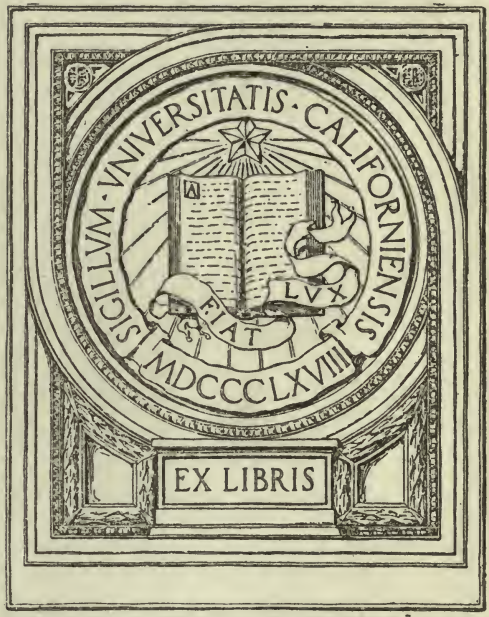

MEN
WHO HAVE RISEN



Presented to

Leland P. Shidy

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by his

Sabbath-School Teacher

Joe. J. Maslin.

Jan. 24th 63.

MEN WHO HAVE RISEN.

W. H. TINSON, Stereotyper.

THE ROTHSCHILDS—THE REPUBLICAN SOLDIERS.

"He did not attempt to conceal any of his own property. He suffered them to carry it all off."

PAGE 49.

Hogg, James

MEN WHO HAVE RISEN

A BOOK FOR BOYS

ILLUSTRATED BY C. A. DOYLE.

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LIST OF ILLUSTRATIONS.

MEN WHO HAVE RISEN.

"Whoe'er, amidst the sons
Of reason, valor, liberty and virtue,
Displays distinguished merit, is a noble
Of Nature's own creating."

STEPHENSON, THE RAILWAY PIONEER.

WITHIN the last thirty years a revolution has been effected in our social relations, and the surface of the country has undergone a change wondrous as the transformations of a geologic era. The greatest works of antiquity cannot stand comparison with our railways, when we take into consideration their magnitude and utility—the engineering skill and amount of capital involved in their construction. It is estimated by the biographer of George Stephenson that in Great Britain and Ireland alone, iron rails have been laid more than sufficient to girdle the globe; tunnels and viaducts, upwards of one hundred miles in extent, have pierced hard rock-mountains, and spanned deep

valleys; and earthworks have been constructed capable, according to calculation, of forming a mountain half-a-mile in diameter at its base, and towering upwards one mile and a-half in height. It seems almost incredible that works of such magnitude, requiring for their construction an unprecedented amount of capital, labor and skill, should have been completed in little more than a quarter of a century. The great value, the absolute necessity, of railway communication, in these days of flourishing trade and extending commerce, is made abundantly manifest by the rapidity with which the country has been incased in a network of iron.

George Stephenson came when a new system of internal intercourse was demanded by the wants of the age, and his invention of the Locomotive Engine gave an impulse to science and art, to commerce and civilization, greater than we can fully estimate. The life of the man who inaugurated the modern system of Railways, and who, by patient plodding perseverance and invincible determination, rendered possible a declared impossibility, possesses the deepest interest, and enforces the most valuable lessons. The biography of the most eminent of English engineers cannot fail to prove attractive in no ordinary degree, unfolding as it does the career of one who rose from obscurity to well-earned fame and affluence, and who must be pronounced a model-worker—the representative practical man of the nineteenth century. Availing ourselves of the information col-

lected by Mr. Samuel Smiles in his bulky biography, we give the following epitome of the life of this true Railway King:

George Stephenson was born at Wylam—a colliery village about eight miles west of Newcastle-on-Tyne—on the 9th of June, 1781. His parents inhabited a laborer's cottage of the humblest class, with unplastered walls, clay floor, and exposed rafters. "Old Bob," as his father was familiarly called, fired the old pumping-engine at the Wylam Colliery—a careful, hard-working man; and Mabel Stephenson, his mother, though troubled occasionally with the "vapors," was held in the highest esteem by her neighbors. They were an honest, decent, respectable couple, such as we may find in colliery cottages and elsewhere. "Old Bob" was a genuine character, a self-taught romancist, and natural naturalist; and it is pleasant to think of him on the winter evenings gathering the children of the village around his engine-fire, and telling, in strong Northumbrian speech, the stories of "Sinbad" and Robinson Crusoe," or wandering about during the summer months in search of birds' nests, when the day's "darg" was done. George was the second of a family of six children —four sons and two daughters. None of them were ever sent to school. The weekly wages of a fireman were barely sufficient, even with rigid economy, to afford the family a sufficient supply of food and clothing.

The first duties of the future eminent engineer

consisted in carrying his father's dinner to him while at work, in nursing the younger children, and seeing that they were kept out of the way of the chaldron wagons, which were dragged by horses along a wooden tramroad immediately in front of the cottage-door. He next herded the cows of a widow at Dewley Burn, whither the family removed from Wylam, when the coal was worked out, and the old engine pulled down. Besides herding the widow's cows, he was appointed, at the wage of twopence a-day (four cents), to bar the gates at night after all the coal-wagons had passed. The herd-boy spent his spare time in making whistles and little mills, and erecting clay engines. The child is father of the man. Wilkie drawing pencil-heads on his slate for pins, and Stephenson modeling clay engines for amusement, had already begun the labor of their lives. From that humble origin, from the rude attempts of a herd-boy sitting by the side of the Dewley Burn, sprung the great system of British Railways. Feeding cows, leading horses at the plow, and hoeing turnips, did not, however, suit the taste of the embryo engineer, and he was much elated when advanced to the position of "picker" at the colliery, where he was employed, along with his elder brother, in clearing the coal of stones and dross. His wages were now sixpence a-day, and rose to eightpence (sixteen cents) when he drove the gin-horse. Shortly after he was sent to Black Callerton Colliery, about two miles from Dewley Burn, to drive

the gin there; and he is described by the old people of that place as a "grit barelegged laddie, very quick-witted, and full of fun and tricks." There was genuine mettle and promise in the boy so characterized. We can picture him there, the rough, unkempt, barelegged collier "laddie," driving his gin-horse, whistling on his own whistles, cracking a whip of his own manufacture, and indulging in practical jokes at the expense of grim pitmen. When off duty, he went bird-nesting, having inherited from "Old Bob" a strong attachment to birds and animals. He tamed young blackbirds, taught them to fly about the cottage unconfined by cages, and prided himself upon the superiority of his breed of rabbits.

At the age of fourteen, the "grit barelegged laddie" became assistant fireman to his father at Dewley. His ambition was to be an engineman, and his exultation was unbounded when he attained the long-desired promotion. He had now got upon the right track, and his career of progress began with his appointment as assistant fireman. From Dewley, the family removed southwards to Jolly's Close, where a new coal-mine had recently been opened. They lived in a poor cottage of one apartment, where father, mother, sons, and daughters, ate their humble meals, and slept their hurried sleep. At Jolly's Close, George was removed to one of the workings on his own account. He was now fifteen years old; a steady, sober, hard-working young man. He was fond of

trying feats of strength with his companions. At throwing the hammer he had no compeer, and seems to have been equally successful in lifting heavy weights.

At the age of seventeen George had got ahead of his father in his station as a workman. He was appointed plugman of a pumping-engine, while his father worked it as fireman. No sooner did he occupy this responsible post, than he devoted himself assiduously to the study of the engine, taking it frequently to pieces in his leisure hours, for the purpose of cleaning and mastering its parts, and thus he early acquired a thorough practical knowledge of its construction, and disciplined his inventive faculty. An engine seemed to attract him by some mysterious fascination; it was no dull, groaning machine in his estimation, but a thing instinct with wondrous life. Its complicated mechanism absorbed his interest, and excited his admiration; and the minute study of its details, while quickening his powers of observation, made him an accomplished workman, and gained for him the increased confidence of his employers. At this period he worked twelve hours every day, and earned twelve shillings (about three dollars) a-week. The "grit barelegged laddie" has now taken a considerable stride in advance.

George Stephenson was eighteen years of age before he knew his letters, and he does not appear to have felt the want until he was told that all the engines of Watt and Bolton, about which he was

so anxious to know, were to be found described in books—and the alphabet was yet to him a hidden mystery! It affords a striking illustration of the persevering, searching, indomitable spirit of the young man, that no sooner did he feel his want—no sooner was the conviction forced upon him that he must learn to read before further progress was possible, than immediately he went to school, big as he was, and commenced in earnest the work of self-culture. He was not ashamed to confess his ignorance; he was proud that he possessed the capability of learning. A poor teacher in the village of Walbottle kept a night-school, and there George Stephenson took his first lessons in spelling and reading, and practiced "pot-hooks." One can imagine the big bony engineman bending over his desk, and laboring sore at the unwonted task. Andrew Robertson, a Scotch dominie, who enjoyed the reputation of being a skilled arithmetician, was the next teacher from whom George took lessons. He made rapid progress, and at the end of the Winter had mastered "reduction," while the junior fireman was heating his brains over simple division. He improved every spare minute by the engine-fire in working out the sums set for him by the learned dominie of Newburn, and the patient pupil was not long in outstripping his teacher. To perseverance all things are possible, and where the desire to learn was so strong, rapid attainment was certain. In this, as in other respects, Stephenson may be held up as a memorable model to young

men. Against every disadvantage of circumstance and fortune, he struggled onwards, by sheer force of will, and the determination to succeed. Many men, unschooled like him in boyhood, and of equal natural ability, ashamed to confess their ignorance, would have remained without instruction, and thus neglected the means and the opportunity of bettering their condition, and of rising from obscurity to eminence.

Stephenson—ever rising steadily step by step—became brakesman at Black Callerton when he had attained his twentieth year, and his wages amounted to from five to ten dollars in the fortnight. By extra work during leisure hours, he increased his earnings, and he had the happy facility, peculiar to some men gifted with mechanical genius, of being able to turn his hand to any and everything. He grew expert in making and mending the shoes of his fellow-workmen. His *chef d'œuvre* in the cobbling department was soleing the shoes of his sweetheart, Fanny Henderson, a servant in a neighboring farm-house. So delighted was the amateur shoemaker with his performance, that he carried the shoes about with him in his pocket on the Sunday afternoon, and exhibiting them to a friend, exclaimed, "What a capital job he had made of them!" From shoemending he contrived to save his first guinea, and considered himself to be a rich man. He did not, like many of the other workmen, spend his earnings in the public-house; he was habitually steady, and applied his spare time

to master the powers and mechanisms of the engine. He had a definite purpose in view when he saved his first guinea. It gradually attracted a few more, and the industrious brakesman soon managed to save as much money as enabled him, on leaving Black Callerton for Willington Quay, to furnish a humble house, and marry Fanny Henderson. After the marriage ceremony, George rode over to Willington on a borrowed horse, with his newly-wedded wife sitting on the pillion behind him, and holding on by her arms around his waist. He continued the same regular course of life, working hard during the day, and studying the principles of mechanics in the evenings by the side of his young wife. He also modeled experimental engines, and occupied himself much in endeavoring to discover Perpetual Motion. He allowed few moments to pass unimproved; his eye was ever observant, and his mind ever active. He could make and mend shoes, cut out shoe-lasts, clean clocks, and model complicated machines; and whatever he did was creditable alike to his ingenuity and his skill. While residing at Willington, his only son Robert was born—that son who has contributed so much to heighten the distinction of the Stephenson name. The child was from the first a great favorite with his father, and added a fresh charm to the domestic hearth.

George Stephenson worked for about three years as a brakesman at the Willington machine, and then removed to a similar situation at Killing-

worth, a village lying about seven miles north of Newcastle, where the coal-workings are of great extent, and a large number of people are employed. Much interest attaches to his settlement in this place, as it was here that his practical qualities as an engineer were fully developed, and that he acquired the reputation of an inventor. He came to Killingworth in 1804, and he had scarcely settled down ere he sustained a severe loss in the death of his much-loved Fanny. A man of strong affections, he felt the bereavement bitterly. He bowed his head in sorrow, and ever fondly cherished the memory of his young wife. While mourning her loss, he was invited to superintend the working of one of Bolton and Watt's engines, near Montrose. He accepted the invitation, and, leaving his boy in charge of a neighbor, set out upon his long journey on foot, with his kit upon his back. He returned to Killingworth, after a year's absence, with £28 ($160) of saved money in his pocket. During his stay in Scotland, old Robert Stephenson, his father, had been severely scorched, and his eye-sight destroyed, while making some repairs in the inside of an engine. George's first step was to pay off his father's debts; and soon afterwards he removed his aged parents to a comfortable cottage at Killingworth, where they lived, supported entirely by their dutiful son.

About the years 1807-8, Stephenson contemplated the idea of emigrating to the United States. Owing to the great war in which England was

then engaged, taxes pressed heavily upon the laboring class; food was scarce and dear, and wages were low; and the workman saw little prospect of any improvement in his condition. The hardwon earnings of George Stephenson were paid to a militiaman to serve in his stead; and need we wonder if he should almost have despaired of ever being able to succeed in England? He could not, however, raise the requisite money to emigrate, and thus his poverty was ultimately his own and his country's gain. He worked on steadily as a brakesman. Stinted as he was for means at the time, he resolved to send his son Robert to school. "In the earlier period of my career," said he, long afterwards, in a speech at Newcastle, "when Robert was a little boy, I saw how deficient I was in education; and I made up my mind that he should not labor under the same defect, but that I would put him to school, and give him a liberal training. I was, however, a poor man; and how do you think I managed? I betook myself to mending my neighbors' clocks and watches at night, after my daily labor was done; and thus I procured the means of educating my son."

An achievement which George performed at this time caused his name to be noised abroad as an engine-doctor. At the Killingworth High Pit, an atmospheric engine was fixed, for the purpose of pumping out the water from the shaft; but the workmen continued to be "drowned out," pump as the engine might. Under the direction of Ste-

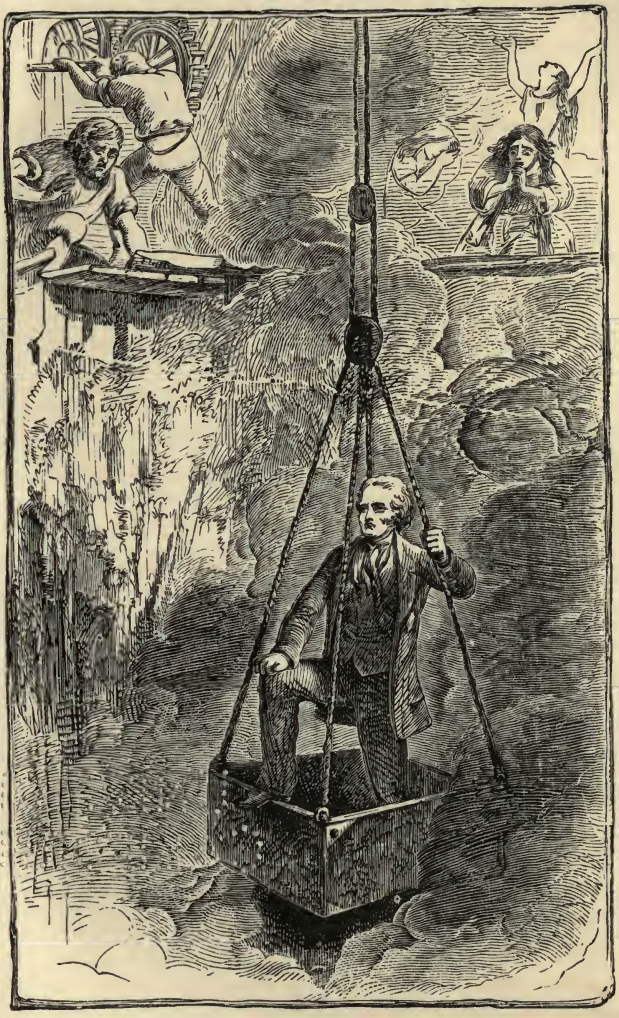
phenson, the engine was taken to pieces, and so repaired that the pumping apparatus proved completely successful. He received a present of £10, as a recognition of his skill as a workman. After hard struggling, the genius of the man now began to be felt and acknowledged. He devoted himself in the evenings, with renewed energy, to self-improvement, modeling steam and pumping engines, and striving to embody the mechanical inventions described in odd volumes on mechanics. From John Wigham, a farmer's son, he derived considerable assistance in his studies. This young man taught him to draw plans and sections. They carefully pondered together Ferguson's "Lectures on Mechanics," and invented many mechanical contrivances to aid them in their experiments. Wigham expounded principles, and Stephenson reduced them to practice.

The resolution which George had formed to give his son a good education, he was able to carry into effect, by managing to save a sum of £100. This amount he accumulated in guineas, and sold them to Jews at twenty-six shillings a-piece. A shrewd, industrious man was George Stephenson, and one destined to rise in the world. He sent his son to an academy at Newcastle, where he commenced a course of sound instruction. At Killingworth, Stephenson continued to astonish the neighborhood by his ingenious mechanical contrivances. He invented a strange "fley craw" to protect his garden-crops from the ravages of birds; he won the

admiration of the women, by connecting their cradles with the smoke-jack, and making them self-acting; and excited much wonder in the pitmen, by attaching an alarm to the clock of the watchman, whose duty it was to call them up in the morning. He also contrived a mysterious lamp, which burned under water, and attracted the fish. His cottage was full of models, engines, and perpetual-motion machines.

In 1812 he was appointed engine-wright of the Killingworth Colliery, at the salary of £100 a-year. He is ever steadily rising, winning more and more the respect of his employers, and gaining for himself, by manful effort, a better position in the world. He had now advanced to the grade of a higher-class workman. He erected a winding and a pumping engine, and laid down a self-acting incline at Willington. The practical study which he had given to the steam engine, and his intimate acquaintance with its powers, were of immense advantage to him in his endeavors after improvement. The locomotive already occupied his attention; he knew its value and its capabilities; and he soon bent the whole force of his mind to develop its might. A more economical method of working the coal trains, instead of by means of horses, was a great desideratum at the collieries. Stephenson immediately began in earnest to attempt the solution of the problem. He first made himself thoroughly acquainted with what had already been done. He went to inspect the engines which were

working daily at Wylam—slow, cumbrous, unsteady machines, more expensive than horses, and certainly much slower in their movements. He declared on the spot that he could make a much better engine than Trevethick's. One of Blenkinsop's Leeds engines he saw placed on the tramway leading from the collieries of Kenton and Coxlodge; and here again, after examining the machine, and observing its performances, he asserted that "he could make a better engine than that to go upon legs." All the engines constructed up to this time were, in his estimation, practical failures, unsteady in their movement, and far from economical in their working. Much ingenuity had already been shown, and some little success had been attained; but a man of keen practical insight and great perseverance was required to promote the efficiency of every part, and to produce a good working machine. Lord Ravensworth, one of the lessees of the Killingworth Colliery, after hearing Stephenson's statements, authorized him to proceed with the construction of a locomotive. With such mechanics and tools as he could find (and both were somewhat clumsy), he set to work, following in part the plan of Blenkinsop's engine. The locomotive was completed in about ten months. Its powers were tried on the Killingworth Railway on the 25th of July, 1814, and it succeeded in drawing after it, on an ascending gradient of 1 in 450, eight loaded carriages, of thirty tons' weight, at about four miles an hour. "Blucher" was a great



GEORGE STEPHENSON.

"There was danger, it might be death, before him, but he must go."—PAGE 21.

advance upon all previous locomotives; but it was nevertheless a cumbrous machine, and jolted, jerked, and rattled like the gigantic skeleton of a mammoth. At the end of the year, the steam-power and horse-power were found to be nearly upon a par in point of cost. The locomotive might have been condemned as useless, had not Stephenson at this juncture fortunately invented and applied the steam-blast, which stimulated combustion, increased the capability of the boiler to generate steam, and more than doubled the power of the engine. The success of the steam-blast was complete; and Stephenson determined to construct a second engine, embodying all the improvements that his experience suggested. It was finished in the year 1815, and may be regarded as the type of the present locomotive engine.

At this period, explosions of fire-damp were frequent in the Northumberland and Durham coal-mines, attended sometimes by fearful loss of life. "One day, in the year 1814, a workman hurried in to Mr. Stephenson's cottage, with the startling information that the deepest main of the colliery was on fire! He immediately hastened to the pit-mouth, about a hundred yards off, whither the women and children of the colliery were fast running, with wildness and terror depicted in every face. In an energetic voice Stephenson ordered the engine-man to lower him down the shaft in the corve. There was danger, it might be death, before him—but he must go. As those about the

pit-mouth saw him descend rapidly out of sight, and heard from the gloomy depths of the shaft the mingled cries of despair and agony rising from the workpeople below, they gazed on the heroic man with breathless amazement. He was soon at the bottom, and in the midst of his workmen, who were paralyzed at the danger which threatened the lives of all in the pit. Leaping from the corve on its touching the ground, he called out, 'Stand back! Are there six men among you who have courage enough to follow me? If so, come, and we will put the fire out.' The Killingworth men had always the most perfect confidence in George Stephenson, and instantly they volunteered to follow him. Silence succeeded to the frantic tumult of the previous minute, and the men set to work. In every mine, bricks, mortar, and tools enough are at hand, and by Stephenson's direction materials were forthwith carried to the required spot, where, in a very short time, a wall was raised at the entrance to the main, he himself taking the most active part in the work. Thus the atmospheric air was excluded, the fire was extinguished, and the people were saved from death, and the mine was preserved."

After this accident, Stephenson set about devising a lamp which would afford sufficient light to the miners, without communicating flame to the inflammable gas in the pit. His experiments resulted in the invention of the Geordy Safety Lamp. The name of Sir Humphrey Davy has

been generally identified with the invention: but it now seems that Stephenson had made a successful trial of his lamp before Davy's invention was made public.

While people were predicting a terrible blow-up some day for George's locomotive at Killingworth, it continued to perform its appointed work. The engine was indeed subject to jolts and shocks, and occasionally it was thrown off the road, owing to the inequality of the rails, and the imperfection of the chairs or cast-iron pedestals into which the rails were inserted. These defects did not long remain unnoticed and unamended. In September, 1816, an improved form of the rail and chair was embodied in a patent taken out in the joint names of Mr. Losh of Newcastle, ironfounder, and of Mr. Stephenson. Important improvements on locomotives previously constructed were also described in the specification of the same patent. Mr. Stephenson had devised an ingenious contrivance, by which the steam generated in the boiler was made to supply the place of springs! The working of the new locomotive and improved road was highly satisfactory, and the superiority of the locomotive to horse traction, both as regards regularity and economy, was now completely established. The identical engines constructed by Mr. Stephenson are still at work on the Killingworth Railway. He investigated the resistances to which carriages are exposed, and ascertained by experiment the now well-known, but then much-contested

fact, that friction was uniform at all velocities.

In 1820 Mr. Stephenson resolved to send his son Robert—who, since leaving school at Newcastle, had acted as under-viewer in the West Moor Pit—to the University of Edinburgh. He was furnished with introductions to men of science in the Scottish metropolis, and attended the lectures of Dr. Hope, Sir John Leslie, and the mathematical classes of Jamieson. He studied at Edinburgh for only one session of six months, but, possessing much of his father's zeal, industry, and perseverance, he made great progress, and stored his mind with scientific knowledge. He subsequently rendered his father the most valuable assistance in developing the power of the steam-engine, and in the construction of railways.

