield, where he continued to reside for the remainder of his life, and near to which were some extensive coal pits, which he had leased in conjunction with some Liverpool gentlemen. From these collieries he supplied London with the first coals that were sent by railway. His fame had now spread abroad and in the year 1845 he was requested to go to

Belgium to make a survey for the proposed Sambre and Meuse Railway. A public banquet was given in his honour at Brussels; he had also an interview with King Leopold, and in the course of a conversation on geology, made use of his hat as a model to illustrate what he was saying. 'I was afraid' said he to his companion as he left the palace, 'that the king would see the inside of my hat, for it's a shocking bad one.'

He had been made a knight of the Order of Leopold some years before; and Sir R. Peel offered him knighthood more than once, but Mr Stephenson would not accept it. A short time after his visit to Belgium, he went to Spain, to make a survey for a proposed line; and having overworked himself, fell ill on the way home; and, though he recovered after a time, was never so strong afterwards. He gradually gave up to his son all matters connected with railways, and settled down into a quiet country gentleman of agricultural tastes. His closing years were chiefly devoted to horticulture and farming; and he revived in his old age many of the tastes of his boyhood. He had special pets among his dogs and horses, and was proud of his superior breed of rabbits.—There was scarcely a nest on his estate that he was not acquainted with; and he used to go round from day to day to look at them, and see that they were kept uninjured. The year before his death, he visited Sir Robert Peel at Drayton Manor. Professor Buckland was of the party. One Sunday as they were returning from church, they observed a train speeding along the valley in the distance.

'Now, Buckland,' said Mr Stephenson, 'I have a poser for you. Can you tell me the power that is driving that train?'

'Well,' said the other, 'I suppose it is one of your big engines.'

'But what drives the engine?'

'Oh, very likely a canny Newcastle driver.'

'What do you say to the light of the sun?'

'How can that be?' asked the professor.

'It is nothing else,' said the engineer. 'It is light bottled up in the earth for tens of thousands of years—light, absorbed by plants and vegetables, being necessary for the condensation of carbon during the process of their growth, if it be not carbon in another form; and, now after being buried in the earth for long ages in fields of coal, that latent light is again brought forth and liberated, made to work, as in that locomotive, for great human purposes.'

Thus peacefully sped away the last few years of this true man. He died on the 12th of Aug. 1848, in the 67th year of his age, and lies buried in Trinity Church, Chesterfield.

These particulars of the life of one who has been appropriately termed the 'Father of Railways,' have been gathered from the excellent memoir by Mr Samuel Smiles, recently published.

A RUSSIAN'S OPINION OF LONDON.

A Russian lady told us she had been in London, and was of course asked how she liked it whether she did not think it very grand. She hesitated—more polite than English travellers often are—and said, 'After I had been some time there I did find it so; but at first—a thrill like a shudder ran through my frame—' 'At first?' we said, inquiringly. 'O! the approach, the landing, you know, after our fine river, our bright city—yes, it was dreadful! so black, so dismal; I assure you I did not recover from it for many days; I thought I was going into a prison. There were also so many poor wretched-looking people to be seen; I said, this can never be the great London we have heard so much about. Afterwards, when we had seen other parts of the city, we were more reconciled; still it was frightful to see the poor.' And in England, thought I, we pity your poor. 'Then,' the lady added, 'we went to see Liverpool, and the effect of landing was almost the same. The quay was so dark, so repulsive, with those terrible-looking dark warehouses and the crowds of miserable creatures.'— 'But how did you arrive by water at Liverpool?' 'We went from London by the steam-boat, because we had heard one had no security for luggage on the railway, and besides such shocking accidents often occur.' Well, our reflection was, the self-conceit of English tourists might be lowered if they always knew the impressions made upon strangers when they first visit us.

VALUE OF THE DOG.

ALTHOUGH nothing can be said in favour of the dog while in a state of nature, still, after he has received an education from man, the whole world will bear testimony of his immense value. Volumes would not suffice to contain instances of his services to the human race. A man and his dog may almost be considered as component parts, each working for the other, whether in heat or in cold, in tempests or in calms. The blind confide in him, the lame have his support, the rich are proud of him, and too often the poor man has nothing but his dog to give him consolation.

Rev. Dr. Bethune calls the yellow-covered novels of the day, 'caterpillars on the tree of knowledge.'