While such men as William James, Edward Pease, and Thomas Gray, were agitating the general adoption of railways, Stephenson was busy making railways, and building efficient locomotives. A very large capital was required to lay down rails and furnish engines, and this accounts in part for the slow growth at first of the railway system. The Hetton Coal Company, possessing adequate means, and observing the working of the Killingworth line, resolved to construct a railway about eight miles in length, and George Stephenson was requested to superintend their works. This was the first decisive public recognition of his engineering skill. The line was opened in No-

vember, 1822, in the presence of a crowd of spectators. Five of Stephenson's locomotives were at work on that day, traveling about four miles an hour, and each engine dragging after it a train of seventeen wagons, weighing about sixty-four tons.

In 1823 the second Stockton and Darlington Railway Act was obtained. Mr. Stephenson was appointed the company's engineer, at a salary of £300 (nearly $1500) per annum. He laid out every foot of the ground himself, accompanied by his assistants. He surveyed indefatigably from daylight to dusk, dressed in top-boots and breeches; and took his chance of bread and milk, or a homely dinner at some neighboring farmhouse. The country people were fond of his cheerful talk, and he was always a great favorite with the children. One day, when the works were approaching completion, he dined with his son, and John Dixon, his assistant, at Stockton. After dinner, Mr. Stephenson ordered in a bottle of wine, to drink success to the railway, and said to the young men, "Now, lads, I will tell you that I think you will live to see the day, though I may not live so long, when railways will come to supersede almost all other methods of conveyance in this country; when mail-coaches will go by railway, and railroads will become the great highway for the King and all his subjects. The time is coming when it will be cheaper for a working man to travel on a railway than to walk on foot. I know there are great and almost insurmountable obstacles that will have to

be encountered. But what I have said will come to pass, as sure as I live. I only wish I may live to see the day, though that I can scarcely hope for, as I know how slow all human progress is, and with what difficulty I have been able to get the locomotive adopted, notwithstanding my more than ten years' successful experiment at Killingworth." The anticipations of the great engineer were more than realized.

The Stockton and Darlington line was opened for traffic in September, 1825. As this was the first public railway, a great crowd of people assembled to witness the ceremony of opening. Mr. Stephenson himself drove the engine. The train consisted of thirty-eight vehicles, among which were twenty-one wagons fitted up with temporary seats for passengers, and a carriage filled with the directors and their friends. The speed attained in some parts was twelve miles an hour; and the arrival at Stockton excited deep interest and admiration. The line was found to work excellently, and the goods and passenger traffic soon exceeded the expectations of the directors.

An important step in the progress of the railway system was the establishment by Mr. Stephenson of a locomotive manufactory at Newcastle. The building, small at first, subsequently assumed gigantic dimensions. Skilled workmen were engaged, under whose direction others were disciplined. The most celebrated engineers of Europe, America and India, acquired their best practical

knowledge in the Newcastle factory. It continued to be the only establishment of the kind, until after the opening of the Liverpool and Manchester line in 1830.

The survey of this railway was the next important public work which Mr. Stephenson was requested to undertake. Great was the opposition on the part of the proprietors of the lands through which the line was intended to pass. Lord Derby's farmers and servants, and Lord Sefton's keepers, turned out in full force to resist the aggressions of the surveying party. The Duke of Bridgewater's property-guard threatened to duck Mr. Stephenson in a pond if he proceeded; and he had to take the survey by stealth, when the people were at dinner. The opposition of landed proprietors and canal companies to the projected railway grew in intensity, when the survey, imperfect as it could not fail to be, was completed, and arrangements were made for introducing the bill into Parliament. The Liverpool and Manchester Bill went into committee of the House of Commons on the 21st of March, 1825. The array of legal talent, on the opposition side especially, was something extraordinary. Mr. George Stephenson was called to the witness-box, and subjected to a rigorous examination. "I had to place myself in that most unpleasant of all positions—the witness-box of a parliamentary committee. I was not long in it before I began to wish for a hole to creep out at. I could not find words to

satisfy either the committee or myself. I was subjected to the cross-examination of eight or ten barristers, purposely, as far as possible, to bewilder me. One member of the committee asked if I was a foreigner; and another hinted that I was mad. But I put up with every rebuff, and went on with my plans, determined not to be put down." The idea of a train going at the rate of twelve miles an hour was considered the height of absurdity. A good story is told of Stephenson during his examination. A member of committee put the following case:—"Suppose, now, one of these engines to be going along a railroad at the rate of nine or ten miles an hour, and that a cow were to stray upon the line, and get in the way of the engine, would not that, think you, be a very awkward circumstance?"—"Yes," replied the witness, in his Northumbrian speech; "very awkward indeed—*for the coo.*" The examination of Mr. Stephenson lasted three days; and the result of the contest was the temporary withdrawal of the bill. This was sufficiently discouraging, and the railway system seemed about to be crushed at the outset. The directors, however, nothing daunted, were determined to press on with their project. A new survey was made, the plans were deposited, and the bill went into committee. It passed the third reading in the House of Commons, by a majority of eighty-eight to forty-one; and its only opponents in the House of Lords were the Earl of Derby and the Earl of Wilton.

The directors appointed Mr. George Stephenson their principal engineer, at a salary of £1,000 per annum—a mighty advance from the herd-boy with his twopence per diem. The Liverpool and Manchester directors had put the right man in the right place, as they subsequently found. He immediately began to make the road over Chat Moss—a work which the distinguished engineers of the day had declared that "no man in his senses would undertake to do." But George Stephenson did not know the meaning of the word "impossible." For weeks, truck-load after truck-load of material was poured in, without any sensible effect. The bog, it was feared, had some connection with the bottomless pit. The directors became alarmed, and Mr. Stephenson answered, "We must *persevere*." Other weeks passed; the insatiable bog swallowed all; the solid embankment made no sign. A special meeting of the board was forthwith held on the spot, to consult whether the work should be proceeded with or abandoned. "An immense outlay had been incurred," said Mr. Stephenson afterwards, "and great loss would have been occasioned had the scheme been then abandoned, and the line taken by another route. So the directors were *compelled* to allow me to go on with my plan, of the ultimate success of which I myself never for one moment doubted. Determined, therefore, to persevere as before, I ordered the works to be carried on vigorously; and, to the surprise of every one con-

nected with the undertaking, in six months from the day on which the board had held its special meeting on the moss, a locomotive engine and carriage passed over the very spot, with a party of the directors' friends, on their way to dine at Manchester." The embankments, the bridges, the Sankey viaduct, the Rainhill Skew bridge, and the Olive Mount excavation, were regarded as wondrous works, and filled even "distinguished engineers" with admiration. In the organization and direction of navvies, and in training them for their special work, Mr. Stephenson also manifested the most eminent skill and ability. He was a Napoleon in his profession, never failing in his resources or his undertakings; a man of infinite vigor and determination.

While the works were in progress, many consultations were held by the directors as to the kind of power which was to be employed in the working of the railway when opened for traffic. Two eminent practical engineers reported against the employment of the locomotive. The whole profession stood opposed to George Stephenson, but he still held to his purpose. Urged by his solicitations to test the powers of the locomotive, the directors at last determined to offer a prize of £500 for the best locomotive engine which, on a certain day, should be produced on the railway, and fulfill certain conditions in the most satisfactory manner. A speed of ten miles an hour was all that was required to be maintained. Mr. Ste-

phenson, assisted by his son, who had returned from South America, immediately set about the construction of his famous "Rocket." An important principle introduced in the construction of this engine, was the multi-tubular boiler, by which the power of generating steam was greatly increased. On the day appointed for the competition at Rainhill, four engines were entered for the prize: first, Messrs. Braithwaite and Ericsson's "Novelty"; second, Mr. Timothy Hackworth's "Sanspareil"; third, Mr. Robert Stephenson's "Rocket"; fourth, Mr. Burstall's "Perseverance." Mr. Stephenson's engine was first ready, and entered upon the contest. It drew after it thirteen tons' weight in wagons, and the maximum velocity attained during the trial trip was twenty-nine miles an hour—three times the speed that one of the judges had declared to be the limit of possibility. The average speed was fifteen miles an hour. The spectators were filled with a great astonishment; and one of the directors lifted up his hands, and exclaimed, "Now is George Stephenson at last delivered!" The "Sanspareil" weighed five hundredweights beyond the weight specified, and was excluded from competition. The steam-generator of the "Novelty" burst, and ended *its* performance. The "Perseverance" did not fulfill the advertised conditions; and the prize of £500 was accordingly awarded to the "Rocket" as the successful engine.

The public opening of the Liverpool and Manchester Railway took place on the 15th of September, 1830. Eight locomotives, constructed by the Messrs. Stephenson, had been placed upon the line. The Duke of Wellington, Sir Robert Peel, Mr. Huskisson, one of the members for Liverpool, and a large body of distinguished persons, were present; for the completion of the work was justly regarded and celebrated as a national event. The lamentable accident to Mr. Huskisson, who was struck down by the "Rocket," and expired that same evening, cast a gloom over the day's proceedings. The "Northumbrian" engine conveyed the wounded body a distance of fifteen miles in twenty-five minutes—a rate of speed which at the time excited much wonder and admiration. The success of the railway in a commercial point of view, was immediate and decisive. Soon after the opening, it carried, on an average, about 1,200 passengers a-day. Mr. Stephenson, whose energy and perseverance had thus triumphed so signally over all difficulties and opposition, continued to improve the construction and develop the powers of the locomotive. The "Planet" was an improvement upon the "Rocket," and the "Samson" was an improvement upon the "Planet." The number of competitors who appeared about the time, stimulated Mr. Stephenson's inventive faculties, and he succeeded in sustaining the superiority of his engines.

The practicability of Railway Locomotion being

now proved, other joint-stock companies speedily arose in the manufacturing districts, and George Stephenson was appointed engineer of the principal projected lines. The landowners might be horrified at the idea of "fire-horses" snorting and puffing through their fields, causing premature births among the cattle, and frightening the poultry to death; but merchants and manufacturers did not feel disposed to sacrifice the interests of commerce to the absurd fears of timid or superannuated proprietors. The London and Birmingham Railway was the most important on which the Messrs. Stephenson were soon afterwards engaged. The works were of the most formidable description; but the difficulties encountered only roused the energies of father and son. The formation of the Kilsby Tunnel—2400 yards in length, and penetrating about 160 feet below the surface—was justly regarded as a great engineering triumph. The number of bricks used, according to estimate, was sufficient to make a good footpath, a yard broad, from London to Aberdeen! Some idea of the magnitude of the works may be formed from the cost of construction, which amounted to five million sterling. Practical ability of the highest kind, and energy that never flagged, were necessary to bring such works to a successful issue.

Mr. Stephenson removed from Liverpool to Alton Grange, near Ashby-de-la-Zouch, in Leicestershire, in 1832. He had leased the estate of Snibston, certain that coal was to be found in the

district, and he soon discovered a rich bed of that mineral. As railway projects were now springing up all over England, he was often called from home for the purpose of making surveys. A private secretary accompanied him on his journeys. He was averse himself to writing letters; but he possessed the power of laboring continuously at dictation. It it stated that in one day he dictated thirty-seven letters, many of them embodying the results of close thinking and calculation. He could snatch his sleep while traveling in his chaise, and by break of day he would be at work again surveying until dark. He was always fresh and energetic, when secretaries and assistants were knocked up and unfit for duty. He took an office in London during the session of 1836, and this office was for many years the busy scene of railway politics.

The importance of the Midland Railway, as opening up new coal-markets, Mr. Stephenson early detected. "The strength of Britain," he would say, "lies in her coal-beds; and the locomotive is destined, above all other agencies, to bring it forth. The Lord Chancellor now sits upon a bag of wool; but wool has long ceased to be emblematical of the staple commodity of England. He ought rather to sit upon a bag of coals, though it might not prove quite so comfortable a seat. Then think of the Lord Chancellor being addressed as the noble and learned lord *on the coal-sack!* I am afraid it would n't answer, after all." He

took a lease of the Clay Cross Colliery, in anticipation of the London demand for railway-led coal. Tapton House, near Chesterfield, thenceforwards continued his residence until the close of his life.

A keen competition of professional ability among engineers was excited by the general demand for railways which sprang up after the opening of the Liverpool and Manchester line. Jealousy, of course, also prevailed, and it was long before the regular professional men would recognize George Stephenson as *entitled* to the status of a civil engineer! He was an interloper; he was born to be a brakesman, and should have remained so; he had no right to do what he had done! The appreciation and generous admiration of genius is the last thing that can be expected of your "regular" respectable professional men. George Stephenson could well afford to despise his detractors, so long as the country recognized his power. The desire to be original, and to excel Stephenson, became a passion with some of the new "fast" engineers. They proposed undulating railways, atmospheric railways, alterations of the gauge, increase of locomotive speed to one hundred miles an hour, and a variety of absurd and impracticable projects. Mr. Stephenson, in opposition to the "fast" men, defended the importance of the uniform gauge, pronounced the atmospheric system to be "gimcrack," and declared that the introduction of steep gradients would neutralize every improvement which he had made. The soundness of his judgment in

these particulars experience has proved. He always kept in view economy, public utility, and commercial advantage, and gave no countenance to schemes that would be prejudicial to the interests of shareholders.

In 1840, George Stephenson publicly intimated his intention of retiring from the more active pursuit of his profession, and resigned the charge of several of the railways of which he was chief engineer. He longed to enjoy rest and leisure in the retirement of Tapton House—a place beautiful for situation, looking down from its wooded eminence upon the town of Chesterfield, and commanding an extensive prospect over a rich undulating country. He contemplated improvements in the garden and pleasure-grounds; but some years elapsed before he could carry them into effect. Although he had retired from the more active pursuit of his profession, he was not allowed, nor did he allow himself, to rest. He was, in 1844, appointed engineer of the Whitehaven and Maryport Railway, along with his friend and former assistant, John Dixon. He was also elected Chairman of the Yarmouth and Norwich Railway. When the Thames and the Tyne were connected by a continuous line, the event was worthily celebrated: Newcastle held holiday; and a banquet in the Assembly Rooms in the evening assumed the form of an ovation to Mr. Stephenson and his son. In replying to the complimentary speech of the chairman, Mr. Stephenson gave a short autobiographic

sketch, part of which we have already quoted. The High Level Bridge over the Tyne at Newcastle—one of the most striking and picturesque erections to which railways have given birth—was shortly afterwards projected by George Stephenson; but he did not live to see it completed.

As early as the year 1835, Mr. Stephenson and his son had been consulted by Leopold, King of the Belgians, as to the formation of the most efficient system of lines throughout his kingdom. In consideration of the great English engineer's valuable assistance, and the services which he had rendered to civilization, he was appointed by the Belgian King a Knight of the Order of Leopold. The same honor was afterwards conferred on his distinguished son by royal ordinance. When the Sambre and Meuse Company, in 1845, obtained the concession of a line from the Belgian legislature, Mr. Stephenson proceeded to Belgium for the purpose of examining the district through which the proposed line was to pass. He went as far as the Forest of Ardennes and Rocroi, examining the bearings of the coal-fields, the slate and marble quarries, and iron mines. The engineers of Belgium invited him to a magnificent banquet at Brussels. "The public hall, in which they entertained him, was gaily decorated with flags, prominent amongst which was the Union Jack, in honor of their distinguished guest. A handsome marble pedestal, ornamented with his bust, crowned with laurels, occupied one end of the room. The chair

was occupied by M. Massui, the chief director of the National Railways of Belgium; and the most eminent scientific men of the kingdom were present. Their reception of the 'father of railways' was of the most enthusiastic description. Mr. Stephenson was greatly pleased with the entertainment. Not the least interesting incident of the evening was his observing, when the dinner was about half over, a model of a locomotive engine placed upon the centre of the table, under a triumphal arch. Turning suddenly to his friend Lopwict, he exclaimed, 'Do you see the Rocket?' It was indeed the model of that celebrated engine; and Mr. Stephenson prized the compliment thus paid him perhaps more than all the encomiums of the evening." He had a private interview with King Leopold next day, at the royal palace of Laaken, near Brussels. Mr. Stephenson was gentlemanly, simple, and unpretending; maintained the most perfect ease and self-possession, and described to the king the geological structure of Belgium. The "grit barelegged laddie" is now teaching a king! In describing the coal-fields, Mr. Stephenson used his hat as a sort of model to illustrate his meaning, and on leaving the palace, said to his friend, "By the by, Lopwict, I was afraid the king would see the inside of my hat, for it's a shocking bad one!" He paid a second visit to Belgium in the course of the same year, for the purpose of examining the direction of the proposed West Flanders Railway, and had scarcely return-

ed, before he was requested to proceed to Spain, to report upon a project then on foot for constructing the Royal North of Spain Railway. He was accompanied by Sir Joshua Walmsley, and several other gentlemen. In passing through Irun, St. Sebastian, St. Andrew, and Bilbao, they were met by deputations of the principal inhabitants, who were interested in the subject of their journey. Mr. Stephenson was not long in forming an unfavorable opinion of the entire project, and it was consequently abandoned. From fatigue and the privations endured by him while carrying on the survey among the Spanish mountains, he became ill on the homeward journey. After a few weeks' rest at home, he gradually recovered, although his health remained shaken.

The Ambergate and Manchester line, which received the sanction of Parliament in 1848, was the last railway in the promotion of which he took any active part. He resided at Tapton House, enjoying his garden and grounds, and indulging that love of nature which remained strong within him to the last. He built new melon-houses, pineries, and vineries of great extent, and became eager to excel his neighbors in the growth of exotic plants. His grapes took the first prize at Rotherham, at a competition open to all England. Rivalry was the very life of the man, and he was never satisfied until he had excelled all competitors. He fed cattle after methods of his own, and was very particular as to breed and build in stock-breeding.

Again, as when a boy, he began to keep rabbits, and prosecuted *con amore* his old occupation of bird-nesting. From close observation, he was minutely acquainted with the habits of British birds. He read very little in-doors; his greatest pleasure was in conversation. He was fond of telling anecdotes illustrating the struggles of his early life. He would sometimes indulge his visitors in the evening by reciting the old pastoral "Damon and Phyllis," or singing "John Anderson my Joe." The humbler companions of his early life were frequently invited to his house; he assumed none of the high airs of an upstart, but treated them as his equals. He was charitable to the needy, and so bestowed his gifts that the delicacy of the fastidious was never offended.

"Young men would call upon him for advice or assistance, in commencing a professional career. When he noted their industry, prudence, and good sense, he was always ready. But, hating foppery and frippery above all things, he would reprove any tendency to this weakness which he observed in the applicants. One day a youth, desirous of becoming an engineer, called upon him, flourishing a gold-headed cane. Mr. Stephenson said, 'Put by that stick, my man, and then I will speak to you.' To another extensively-decorated young man he one day said, 'You will, I hope, Mr. ——, excuse me; I am a plain-spoken person, and am sorry to see a nice-looking and rather clever young man like you disfigured with that fine-

patterned waistcoat, and all these chains and fangdangs. If I, sir, had bothered my head with such things when at your age, I would not have been where I am now."

During the later years of his life, Mr. Stephenson took a deep interest in educational institutes for the working classes. He had many thousand workpeople engaged in his works at Tapton and Clay Cross; and he established a model educational institute, beneficial alike to employers and employed.

The inventive faculty of the eminent engineer did not slumber when he retired to the seclusion of private life. In 1846 he brought out his design of a three-cylinder locomotive. It has not come into general use, owing to the greater expense of its construction and working. In 1847 he invented a new self-acting break. He communicated a paper on the subject, accompanied by a model, to the Institute of Mechanical Engineers at Birmingham, of which he was president.

Sir Robert Peel on more than one occasion invited Mr. Stephenson to Drayton. He refused at first, from an indisposition to "mix in fine company;" but ultimately went. "On one occasion, an animated discussion took place between himself and Dr. Buckland, on one of his favorite theories as to the formation of coal; but the result was, that Dr. Buckland, a much greater master of tongue-fence than Stephenson, completely silenced him. Next morning, before

breakfast, when he was walking in the grounds, deeply pondering, Sir William Follett came up, and asked what he was thinking about. 'Why, Sir William, I am thinking over that argument I had with Buckland last night. I know I am right, and that, if I had only the command of words which he has, I'd have beaten him.' 'Let me know all about it,' said Sir William, 'and I'll see what I can do for you. The two sat down in an arbor, where the astute lawyer made himself thoroughly acquainted with the points of the case, entering into it with all the zeal of an advocate about to plead the dearest interests of his client. After he had mastered the subject, Sir William rose up, rubbing his hands with glee, and said, 'Now I am ready for him.' Sir Robert Peel was made acquainted with the plot, and adroitly introduced the subject of the controversy after dinner. The result was, that, in the argument which followed, the man of science was overcome by the man of law, and Sir William Follett had at all points the mastery over Dr. Buckland. 'What do *you* say, Mr. Stephenson?' asked Sir Robert, laughing. 'Why,' said he, 'I will only say this, that, of all the powers above and under the earth, there seems to me to be no power so great as the gift of the gab.' On another occasion a highly original idea was struck out by Mr. Stephenson in conversation with Dr. Buckland. 'Now, Buckland,' said he, 'I have a poser for you: can you tell me what is 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?' '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.'" Such an idea was more an immediate intuition of genius, than the result of methodical reasoning.

Sir Robert Peel made Stephenson the offer of knighthood more than once, but he steadily refused. He was not the creature of patronage, and he did not wish to shine with borrowed lustre. He gave a characteristic reply to a request that he would state what were his "ornamental initials," in order that they might be added to his name in the title of a work proposed to be dedicated to him: "I have to state, that I have no flourishes to my name, either before or after; and I think it will be as well if you merely say 'George Stephenson.' It is true that I am a Belgian knight; but I do not wish to have any use made of it. I have had the honor of knighthood of my own

country made to me several times, but would not have it. I have been invited to become a Fellow of the Royal Society, and also of the Civil Engineers' Society, but objected to the empty addition to my name. I am a member of the Geological Society, and I have consented to become president of, I believe, a highly respectable Mechanics' Institution at Birmingham." He wished to join the Civil Engineers' Institute; but the council would not waive the condition that he should compose a probationary essay in proof of his capacity as an engineer! Mr. Stephenson would not *stoop* to enter, and turned his back upon the Institute.

In July, 1848, though suffering from nervous affection, he attended a meeting of the Birmingham Institute, and read a paper to the members "On the Fallacies of the Rotary Engine." It was his last appearance in public. A sudden effusion of blood from the lungs, which followed an attack of intermittent fever, carried him off, on the 12th of August, 1848, in the sixty-seventh year of his age. The death-pallor lay upon that countenance, once so ruddy and glowing with health; the keen gray eye looked no longer upon the common light of day; the brain within that massive forehead throbbed no more. A large body of his workpeople, by whom he was as much beloved as admired, followed his remains to the grave. He was interred in Trinity Church, Chesterfield, where a simple tablet marks his

resting-place. A chaste and elegant statue of the great engineer, produced by Mr. Gibson of Rome, was placed in the magnificent St. George's Hall, Liverpool. To him, more than any other man of this century, the commercial metropolis of England owed a debt of gratitude and a tribute of respect.

Such is a rapid review of the leading events in the life of George Stephenson—a life pregnant with valuable lessons and large results. He had a work to do in this world, and he performed his duty; he fulfilled his mission with manliness, with energy, and with success. It is impossible as yet correctly to estimate the greatness of the impulse he has given to civilization, or to weigh in the balance the mighty advantages, commercial, social, and political, which he has conferred upon mankind. Future generations will be better able to form a judgment and give a decision, when the system he originated has been longer in existence, and has attained a fuller development. Great was the work he wrought, but still greater was the workman. We cannot but wonder that one born in circumstances so humble, and laboring long under so many disadvantages, should have been able to exemplify, more perhaps than any other man, the masterdom of mind over matter. He was enabled, through sheer force of intellect and never-failing determination, to make all difficulties and every apparent disadvantage work together for good both to himself and to the world. Under the stern discipline of poverty and neces

sity, he early grew strong in self-reliance. He had the desire to learn, the desire to advance, and that desire was accompanied by the resolute will which commands success. He never thought of failure; he never dreamed of impossibilities; he fixed the whole strength of his mind upon the end to be gained, and the means to be applied. By patient, unwearied, self-reliant industry, he rose from obscurity to world-wide renown, and emphatically proved, throughout the whole course of his laborious life, that perseverance is power. By word as by example, he strove on every available occasion to enforce this important truth. On one of his last public appearances, he told the mechanics of Leeds that "he stood before them but as a humble mechanic. He had risen from a lower standing than the meanest person there; and all that he had been enabled to accomplish in the course of his life had been done through perseverance. He said this for the purpose of encouraging youthful mechanics to do as he had done—to persevere." It is remarkable that, although Stephenson was originally endowed with a strong mind, an inquiring spirit, and great constructive skill, he attributed to perseverance all his success. Any man, he considered, might have done what he did by simple tenacity of purpose, and the resolution to be undaunted by difficulties. He never plumed himself upon the possession of superior powers, nor was there any affectation in describing himself as a humble mechanic, when he was universally recog-

nized as the greatest engineer of the day. He had all the manly modesty, the unpretending, unconscious greatness, which ever characterize true genius. Social elevation did not destroy his natural humility. Popular applause he estimated at its true value. His personal worth imparted new dignity to his mechanical eminence; his heart was as sound as his head; he was as much beloved as he was admired. George Stephenson was, in fine, a genuine Englishman—frank, fearless, heroic, vigorous in thought and energetic in action. He has left behind him a memorable name, and his works will ever be his noblest monument.

THE

BEGINNING OF THE ROTHSCHILDS.

On the approach of the republican army to the territories of the Prince of Hesse Cassel, in the early part of the French revolutionary wars, his Serene Highness—like many other pretty princes of Germany—was compelled to flee. In his passage through the imperial city of Frankfort-on-the Maine, he paid a hasty visit to one Moses Rothschild, a Jewish banker of limited means, but of good repute both for integrity and ability in the management of his business. The prince's purpose in visiting Moses was to request him to take charge of a large sum in money and jewels, amounting in value to several millions of thalers, a coin equal to seventy-five cents of our money. The Jew at first point blank refused so dangerous a charge; but, upon being earnestly pressed to take it, at the prince's own sole risk—nay, that even a receipt should not be required—he at length consented. The money and jewels were speedily but

privately conveyed from the prince's treasury to the Jew's residence; and, just as the advanced corps of the French army had entered through the gates of Frankfort, Moses had succeeded in burying it in a corner of his garden. He, of course, received a visit from the republicans; but, true to his trust, he hit upon the following means of saving the treasure of the fugitive prince, who had placed such implicit confidence in his honor. He did not attempt to conceal any of his own property (the whole of his cash and stock consisting of only 40,000 thalers, or about $30,000), but, after the necessary remonstrances and grumbling with his unwelcome visitors, and a threat or two that he should report them to the General-in-Chief—from whom he had no doubt of obtaining redress—he suffered them to carry it all off.

As soon as the republicans had evacuated the city, Moses Rothschild resumed his business as banker and money-changer; at first, indeed in an humble way, but daily increasing and extending it by the aid of the Prince of Hesse Cassel's money. In the course of a comparatively short space of time, he was considered the most stable and opulent banker in all Germany.

In the year 1802, the prince, returning to his dominions, visited Frankfort in his route. He was almost afraid to call on his Jewish banker; apprehending that if the French had left anything, the honesty of Moses had not been proof against so strong a temptation as he had been compelled from

dire necessity to put in his way. On being introduced into Rothschild's *sanctum*, he, in a tone of despairing carelessness, said, "I have called on you, Moses, as a matter of course; but I fear the result. Did the rascals take all?"

"Not a thaler," replied the Jew, gravely.

"What say you?" returned his Highness. "Not a thaler! Why, I was informed that the *Sans-culottes* had emptied all your coffers and made you a beggar: I even read so in the gazettes."

"Why, so they did, may it please your Serene Highness," replied Moses; "but I was too cunning for them. By letting them take my own little stock, I saved your great one. I knew that as I was reputed wealthy, although by no means so, if I should remove any of my own gold and silver from their appropriate bags and coffers, the robbers would be sure to search for it; and in doing so, would not forget to dig in the garden; it is wonderful what a keen scent these fellows have got! they actually poured buckets of water over some of my neighbors' kitchen and cellar floors, in order to discover, by the rapid sinking of the fluid, whether the tiles and earth had been recently dug up! Well, as I was saying, I buried your treasure in the garden; and it remained untouched until the robbers left Frankfort, to go in search of plunder elsewhere. Now, then, to the point: as the *Sans-culottes* left me not a kreutzer to carry on my business; as several good opportunities offered of making a very handsome profit; and as I thought

it a pity that so much good money should lie idle, whilst the merchants were both ready and willing to give large interest; the temptation of converting your Highness's florins to present use haunted my thoughts by day and my dreams by night. Not to detain your Highness with a long story, I dug up the treasure, and deposited your jewels in a strong box, from which they have never since been moved; I employed your gold and silver in my business; my speculations were profitable; and I am now able to restore your deposit, with five per cent. interest since the day on which you left it under my care."

"I thank you heartily, my good friend," said his Highness, "for the great care you have taken and the sacrifices you have made. As to the interest of five per cent., let that replace the sum which the French took from you; I beg you will add to it whatever other profits you may have made. As a reward for your singular honesty, I shall still leave my cash in your hands for twenty years longer, at a low rate of two per cent. interest per annum, the same being more as an acknowledgment of the deposit, in case of the death of either of us, than with a view of making a profit by you. I trust that this will enable you to use my florins with advantage in any way which may appear most beneficial to your own interests."

The prince and his banker parted, well satisfied with each other. Nor did the gratitude and good will of his Serene Highness stop there—on every

occasion in which he could serve his interests he did so, by procuring for him, from the princes of Germany, many facilities both for international and foreign negociation. At the congress of sovereigns, which met at Vienna in 1814, he did not fail to represent the fidelity of Moses Rothschild, and procured for him, thereby, from the Emperors of Russia, Austria, and the other European potentates, as well as from the French, English, and other ministers, promises that in case of loans being required by their respective governments, the "Honest Jew of Frankfort" should have the preference in their negociation. Nor were these promises "more honored in the breach than in the observance," as those of princes and courtiers are proverbially said to be. A loan of 200 millions of francs being required by the French government to pay the Allied Powers for the expenses they had been put to in the restoration of the Bourbons, one of old Rothschild's sons, then residing at Paris, was intrusted with its management. The same was accordingly taken at 67 per cent., and sold to the public in a very few days at 93! thereby yielding an immense profit to the contractor. Other loans followed to various powers, all of which turned out equal to the most sanguine expectations of this lucky family, who are now in possession of such immense wealth, that it is supposed they could at will change the destinies of the nations of Europe.

THE RISE OF THE PEEL FAMILY.

About a week before Whitsuntide, in the year 1765, at nine o'clock in the morning, a line of Manchester bell-horses (nineteen in number), loaded with packs and attended by chapmen, were seen by the weavers of Irwell Green, descending from the moors by the bridle-road into that hamlet. The weavers (thirty in number, or thereabout) stopped their looms, and went forth to ask questions about trade, wages, prices, politics; Lord Bute, Grenville, William Pitt (the elder), and young King George III.; and to inquire if there were a likelihood of the young king doing anything for the good of trade.

The spinning women had come forth also from their spinning-wheels, and, in reference to them, Mr. William Garland, a merchant (locally called a Manchester warehouseman), who had accompanied his pack-horses thus far to make some arrangements with the resident weavers of this hamlet, said, "If the young king would make the

lasses spin more, he would do some good." "Or," said a weaver, "an t' king would make a spinning-wheel to spin two threads instead of one, it would be some good." "Nonsense," replied another; "no man can make a wheel to spin two threads at once; no, not even King George upon the throne."

The chapmen having baited their horses, proceeded on their journey towards Blackburn, which they hoped to reach early in the afternoon. When they were gone, the children of Irwell Green ranged themselves in a troop across the stony causeway, hand in hand, and sang,

> "Bell-horses, bell-horses, what time o' day?
> One o'clock, two o'clock, three, and away!"

At the word "away," they raised a shout, ran down the causeway, their wooden-soled clogs clattering on the stones as loudly as all the shuttles of Irwell Green. About two in the afternoon, the bell-horses reached Blackburn.

If the reader should ever visit Blackburn—winding through the vales by the turnpike road, or, on the railway, through tunnels, over ravines, along the mountain-sides—he will find it a town containing fifty thousand people, or thereabout, with narrow, crooked streets, situated on undulating ground. It is surrounded by hills; and a rivulet, a canal, a railway, and several thoroughfares run through it. The whole town of gray stone houses, with stone roofs, and the country of green pastures rising around, are less changed for better or worse

than any other town and neighborhood which existed in the middle of last century in Lancashire. This has resulted from the early and long sustained resistance of the inhabitants to the mechanical inventions which had their origin in that vicinity.

Being a stranger in Blackburn, you will doubtless visit Stanehill Moor and Peel Fold—the one the birth-place of the spinning-jenny, and of James Hargreaves, its inventor; the other, of the Peels; and, though not the birth-place of the art of printing calico, nor, perhaps its cradle, yet certainly its infant-school.

If you leave the town by yonder windmill on the rising ground, your face northeast, and, where the road divides, take that branch going due east, you will, having proceeded about two and a half miles, turn to your right hand, and face southward. As you approach the village of Knuzden Brook, lift your eyes towards the plantation which runs from west to east, and crowns that green upland. Behind that plantation lies Stanehill Moor, in one of the houses of which the spinning-jenny was invented; and that farm-house — with cowsheds, barn, and inclosure walls, all built of gray stone and roofed with the same—is Peel Fold. Forty acres of that cold, wet pasture land, with these buildings, formed the inheritance of the Peels.

With this view and knowledge of the estate, it will not surprise you to be told that the Robert Peel born in 1714, who married Elizabeth Howarth of Walmsley Fold, in 1744, and had a family

of five sons and a daughter in 1755, was not, as some heraldic writers have written, a "yeoman, living on and cultivating his own estate." He did not cultivate it at all, except a garden for pot-herbs; nor did he live on it in the sense indicated. He was a "yeoman," it is true, and sold the milk and butter of four or five cows in Blackburn; but he was a weaver also, and was too shrewd a man of the world not to educate his sons to industrial pursuits of a like kind. They, too, were weavers. In yonder house, to which our footsteps now tend, were at least two looms in 1765. His children were, William, born 1745; Edmund, born 1748; Robert, born April 25, 1750 (whose son, Sir Robert Peel, the eminent statesman, died one hundred years afterwards, July 2, 1850); Jonathan, born 1752; Anne, born 1753; Lawrence, born 1755; some others who died in infancy; Joseph, born 1766; and John, whose birth occurred after the family were driven out of Lancashire by the insurgent spinning women, probably at Burton-on-Trent, Staffordshire.

Here it may be as well to remark, that, though the tradition which the reader is about to know is shaped somewhat like a story, we have not dared, for the sake of a story, to falsify incidents so truly national and historical, though so little known. The incidents and domestic economy of Peel Fold about to be described are such as old people, with whom we became acquainted a few years ago, related. We have conversed with per-

sons who had seen the Robert and Elizabeth Peel now under notice; who had also seen James Hargreaves, inventor of the spinning-jenny; and the fathers and mothers of these aged persons were the neighbors of Robert Peel and James Hargreaves, and had often spoken of them to their sons and daughters.

Some time in the year 1764, one of the boys at Peel Fold, in weaving a piece of cloth of linen and cotton mixture, spoiled it for the Blackburn cloth market. It was taken to Bamber Bridge, near Preston, to be printed for kerchiefs, there being a small print-work at that place, the only one in Lancashire, and, except at Cray, near London, the only one in England. The real object of Robert Peel, in taking this piece of cloth to be printed, was alleged, however, to be a desire to see the process. In this he was disappointed; the works were kept secret. Such being the case, he induced Mr. Harry Garland, son of the Manchester warehouseman, to take note of the Cray print-works when he next went to London with his father's pack-horses, and if possible to procure some of the patterns, colors, gums, and printing-blocks. The first visit of Harry Garland to Blackburn, after attending to this business, was on that day near Whitsuntide, 1765. On the afternoon of that day (we were told it was so, but it might have been on another day), James Hargreaves was "at play," as the weavers termed it, for want of weft. His wife had given birth to an infant, and was still in

bed, and could not spin. The spinning women were all too well employed to give him weft, except as a very great favor, though highly paid; and, now that he was a married man, favors were not so readily obtained. Besides, under ordinary circumstances, his wife could spin more weft than most other women. She was such an extraordinary spinner for diligence and speed, that people called her "Spinning Jenny."

James at last determined to step across "the waste" and the stone quarry to Peel Fold, and borrow weft. Neighbor Peel he knew to be a careful man: doubtless he would have enough for the lads (Edmund, Robert, and Jonathan, who were on the loom—William was otherwise employed), and might have some to spare. True, he was a shade beyond being careful—he was narrow; but James Hargreaves had taught the boys how to use the fly-shuttle—a recent invention of the Brothers Kay of Bury. He hoped, therefore, they would not refuse a loan of some weft.*

James reasoned rightly. He was accommodated with weft, and invited to partake of their frugal supper. Had you been present while the rustic mess was preparing, and Hargreaves was employed in sorting out and counting the copes of weft, you would have observed that the kitchen

* The weft of a web is the cross threads wound into copes or pirns," and placed in the shuttle; the warp is the longitudinal threads.

in which you sat was large enough to hold two looms, a carding stock, a reel, and other implements of in-door and out-door labor, with space still unoccupied. You would have seen the reeds and headles to be used in the looms when required, hanging from the joists; the oatmeal jannock (the common bread in Lincolnshire in those days), hanging over spars, like leather; bundles of yarn; bacon, for family use and for sale; some books, of which one was the Holy Bible, covered with untanned calf-skin, the hair outside—a part of the same skin which Robert Peel wore for a waistcoat. You would have seen that he wore a coat of homespun wool, undyed; breeches of the same, tied at the knee with leather thongs; an apron of flannel; stockings made of the undyed wool of a black and a white sheep, mixed; clogs, made of leather above, and wood and iron below; a brown felt hat, once black, turned up behind and at the sides, and pointed before. His sons were dressed in the same manner, except that they had buckles at their knees instead of leather thongs, and waistcoats of stuff like their mother's linsey-woolsey gown, instead of calf-skin. You would have seen and heard that Mrs. Peel trod the same floor in wooden-soled clogs, while the clat-clatting of little Anne gave the same intimation. On seeing the family seated around the table uncovered, you would have observed, by their golden-tinged hair, short and curly, that they still retained the Scandinavian temperament of their Danish ancestors,

who, as rovers of the sea, are supposed to have brought the lineage and name of Peel to England. Their neighbor Hargreaves, you would have seen, was a short, broadly formed man, with hard black hair. He did not stand above five feet five; Robert Peel stood five feet eleven inches, rather more.

Being seated, and seeing his wife sit down, he said, "'Lizabeth, are you ready?" to which she, having put a portion of the supper on a platter, to cool for the younger children, and lifted her finger in sign of admonition to be silent and still, answered, "Say away, Robert," and bowed her head. The father looked around, and, seeing that his children had bent their heads and were still, bowed his own, and addressed himself to the Most High. He besought a blessing on their food, on all their actions, on all their varied ways through life, and for mercy to their manifold sins. To which they all said, "Amen."

Soon after, William, the eldest son, came in from Blackburn. He said Harry Garland and other chapmen had come as far as the Pack Horse, at the Brook, but had gone in there, and he thought Garland was not much short of tipsy; they had been drinking at the Black Bull in Blackburn before starting. Saying which, he asked, "Mother, is there no supper for me?" She replied, "In t' oven; in t' dish; dinnot fear but thy share were set by for thee."

Presently the dogs, Brock and Flowery, began

to bark, and the sound told they were running up the path toward the plantation. This indicated the approach of a stranger. Anne and little Lawrence ran, spoons in hand, their clogs clattering on the stones, and returned in fright, saying it was a man who wore a red coat, and with a sword in his hand; and he was like to cut off the heads of Brock and Flowery with it for barking at him; upon which William observed, he dared say it was Harry Garland. Robert, the third son, laid down his spoon, saying he would call in the dogs; but his father bade him stay; he would go himself, and went. It was Harry Garland. Mr. Peel, desiring to speak with him privately about the printing at Cray, took him into another apartment. They remained there more than an hour. The girl and the youngest boy looked through the keyhole, and, returning to the kitchen, said the stranger was showing father such beautiful paper, and such a curious piece of wood, and such lovely things. But their mother interrupted them, saying, "Howd thee tongue, and sit thee down." James Hargreaves, thinking, correctly enough, that his presence stood in the way of some private business, took the copes of weft in his apron, and went home. Presently the private conference was at an end, and the visitor, with Mr. Peel, went to the kitchen.

Harry Garland was a handsome young man, in his twentieth year. He had dark brown hair, tied behind with blue ribbon; clear, mirthful

eyes; boots which reached above his knees; a broad-skirted scarlet coat, with gold lace on the cuffs, the collar and the skirts, and a long waistcoat of blue silk. His breeches were buckskin; his hat was three-cornered, set jauntily higher on the right than on the left side. In his breast-pockets he carried loaded pistols, and, dangling from his waistbelt, a short, heavy sword, sufficiently strong to cut the branches from a tree, or kill a highwayman. He thus appeared, on ordinary days, in the dress and accoutrements which a Manchester chapman only wore on holidays, or at a wedding, or at church. Mr. Peel had invited him, when in the private apartment, to stay all night; but no, he must be in Blackburn, he said, to go early in the morning to Preston. Besides, he had friends at the Pack Horse, down at the Brook, awaiting his return. Would William, Edmund, and Robert step that length with him? Their father, answering, said, "No, they cannot go out." They inclined to go; the smart dress of the handsome Harry Garland, his lively conversation, his knowledge of the social and commercial world, so far exceeding theirs, inclined them to his company. But their father had said "No." They said nothing.

Robert Peel had work for himself and his sons which required to be done that night. He accordingly called them together, and said it was not so much that he objected to their being with Garland, though doubtless they might find more pro-

fitable company, as truly as they might find worse; but he had objected to their going out because there was work to do. "Seest thou a man diligent in his business," he quoted, "he shall stand before kings." He then told them to get the hand-barrow, the sledge-hammer, the iron wedges, the pinch (an iron lever), the two crowbars, and the pick, and that perhaps they might also require the spade. They put the wedges, hammer, and pick on the barrow, and Anne and Lawrence on the top of them. William and Edmund took their places upon the shafts; their father went on before with the spade under his arm, Robert with him, walking sturdily with the iron lever on his shoulder. It was a clear moonlight night. When they came to the quarry, they removed some surface earth and rubbish, and, having laid bare a stratum of rock likely to split into slabs, they began to use the pick. They marked a surface of solid stone five feet long and twenty inches wide, or thereabout. They made a series of incisions along the line, about five inches apart, into which they set the iron wedges. After tapping them gently, to make their points lay hold, Mr. Peel, who was the steadiest hand at the large hammer, swung it round his head, and gave each of the wedges a blow in turn, until the block was rent from the mass, as desired. The points of the pick and lever were then inserted in the rent. The crowbars, unfortunately, were found to be short and powerless. The father and two of the

sons laid all their weight and strength on the long pinch; another worked the pick as a lever, and poised the block outward and upward. Jonathan had a small hard stone ready, and Anne another a little larger. The smallest was dropped, as directed, into the opening. Then they let go with the levers, and took a deeper hold, the small hard stone keeping the block from subsiding to its place. Having got a deeper hold, they gave their united weight and strength to the leverage again, and the opening being wider, Anne dropped in the larger of the hard stones. Again they let the block rest, and, getting a still deeper hold, they poised it upward and outward further, and Jonathan, having got a larger hard stone, dropped it in. By two other holds and rests, conducted in like manner, they overturned the block, two-and-twenty inches thick, or thereabout, to its side. On examining it all round, and detecting no break nor flaw, they estimated that, could they split it into four equal slabs of five and a half inches thick, they would have as many stone tables as were required. To split the block into four slabs, it was necessary to make three rows of incisions with the pick, into which to introduce the wedges. This was done, and the slabs being split, were dressed a little at the ends and sides. Turning one of them on edge, they placed the hand-barrow on edge beside it, and brought barrow and stone down, the stone uppermost, as desired. Turning it crossways, that its ends should project to the

sides, and enable one at each end to attach his sustaining strength, Robert and Edmund were allotted to that duty. Their father and William, as the stronger of the four, took their places between the shafts—the father behind, William before. They got it out of the quarry by the exercise of sheer strength. But to get it over the steps going out of the waste into the plantation, required skill and caution, as well as strength. It was both difficult and dangerous. Nor were they clear of danger going down the path which led athwart the slope. Their feet had a tendency to slip, and the stone naturally slid to the lowest side; but the youth who had charge of that end kept it up manfully. Without hurt or mishap, they got it to the kitchen door. So, in due time, they got the other three; but, before they were done, the perspiration was dripping from all the four. They sat down to rest and wipe their warm faces, and found the time was an hour past midnight.

There was not space for them all to work in the small back room at laying the slabs. The father and the two elder sons laid them at the proper height for working upon with printing blocks, as described by Harry Garland. In that room they remain at this day, as then laid down. In that room the visitor still sees those slabs of stone upon which the Peels made their first essays in printing calicoes—upon which they took the first step towards that wonderful fortune of wealth and fame which then lay before them unknown.

Though the hour was late, young Robert Peel was too full of ideas about designs for the blocks he intended to carve for printing, to go to sleep. He went out to the moor in the moonlight, to gather a handfull of bilberry leaves, or other foliage, which might be copied. (The first thing printed at Peel Fold was a parsley leaf.) Going to the moor, the youth had to pass near the house of James Hargreaves. He saw a light in the window. Seeing a shadow moving, he halted for a moment, and that moment revealed enough to detain him half an hour. He was surprised, not alone to see the weaver up at that hour, but to see his singular, his inexplicable employment. To comprehend what that was, let us return to Garland's departure from Peel Fold, as told before.

When Harry had crossed the waste, he met James Hargreaves, carrying two pails of water for domestic use, and asked him to go down the hill, and drink a "gill of ale" at the Horse. James considered a minute, set down his pails, twisted his body, rolled one shoulder forward, the other back, chipped the stones of the road with his iron-shod clogs, and confessed that he had no objection to a gill of ale at the Horse, were it not that he had Jenny's gruel to make. But, again, there was Nan Pilkington who would make the gruel. Also, there was Charlotte Marsden at the Horse, who was always at her wheel, and Alice, her sister, who also was a spinner when not waiting on the customers; perhaps they might have weft ready

which nobody had bespoke. The balance of reasons for and against going to the Horse was thus found to be in favor of going. So, taking in the water, and directing Nan Pilkington's attention to Jenny's gruel, he called on Joe Pilkington, the singing weaver, and both went.