INDIAN AFFAIRS.

HANSI.

To the north-west of Delhi, in the Hurrianah district, General Van Cortlandt is still busy repressing disturbance and resettling the country. On the 6th of September an insurgent village near Hansi was surprised, and its occupants driven out and dispersed, with the loss of one of the ringleaders in the mutiny of the Hurrianah battalion and 25 of the men. I read, too, of what appears to be the destruction of another village at a later date, when a number of the mutinied 10th Cavalry fell, and several prisoners of the same regiment, were executed. On this occasion a large amount of booty in horses, cattle, and money, fell into the hands of the General's men.

AGRA.

Our intelligence from Agra is well-nigh contained in the single announcement of the death of Mr Colvin, Lieutenant-Governor of the North West Provinces, on the 9th of September.—This eminent, and at the commencement of the outbreak most popular, public servant such cumbered to an attack of dysentery. Mr Reade, the senior civil servant present, assumed temporary charge of the government upon the death of his chief. On the other side of the Doab two civilians, regarding whose safety fears were entertained, have been preserved by a native, Haldeo Buksh, of Dhurrupore, and by him forwarded to Cawnpore. They are Mr Edwards, collector of Buden, and Mr Probyn, collector of Futteyghur, with his wife and children. Several other Europeans are reported to be hiding in the neighbourhood.

SCINDIA—INDORE AND MHOW.

Further to the north and west, in the great province of Malwa, things are looking sufficiently well. I have already alluded to the report of Scindia's raising new levies to intercept fugitives from Delhi. A letter from an officer at Indore, just received, lies before me. Upon information which he considers reliable he writes that on the 25th, and for five days previous, Scindia and the mutinied Contingent were at Gwalior face to face each seeking to coerce the other. The Maharajah had all his guns in position, and from 17,000 to 20,000 men and of new and old levies strongly posted. He was unwilling to use force, I suppose, against such formidable antagonists, unless absolutely forced to do so, and contented himself with holding them in check, waiting probably for the fall of Delhi. If this be true he has done us good service, and has saved his sovereignty. Indore and Mhow are quiet.—The succession to the chieftainship of Rutnam has been tranquilly settled, the disturbed little State of Dhar, is at rest again, and more than all, the Mundesore insurrection, of which I wrote in my last, is melting away to nothing. Thus in Malwa all is pretty well, nor in Rajpootana is there much amiss, save in the matter of the revolted Joudpore Legion.—These rebels, when I left them a fortnight ago, were, you may remember, posted in a strong village called Awa, where Colonel Lawrence, as I had heard, hesitated or declined to attack them. However, he subsequently allowed the Rajah of Joudpore to attempt the place with his troops, unwisely as it would seem for the Rajah's men, if more numerous than his own, were of inferior materials. Accordingly their attack was repulsed, and Mr Monk Mason, the Commissioner, who accompanied them, was, it is feared killed.

COLONEL LAWRENCE AT AWA.

Then Colonel Lawrence resolved himself to attack. On the 18th of September he led his small body of men from the 85th Foot, the Mhairwarra battalion and the Bombay Lancers, with a half troop of Horse Artillery, against the enemy's position, which in the high standing corn was scarcely visible. The rebels had the guns of the legion, and made good practice with them. They were driven, however, from two successive positions into the town, and there the triumphs of the day ended, for the place being evidently unassailable, our troops were forced to draw off, without loss, indeed, but no doubt considerably to the detriment of our prestige in the district.

NEW DISTURBANCES.

For the past fortnight we have had further little disturbances in this Presidency, which constitute a drawback, though but a slight one, on the generally favourable character of the intelligence, and afford a contrast to the loyalty of the Madras army, still unstained, unless by the refusal of the 8th Cavalry to proceed for service to Bengal, for which, by the way, all the subahdars and the native staff officers have been summarily dismissed the service. I noted in my last that the native artillery at Hyderabad and Shirkarpore in Scinde were thought to be wavering, and that a company of European artillerymen had been sent up from Bombay in great haste to relieve them of the guns which it was feared they might misuse.—At Hyderabad it was found necessary to take prompt measures without waiting for the arrival of the Europeans. Acting upon information derived from his subahdar, Lieut. Battiscombe, commanding the company, applied to the brigadier, and by means of 500 of the police and 100 picked men of the 13th Native Infantry, the golanders were disarmed and