They joined the chapmen from Blackburn, and were soon in a merry mood. Joe Pilkington was ready with a song at any time. Perhaps they would have sat later than the usually sober hours of James Hargreaves, had not an accident occurred which disconcerted Garland, and suggested to Hargreaves to go home. Harry had seated himself beside Charlotte Marsden, where she was spinning at the further end of the spacious kitchen. In this apartment the company were assembled. Some who knew the lofty spirit of the beautiful Charlotte, offered to wager with Garland that he could not kiss her. The forward youth attempted the rash act without hesitation; upon which she called him an impudent moth, and, rising indignantly, overturned her spinning-wheel. It fell backward. The spindle, which before had been horizontal, the point towards the maiden's left hand, stood upright. The wheel, which had been upright, and turned by her right hand (its band turning the spindle), was now horizontal. It continued to revolve in that position, and to turn the spindle. In a moment, a thought—an inspiration of thought—fixed the eyes of Hargreaves upon it. Garland pursued the indignant Charlotte out

of the apartment. The company followed, urging him to the renewal of his rudeness, which, the more he tried to succeed in, the more he seemed to be baffled and humiliated. In their absence, James Hargreaves turned the wheel with his right hand, it still lying as it fell, and, drawing the roving of cotton with his left, saw that the spindle made as good a thread standing vertically as it had done horizontally. "Then why," his inspiration of thought suggested, "should not many spindles, all standing upright, all moved by a band crossing them from the wheel, like this single spindle, each with a bobbin on it, and a roving of cotton attached, and something like the finger and thumb, which now take hold of the one roving, to lay hold of them all, and draw them backward from the spindles into attenuated threads? Why should not many spindles be moved, and threads be spun by the same wheel and band which now spin only one?"

Hearing the company return, James Hargreaves lifted the wheel to its feet, placed the roving in its right place, and said, "Sit thee down, Charlotte; let him see thee spin; who can tell what may come of this!" Then, after a pause, and a reflection that he should retain his new ideas as secrets of his own at present, he continued: "Thou may be his wife; more unlikely things have happened; it will be a fine thing to be lady of all that owd Billy Garland may leave some day."

"Wife, indeed!" interjected the vexed maiden;

"the moth! Wife, indeed! Who would be wife to *it?*"

"Weel," said James, "be that as it may; but I mun go whoam; my wife thinks whoam the best place for me, and I think so mysen."

Remarks were made as to why he was going so soon. But Harry Garland had lost spirit after the conflict, and felt the scorn of the maiden more keenly than any reproof which had ever fallen upon his impudence before. He was not in a humor to solicit James Hargreaves to remain; so they parted.

James had reached home two or three hours before young Robert Peel observed the light in his window. On the lad approaching the window, the weaver was standing motionless. Suddenly he dropped upon his knees, and rolled on the stone floor at full length. He lay with his face towards the floor, and made lines and circles with the end of a burned stick. He rose, and went to the fire to burn his stick. He took hold of his bristly hair with one hand, and rubbed his forehead and nose with the other and the blackened stick. Then he sat upon a chair, and placed his head between his hands, his elbows on his knees, and gazed intently on the floor. Then he sprang to his feet, and replied to some feeble question of his wife (who had not risen since the day she gave birth to a little stranger), by a loud assurance that he had it; and, taking her in his sturdy arms, in the blankets, the baby in her arms, he lifted her

out, and held her over the black drawings on the floor. These he explained, and she joined a small, hopeful, happy laugh with his high-toned assurance, that she should never again toil at the spinning-wheel—that he would never again "play," and have his loom standing for want of weft. She asked some questions, which he answered, after seating her in the arm-chair, by laying her spinning-wheel on its back, the horizontal spindle standing vertically, while he made the wheel revolve, and drew a roving of cotton from the spindle into an attenuated thread. "Our fortune is made when that is made," he said, speaking of his drawings on the floor.

"What will you call it?" asked his wife.

"Call it? What an we call it after thysen, Jenny! They called thee 'Spinning Jenny' afore I had thee, because thou beat every lass in Stanehill Moor at the wheel. What if we call it 'Spinning Jenny?'"

It was all a mystery to Robert Peel. He went home with his bilberry leaves, and went to bed, wondering if Hargreaves were out of his mind, or if he, too, were inventing something, or about to make experiments in some new process of working.

The principle of spinning by rollers, usually called Arkwright's invention, was not introduced until about four years after the invention of the jenny. Whether it was original to Arkwright, cannot now be told; but Mr. Baines of Leeds, and other diligent inquirers, have established the

THE SPINNING JENNY.

"Our fortune is made when that is made, he said, speaking of his drawings on the floor."—PAGE 70.

fact that an ingenious man named Wyatt, erected a machine at Birmingham, and afterwards at Sutton Coldfield, in Warwickshire, twenty years before Arkwright evolved his idea, which was in principle the same—namely, that a pair of rollers with slow motion drew in a roving of cotton, and a second pair, with an accelerated motion, drew the roving from the other. All the varieties of cotton-spinning machinery have sprung from those two—the rollers of Wyatt (or Arkwright) and the jenny of Hargreaves. A farmer, named Samuel Crompton, living at Hall-i'-th'-wood, near Bolton, was the first to combine them in one machine; this was called the "mule."

Returning to the Peel family, we see Robert, the son, following the printing of calicoes with enthusiasm. He obtains lessons at Bamber Bridge. We see his father engaged in constructing a machine for carding cotton into rovings, preparatory to spinning. Instead of two flat cards set full of small wiry teeth, the one card to work over the other, this machine of Robert Peel the elder is a cylinder covered with such wiry teeth. It revolves, and a flat card with a vertical motion works upon it. The carding by cylinders obtains to this day; and there is no reason to doubt that it was invented at Peel Fold. It was, however, first erected for use at Brookside, a mile distant, for the convenience of water power. You look down upon the place called Brookside from Stanehill Moor, your face turned to the south-west. There, also, Mr.

Peel and his sons erected the first of Hargreaves' spinning-jennies, which was set in motion by water power, they being previously moved by hand.

It was now, 1766, that the murmurs of the spinning women ripened to acts of violence. At first the men were pleased with the jenny, which gave eight threads of weft instead of one; but, when it threatened to supersede hand-spinning altogether, they joined with the women in resisting its use. They marched out of Blackburn in mobs, and broke all the jennies, reduced the works at Brookside to absolute wreck, and leveled the house of James Hargreaves at Stanehill Moor with the ground. Hargreaves, his wife and child, fled for their lives, first to Manchester, and then to Nottingham. After many difficulties, he obtained the assistance of a person named Strutt, and the jenny was brought into use at Nottingham (1766–67), also at Derby. Mr. Strutt made a fortune out of it, which, with his sagacity, integrity, and business habits, has descended to the eminent family who still bear that name at Derby. It has been said that James Hargreaves died a pauper at Nottingham. This was repeated in books for many years; but more recent investigation has proved that, though neither so rich as the Strutts, Peels, or Arkwrights, he was not a pauper. In his will he bequeathed £4,000 to relatives.

When the buildings and machinery were demolished at Brookside, the mob proceeded to Al-

tham, six miles distant, and destroyed the works which William Peel, the eldest son, had erected there. Everywhere the Peels were hunted for the next twelve months. At last the father turned his back on Lancashire, and took up his abode at Burton-on-Trent, in Staffordshire, where he established both spinning and printing. Meanwhile Robert, the third son, was diligently fulfilling an apprenticeship with the Bamber Bridge printers already named. When at liberty to enter upon business for himself, he selected a green, sunny spot, with abundance of water, close to the town of Bury, in Lancashire. His brothers did the same, at the hamlet of Church, near to which has since arisen the thriving and populous town of Accrington.

The wonderful success of the whole family of the Peels as merchants, manufacturers, and calico printers, is a part of the industrial history of Britain. Nothing more can be done here than to name it. Robert, from the magnitude of his works at Bury, and from his political tendencies, became the best known. He married the daughter of Mr. Yates, one of his partners in business, and by her had a large family.

He extended his works to other places than Bury. Near Tamworth, in Staffordshire, he acquired property (where there was an abundance of water), and built the town of Fazeley, besides giving employment to the population of Tamworth. In 1790 he became member of Parliament for the

latter place. In 1797, when the government was distressed for money, he subscribed £10,000 to the voluntary contribution. Next year, when invasion was first seriously feared, he raised six companies of volunteers, chiefly among his own work-people at Bury, and became their lieutenant-colonel. He published several political pamphlets. He was the first to claim legislative protection to young persons employed in factories. He had been careful to regulate his own establishment more in accordance with humanity than most of his neighbors, and founded his bill of 1802 to "ameliorate the condition of apprentices in the cotton and woolen trade" on the regulations which he had practically adopted. At various times he re-opened this question during the next seventeen years, but never with that success which he desired. In 1801, he was created a baronet; about which time he purchased the estate of Drayton Manor, close beside Fazeley. He died there, and was interred in the church of Drayton Bassett, in 1830, where the escutcheon, with its *bees* and the word "industria," was raised over his tomb by his more celebrated son. But there, too, the son is now lying—"Dust to dust, ashes to ashes."

His son, the second Sir Robert Peel, was born 5th February, 1788, at Bury. His latter years were identified with the untaxing of bread, and Bury was the first to propose a monument to his memory in gratitude for that legislation. This monument was completed, and opened to public

view on the 8th September, 1852. It bears the following inscription, quoted from one of his latest speeches: "It may be that I shall leave a name sometimes remembered with expressions of good-will in the abodes of those whose lot it is to earn their daily bread by the sweat of their brow, when they shall recruit their exhausted strength with abundant and untaxed food—the sweeter because it is no longer leavened by a sense of injustice."

From Bury he was sent to school at Harrow, where he displayed great diligence and aptitude for learning. Lord Byron was his contemporary, and, long before the statesman reached his great eminence, bore testimony to his unusual ability and diligence. He said: "Peel, the orator and statesman that was, or is, or is to be, was my form-fellow, and we were both at the top of our remove, in public phrase. We were on good terms, but his brother was my intimate friend. There were always great hopes of Peel amongst us all, masters and scholars, and he has not disappointed us. As a scholar, he was greatly my superior; as a declaimer and actor, I was reckoned at least his equal. As a schoolboy out of school, I was always in scrapes; he never; and in school he always knew his lesson, and I rarely." Mr. Peel proceeded to Christ-Church, Oxford. On taking his degree, he was the first man in his year. In 1809, he obtained a seat in Parliament for the borough of Cashel, in Ireland. In 1810 he was made under-secretary of state. In September, 1812, he

was appointed chief secretary for Ireland. In 1817, Mr. Abbott, speaker of the House, and member for the University of Oxford, being elevated to the peerage, Mr. Peel was elected for the university in his stead. In 1822, he succeeded Lord Sidmouth as secretary of state for the home department, and, with a short interval, filled that office eight years. In 1819, he carried a measure effecting great changes in the currency. In 1826, he introduced measures for the reform of the criminal code. In 1828–29, he reformed the police system; and in the latter year, with the Duke of Wellington, carried the Catholic Emancipation Act. Before entering on this last measure, he resigned his seat for the university, and stood a new election, but was rejected. In 1830, he succeeded to the baronetcy and a magnificent fortune as Sir Robert Peel. In 1831–32, he opposed Lord John Russell's Reform Bill. In addressing the electors of Tamworth, in 1832, he made a declaration of his principles, which did not seem so true then as it does now, when his life and legislation are a part of national history. He said: "I have never been the decided supporter of any band of partisans, but have always thought it better to look steadily at the peculiar circumstances of the times in which we live, and, if necessities were so pressing as to demand it, to conclude that there was no discredit or dishonor in relinquishing opinions or measures, and adopting others more suited to the altered state of the country."

In the month of November, 1834, Sir Robert Peel, being in Rome, received a message that his presence was desired in London, to place himself at the head of a Conservative ministry. He obeyed the summons; but the ministry only retained office until the month of April, 1835. He remained out of office until 1841. In that year he became prime minister, and, in 1842, surprised both his adherents and opponents by the boldness of his financial measures. He proposed an income and property tax, to supply the deficiency in the exchequer, which had been gradually increasing, and causing alarm over several years; and he proposed to exempt from the tariff of customs duties many hundreds of articles. Some of these yielded little or no revenue, and were only a hindrance to commercial business; others entered largely into manufactures, as the raw material of industry. He still resisted the repeal of the corn laws; but yearly his resistance became more feeble, until, on the 4th of December, 1845, he announced his intention to propose the abolition of the corn laws in the ensuing session of Parliament. This was accomplished, and the act took full effect on the 1st February, 1849.

In the latter part of the session of 1846, Sir Robert Peel resigned office. He occasionally spoke in the House afterwards, but evinced no desire to return to office. When His Royal Highness Prince Albert propounded the plan for a Great Exhibition of the Industry of all Nations,

for the year 1851, Sir Robert Peel entered heartily into it, was nominated a commissioner, and was, up to the week of his death, the most unweariedly working member of the commission.

On the 29th of June, 1850, when riding on horseback on Constitution Hill, near Buckingham Palace, in London, he was seen to fall from his horse. Whether the horse stumbled, or he had lost his balance in a fit, no one could tell. He was bruised, and so severely injured, that he never recovered consciousness. He died on the 2d of July, in the 62d year of his age.

The following extract from a letter, written by the father of the statesman, relating to his father, the Robert Peel of 1765, with whom we started, is worth perusal. It was written in 1821. He said—"My father moved in a confined sphere, and employed his talents in improving the cotton trade. . . . I lived under his roof until I attained the age of manhood, and had many opportunities of discovering that he possessed in an eminent degree a mechanical genius and a good heart. He had many sons, and placed them all in situations that they might be useful to each other. The cotton trade was preferred, as best calculated to this object; and by habits of industry, and imparting to his offspring an intimate knowledge of the various branches of the cotton manufacture, he lived to see his children connected together in business, and, by his successful exertions, to become, without one exception, opulent and happy. My father

may be truly said to have been the founder of our family; and he so accurately appreciated the importance of commercial wealth in a national point of view, that he was often heard to say, that the gains to the individual were small compared with the national gain arising from trade."

Is there a moral to be derived from the history of the Peel family? It was seen in the obedience of the boys to their father in 1765—"Seest thou a man diligent in his business," said he, "he shall stand before kings." Harry Garland, the gay Manchester chapman, became a ruined spendthrift.

WILSON, THE ORNITHOLOGIST.

The name of Alexander Wilson—"Scottish poet and American ornithologist"—is dear to every admirer of genius, to every one, indeed, who loves to think of talent and worth struggling with adverse circumstances, and, by dint of patience and perseverance, rising to honor and fame.

He was born in the Seedhills of Paisley on the 6th of July, 1766. His father (though formerly he had been a distiller on a limited scale) followed the occupation of a weaver, and at one time possessed looms and employed journeymen. In personal appearance he is said to have greatly resembled his son, whom he survived a few years.

The future poet and ornithologist was, it appears, intended by his parents for the church; but his mother, with whom the idea seems to have originated, suddenly died, and with her perished the young man's hopes of filling the position to which he had been taught to aspire. In his thirteenth year he was apprenticed to a weaver,

an engagement which lasted three years, and which was faithfully fulfilled. For four years after this Wilson was employed as a journeyman weaver—sometimes in Paisley and sometimes in Lochwinnoch. It was during these years that he was first visited by the muse, and some of his pieces gained no little repute in his native town.

In his twentieth year a new calling opened up to Wilson. William Duncan, his brother-in-law, with whom he was now employed, having deserted the weaving in order to follow out a mercantile speculation on the eastern coasts of Scotland, Wilson determined, though at an humble distance, to follow his example. He accordingly devoted himself to the wandering life of a peddler or "chapman," an occupation then more frequently followed than at present, the contents of his wallet or "pack" consisting of a miscellaneous assortment of such articles of dress, bijouterie, &c., as were likely to be in request in the houses of the farmers or peasantry. A love of "rural sights and rural sounds," combined with a certain shrewd talent for the observation of character, which distinguished the poet, must have lent a peculiar charm to such an employment. The idea occurred to Wilson that he might advantageously add a volume of poems to the other attractions of his pack; and having got prospectuses printed, he set out in September, 1789, for Edinburgh—in order, as he says in his journal, "to make one bold push for the united interests of pack and

poems." In his new character of peddler-poet, he did not long remain in Edinburgh, but proceeded at once to the towns on the eastern coast. The journal which he kept during the excursion was afterwards printed with his poems. It is cleverly written—a kind of prose of a much higher order than his poetry—and contains some shrewd observations, with a few sketches of the more remarkable characters which fell in his way. In the course of his wanderings, he met in with "a schoolmaster, who seemed to be a son of Bacchus, learning, and snuff; for after several favorable observations on the specimen (of his poems), and an enormous draught of snuff, he declared he would most certainly take a copy. 'But remember,' says he, 'by Jupiter, we will offer up one-half of its price at the shrine of Bacchus.'" In the same town he encountered a brother of the rhyming craft, whom "he began to interrogate as to his knowledge of poetry, but found him entirely ignorant of everything save rhyme. Happening to ask him if he had ever read any of Pope or Milton's pieces, he told me he never had, for he did not understand one word of *Latin*. I showed him my proposals, asked him to subscribe, and said I knew the author. He read part of them with excessive laughter, declared that the author was certainly a learned fellow, and that he would cheerfully subscribe, but that his wife was such a person that if she knew of him doing anything without her approbation, there would be no peace

in the house for months to come. 'And, by the by,' says he, 'we are most dismally poor.' I told him that poverty was the characteristic of a poet. 'You are right,' said he, 'and for that very reason I am proud of being poor.'"

After much hard labor and many rebuffs—the poet meanwhile subsisting on the sales from his pack—he at length got a goodly few subscribers; and having retraced his steps to his native town, he engaged with a bookseller, and "rushed on publication." His next step was a second peregrination to deliver the copies which had been subscribed for. Here again the pack was called into requisition, to sustain him during the distribution of his "rhyming ware." The few opening sentences of his journal, descriptive of his setting out from Edinburgh, make up a very pleasing little picture, not unworthy of the hand which afterwards threw off the finished sketches in America. He says—"Having furnished my budget with what necessary articles might be required, equipped with a short oaken plant, I yielded my shoulders to the load, and by daybreak left the confines of our ancient metropolis. The morning was mild, clear, and inviting. A gentle shower, which had fallen amid the stillness of night, besprinkled the fields and adjoining meadows, exposing them to the eye, clad with brightest green, and glittering with unnumbered globes of dew. Nature seemed to smile on my intended expedition; I hailed the happy omen, and with a heart light as the lark

that hovered over my head, I passed the foot of Salisbury Rocks, and directing my course towards Dalkeith, launched among the first farms and cottages that offered."

Many mortifications awaited the peddler-poet on his second trip. He found that many of the parties who had subscribed for his volume had entirely forgotten the circumstance, and the greater portion "either could not or would not accept of it." Odd characters in abundance, as may be readily supposed, fell in his way. An innkeeper, by way of puffing the poet, and at the same time paying a compliment to his own understanding, said to the poor author regarding his pieces—

"They're clever, very clever; but I incline more to the historical way, such as Goldsmith's Scots History, the Inquest of Peru, and things of that kind, else I would cheerfully take a copy."

On the whole, the result of this expedition was very discouraging to Wilson, who, on his return to Paisley, was fain once more to settle down to the loom. To this "his poverty but not his will consented;" and on another opportunity offering, he again deserted it for the fields of literature. A friend in Edinburgh having informed him that the question, "Whether have the exertions of Allan Ramsay or Robert Fergusson done more honor to Scottish poetry?" was to be discussed in a debating society called the Forum, Wilson seized the opportunity for distinguishing himself, and after a few days' hard work at the loom, in

order to provide the necessary funds, and a little mental labor at home, the ambitious poet set out for Edinburgh. He arrived just in time to take part in the debate, and enthusiastically delivered his poem entitled, "The Laurel Disputed," in defence of the unfortunate Fergusson. The piece gained him some notice and applause, and was the means of detaining him in Edinburgh till he had composed and recited two other productions, namely, "Rab and Ringan," and "The Loss o' the Pack."

Stimulated by the applause he received while resident in the metropolis, Wilson, on his return to his native town, once more set to the unprofitable business of publishing, by producing a second edition of his poems, and again did he depart on a thankless and harassing mission to dispose of his volume. This turned out as unfortunate as the first, and the result of all these high hopes and anticipations was the return to his shuttles. About this time he opened up a correspondence with Burns, then in the zenith of his fame, and shortly afterwards paid him a visit in Ayrshire. Of this interview Wilson always spoke in enthusiastic terms.

The poet made a great start in the year 1792, when the poem of "Watty and Meg" made its appearance. This is a piece of rich and genuine humor, almost rivaling in its broad and original pictures of low life, its pathos and perfect versification, the best parts of "Tam o' Shanter." In-

deed, both poems were universally ascribed to the same hand, till Wilson dropped the anonymous curtain, under the needless shade of which the poem had been issued, and declared himself the author. The popularity of this piece was peculiarly gratifying to the author, this being the only effort of his muse which had successfully commanded anything like universal esteem.

This bright glimpse of sunshine was speedily followed by a lowering sky. A dispute happening to arise between the manufacturers and weavers of Paisley, Wilson at once took part with the latter, and in the course of the controversy produced an offensive piece of personal satire entitled "The Shark, or Lang Mills Detected." This subjected him to a criminal prosecution before the sheriff, in which he was convicted. But his prosecutors were not vindictive. He suffered only a few days' imprisonment, and the mortification of being obliged to burn his own poem on the stair fronting the jail. The folly of these attacks he deeply regretted; and many years afterwards, in America, we find him rebuking his brother for having brought with him copies of the offensive Paisley diatribes. "These," said Wilson, throwing the packet into the fire, "were the sins of my youth, and had I taken my good old father's advice, they never would have seen the light."

The mortification consequent on this event, combined with the disagreeable prominence he had attained in his native town as the advocate of

the French Revolution, were the main causes of the poet's leaving Scotland. And having made up his mind to the step, with the singleness of purpose which characterized him, he set about gathering the necessary funds, and for four months labored incessantly at the loom, confining the expenses of his living during that time, as we are informed, to *one shilling a-week.* He was thus able to save the sum necessary for the voyage, and embarked at Belfast in a ship bound for Newcastle, in the State of Delaware, where he arrived on the 14th July, 1794.

When the future ornithologist of his adopted country set foot on its shores, his prospects were as gloomy as may well be imagined. His passage-money had absorbed all his means, even to the last shilling. He had no friends, no letters of introduction, and his poetical talents, as sad experience had taught him, were little calculated to gain him favor or friends. But his was not the soul to be daunted by circumstances, however untoward; so he cheerfully shouldered his gun and marched towards Philadelphia—the same city which, some seventy years before, had been entered in similarly destitute circumstances by one of the greatest men of the eighteenth century—Franklin, of origin alike humble with the future ornithologist (like him, also, destined for the church), but who lived to exercise an influence on the affairs of the world greater than the greatest monarchs or ministers of his time. The reminiscence, so interesting

in the circumstances, could scarcely escape Wilson, and must have infused fresh courage and hope into his mind.

On arriving in the town, his first search was for weaving, but none was to be had. Chance threw him in the way of a countryman, who was in business as a copperplate-printer, from whom Wilson procured employment, which, however, was deserted on finding work at his own business. After a few months, the loom was again abandoned for his old occupation of peddler, in which capacity he traveled over a considerable part of New Jersey; meeting with more success, however, than had attended him in his own country. On his return from wandering, he opened a school, and for several years, in different places, he taught with great efficiency and success. To remedy the defects of his education, he began a course of systematic study, and among other acquisitions, succeeded in gaining a knowledge of mathematics, in which he proceeded so far as to be able to survey. After several unimportant removals, we find him appointed teacher of a union school in the township of Kingsessing, not far from Philadelphia. While resident here, he learned that his nephew, William Duncan (whose father was then dead), had landed in New York, with his mother and a large family of brothers and sisters; and knowing that his favorable representations of America had been the principal means of inducing his nephew to this perilous step, Wilson instantly set out on foot for

New York, a distance of one hundred miles, in order to assist in getting his relations comfortably settled. Having accomplished this object, the generous man returned on foot to the labors of the school-room; and, from all we can learn, thinking no more of the feat than any other ordinary act of duty.

It was also while residing at Kingsessing that Wilson became acquainted with a kindred spirit of the name of Bartram, an amiable, self-taught naturalist, who has been styled the American Linnæus of the period, and whose residence and botanic garden were happily situated in the vicinity of Wilson's schoolhouse. The love of nature, which had always characterized Wilson, here seems to have taken firm root; and from the feelings of general interest with which all the works of God were regarded, gradually rose a predilection for that branch of natural history, the pursuit of which was to immortalize his name. The nature of his employments at this period are beautifully described in a letter to his friend Bartram:—"I sometimes smile to think, that while others are immersed in deep schemes of speculation and aggrandizement, in building towns and purchasing plantations, I am entranced in contemplation over the plumage of a lark, or gazing, like a despairing lover, on the lineaments of an owl. While others are hoarding up their bags of money, without the power of enjoying it, I am collecting, without injuring my conscience or wounding my

peace of mind, those beautiful specimens of Nature's works that are for ever pleasing. I have had live crows, hawks, and owls; opossums, squirrels, snakes, lizards, &c., so that my room has sometimes reminded me of Noah's ark; but Noah had a wife in one corner of it, and, in this particular, our parallel does not altogether tally. I receive every subject of natural history that is brought to me; and, though they do not march into my ark from all quarters, as they did into that of our great ancestor, yet I find means, by the distribution of a few fivepenny *bits*, to make them find the way fast enough. A boy not long ago brought me a large basketfull of crows. I expect his next load will be bull-frogs, if I do n't soon issue orders to the contrary. One of my boys caught a mouse in school, a few days ago, and directly marched up to me with his prisoner. I set about drawing it the same evening, and all the while the pantings of its little heart showed it to be in the most extreme agonies of fear. I had intended to kill it, in order to fix it in the claws of a stuffed owl; but happening to spill a few drops of water near where it was tied, it lapped it up with such eagerness, and looked in my face with such an eye of supplicating terror, as perfectly overcame me. I immediately restored it to life and liberty. The agonies of a prisoner at the stake, while the fire and instruments of torture are preparing, could not be more severe than the sufferings of that poor mouse; and, insignificant as the object was, I felt at that

WILSON—THE ORNITHOLOGIST.

"One of my boys caught a mouse in school, a few days ago, and directly marched up to me with his prisoner. . . . I had intended to kill it, in order to fix it in the claws of a stuffed owl; but, happening to spill a few drops of water near where it was tied, it lapped it up with such eagerness, and looked in my face with such an eye of supplicating terror, as perfectly overcame me. I immediately restored it to life and liberty."—PAGE 90.

moment the sweet sensations that mercy leaves in the mind when she triumphs over cruelty." The first indication of his design to form an ornithological collection is found in a letter to a friend in Paisley, written in June, 1803. He says:—"Close application to the duties of my profession, which I have followed since November, 1795, has deeply injured my constitution; the more so, that my rambling disposition was the worst calculated of any one in the world for the austere regularity of a teacher's life. I have had many pursuits since I left Scotland—mathematics, the German language, music, drawing, &c.; and I am about to make a collection of all our finest birds."

Wilson's first designs, though but faint outlines of the magnificent plan he afterwards conceived, were sufficiently comprehensive to alarm his friends, who sought to dissuade him from an enterprise which, as they represented, and with much truth, only fortune and learned leisure could competently achieve. But the naturalist, having formed his plan, set to work with all the indomitable energy of his character, and in October of the year 1804, accompanied by his nephew and a friend, he began his first bird-seeking pilgrimage by a pedestrian tour to Niagara. The travelers had undertaken the journey too late in the season, and on their return were overtaken by winter, and had to travel a great part of the way through snow. The perseverance of his companions failed, but Wilson set forth alone with his gun and bag-

gage, and reached home safely, after an absence of fifty-nine days. Regarding this journey, he thus enthusiastically writes to his friend Bartram:—"Though in this tour I have had every disadvantage of deep roads and rough weather, hurried marches, and many other inconveniences; yet, so far am I from being satisfied with what I have seen, or discouraged by the fatigues which every traveler must submit to, that I feel more eager than ever to commence some more extensive expedition, where scenes and subjects entirely new, and generally unknown, might reward my curiosity; and where, perhaps, my humble acquisitions might add something to the stores of knowledge."

As an evidence of the strength of his resolution, he set himself to learn drawing and coloring, and the art of etching on copper. In these arts he made some progress, but meanwhile his worldly means were far from improving. His scholars fell off, till the number could not support him; but such was the estimation in which Wilson was held, that the trustees of the school, on learning the state of affairs, generously subscribed for a sufficient number of pupils to maintain him.

In the beginning of 1806, Wilson received intimation that the United States Government intended despatching a party of scientific men to explore the valley of the Mississippi. This was an expedition in which Wilson would have rejoiced to embark, and accordingly he addressed a letter to Jefferson, offering his service; but much

to the chagrin of the eager naturalist, the letter was never answered.

A brighter era at length dawned on the hitherto unfortunate projector. A bookseller of Philadelphia, Mr. Samuel Bradford, "being about to publish an edition of Rees' Cyclopædia, Wilson was recommended to him as a person well qualified to superintend the work, and his services were accepted. This was an occupation more congenial to his mind, and it gave him a better opportunity of pursuing his studies, being free from the harassing cares of a teacher's life." The connection was of signal service to Wilson; for on his explaining to Mr. Bradford his views regarding "The American Ornithology," that gentleman undertook the risk of publication. One material difficulty being thus removed, Wilson set himself for some months heartily and unremittingly to the duties of author; and in the month of September, 1808, the first volume of his great work made its appearance.

The design and execution of the work have been truly described as magnificent. But although it took the public completely by surprise, yet the patronage was so meagre, that the enterprising editor was fain to call in on its behalf the old resource of his peddler craft—canvassing for subscribers; and, with this view, he set out on a tour through the Southern States, which lasted for six months, but was only slightly productive of the encouragement he was in quest of, though doubtless the naturalist found this and similar expedi-

tions of immense advantage in the accumulation of materials. Of this expedition, Wilson thus writes in a letter to a friend: "I have labored with the zeal of a knight-errand in exhibiting this book of mine wherever I went—traveling with it like a beggar with his bantling from town to town, and from one country to another." The second volume was published in January, 1810, fifteen months after the first was issued; and immediately on its appearance, Wilson again started on an extensive land and water journey, including a sail of 720 miles down the river Ohio. Contrary to the advice of his friends, the daring ornithologist decided on attempting this dangerous voyage alone and unattended. The outset of the expedition is thus graphically described: "My stock of provisions consisted of some biscuit and cheese, and a bottle of cordial presented me by a gentleman of Pittsburgh; my gun, trunk, and greatcoat occupied one end of the boat; I had a small tin, occasionally to bale her, and to take my beverage from the Ohio with; and bidding adieu to the smoky confines of Pitt, I launched into the stream, and soon winded away among the hills that everywhere enclose this noble river. The weather was warm and serene, and the river like a mirror, except where floating masses of ice spotted its surface, and which required some care to steer clear of; but these, to my surprise, in less than a day's sailing, totally disappeared. Far from being concerned at my new situation, I felt my heart ex-

pand with joy at the novelties which surrounded me; I listened with pleasure to the whistling of the redbird on the banks as I passed, and contemplated the forest scenery as it receded, with increasing delight. The smoke of the numerous maple sugar camps, rising lazily among the mountains, gave great effect to the varying landscape; and the grotesque log cabins, that here and there opened from the woods, were diminished into mere dog-houses by the sublimity of the impending mountains." This solitary voyage, "exposed to hardships all day, and hard berths all night, to storms of rain, hail, and snow, for it froze severely almost every night," lasted some three weeks; and then mooring his boat in Bear Grass Creek, at the rapids of the Ohio, and "leaving his baggage to be forwarded by a wagon, he set out on foot to Lexington, seventy-two miles further, where, on the 4th of May, he hired a horse and departed on a journey towards Natchez, with a pistol in each pocket, and his fowling-piece belted across his shoulders. During this long and hazardous journey he experienced great hardships, sometimes having to swim perilous creeks, and having to encamp for thirteen different nights in the woods alone. To these inconveniences was added a new attack of the dysentery, when far amidst execrable swamps. 'My complaint,' he writes, 'increased so much that I could scarcely sit on horseback, and all night my mouth and throat were parched with burning thirst and

fever. On Sunday I bought some eggs, which I ate, and repeated the dose at mid-day and towards evening. I found great benefit from this simple remedy, and inquired all along the road for fresh eggs; and for a week made them almost my sole food, until I completed my cure.' He was also in danger of a tornado, attended with a drenching of rain. Trees were broken and torn up by the roots, and those which stood were bent almost to the ground; limbs of trees flew whirling past him; and his life was in such danger that he was astonished how he escaped, and declared he would rather take his chance in a field of battle, than in such a tornado again. Nevertheless he seems to have enjoyed his journey, and reached Natchez on the 17th of May. After enjoying at this place the kind hospitality of William Dunbar, at whose residence he remained a few days, he proceeded on his journey, and on the 6th of June arrived at New Orleans, distant from Natchez two hundred and fifty-two miles. But as the sickly season was fast approaching, he did not consider it safe to remain there long; and on the 25th of the month he took passage for New York, where he landed on July the 30th. He had left home on the 30th of January, and all his expenses to this period amounted only to four hundred and fifty dollars. He arrived in Philadelphia on the 2d of August, after an absence of seven months, and immediately applied himself with increasing industry to the preparation of his third volume."

From this period to the year 1812, Wilson undertook several other journeys, partly with the object of procuring subscribers, and partly also to gather fresh materials for his publication, which, meanwhile, was rapidly proceeding, and had attained its seventh volume early in 1813. The carrying forward of the grand project which filled the mind of Wilson, would, even to a learned body with ample materials at command, have been sufficiently arduous and exciting; and what then must it have been to a single individual who had all his specimens to collect, arrange, and make drawings from, and afterwards, in some cases, to etch the plates and color the engravings? The health of the ardent naturalist gradually gave way under the extraordinary exertion, but he would hear of no respite from his labors; "he denied himself rest, and spent the whole of the day in unceasing exertion." To the remonstrances of his friends he calmly said, "Life is short, and nothing can be done without exertion." The eighth volume of his work was announced to appear in November, 1812, and another volume was intended to conclude it; but the gifted author was not destined to see the completion of his project. Severe labor and anxiety had now so far undermined his constitution as to predispose it to yield under the first extraordinary exertion, and to a person of Wilson's enthusiastic temperament the occasion soon presented itself. The cause which led to his early and lamented death was

this: "Sitting one day conversing with a friend, a rare bird, which he had long been desirous to possess, happened to fly past the window. The moment Wilson beheld it, he seized his gun, and after an arduous pursuit, during which he swam across a river, succeeded in killing it; but the consequence was a severe cold, followed by an attack of dysentery, which, after ten days' duration, ended his mortal career. He died at nine o'clock on the morning of the 23d August, 1813, in his 48th year, and was interred on the following day—the whole of the scientific men of the city, and the clergy of all denominations, attending the mournful scene. We are told, also, that the Columbian Society of Fine Arts walked in procession before the hearse, and for thirty days wore crape round their arms.

Thus ended the life of this gifted man. Of his personal character we have said little, leaving it to be gathered from the events of his chequered career. From first to last he maintained his independence in thought and action, and, if he ever strove after the gifts of fortune, it was only, like Burns, "for the glorious privilege of being independent." His great work, which cost him so many years of the most arduous toil and an anxiety ever on the stretch, brought him nothing more substantial than fame—of pecuniary renumeration he received nothing, except *payment for coloring his own plates.* "The American Ornithology" ranks amongst the first works on

natural history which any age or nation ever gave birth to, and is not less remarkable for the beauty and fidelity of the illustrations than for the admirable spirit and faithfulness of the descriptions—a proud triumph for the Paisley weaver, and due to his indomitable energy and perseverance.

Wilson's intense delight in the feathered songsters of the grove was beautifully portrayed in the wish he had more than once expressed, "that he might be buried in some rural spot where the birds might sing over his grave."

BENJAMIN WEST, THE ARTIST.

Benjamin West, the earliest and most distinguished of American painters, was born in Springfield, Chester county, Pennsylvania, on the 10th of October, 1738. He was the youngest of nine children, of excellent Quaker parents, and at a very early age gave evidence of a genius for Art. When only seven years of age, while keeping flies from the sleeping baby of his eldest sister, he was prompted to attempt a sketch of the babe in black and red ink, which were at hand. The portrait was so accurate that his mother, upon returning, snatched the paper from his hand, exclaiming, "I declare he has made a likeness of little Sally." His parents encouraged his efforts, and from the Indians he learned the use of the red and yellow colors with which they painted their belts and ornaments. This was, however, after he had advanced somewhat in his artist career. At first, the colors he used were principally charcoal and chalk, mixed with the juice of berries, while the material

for his brushes were drawn from the tail of a cat With these colors and implements, when only nine years of age, he drew on a sheet of paper the portraits of a neighboring family. When twelve years of age he accomplished a more difficult task, and drew a portrait of himself. But the knowledge which he had gained from the Indians enlarged his field of operations. His mother's indigo bag supplied him with blue, and he now had the three primary colors to work with.

"Such was the juvenile beginning of the greatest historical painter of the last century; such were the first buddings of the genius of that boy, who would not ride in company of another, because he aspired to nothing greater than a tailor's shopboard.

"'Do you really mean to be a tailor?' asked little West.

"'Indeed I do,' replied his boy-companion.

"'Then you may ride alone,' exclaimed the young aspirant, leaping to the ground. 'I mean to be a painter, and be a companion of kings and emperors. I'll not ride with one willing to be a tailor!'".

At the age of sixteen, it was determined that Benjamin should become a painter. The pursuit of such an art was not in accordance with the discipline of the Quakers. A meeting was called and a consultation held. One of the assembly arose and said: "God hath bestowed on this youth a genius for Art; shall we question His wisdom?

I see the Divine hand in this. We shall do well to sanction the art and encourage this youth." The women of the assembly then rose up and kissed the young aspirant: the men, one by one, laid their hands on his head, and thus "Benjamin West was solemnly consecrated to the service of the Great Art."

Young West now went to Philadelphia, in order that he might pursue his studies with the advantages which that city afforded. He had free access to all the pictures. In the intervals of his portait painting, he made copies of celebrated pictures, especially of a Murillo in Governor Hamilton's collections. A Saint Ignatius was next copied with enthusiasm. His application now became intense, and the result was an attack of sickness. While stretched upon his sick bed in a darkened room, the light entering only through the cracks in the window-shutters, an incident occurred which illustrates the young artist's keen powers of reasoning and observation.

"As he was lying in bed, slowly recovering from a fever, he was surprised to see the form of a white cow enter at one side of the roof, and, walking over the bed, gradually vanish at the other. The phenomenon surprised him exceedingly, and he feared that his mind was impaired by his disease, which his sister also suspected, when, on entering to inquire how he felt himself, he related to her what he had seen. She soon left the room, and informed her husband, who accompanied her

back to the apartment; and as they were both standing near the bed, West repeated the story, exclaiming that he saw, at the very moment in which he was speaking, several little pigs running along the roof. This confirmed them in the apprehension of his delirium, and they sent for a physician; but his pulse was regular, the skin moist and cool, the thirst abated, and, indeed, everything about the patient indicated convalescence. Still, the painter persisted in his story, and assured them that he then saw the figures of several of their mutual friends passing on the roof, over the bed, and that he even saw fowls picking, and the very stones of the street. All this seemed to them very extraordinary, for their eyes, not accustomed to the gloom of the chamber, could discover nothing; and the physician himself, in despite of the symptoms, began to suspect that the convalescent was really delirious. Prescribing, therefore, a composing mixture, he took his leave, requesting Mrs. Clarkson and her husband to come away and not disturb the patient. After they had retired, the artist got up, determined to find out the cause of the strange apparitions which had so alarmed them all. In a short time he discovered a diagonal knot-hole in one of the window-shutters, and upon placing his hand over it, the visionary paintings on the roof disappeared. This confirmed him in an opinion that he began to form, that there must be some simple natural cause for what he had seen, and having thus ascertained the way in

which it acted, he called his sister and her husband into the room, and explained it to them. He profited by this investigation; made a box with one of its sides perforated, and thus, without ever having heard of the invention, contrived a *camera obscura.*

From Philadelphia West went to New York, where he remained during a period of eleven months, industriously pursuing his profession—working at portraits for his support, and in such intervals as he could secure, laboring with undiminished zeal and enthusiasm at original compositions. His successes now determined him to visit Italy. Although almost self-taught, and with no advantages in the way of fortune or birth, young West had been more fortunate, had advanced more smoothly on the road to fame and position, than is common with those who essay the paths of ambition. His genius had been recognized from the beginning; friends had not withheld their aid or countenance; he had even succeeded in accumulating means sufficient for his contemplated visit to the classic shores of Italy. Among the earliest of his friends was the father of the immortal General Wayne. This gentleman saw the first crude-sketches of the boy, and purchased some of his drawings. A Mr. Pennington also encouraged and patronized the lad; and when he removed to Philadelphia, he there experienced no lack of supporters and friends. When he determined to sail for Italy, he was engaged upon the portrait of Mr. Kelly, a merchant of New York.

To this gentleman he mentioned his plan, who approved of it, and gave him a letter to his agents in Philadelphia, from which place he intended to sail. West presented the letter, and was surprised to find that it contained an order for fifty guineas—"a present to aid in his equipment for Italy." These instances prove that West did not experience that neglect and poverty, which so frequently cloud the dawning efforts of genius.

West embarked in 1760; reached Leghorn in safety, and thence proceeded to Rome, which he entered on the 10th of July, 1760. With regret it must be said that he never returned to America.

Among West's letters of introduction was one to Cardinal Albani, a great connoisseur, although nearly blind. An amusing anecdote is related of his interview with this personage. The Cardinal passed his hand over the face of the young artist, in order to judge of his features.

"This young savage," said he, "has good features; but what is his complexion? Is he black or white?"

The gentleman who introduced West replied that he was "very fair."

"What!" exclaimed the Cardinal; "as fair as I am?"

The interrogation caused no little mirth, for the Cardinal was not remarkable for his beauty in this particular.

West remained three years in Italy, visiting Florence, Bologna, and Venice, and everywhere

meeting the most gratifying encouragement, and the amplest recognition of his genius. He now made his preparations for returning to America, but first determined to visit England, where he arrived in August, 1763. In London he found so much encouragement, that, contrary to his first intention, he determined to settle there. He made the acquaintance of Sir Joshua Reynolds, Nelson the landscape painter, Dr. Johnson, Mr. Burke, and other distinguished personages in that age of great men: he was also introduced to the young king George III., who commanded him to paint *The Departure of Regulus.* He became established in popular favor almost immediately. Commissions poured in upon him. His rank, as among the first of the living historical painters, became everywhere conceded. Lord Rockingham offered the successful artist three thousand five hundred a-year, if he would undertake to embellish his family mansion with pictures. West declined. He wished to keep before the public.

Prior to his departure from America, he had won the affections of a young lady of the name of Shewell. His position was now secured, and he desired to make her his wife. At first he purposed to return to America with the object of effecting the marriage, but this was prevented by his father, who took the bride to England, where the marriage was consummated, West then being twenty-seven years of age.

In 1768, West, in conjunction with Sir Joshua

Reynolds and the King, established the Royal Academy. Sir Joshua was the first president, but, after his death, West was unanimously elected to that honorable position, which he held to the time of his death.

We cannot, in this brief sketch, attempt to dwell upon the various productions of West's prolific pencil. His *Death of Wolfe*, one of his earlier efforts, achieved a world-wide reputation, not only as a work of art, but as exhibiting a broad innovation on the customs and usages of artists. Up to that period, it had been customary to costume the characters in modern heroic pieces in the flowing robes of ancient Greek and Roman heroes. West rejected the teaching, and in spite of many remonstrances, he depicted the characters in this celebrated picture in the actual dress of the time. The result justified the attempt. It was a success. Even Reynolds, who had resolutely opposed the innovation, exclaimed, when he saw the painting, "West has conquered. I retract. This picture will occasion a revolution in art." The King's admiration for the artist was almost unbounded. He gave West an order for painting thirty grand pictures, illustrative of revealed religion, for a new chapel at Windsor Castle. West designed them all, and completed twenty-eight. "A work so varied, so extensive and so noble, was never undertaken by any painter;" but when insanity clouded the mind of the king, West was neglected, and the series were discontinued. But our artist, in

losing royal patronage, still retained the favor of the public. He never lacked commissions; and as he labored diligently and with earnestness, the number of his productions were immense. It has been stated, that to exhibit all his works it would take a gallery four hundred feet long, fifty in breadth, and forty in height. The sums that he received were large, not less in the aggregate, during his residence in England, than $500,000.

In December, 1817, occurred the death of Mrs. West, and three years later, in the eighty-second year of his age, the artist departed this life. He was buried with great pomp in St. Paul's Cathedral.

"The last illness of Mr. West," says Mr. Galt, "was slow and languishing. It was rather a general decay of nature than any specific malady; and he continued to enjoy his mental faculties in perfect distinctness upon all subjects as long as the powers of articulation could be exercised. To his merits as an artist and a man I may be deemed partial, nor do I wish to be thought otherwise. I have enjoyed his frankest confidence for many years, and received from his conversation the advantages of a more valuable species of instruction, relative to the arts, than books alone can supply to one who is not an artist. While I therefore admit that the partiality of friendship may tincture my opinion of his character, I am yet confident that the general truth of the estimate will be admitted by all who knew the man, or are capable to appreciate the merits of his works.

"In his deportment Mr. West was mild and considerate; his eye was keen, and his mind apt; but he was slow and methodical in his reflections, and the sedateness of his remarks must often, in his younger years, have seemed to strangers singularly at variance with the vivacity of his look. That vivacity, however, was not the result of any particular animation of temperament; it was rather the illuminations of his genius; for, when his features were studiously considered, they appeared to resemble those which we find associated with dignity of character in the best productions of art. As an artist, he will stand in the first rank; his name will be classed with those of Michael Angelo and Raffaelle; but he possessed little in common with either. As the former has been compared to Homer and the latter to Virgil, in Shakspeare we shall perhaps find the best likeness to the genius of Mr. West. He undoubtedly possessed but in a slight degree that energy and physical expression of character in which Michael Angelo excelled, and in a still less degree that serene sublimity which constitutes the charm of Raffaelle's great productions; but he was their equal in the fullness, the perspicuity, and the propriety of his compositions. In all his great works, the scene intended to be brought before the spectator is represented in such a manner that the imagination has nothing to supply. The incident, the time, and the place are there as we think they must have been; and it is this wonderful force of conception which

renders the sketches of Mr. West so much more extraordinary than his finished pictures. In the finished pictures we naturally institute comparisons in coloring, and in beauty of figure, and in a thousand details which are never noticed in the sketches of this illustrious artist; but, although his powers of conception were so superior, equal in their excellence to Michael Angelo's energy or Rafaelle's grandeur, still, in the inferior departments of drawing and coloring he was one of the greatest artists of his age. It was not, however, till late in life that he executed any of those works in which he thought the splendor of the Venetian school might be judiciously imitated. At one time he intended to collect his works together, and to form a general exhibition of them all. Had he accomplished this, the greatness and versatility of his talents would have been established beyond all controversy; for unquestionably he was one of those great men whose genius cannot be justly estimated by particular works, but only by a collective inspection of the variety, the extent, and the number of their productions."

ASTOR, THE MILLIONAIRE.

In July, 1763, the worthy and profound bailiff of the village of Waldrop, near Heidelberg, in the duchy of Baden, had a son born unto him. He had had several sons, but this particular one was designated John Jacob, two names with wonderful opposite significations. John is one of your soft, gentle names, full of urbanity, with a touch of dignity; it means gracious, and would suit a condescending monarch well. Jacob, on the other hand, is just the name for a money-maker; it is quite a pecuniary name. The wealth of Laban of old consisted of flocks; and Jacob manifested as much adroitness in the accumulation of these as in the supplanting of Esau. Jacob means a supplanter; that is, one who trips up somebody's heels and takes his place. John Jacob Astor began life with auguries of success. He was a German; had a worthy, cautious, and wise father, who did not spare him of good advice, and equally good example. The Germans, like the Scotch,

are brought up with a predisposition for emigration. One of the German tendencies is to leave home. Preparatory to departing from the place of his nativity, John Jacob Astor had been instructed in what was right and wrong in a worldly sense; so that, when he packed up his scanty wardrobe and took leave of Waldrop, he determined that honesty, industry, and total abstinence from the immoral practice of gambling, should mark his conduct through life. At eighteen years of age John Jacob steered his course for London, where he had a brother resident. With a few wearables in his bundle—coarse home-made clothes, blue cap, keel, and heavy hobnailed shoes—he landed in the great city. He had two brothers who had emigrated. One was a musical instrument maker in London, the other a butcher in New York; but he does not seem to have thriven under the auspices of the brother in Britain, during the three years that he remained in England. This residence was of advantage to him, however, for he acquired the English tongue, which was indispensable to him in his new sphere of action.

The revolutionary war had just ceased; eight years of fiery ordeal had been passed through; the Americans had attained independence, and the hopeful and aspiring youth of Europe were hastening to the now open ports of the New World. With various articles of manufacture as his whole wealth, among the most valuable of which were seven flutes, presented to him by his brother, John

Jacob Astor embarked in November, 1784, as a steerage passenger on board of an emigrant ship bound for the United States. The voyage was long and tedious, the ship being retarded by ice for nearly three months in the Chesapeake. During this protracted detention in the river, the passengers went on shore occasionally, and Astor had time to form and perfect a friendship with a young countryman of his own, a furrier to trade, who induced him to turn his attention to his art, and generously offered to assist him in the acquirement thereof, and to go to New York with him. When he arrived at New York, the young German sold his flutes and other property, and immediately invested the small capital arising therefrom in furs. These he carried to London and sold; and then, returning to New York, high in hope, he apprenticed himself to the fur trade, in Gold-street, where he commenced beating skins. He had not been long here until he sufficiently understood the trade to embark in it as a capitalist; and he had at the same time manifested so much diligence and industry as to obtain the notice of Robert Bowne, a good old Quaker, who carried on an extensive business in New York as a furrier. Employed by Bowne as clerk, Astor recommended himself so highly by his industry and probity as to command the respect of the old Quaker, and his entire confidence. In this situation he made himself thoroughly acquainted with the nature of the fur trade, coming in contact with the agents, and ob-

taining a complete knowledge of the methods and profits of the traffic.

When the revolutionary war closed, Oswego, Detroit, Niagara, and other posts, were in the hands of the British; and as these were the entrepots of the western and northern countries, the fur trade had languished after their capture and during their detention. The traders had been either driven away or drafted into the armies; the trappers had ranged themselves on either side of the political contention; and the Indians obtained more fire-water and calico for the use of their mercenary rifles and tomahawks from Great Britain, in this her domestic quarrel with the colonists, than if they had employed them on beavers and squirrels. After much negotiation and surveying, and the advancement and consideration of claims, these posts were conceded to the United States, and Canada was open to the fur trade. Astor had received from his brother Harry, a rich butcher in Bowery, an advancement of a few thousand dollars; these he had already embarked in the fur trade, in 1794, and shortly afterwards the British retired from the west side of St. Clair, opening up to the enterprising sons of America the great fur trade of the west. The cautious, acute German saw that the posts now free would soon be thronged by Indians eager to dispose of the accumulated produce of several years' hunting, and that the time was now come when he was certain to amass a large fortune by

the traffic. He immediately established agencies, over which he exercised a sort of personal superintendence, visiting the stations sometimes, but chiefly devoting himself to the New York business. The result verified the sagacious predictions of the adventurous trader, for in six years he is said to have accumulated the enormous sum of two hundred and fifty thousand dollars. This sum was not stored up, but invested in stock which was likely to yield large returns.

The British fur companies had, however, built their block-forts at almost every eligible site on the rivers of the northern and south-western parts of the American continent, and were soon likely to monopolize the whole of the fur trade, unless some bold measures were adopted to rescue it from them. This Astor attempted in 1803, by establishing the American Fur Company. The hardy adventurers who entered into this project, boldly pushed their outposts far into the hitherto unknown prairie, and raised their forts upon the banks of yet unexplored rivers. Tribes unused to see the white man, and who only knew him through vague tradition, or in a passing tale from some visitor of another tribe, now saw and knew him, and brought their abundance of beaver, otter, and buffalo skins, and laid them at his feet for muskets, powder, and fire-water.

If there is a genius in money-making, Astor surely possessed it. He had that insatiable thirst

peculiar to genius—that desire that expands and rises with success. The American Fur Company was no sooner established and in operation than he cast his sagacious, cunning little eyes towards the region stretching from the Rocky Mountains to the ocean. He proposed to the United States government the establishment of a line of forts along the shores of the Pacific Ocean and on the Columbia river, in order to take from the hands of the British all facilities for establishing a trade west of the Rocky Mountains. The project was agreed to; and, in 1810, sixty men, under the command of a hardy and adventurous leader (W. P. Hunt), established the first post at the mouth of the Columbia, which took its designation of Astoria from the projector of the scheme. This became the germ of the budding State of Oregon. Then commenced a series of operations on a scale altogether beyond anything hitherto attempted by individual enterprise. The history is full of wildest romance; and the chaste pen of Irving has woven the wonderful incidents into a charming narrative. We cannot even glance at it in this brief memoir. The whole scheme was the offspring of a capacious mind; and had the plans of Mr. Astor been faithfully carried out by his associates, it would, no doubt, have been eminently successful. But the enterprise soon failed. During the war a British armed sloop captured Astoria, and the British fur traders entered upon the rich field which Mr. Astor had planted, and reaped the

golden harvest. When the war had ended, and Astoria was left within the domain of the United States by treaty, Mr. Astor solicited the government to aid him in recovering his lost possessions. Aid was withheld, and the grand scheme of opening a highway across the continent, with a continuous chain of military and trading posts, which Mr. Astor laid before President Jefferson, became a mere figment of history, over which sound statesmen soon lamented.

From the period of the establishment of the American Fur Company, Mr. Astor had not only covered an immense tract of inland country and coast with the depots of his wealth, but he had also multiplied the number of his ships until they exceeded the marine of some of the smaller European States. He had ships freighted with furs trading to the ports of France, England, Germany, and Russia, and carrying peltries to Canton, whence they came laden with teas, silks, spices, and the other products of the East. On every sea, laden with the richest cargoes, and consigned to every port of note, were the vessels of this German lad, who, in 1784, with only a few flutes and several other articles in his chest, landed from the steerage of an English emigrant ship upon the quay of New York. With the sagacity of a Franklin, Astor purchased a good deal of the land lying round New York. Perceiving the rapid growth of the city, he knew that this land, prospectively, was of immense value, and for a long time he invested

two-thirds of his yearly income in the purchase of an estate, which he took care never to mortgage. Through the natural growth of the city, the returns from his real estate yearly increased till it reached an enormous amount. Speculating upon the settlement of Iowa, Missouri, Wisconsin, and other parts of the west, he purchased immense tracts at the goverment price, which, of course the settlers will be constrained to take at an advance. The labor of generations yet unborn, the inhabitants of nations yet unknown, is mortgaged in this way to the descendants of John Jacob Astor. From indigence equal to that of the poor itinerant lads who perambulate our streets with organs, this man rose to be second only to the Rothschilds in wealth, in a shortness of time almost incredible.

It must be mentioned to the honor of this plethoric old Crœsus, however, that he lent his aid to many works of public utility and philanthropy; he gave 350,000 dollars for the foundation of a library in New York, the interest to be expended in the erection of a building and the employment of agents for the purchase of books. He also gave a large sum of money to his native town, for the purpose of founding an institution for the education of the young, and as a retreat for indigent aged persons. The *Astor Library* in New York, and the *Astor House* in Walldorf, were both opened in 1854. The following amusing anecdote is told of him, in the double character of a patron of

literature and parsimonious money-holder, which appears to be exceedingly characteristic: Among the subscribers to Audubon's magnificent work on ornithology, the subscription price of which was 1,000 dollars a copy, appeared the name of John Jacob Astor. During the progress of the work, the prosecution of which was exceedingly expensive, M. Audubon, of course, called upon several of his subscribers for payments. It so happened that Mr. Astor (probably that he might not be troubled about small matters) was not applied to before the delivery of all the letterpress and plates. Then, however, Audubon asked for his thousand dollars; but he was put off with one excuse or another. "Ah, M. Audubon," would the owner of millions observe, "you come at a bad time; money is very scarce; I have nothing in bank; I have invested all my funds." At length, for the sixth time, Audubon called upon Astor for his thousand dollars. As he was ushered into the presence, he found William B. Astor, the son, conversing with his father. No sooner did the rich man see the man of art, than he began, "Ah, M. Audubon, so you have come again after your money. Hard times, M. Audubon—money scarce." But just then, catching an inquiring look from his son, he changed his tone: "However, M. Audubon, I suppose we must contrive to let you have some of your money, if possible. William," he added, calling to his son, who had walked into an adjoining parlor, "have we any money at all in the

bank?" "Yes, father," replied the son, supposing that he was asked an earnest question pertinent to what they had been talking about when the ornithologist came in, "we have two hundred and twenty thousand dollars in the Bank of New York, seventy thousand in the City Bank, ninety thousand in the Merchants', ninety-eight thousand four hundred in the Mechanics', eighty-three thousand——." "That'll do, that'll do," exclaimed John Jacob, interrupting him. "It seems that William can give you a check for your money."

Mr. Astor married shortly after his settlement in America, and had four children—two sons and two daughters. He died on 29th March, 1848, at his residence, Broadway, aged eighty-five years.

The singular life and growth in wealth of John Jacob Astor offers many interesting reflections. There is assuredly scarcely another individual who has contrived to accumulate so much of the world's capital. The Rothschilds and Barings have, it is true, acquired magnificent fortunes through usury, but the process has been infinitely more tedious than that of Astor. Their money was acquired through the exigencies of exchequers. Astor's was gained in trade—by what may be termed a gigantic system of concentration, through which the wealth of savage tribes was made to flow by semi-civilized agents into the coffers of the prime mover of the system.

HUTTON, THE BOOKSELLER.

William Hutton, according to his very interesting autobiography, was born in Derby, England. He remarks that there were no prognostications prior to his birth, except that his father, a day before, was chosen constable. But a circumstance occurred, which, he believes, never had happened before in his family—the purchase of a cheese, price half a guinea, so large as to merit a wheel-barrow to bring it home. When about two years and a half old he was sent to Mount Sorrel, where he had an uncle, who was a bachelor; also a grandmother who kept his house. With this uncle, and three crabbed aunts, all single, who resided together at Swithland, about two miles distant from his uncle's, he lived alternately for about fifteen months. Here he was put into breeches; but he was considered an interloper, and treated with much ill-nature. One of his aunts was unhappily addicted to drinking; and he says, that upon one occasion when he was out with her, she

called at an ale-house and got so very tipsy that she could neither stand nor walk. This was a scene that often occurred, and though he was very young, it seems to have made such an impression upon him as to cause him to look ever afterwards upon this vice with disgust and abhorrence. His father, too, was so given to the same debasing habit that he squandered the pittance he was able to earn as a journeyman wool-comber, while his wife and family were oftentimes nearly starved for want of bread. Between the age of four and six, Hutton, by some contrivance or other, was sent to school, where he was most harshly treated by his teacher, who often took occasion to beat his head against the wall, holding it by the hair, but without being able to drive any learning into it, for he hated all books but those containing pictures. This was the only schooling he ever had.

When Hutton was six years old, consultations were held about fixing him in some employment for the benefit of the family. Winding quills for the weaver was mentioned, but this was dropped. Stripping tobacco for the grocer, in which he was to earn four-pence a week, was also proposed; but it was at last concluded that he was too young for any employment. The year following, however he was placed in a silk mill in the town of Derby, where for seven years he had to work; rising at five in the morning, summer and winter; submitting to the cane whenever his master thought proper to make use of it; the constant companion of

the most rude and vulgar of the human race; never taught by nature, and never wishing to be taught. In the year 1731, about Christmas, there was a very sharp frost, followed by a thaw; and another frost, when the streets were again glazed with ice. On awaking one night it seemed daylight. Hutton rose in tears, being fearful of punishment, and went to his father's bedside to ask what was the clock. He was told it was about six. He then darted out in terror; and from the bottom of Fall-street to the top of Silkmill Lane, not 200 yards, he fell down nine times. Observing no light in the mill, he perceived it was still very early, and that the reflection of the snow into his bed-room window must have deceived him. As he was returning home it struck two.

On the 9th of March, 1731, the youth was so unfortunate as to lose his mother. After her death his father gave up housekeeping, sold the furniture, and spent the money—took lodgings for himself and children with a widow, who had four of her own. His mother dead, his father continually at an ale-house, and himself among stangers, his life was forlorn indeed! He was almost without a home, nearly without clothes, and his cupboard, we need scarcely add, was scanty enough. At one time, he fasted from breakfast one day till noon the next, and then only dined upon flour and water boiled into a hasty-pudding. He was also afflicted with the hooping-cough and with boils. His master at the

mill was very cruel to him; he made a severe wound in his back when beating him with a cane. It grew gradually worse. In a succeeding punishment the point of the cane struck the wound, which brought it into such a state that mortification was apprehended. His father was advised to bathe him in Keddleston water. A cure was effected, but he continued to carry the scar. When his seven years' servitude at the silk mill had expired, it was necessary to think of some other trade. Hutton wished to be a gardener, but his father opposed this, and to save himself expense and trouble turned him over for another term of years to his brother, a stocking-maker at Nottingham. On being transferred from Derby to Nottingham, he did not find that his condition was much improved. His uncle acted in a very friendly manner towards him, but his aunt was mean and sneaking, and grudged him every meal he ate. She kept a constant eye upon the food and the feeder. This curb galled his mouth to that degree, that he never afterwards ate at another's table without fear. He had also to work over-hours, early and late, to gain a trifle to clothe himself with; but so little was he able to earn, that during even the severest part of the winter, he was obliged to be content with a light thin waistcoat, without a lining; as for a coat, he could not possibly get money enough to purchase one. On the 12th of July, 1741, the ill treatment he received from his uncle in the shape of a brutal

HUTTON—THE BOOKSELLER.

"He had only twopence in his pocket, a spacious world before him, and no plan of operation."

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flogging, with a birch broom-handle of white hazel, which almost killed him, caused him to run away. He was then in his seventeenth year, and was badly dressed, nearly five feet high, and rather of Dutch make. He carried with him a long narrow bag of brown leather, that would hold about a bushel, in which was packed up a new suit of clothes; also a white linen bag which would hold about half as much, containing a sixpenny loaf of the coarsest bread; a bit of butter wrapped in the leaves of an old copy book; a new Bible worth three shillings; one shirt; a pair of stockings; a sun-dial; his best wig carefully folded and laid at the top, that by lying in the hollow of the bag it might not be crushed. The ends of these two bags being tied together, he flung them over his left shoulder, rather in the style of a cock-fighter. Being unable to put his hat into the bag, he hung it to the button of his coat. He had only twopence in his pocket, a spacious world before him, and no plan of operation. He carried neither a light heart nor a light load; and all that was light about him was the sun in the heavens and the money in his pocket. He steered his course to Derby, and near to that town he slept in a field. The next morning he arrived at Litchfield, and espying a barn in a field, he thought it would afford him a comfortable shelter; on approaching it, however, and trying the door, he found it was locked. He then went in search of another lodging, leaving his bags be-

hind him; to his horror, on returning for them, he discovered that they had been stolen. Terror seized him, he roared after the rascal, but might as well have been silent, for thieves seldom come at call. Running, roaring, and lamenting about the fields and roads occupied some time. He was too deeply plunged in distress to find relief in tears. He described the bags and told the affair to all he met; and from all he found pity or seeming pity, but redress from none. He saw his hearers dwindle away with the summer twilight, and by eleven o'clock he found himself in the open street, left to tell his mournful tale to the silent night. It is not easy to conceive a human being in a more forlorn situation. His finances were nothing; he was a stranger to the world, and the world was a stranger to him; no employment, nor likely to procure any; he had neither food to eat nor a place to rest; all the little property he had upon earth had been taken from him; nay, even *hope*, that last and constant friend of the unfortunate, well-nigh forsook him. In this miserable state of destitution he sought repose upon a butcher's block. Next day he continued his way to Birmingham, and on arriving there he was much struck with the bustle and alacrity of the people. He little thought then, that in the course of nine years he should become a resident in it, and thirty-nine years afterwards its historian. Here he made various unsuccessful applications for work. At night he sat down to rest upon the

north side of the Old Cross, near Philip Street—the poorest of all the poor belonging to that great parish, of which, twenty-seven years afterwards, he became overseer. He sat under that roof a silent, oppressed object, where, thirty-one years afterwards, he sat to determine differences between man and man. He next day proceeded to Coventry, where he slept at the Star Inn, not as a chamber guest, but a hay-loft one. Not being able to procure any work, he then steered his course to Derby; and finally, it was arranged that he should return to Nottingham again, which he accordingly did. His wretched and unhappy ramble had damped his rising spirit—it sunk him in the eyes of his acquaintance, and he did not recover his former balance for two years. It also ruined him in point of dress, for he was not able to re-assume his former appearance for a long time.

Hutton took a fancy to music, and purchased a bell-harp. This was a source of pleasure during many years. For six months he used every effort that ingenuity could devise to bring something like a tune out of this instrument; still his progress was but slow. Like all others, however, who ever have succeeded in any art or pursuit, perseverance was his motto, and he kept the following couplet in his memory:

> "Despair of nothing that you would attain,
> Unwearied diligence your point will gain;"

and the difficulties that he at first had to contend with soon vanished.

As soon as his second apprenticeship was completed, Hutton continued with his uncle as a journeyman, in which capacity he was able to save a little money. Having contracted a habit of reading what books came in his way, he was now enabled better to gratify this taste, by purchasing a few works. Among others he bought three volumes of the "Gentleman's Magazine," which, being in a tattered state, he contrived to bind. As the stocking trade was very bad, and would not support him, he contrived, with considerable difficulty, to learn the art of bookbinding, and after the most devoted attention to it, he managed to become pretty expert at it. In the year 1747 he set out for London, with the intention of trying to gain his livelihood by his third trade. His sister Catherine raised for him three guineas, sewed them in his shirt collar, and he commenced his arduous journey on Monday morning, the 8th of April, at three o'clock. Not being used to walk, his feet were blistered with the first ten miles. He would not, however, succumb to the pain and fatigue he experienced, but continued to walk on until he had got over fifty-one miles. On the Wednesday evening he arrived in London, and took up his residence at an inn called the "Horns," in Smithfield. He remained in London a few days, but without being able to procure any work, and, as he was entirely friendless, he thought it the most prudent thing he could do to return to Nottingham. He then took a shop at South-

well, which he stocked with a quantity of old books he had contrived to buy with his slender finances. As he only attended at Southwell on the market day, Saturday, he had to walk to that place through all sorts of weather; setting out about five o'clock in the morning, opening shop about ten, starving in it all day upon bread and cheese and half-a-pint of ale; taking about one shilling and sixpence or two shillings, and then, trudging through the solitary night for five hours, he arrived at Nottingham again. Thus for some time he continued to work at the stocking-frame during the first five days of the week, and to attend at Southwell on the Saturday; and although he worked early and late, and practiced the most rigid economy, he could scarcely get his daily bread. Never despairing of success, he looked out for a shop in Birmingham, and removed to that town. He had arranged with a poor woman who resided at No. 6 Bull Street, for part of her small shop, agreeing to pay her one shilling a-week for the use of it. He was also, through the kindness of a clergyman, enabled to make a better show than he had hitherto done in point of stock. This gentleman had a quantity of old books, which he let Hutton have upon his signing a note to the effect that he would pay him when he was able.

Hutton soon was able, and discharged the debt accordingly. "First creep and then go," is a popular remark. This seems to have been the maxim on which the subject of this memoir acted.

He could not possibly have started in business with less means: we shall see how he contrived to get on. When he first opened his Birmingham shop, everything around him seemed gloomy and disheartening, but he managed to keep up his spirits, and practicing his usual rigid economy, he saved during the first year £20. By degrees his business increased, and he took larger premises.

In the year 1755, Hutton married a young woman, with whom he had a dowry of £100, and, as he had saved £200 himself, he was placed in a situation to extend his business by adding to it the sale of paper. He had now gained a good footing upon the road to wealth, and he followed it up with such ardor and industry, that the results were splendid and triumphant. In 1772, Hutton was chosen one of the Commissioners of the Court of Requests, to the onerous and gratuitous duties of which he devoted himself during a period of nineteen years. In the year 1776, he purchased a good deal of land, and as he kept adding to his acres, he became a very extensive landed proprietor in the course of a few years.

We have, as yet, only noticed William Hutton as the poor, miserable, ill-treated, ill-fed, and ill-clad mill-boy, weaver, and bookseller, gradually making his way through all sorts of hardships, to competency and station. We have now to speak of him as an author. In the year 1780, at the age of fifty-seven, he published a "History of Birmingham," which has always been looked upon

as a standard book of the kind. He afterwards wrote and published the following works: "The Journey to London;" "The History of Blackpool;" "The Battle of Bosworth Field, with a Life of Richard III., till he assumed the regal power;" "The History of Derby;" "The Barbers, a poem;" "A History of the Roman Wall which crosses the island of Britain, from the German Ocean to the Irish Sea; describing its ancient appearance and present state." For the purpose of producing a correct work on the last-named subject, Hutton, at the age of seventy-eight years, took a journey of six hundred miles on foot for the purpose of exploring the wall. In this journey he was accompanied by his daughter Catherine, who traveled on horseback. She says, in a letter written to one of her friends, "that such was the enthusiasm of her father with regard to the wall, that he turned neither to the right nor to the left, except to gratify me with a sight of Liverpool. Windermere he saw, and Ullswater he saw, because they lay under his feet, but nothing could detain him from his grand object. On our return," she continues, "walking through Ashton, a village in Lancashire, a dog flew at my father and bit his leg, making a wound about the size of sixpence. I found him sitting in the inn at Newton, where we had appointed to breakfast, deploring the accident and dreading its consequences. They were to be dreaded. The leg had got a hundred miles to walk in extreme hot

weather. I comforted my father. 'Now,' said I, 'you will reap the fruit of your temperance. You have put no strong liquors or high sauces into your leg; you eat but when you are hungry, and drink but when you are thirsty, and this will enable your leg to carry you home.' The event showed I was right. When we had got within four days of our journey's end, I could no longer restrain my father. We made forced marches, and if we had had a little further to go the foot would fairly have knocked up the horse. The pace he went did not even fatigue his shoes. He walked the whole six hundred miles in one pair, and scarcely made a hole in his stockings."

Up to the age of eighty-five, Hutton continued his career as an author. He still enjoyed at that great age the use of his faculties and health. He had now retired to his country seat and set up his carriage, enjoying himself in agricultural and intellectual pursuits. His last years were indeed all happiness and sunshine, if the morning of his life, as he observes, was gloomy and lowering. At the age of ninety, this exemplary man sunk into the arms of death from the exhaustion of old age.

PASSAGES FROM THE AUTOBIOGRAPHY OF WILLIAM HUTTON.

1741. What the mind is bent upon obtaining, the hand seldom fails in accomplishing. I detested the frame, as totally unsuitable to my temper; therefore I produced no more profit than necessity

demanded. I made shift, however, with a little overwork and a little credit, to raise a genteel suit of clothes, fully adequate to the sphere in which I moved. The girls eyed me with some attention; nay, I eyed myself as much as any of them.

1743. At Whitsuntide I went to see my father, and was favorably received by my acquaintance. One of them played upon the bell-harp. I was charmed with the sound, and agreed for the price, when I could raise the sum, half a crown.

At Michaelmas I went to Derby, to pay for and bring back my bell-harp, whose sound I thought seraphic. This opened a scene of pleasure which continued many years. Music was my daily study and delight. But perhaps I labored under greater difficulties than any one had done before me. I could not afford an instructor. I had no books, nor could I borrow or buy; neither had I a friend to give me the least hint, or put my instrument in tune.

Thus was I in the situation of a first inventor, left to grope in the dark to find something. I had first my ear to bring into tune, before I could tune the instrument; for the ear is the foundation of all music. That is the best tune which best pleases the ear, and he keeps the best time who draws the most music from his tune.

For six months did I use every effort to bring a tune out of an instrument which was so dreadfully out, it had no tune in it. Assiduity never

forsook me. I was encouraged by a couplet I had seen in Dyce's Spelling-book:

> "Despair of nothing that you would attain,
> Unwearied diligence your point will gain!"

When I was able to lay a foundation, the improvement and the pleasure were progressive Wishing to rise, I borrowed a dulcimer, made one by it, then learned to play upon it. But in the fabrication of this instrument, I had neither timber to work upon, tools to work with, nor money to purchase either. It is said, "Necessity is the mother of invention." I pulled a large trunk to pieces, one of the relics of my family, but formerly the property of Thomas Parker, the first Earl of Macclesfield; and as to tools, I considered that the hammer-key and the plyers belonging to the stocking-frame, would supply the place of hammer and pincers. My pocket-knife was all the edge-tools I could raise; a fork, with one limb, was made to act in the double capacity of spring-awl and gimlet.

I quickly was master of this piece of music; for if a man can play upon one instrument he can soon learn upon any.

A young man, apprentice to a baker, happening to see the dulcimer, asked if I could perform upon it. Struck with the sound, and with seeing me play with what he thought great ease, he asked if I would part with the instrument, and at what price? I answered in the affirmative, and, for sixteen shillings. He gave it. I told him, "If

he wanted advice, or his instrument wanted tuning, I would assist him." "O no; there's not a doubt but I shall do." I bought a coat with the money, and constructed a better instrument.

1746. An inclination for books began to expand; but here, as in music and dress, money was wanting. The first article of purchase was three volumes of the "Gentleman's Magazine," 1742, 3, and 4. As I could not afford to pay for binding, I fastened them together in a most cobbled style. These afforded me a treat. I could only raise books of small value, and these in worn-out bindings. I learned to patch, procured paste, varnish, &c., and brought them into tolerable order; erected shelves, and arranged them in the best manner I was able. If I purchased shabby books, it is no wonder that I dealt with a shabby bookseller, who kept his working apparatus in his shop. It is no wonder, too, if by repeated visits I became acquainted with this shabby bookseller, and often saw him at work; but it is a wonder and a fact, that I never saw him perform one act but I could perform it myself; so strong was the desire to attain the art. I made no secret of my progress, and the bookseller rather encouraged me, and for two reasons: I bought such rubbish as nobody else would; and he had often an opportunity of selling me a cast-off tool for a shilling, not worth a penny. As I was below every degree of opposition, a rivalship was out of the question. The first book I bound was a very

small one—Shakspeare's "Venus and Adonis." I showed it to the bookseller. He seemed surprised. I could see jealousy in his eye. However, he recovered in a moment. He had no doubt but I should break. He offered me a worn-down press for two shillings, which no man could use, and which was laid by for the fire. I considered the nature of its construction, bought it, and paid the two shillings. I then asked him to favor me with a hammer and a pin, which he brought with half a conquering smile and half a sneer. I drove out the garter-pin, which, being galled, prevented the press from working, and turned another square, which perfectly cured the press. He said in anger, "If I had known, you should not have had it." However, I could see he consoled himself with the idea that all must return in the end. This proved for forty-two years my best binding press. I now purchased a tolerably genteel suit of clothes, and was so careful of them, lest I should not be able to procure another, that they continued my best for five years. The stocking-frame being my own, the trade being dead, the hosiers would not employ me; they could scarcely employ their own frames. I was advised to try Leicester, and took with me half-a-dozen pair of stockings to sell. I visited several warehouses; but, alas! all proved blank. They would neither employ me, nor give for my goods anything near prime cost. As I stood like a culprit before a gentleman of the name of Bennet, I was so affected that I burst

into tears, to think that I should have served seven years to a trade at which I could not get bread. My sister took a house, and, to soften the rent, my brother and I lodged with her.

1747. It had been the pride of my life, ever since pride commenced, to wear a watch. I bought a silver one for thirty-five shillings. It went ill. I kept it four years, then gave *that* and a guinea for another, which went as ill. I afterwards exchanged this for a brass one, which, going no better, I sold it for five shillings; and, to complete the watch farce, I gave the five shillings away, and went without a watch thirty years.

I had promised to visit my father on Whitsun eve, at Derby. Business detained me till it was eleven at night before I arrived. Expectation had for some time been on the stretch, and was now giving way. My father being elevated with liquor, and by my arrival, rose in ecstacy, and gave me the first kiss, and, I believe, the last, he ever gave me.

This year I began to dip into rhyme. The stream was pleasant, though I doubt whether it flowed from Helicon. Many little pieces were the produce of my pen, which perhaps pleased; however, they gave no offence, for they slept on my shelf till the rioters burnt them in 1791.

1748. Every soul who knew me scoffed at the idea of my bookbinding, except my sister, who encouraged and aided me; otherwise I must have

sunk under it. I considered that I was naturally of a frugal temper; that I could watch every penny; live up a little; that I hated stocking-making, but not bookbinding; that if I continued at the frame, I was certain to be poor; and if I ventured to leave it, I could not be so. My only fear was lest I should draw in my friends; for I had nothing of my own. I had frequently heard that every man had, some time or other in his life, an opportunity of rising. As this was a received opinion, I would not contradict it. I had, however, watched many years for the high tide of my affairs, but thought it never yet had reached me. I still pursued the two trades. Hurt to see my three volumes of magazines in so degraded a state, I took them to pieces, and clothed them in a superior dress.

1749. It was now time to look out for a future place of residence. A large town must be the mark, or there would be no room for exertion. London was thought of, between my sister and me, for I had no soul else to consult. This was rejected for two reasons. I could not venture into such a place without a capital, and my work was not likely to pass among a crowd of judges. My plan was to fix upon some market town, within a stage of Nottingham, and open shop there on the market day, till I should be better prepared to begin the world at Birmingham.

I fixed upon Southwell as the first step of elevation. It was fourteen miles distant, and the town

as despicable as the road to it. I went over at Michaelmas, took a shop at the rate of twenty shillings a-year, sent a few boards for shelves, a few tools, and about two hundred weight of *trash*, which might be dignified with the name of *books*, and worth, perhaps, a year's rent of my shop. I was my own joiner, put up the shelves and their furniture, and in one day became the most eminent bookseller in the place.

During this rainy winter, I set out at five every Saturday morning, carried a burden of from three pounds' weight to thirty, opened shop at ten, starved in it all day upon bread, cheese, and half-a-pint of ale, took from one to six shillings, shut up at four, and, by trudging through the solitary night and the deep roads five hours more, I arrived at Nottingham at nine, where I always found a mess of milk porridge by the fire, prepared by my valuable sister. Nothing short of a surprising resolution and rigid economy could have carried me through this scene.

1750. Returning to Nottingham, I gave warning to quit at Southwell, and prepared for a total change of life.

On the 10th of April, I entered Birmingham for the third time, to try if I could be accommodated with a small shop. If I could procure any situation, I should be in the way of procuring a better. On the 11th I traveled the streets of Birmingham, agreed with Mrs. Dix for the lesser half of her shop, No. 6 in Bull Street, at one shilling a-week;

and slept at Litchfield on my way back to Nottingham.

On May 13th, Mr. Rudsdall, a dissenting minister of Gainsborough, with whom my sister had lived as a servant, traveling from Nottingham to Stamford, requested my company, and offered to pay my expenses, and give me eighteen pence a day for my time. The afternoon was wet in the extreme. He asked why I did not bring my great-coat? Shame forbade an answer, or I could have said I had none. The water completely soaked through my clothes, but, not being able to penetrate the skin, it filled my boots. Arriving at the inn, every traveler, I found, was wet; and every one produced a change of apparel but me. I was left out because the house could produce no more. I was obliged to sit the whole evening in my drenched garments, and to put them on nearly as wet on my return the next morning! What could I expect but destruction? Fortunately I sustained no injury.

It happened that Mr. Rudsdall now declined housekeeping, his wife being dead. He told my sister that he should part with the refuse of his library, and would sell it to me. She replied, "He has no money." "We will not differ about that. Let him come to Gainsborough; he shall have the books at his own price." I walked to Gainsborough on the 15th of May, stayed there the 16th, and came back on the 17th.

The books were about two hundred pounds'

weight. Mr. Rudsdall gave me his corn-chest for their deposit; and for payment drew the following note, which I signed: "I promise to pay to Ambrose Rudsdall, one pound seven shillings, when I am able." Mr. Rudsdall observed, "You never need pay this note if you only say you are not able." The books made a better show, and were more valuable than all I possessed beside.

I had now a most severe trial to undergo; parting with my friends, and residing wholly among strangers. May 23d, I left Nottingham, and I arrived at Birmingham on the 25th. Having little to do but look into the street, it seemed singular to see thousands of faces pass, and not one that I knew. I had entered a new world, in which I led a melancholy life—a life of silence and tears. Though a young man, and of rather a cheerful turn, it was remarked "that I was never seen to smile." The rude family into which I was cast added to the load of melancholy.

My brother came to see me about six weeks after my arrival, to whom I observed, that the trade had fully supported me. Five shillings a-week covered every expense—as food, rent, washing, lodging, &c. Thus a solitary year rolled round, when a few young men of elevated character and sense took notice of me. I had saved about twenty pounds, and was become more reconciled to my situation. The first who took a fancy to me was Samuel Salte, a mercer's apprentice, who, five years after, resided in London,

where he acquired £100,000. He died in 1797. Our intimacy lasted his life.

In this first opening of prosperity, an unfortunate circumstance occurred which gave me great uneasiness, as it threatened totally to eclipse the small prospect before me. The overseers, fearful I should become chargeable to the parish, examined me with regard to my settlement; and, with the voice of authority, ordered me to procure a certificate, or they would remove me. Terrified, I wrote to my father, who returned for answer, "That All Saints, in Derby, never granted certificates."

I was hunted by ill-nature two years. I repeatedly offered to pay the levies, which was refused. A succeeding overseer, a draper, of whom I had purchased two suits of clothes, value £10, consented to take them. The scruple exhibited a short sight, a narrow principle, and the exultations of power over the defenceless.

Among others who wished to serve me, I had two friends, Mr. Dowler, a surgeon, who resided opposite me, and Mr. Grace, a hosier at the Gateway, in the High Street. Great consequences often arise from small things. The house adjoining that of Mr. Grace's was to be let. My friends both urged me to take it. I was frightened at the rent, eight pounds. However, one drew, and the other pushed, till they placed me there. A small house is too large for a man without furniture, and a small rent may be too large for an income which

has nothing certain in it but the smallness. Having felt the extreme of poverty, I dreaded nothing so much; but I believed I had seized the tide, and I was unwilling to stop. Here I pursued business in a more elevated style, and with more success.

No event in a man's life is more consequential than marriage, nor is any more uncertain. Upon this die his sum of happiness depends. Pleasing views arise, which vanish as a cloud; because, like that, they have no foundation. Circumstances change, and tempers with them. Let a man's prior judgment be ever so sound, he cannot foresee a change; therefore he is liable to deception. I was deceived myself, but, thanks to my kind fate, it was on the right side. I found in my wife more than I ever expected to find in woman. Just in proportion as I loved her, I must regret her loss. If my father, with whom I only lived fourteen years, who loved me less, and has been gone forty, never is a day out of my thoughts, what must be my thoughts towards her, who loved me as herself, and with whom I resided an age!

1756. My dear wife brought me a little daughter, who has been the pleasure of my life to this day. We had now a delightful plaything for both.

Robert Bage, an old and intimate friend, and a paper-maker, took me to his inn, where we spent the evening. He proposed that I should sell paper for him, which I might either buy on my own account, or sell on his by commission. As I could spare one or two hundred pounds, I chose to pur-

chase; therefore appropriated a room for the reception of goods, and hung out a sign—*The Paper Warehouse.* From this small hint I followed the stroke forty years, and acquired an ample fortune.

1763. We took several pleasurable journeys; among others, one at Aston, and in a superior style to what we had done before. This is the peculiar privilege of us Birmingham men: if ever we acquire five pounds extraordinary, we take care to show it.

1764. Every man has his hobby-horse, and it is no disgrace prudently to ride him. He is the prudent man who can introduce cheap pleasures without impeding business. About ten of us, intimate friends, amused ourselves with playing at tennis. Entertained with the diversion, we erected a tennis-court, and met on fine evenings for amusement, without expense. I was constituted steward of our little fraternity. My family continued their journeys, and were in a prosperous state.

FRANKLIN, THE NAVIGATOR.

Sir John Franklin was born in the year 1786, of a respectable family in Lincolnshire, England, possessed for several centuries of an estate and position which very probably gave them their name originally. The father of Sir John was compelled to part with the patrimonial estate, and sent his children into active life, upon very slender means, and without interest with which to work their way to distinction.

John, the youngest of four sons, was destined by his father for the Church, or for agricultural pursuits; but he showed so strong a predilection for the sea, that he was allowed to have his way, and entered the navy on the 1st of October, 1800, at the age of fourteen, on board the Polyphemus, sixty-four gun-ship. He was present at the action off Copenhagen in 1801. Immediately afterwards, one phase of his career of exploration commenced. He was one of the party in the Investigator under his relative Captain Flinders, and

though only a young midshipman, was personally associated with his Commander in all his explorations and survey of the coasts of Australia, and suffered shipwreck with him in Torres Straits, near Cato Bank, in August, 1803. A worthy beginning it was for that adventurous career, self-adopted, and nobly carried out in after days. The Earl Camden, an East Indiaman, conveyed Franklin home, and he distinguished himself highly even on this incidental passage, aiding in the repulse of the French squadron under Linois. Bonaparte was then contesting the seas most futilely.

As signal-midshipman in the Bellerophon, Franklin was present at Trafalgar, on the 21st of October, 1805; and during the succeeding years, rising to the rank of lieutenant, he served at Flushing, and afterwards at New Orleans (1814). During the engagements at the latter place, he commanded some of the boats of the British squadron which captured the strong gun-boats of the Americans, after a hard struggle and severe losses. The attempted siege ended unhappily for the British; to Franklin, however, the campaign brought a more solid reward, in the shape of a strong recommendation for immediate promotion. He had, indeed, not only proved his merits professionally, but he had shown himself to be a man of ready resources in all departments of action. He had, in short, given an indication of those general and superior abilities which afterwards came more fully to light during his arctic explorations.

Franklin, after serving in the interval as first lieutenant of the Fourth, at length made his debut in the field of Northern Discovery in 1818. At this period, Captain David Buchan, of the Dorothea, 370 tons, had been instructed to attempt (as Parry did afterwards) a *direct northern* passage, that is, to and through the very centre of the polar circle; and Franklin, his chosen colleague, was nominated to the command of the Trent, a hired vessel of 250 tons. The enterprising navigators set sail in the spring of the year mentioned and made for Spitzbergen. On arriving there they endeavored several times to pass northwards, but could not get beyond latitude 80 deg. 15 min., where they were locked up for three weeks in the ice. They tried the east coast of Greenland on being released, but were again baffled by the ice. It gave worthy occasion to try the patience and courage of Franklin, the dangers undergone being inconceivably great. Buchan and his colleague arrived in England in October, 1818, Franklin having vainly sought permission from his commanding officer to prosecute the voyage alone; a request very naturally denied him, on account of the injury which the vessels had received.

The eyes of the British Government, as well as of all interested in arctic discovery, were now fixed on Lieutenant Franklin, as a man possessed of every leading quality requisite for conducting these honorable and perilous northern explora-

tions. In 1819, accordingly, he was selected for the great enterprise of descending the Coppermine River, which, like Mackenzie River, carries a portion of the waters of Arctic North America into the Polar Ocean, and the course of which had never before been specially investigated. The mouth of the Coppermine once reached, Franklin was directed to make his way along the vast and yet almost unknown line of coast to the westward, that is, towards Behring's Straits. This task, involving a guideless peregrination of immense length, and in a clime of surpassing severity, was certainly one of the most formidable that could be undertaken by man; but with his admirable coadjutors, Lieutenants Back and Hood and Dr. Richardson, Franklin manfully girded up his loins for the adventure. On the 23d of May, 1819, he set sail in a ship belonging to the Hudson's Bay Company, and, after narrowly escaping shipwreck, crossed Hudson's Bay safely, and arrived at York Factory on its western shores. Here a strong boat was built for the party, and, on the 9th of September, they began to ascend Hayes River, on their inland route to the Coppermine. Seven hundred miles of river transit were accomplished by them at this period, a feat rendered alike difficult and perilous by falls, rapids, swamps, and countless other obstacles. A valuable chart resulted from this part of the journey. Reaching Cumberland House, a station on Pine Island Lake, on the close of October, the setting in of the ice

compelled Franklin to pause till January, when, accompanied by Back, and a faithful seaman named Hepburn (to whose fidelity and hardihood the whole party afterwards owned themselves to have been more than once indebted for their lives), the commander moved westwards for another eight hundred and fifty miles, and reached Fort Chipewyan on the 20th March. Another important inland chart was the product of this excursion. The station of Fort Chipewyan is situated on the Lake Athabasca, into which Slave River flows from the Great Slave Lake. The locality lies towards the centre of Arctic America, or about latitude 110 deg., and was reached by Franklin chiefly by the aid of dogs and sledges. Many interesting observations were made about this period by Franklin, Back, Hood, and Richardson, on the Cree, Chipewyan, and Stone Indians, and on the native features and productions of the country generally; while Lieutenant Hood also indefatigably pursued a course of meteorogical and other scientific inquiries. But attention must be confined here mainly to the contributions of Franklin to geognostic science.

All this while Franklin was drawing near to the upper part of the course of the Coppermine, and, being joined at Fort Chipewyan in July by Richardson and Hood, he entertained strong hopes of wintering at the mouth of the river mentioned, the grand object of his enterprise. Having obtained three canoes and various supplies of

food and ammunition, the whole party started briskly for the north, along Slave River. Six Englishmen (Mr. Wentzel of the Fur Company having joined the corps), seventeen hired Canadian voyageurs (all French or half-breeds), and three interpreters, constituted, at this period, the expedition; and a considerable number of Indians, also, were engaged as guides and hunters, under the leadership of a chief named Akaitcho. All went well for a time; deer were shot plentifully; but as the party moved northwards the hardships of the route grew severe, and food more scarce. All that Franklin could accomplish that season was merely to behold the Coppermine River. Fain would he have borne all risks, and attempted its descent, but Akaitcho told him that he would do so only to perish. "I will send some of my young men with you if you persist in advancing, but from the moment that they embark in your canoes I and my relatives shall lament them as dead." The English commander was therefore compelled to settle in winter quarters, which he did at a place termed Fort Enterprise, near the head of the Coppermine, and distant five hundred and fifty miles from Fort Chipewyan. The adventurers had now advanced about one thousand five hundred and twenty miles, in the course of 1820, into the heart of these obscure and perilous regions.

As strong a winter-house of wood being erected as possible, the party passed their time for some

months mainly in shooting and fishing. But, though the reindeer were pretty numerous, and nearly two hundred fell before the hunters, the influx of famished Indians to the station greatly lessened the stores and curtailed the provisions. The ordinary condition of the poor native people may be guessed from their own words. Sometimes they generously gave the whole of their own game to the strangers, saying, "We are used to starvation, you are not." At this time fresh supplies of amunition and other articles were indispensable to the progress of the enterprise, and Back undertook a foot journey to Fort Chipewyan to procure what was requisite. Perhaps his passage of the intervening five hundred miles, in the midst of an arctic winter, when noon is almost midnight, formed one of the most severe trials of this whole journey. At a distance of a few feet from the house fires, the thermometer stood at fifteen below zero, and we may thus conjecture what Back had to endure while camping nightly out of doors. He and his comrades were even exposed to painful changes of temperature, causing a French-Canadian to say, "It is terrible, to be frozen and sun-burnt in one day." The heavy snow-shoes, too, galled their feet and ankles, till they bled profusely. Nevertheless, Back managed to return safely to Fort Enterprise, with four sledges laden with needful goods and supplies. Others followed, and still more were promised for prospective necessities.

In the beginning of July, 1821, the party approached and began to descend the Coppermine River, two frail canoes being their sole means of conveyance. At the outset, Akaitcho and his Indians accompanied them, and, by hunting on shore, kept up a decent supply of food. After a painful route of three hundred and thirty-four miles, one hundred and seventeen of which were accomplished by dragging the canoes over land, Franklin at length found himself (19th July) on the shores of the great Northern Ocean. The Indians had now gone back, partly alarmed by a meeting with a small Esquimaux party, their enemies. Provisions now ran low with the expedition, and the Canadian voyageurs expressed great fears at embarking on an unknown sea in frail bark canoes. But, after having made all possible preparations (through the returning Indians and Mr. Wentzel) for obtaining food at different land stations on the way back, Franklin boldly launched on the polar main, and moved westwards, or in the direction of Behring's Straits. It is unnecessary to dwell on the toils and dangers of the subsequent sea voyage. They advanced only six degrees and a half along the coast, in a direct line, though bays, and gulfs, and islands lengthened their actual route to six hundred and fifty miles. Necessities of all kinds at length began to press upon the party, and compelled Franklin to turn back. He resolved to make his way to Fort Enterprise by a river which had been passed on

his advance, and which he had called Hood's River, but the expedition had only ascended this stream for a few miles, when they were completely stopped by a magnificent cataract; and they then set to work to make two new and small portable canoes, with which they might proceed inland, taking to the waters when they found it practicable, or crossing them when necessary. They counted their direct distance from Fort Enterprise to be no more than one hundred and forty miles, and all were in high spirits at the thoughts of rest there and good food. This journey, however trifling seemingly to what they had before performed, was destined to be a terrible and fatal one. It was commenced early in the month of September, and during the first few miles they were ominously met by a snow-storm, which absolutely drove them to hide under their blankets for two entire days. Their preserved meat failed them, and they had no resource, when they resumed their path, save to eat *tripe-de-roche*, a sort of lichen or moss found on the rocks. The deer rarely appeared in their way, and still more rarely could they kill them when seen. All the band began to feel the horrors of starvation, and to sink under the clime. Their bodies became miserably emaciated, and a mile or two formed a heavy days' journey. The Canadians grew unmanageable through despair, and at length both canoes were lost, or rather willfully destroyed, the men refusing to drag them along. The consequences of this

conduct of the Canadians, against which Franklin remonstrated in vain, became too plainly apparent when they did finally reach the Coppermine. For eight days the famished band stood shivering on the banks of the river, unable to get across, though its width was but one hundred and thirty yards. The brave Richardson finally offered to swim over with a line, which might have got a raft across, but, after going half way, he sank, and had to be pulled back, nearly dead. At last, a sort of wicker boat, lined with painted cloth, took them all safely over the stream; but, in their wretched condition of body, supported by almost nothing save *tripe-de-roche* (which could scarcely be called nutriment, and injured many of the eaters), they could only advance by inches, as it were, though Fort Enterprise was now within forty or fifty miles of them in a direct line. Snows and rains fell upon them incessantly; they had stream after stream to cross; and fuel often failed as well as food. Two of the men dropped behind, sinking on the ground, benumbed with cold, and incapable of motion. Dr. Richardson and Hood, with Hepburn, resolved, for the sake of these men, to encamp for a time, and allow Franklin with the rest to go forward, in the hope of procuring aid at Fort Enterprise from the Indians. The adventures of Richardson at this encampment are thrillingly interesting. The two men who had fallen behind perished, but the doctor and his friends were joined by one of the voyageurs, who had fallen

back, finding himself (as he said) unable to go on with Franklin. This individual, an Iroquois or half-breed voyageur, named Michel, grew strong, comparatively, and was able to hunt. He brought to the tent pieces of flesh, which he said had been part of a wolf killed by a deer's horn. Later circumstances led Dr. Richardson to the conclusion, however, that this flesh was actually part of the bodies of the two stragglers, found by Michel in the snow, and possibly found *not* yet dead. Michel became gloomy and sullen, awakening the suspicions of his companions, and adding fresh horrors to their already horrible situation. He watched the Doctor and Hepburn so closely that they could not speak a word to one another, while poor Hood lay in the tent incapable of motion, and seemingly near his end. At length, on the 20th of October, when the Doctor and Hepburn were severally employed out of doors, a shot was heard in the tent, and there they found Hood killed by a ball through the head. Michel, who was about him at the time, declared that he must have slain himself, or the gun must have gone off accidentally; but Richardson saw clearly that the shot had certainly been fired *from behind*, close to the head. Notwithstanding his assertions as to the cause, Michel could not refrain from betraying guilt by continually exclaiming, "You do not suppose that I murdered him!" Indeed, he was not assailed by any such charges. His companions, than whom, perhaps, two men were never more unhappily

placed, dared not utter a word on the subject, as Michel had strength enough to have overpowered them both openly, and with ease. That he would do so at the first opportunity—that he would never return to Fort Enterprise *with them*—they now also felt as a thing indubitable. By a great and memorable exertion of moral courage, Dr. Richardson saved himself and his friend Hepburn from the fate impending over them. On the third day after the murder of Hood, the three companions set out for Fort Enterprise, and on the way Michel, staying behind under the plea of gathering some *tripe-de-roche*, allowed the two Englishmen to speak alone for the first time. Their mutual sense of being doomed to almost instant death proved so strong as at once to determine Richardson on his course. On Michel coming up, the doctor put a pistol to the head of the wretch and shot him dead on the spot. The Iroquois had *loaded his gun*, but had gathered no *tripe-de-roche*. It is scarcely possible to doubt that but for this terrible step, Richardson and Hepburn would both have been sacrificed, and most probably on that very day. Michel durst not permit them to go alive to the Fort, to tell their sad and accusing tale.

On the 11th of November, Franklin had reached Fort Enterprise with five companions, but their joy at reaching its shelter was sadly damped by the desolation of the place, and by the want of food. It was found from a note that the unwearied

Back (who had moved on in advance) had been there, but, seeing the condition of matters, he had instantly set off in search of the Indians, to procure supplies against the arrival of his famished associates. With this hope before them, the party of Franklin set to grubbing for bones to pound and make soup of. On this diet and *tripe-de-roche* they lingered out their existence (with one or two exceptions) till Richardson and Hepburn came up, on the 6th November, only to bring starvation into the midst of starvation. The skeleton figures, the ghastly faces, and the sepulchral voices of the adventurers, prognosticated, indeed, a speedy end to all as regarded this world, when the arrival of the Indians (7th November), sent by Back, snatched them from the grasp of the grave. On the 15th December they were strong enough to start on their journey eastward, and, being joined by Back and his party, they safely reached the Hudson's Bay Company's stations early in the summer of 1822. From these stations Franklin and his friends had an easy passage, where they arrived after having journeyed by water and by land (including the navigation of the Polar Sea), the immense distance in all of *five thousand five hundred and fifty miles.*

Though the grand point of traversing the arctic shores of North America, from the mouth of the Coppermine River to Behring's Straits, had not been fully accomplished, Franklin, in addition to the new information collected by him relative to

the interior, had also at least rendered it extremely probable that the continent presents to the Polar Ocean a direct and pretty regular line of coast the whole way west of the Coppermine. But Franklin, nothing daunted by his past sufferings, was determined to have the honor of clearing up the matter fully, knowing that, by tracing the shores in the direction of his former enterprise, he would acquire the merit of narrowing the north-west passage question to the mere discovery of an inlet to the Arctic Sea on the Eastern shores of North America, either through Hudson's Bay or Baffin's Bay, or their various channels, straits and sounds. He therefore proposed to the British Government to undertake an overland journey to the mouth of Mackenzie River, by which plan he would shorten his course along the coast to Behring's Straits, being satisfied of the continuity of the land from the Coppermine westward to the Mackenzie. The British Government embraced the gallant offer of Franklin, and the latter, now captain, was fortunate enough to obtain anew the company of Richardson and Back, his well-tried friends. Recollecting the previous difficulties in regard to boats, he had three constructed at Woolwich, the materials being mahogany with ash timbers; while he also prepared a portable one, only eighty-five pounds in weight, and of which the substance was ash, fastened plank to plank with thongs, and covered with Mackintosh cloth. All was ready in the beginning of 1825, and the expedition sailed

from Liverpool on the 16th of February. It reached New York on the 15th of March. Their further progress northwards affords nothing of novel interest, until they reached the Great Bear Lake, at the head of Mackenzie river—so called from Sir Alexander Mackenzie, who descended it in 1789, and who lived to give Franklin the benefit of his friendly counsels on the occasion of his first journey. When Captain Franklin arrived at Great Bear Lake, he set a party to work on a winter residence, and, eager to advance the objects of his expedition, proceeded in person with a few companions down the Mackenzie to look at the Polar Sea in that region, and prepare for its navigation.

Franklin and his party reached the north-eastern entrance on the 14th August, in latitude 69 deg. 44 min., longitude 135 deg. 57 min., and rejoiced at the sea-like appearance to the north. Observing an island in the distance, the boat's head was directed towards it, and, hastening to its most elevated part, the prospect was highly gratifying. The Rocky Mountains were seen from S. W. to W. 1-2 N., while to the north the sea appeared in all its majesty, with many seals and whales sporting in its waves. On the 5th September they returned to their winter quarters on the Great Bear River, which now presented a lively, bustling scene, from the preparations necessary to be made for passing eight or nine months in what was appropriately called Fort Franklin. With full em-

ployment for every one, the time passed away very cheerfully. On Christmas-day sixty human beings assembled in the little hall to do honor to the usual festivities—Englishmen, Highlanders, Canadians, Esquimaux, Chipewyans, Dogribs, Hare Indians, Cree women and children, all talking at one time in their different languages, and all mingling together in perfect harmony.

On Tuesday, the 28th June, 1856, the whole company re-embarked in the boats, on the Mackenzie, and proceeded on their voyage down that river until the 3d July, when, on arriving at the point where the river branches off into several channels, the separation into two parties took place—Captain Franklin and Back with two boats (one of which had been built at the fort) and fourteen men, including Augustus, a faithful interpreter of the former journey, were to proceed to the westward; while Dr. Richardson and Lieutenant Kendall, in the other two, were to proceed with ten men to the eastward as far as the Coppermine. We shall, however, first follow Captain Franklin and his party.

On the 7th he arrived at the mouth of the Mackenzie, where he fell in with a very large party of Esquimaux, whose conduct was at first very violent, but by great command of temper, and some conciliation, they were at length brought to restore the articles pillaged from the boats. Captain Franklin, however, speedily discovered that all their protestations of regret were false, and nothing but

the greatest vigilance on his part saved the party from a general massacre. On the 13th his progress towards Behring's Straits was arrested by a compact body of ice stretching from the shore to seaward; and on landing for shelter from a heavy gale, another party of Esquimaux was met with. On the 15th, having passed this barrier, they arrived off Babbage's River, but again were they involved in an icy labyrinth, which, added to the dense fogs here found in the highest degree of perfection, owing to the barrier opposed to their progress south by the Rocky Chain, made it tormentingly slow. A month—one the most favorable for arctic exploration—had passed in this manner, while only 10 deg. (three hundred and seventy-four miles) of west longitude had been attained, and another 10 deg. still lay between them and Icy Cape. Thus situated, and ignorant that a hundred and fifty miles further west a boat was awaiting him from the Blossom, which had been sent to Behring's Straits, under Captain Beechey, Captain Franklin justly came to the conclusion that they had reached a point, beyond which perseverance would have been rashness, and their best efforts fruitless. On the 18th August they, therefore, set out on their return, giving to their extreme point, in latitude 70 deg. 24. min. north, longitude 149 deg. 37 min. west, the name of Return Reef; and, with the exception of a violent storm near Herschel Island, reached Fort Franklin on the 21st September, without any material danger.

By Captain Beechey, in the meantime, an important addition had been made to our knowledge of the arctic shores of North America. Franklin had made it clear that from longitude 115 deg. to 149 deg. west, or from Coppermine River to Return Reef, these shores were open and navigable; and Beechey had advanced a considerable way eastward from Behring's Straits, till checked by ice. Having been instructed to avoid being shut up, he sent forward his barge under Mr. Elson, who examined the coast up to a point only one hundred and fifty miles from Return Reef. These were great accessions to geognostic science and, as before remarked, necessarily narrowed materially the question of a north-west passage.

Being joined by Dr. Richardson, who with his party had made valuable and extended observations on the Coppermine River, as well as on its Esquimaux and Indian tribes, and the native productions of the country, Franklin and his friends returned once more to Britain in September, 1827, to enjoy their well-won repute. Not only his own land but Europe generally recognized the high deserts of Franklin. The Geographical Society of Paris presented him, immediately on his return home, with a valuable gold medal, thereby stamping him as the greatest geographical discoverer of the year preceding. On the 29th April, 1829, he received the honor of knighthood, and, shortly afterwards, the degree of a D.C.L. from the Uni-

versity of Oxford. In 1830, Sir John was employed, in his naval capacity simply, to command the Rainbow on the Mediterranean station, and for his exertions while there in furthering the interests and quieting the troubles of Greece, he was decorated with the order of the Redeemer of Greece.

The next prominent post held by Sir John Franklin was that of Lieutenant-Governor of Tasmania or Van Diemen's Land, his appointment to which took place in 1836. On this occasion he was created a knight of the Guelphic or Hanoverian Order. He held his governorship nearly up to his entrance on his last explorations.

Having done so much to clear up the mysteries of the northern shores of the New World, it is no wonder that on a new voyage in search of a northwest passage being resolved upon by the Admiralty, Sir John Franklin should have been selected for the task. Nor need we be surprised that he, though now in the sixtieth year, should have accepted it. Satisfied of the existence of a great navigable sea to the west, he could scarcely fail to entertain the hope of penetrating to it at some point or another, and thus winning the laurel so long struggled for by himself, and by so many able rivals. Danger, and perhaps death, he knew lay in the way, but beyond shone the inviting crown of deathless celebrity. Two ships were placed under the command of Sir John Franklin

for this fresh service in the Polar Seas, namely, the Erebus and Terror, both of which were fitted with small steam-engines and propellers. Captain Crozier, who had been Parry's lieutenant in the Hecla, was nominated to the command of the Terror. The directions of the Admiralty were, generally, that Sir John should enter Lancaster Sound through Baffin's Bay, and, descending south-westwards, into the water-way discovered by himself along the northern shore of the American continent, seek an opening into the western Polar Ocean. He set sail on the 26th May, 1845, and was last seen, by a whaler, in Baffin's Bay, on the 26th July, at which time he was moored to an iceberg, and waiting impatiently till the ice would allow him to enter Lancaster Sound.

Since that period neither Sir John Franklin nor any of his gallant company has been discoverable. After three years had passed, public as well as private anxiety was awakened on behalf of the absent ships, and during successive years it was kept alive by continual attempts to ascertain the proceedings and fate of the expedition. A visit to Beechey Island, in Barrow Strait, by one of these searching vessels, disclosed the fullest evidence that the Erebus and Terror had passed there the winter of 1845-6, the first of their absence. Three deaths had occurred among the crews, but there were indisputable signs of the prosperous condition of the expedition, and of the fulfillment of some of the scientific pursuits to

which it was devoted. The search made subsequently to this important discovery, unfortunately took a wrong direction, with the single exception of that of a vessel (the Prince Albert) sent out by Lady Franklin, whose instructions pointed to the precise locality where, as is now known, the Erebus and Terror must have been finally arrested.

It was in 1854 that the next, and, as yet, latest, tidings were received. Dr. Rae, who was engaged upon a geographical exploration in the Hudson Bay Company's territory, accidentally received information that a party from the missing expedition had landed upon the coast at the mouth of the Back or Fish River; and he brought home many indisputable relics, given him by the Esquimaux, which proved the vicinity of the Erebus and Terror. A boat party was sent in the following year to the spot indicated to Dr. Rae by the Esquimaux, and it was proved that an escaping party had reached it, and ascended the Fish River; traces of their progress being found higher up, but no signs of their having perished there. Thus the actual fate of these martyrs to science is yet undecided—nay, though hope may well have died out, it cannot be positively affirmed that some may not be still alive, sharing, possibly, the miserable existence of the Esquimaux upon the coast. It is well known that the task of clearing up this fearful mystery has been accepted by the devoted wife of Franklin, and that in 1857, another expedition (the fourth we believe, which has been

mainly or wholly furnished by her funds), small, but admirably equipped and organised, started under the command of Captain M'Clintock, an officer who has distinguished himself in each of the searching expeditions sent out by the Government.

One closing word may be added. Many persons are apt to ask, "What good end the discovery of a north-west passage will serve?" They give force to their question, by assuming it as undeniable, that the passage, even if fully made out by a ship sailing through could never be used for trading purposes, or any others truly beneficial. It must be allowed that science (and not commerce) is more deeply, or at least directly, interested in the arctic exploration. Yet let not the merchant, who sends out his ships to bring him gain from the four quarters of the globe, imagine that, as being a scientific question chiefly, the exploring of the Arctic Circle is a matter in which he has no positive concern. The safe voyaging of his vessels hangs upon the compass—the mysterious root of whose power and utility lies in the heart of the boreal regions. Let the merchant consider what would be the chances of safety to his barks without that instrument, and not undervalue those labors of science which have done so much for him before, and which have even now his final good in view, did the settlement of the magnetic pole form their whole and sole object. Let the practical man of business also reflect, that to the north-west passage question we owe the discovery

f the New World. Columbus sailed simply to nd a western route to the Indies; the Americas only fell in his way by mere accident, or at least unexpectedly. Let any one who scouts northern exploration as useless, meditate on this one grand fact, and be silent. On the further general and scientific points connected with the subject it is needless to enter. They are numerous, and involve the welfare of our kind deeply.

OBERLIN THE PASTOR.

The Ban de la Roche derives its name from the neighboring castle of La Roche. The Germans call the Ban "Steinthal," or the valley of stone. Formerly it was part of the province of Alsace, in the north-east of France, and is situated on the western slope of the Champ de Feu, an isolated range of mountains of volcanic origin—as the name implies—separated by a deep valley from the eastern chain of the Vosges. The Ban contains only two parishes—one called Rothau; the other comprises the hamlets of Waldbach, Zolbach, Belmont, Bellefosse, and Foudai. Waldbach, which lies nearly in the centre of these hamlets, is about eighteen hundred feet above the level of the sea; and four hundred feet below Waldbach, on the mountain-side, stands Rothau. The two parishes contain about nine thousand acres, the sterility of which may be judged from the fact, that little more than fifteen hundred are capable of cultivation. Wave after wave of persecution

broke upon them during the thirty years' war and the reign of Louis XIV., which so desolated the Ban as to render it almost incapable of affording sustenance to any human being. Nevertheless, about eighty or a hundred families, destitute of all the necessaries of civilized life, and shut out from intercourse with the inhabitants of the neighboring districts, in consequence of the want of roads, here continued to drag on a most wretched and miserable existence. At length the province of Alsace was united to France—an union which brought no change to the moral or physical condition of the poor dwellers in the "valley of stone." About the year 1750, a devout and earnest clergyman, moved by their wretched state, undertook the charge of the Ban. His name was Stouber. Desirous of knowing what was the state of education in the district, he inquired for the principal school. To his astonishment he was conducted to a miserable hovel, in one corner of which lay a helpless old man on a truckle bed, and around him were grouped a crowd of ill-clad, noisy, wild-looking children.

"Are you the schoolmaster, my good friend?" asked Stouber to the old man.

"Yes, sir."

"And what do you teach the children?"

"Nothing, sir."

"Nothing! How is that?"

"Because," replied the old man, with genuine naïveté, "I know nothing myself."

"Why, then, were you appointed schoolmaster?"

"Why, sir, I had been taking care of the Waldbach pigs, and when I got too old and infirm for that employment, I was sent here to take care of the children!"

Stouber found the schools of the other villages in a similar condition. Nothing could be more deplorably wretched than the ignorance of the masters, who, for the most part, were swineherds and shepherds! During the months of summer, they ranged the hills with their flocks, but in winter they were transformed into "dominies," without any qualifications for their office, but a most laudable stock of good intentions, which led them to attempt to teach the children what they themselves could not understand; for the language of the Ban is a *patois*, evidently the old dialect of Lorraine; when, therefore, they taught their charge to read a French or German elementary work, or a fragment of a French Bible, they were wholly incapable of explaining the sense or of giving the correct pronunciation!

A man of less ardent piety and determined resolution than M. Stouber, would have departed from the Ban in hopeless despair of ever being able to bring about a revolution in the condition of its wretched inhabitants; but he was rich in faith. For fourteen years he labored unceasingly to effect the object which lay next his heart, by establishing schools, by assiduous pastoral visita-

tion, and by the faithful preaching of the Gospel of Christ. Soon after the death of his wife, Stouber was appointed to a new sphere of labor; but before entering on this he was anxious to see the Ban provided with a man "like-minded" as himself. He knew this was no easy matter to accomplish, for the difficulties in that isolated place were numerous, while the income was extremely small. The man who came there, Stouber knew, must make up his mind to "endure hardness," to suffer privation, to be cut off from all intercourse with the educated, and to wholly devote himself to the instruction of the poor and the wretched. Consequently he feared lest he should find it impossible to obtain any one who would be willing to take charge of the parish; and this grieved him the more, as his own health was so completely shattered as to forbid his continuance. He, however, commenced his inquiries.

In 1740, at the gymnasium of Strasburg, a man of very considerable classical attainments, named Oberlin, held the office of tutor. His wife was an amiable and accomplished woman. They had seven sons and two daughters. Theirs was a joyous household. If you visited Madame Oberlin in the evening of almost any day in the year, you would have found her seated in the midst of her children, correcting their drawings, or reading aloud to them some interesting and instructive book. Thus her evenings were spent, and when the hour for retiring to rest came, there was gen-

erally a united request for one "beautiful hymn from dear mamma!" When that mother's voice was no longer heard upon the earth, and the long green grass grew thick upon her grave, those evening hymns were remembered and their influence felt.

Oberlin was the playfellow as well as the instructor of his children. In the vicinity of Strasburg, at a place named Schiltigheim, he had a few acres of land, and there, once a week, during the summer, the villagers would see him, with an old drum slung across his shoulder, acting as drill sergeant and drummer at the same time to his lads, whom he put through the military evolutions, with which he was well acquainted. One of the boys, John Frederic, in consequence of this "playing at soldiers," became passionately attached to the military profession. Tales and histories of battles were eagerly sought after and as eagerly read by him. The officers of the troops quartered in the city were known to his family, and, being aware of the predilection which he had formed, and astonished at the acquaintance with military science which he displayed, granted his request to be permitted to join the soldiers when at exercise. The glitter and excitement of the parade filled the boy's mind.

He, like most of his age, did not interpret the word "soldier." Its import was hidden from him, or his gentle, sensitive nature would have shrunk from it. He looked upon the troops as they marched

before him, with their gay clothing, and glistening weapons, and emblazoned banners; he heard their regular tread and thrilling music; but to him it was all *only* a splendid summer-day pageant—he thought not of the cruelty, and gore, and carnage of the battle-field.

Happily for him, his father destined him for a learned profession. Filial obedience was a pleasure to the lad, so, without a regret, he gave himself to the ardent pursuit of the studies which his father marked out. A few years, and the curriculum was passed through, and he was now of age to choose a profession. He made choice of the ministry. Of the work in which he had engaged, he had the clearest views. His was not an ambition to *preach*. The responsibilities of the Christian pastor were set before him, and he sought to prepare himself for their efficient discharge. When pressed to undertake a pastoral charge, his reply was, "I need more experience, more knowledge; at present I am not qualified. Moreover, I wish to labor where I can be useful, not where I can be at ease." The key to his after life is to be found in this reply. Seven years elapsed, during which he diligently employed himself in the study of theology, supporting himself in the meantime by acting as tutor to the family of a distinguished surgeon of Strasburg, in whose house he acquired the knowledge of surgery and the healing art, which he afterwards turned to such good in the Ban de la Roche.

Thus he continued teaching and studying until 1776, when the chaplaincy of a French regiment was offered to him. The "old drum" and the military associations of childhood were aroused up from the sleep of years. The chaplaincy, he thought, presented a prospect of extensive usefulness, so he decided to accept it. Accordingly he resigned his tutorship, took lodgings in the city, and commenced a preparatory course of reading.

About this period M. Stouber began his search after a pastor to succeed him in the Ban. Oberlin, whose piety, disinterested benevolence, and scholarly ability, had already won him the esteem of his fellow-citizens, was mentioned to him as exactly such a man as he sought. Stouber came to Strasburg, and sought out Oberlin's lodgings. They were in a mean street, and when he reached the house he was directed to a little room up three pair of stairs. He opened the door, and the first thing that caught his eye was a small bed, covered with curtains made of—*brown paper!* He entered the apartment and approached the bed, and there he found Oberlin, racked with the agony of toothache. After some conversation, during which he rallied him upon the unique character of his bed-hangings and the poverty of his abode, he inquired the use of a little iron pan which he saw suspended above his table. "That," replied Oberlin, "is my kitchen. I am accustomed every day to dine at home with my parents, and they give me a large piece of bread to carry back with me in my pocket.

At eight o'clock in the evening I put my bread into that pan; and, having sprinkled it with a little salt and water, I place my lamp beneath it, and go on with my studies until ten or eleven, when I generally begin to feel hungry, by which time my slice of bread is nicely cooked, and I relish it more than the choicest luxuries."

Stouber was overjoyed while he listened. This was the very man for the Steinthal. He declared the object of his visit, portrayed the condition of the people, their misery and ignorance, gave utterance to his own unfeigned sorrow at being obliged to leave them, and his fear, lest he could prevail upon him to occupy his post, that they must perish for lack of knowledge.

Oberlin's heart was touched. The place which Stouber described was just such a one as he had often pictured to himself as the scene of his pastorate. But, then, what could he do? his engagement with the regiment being all but finally concluded. He could not think of accepting charge of the Ban unless he was liberated from the chaplaincy, and, moreover, except there were before him no candidates for clerical preferment who would accept M. Stouber's proposal. These obstacles were soon removed. The chaplaincy was speedily filled, and Oberlin was free to become the pastor of the Ban de la Roche.

His mother accompanied him to Waldbach, and after arranging his little establishment, she bade him adieu, leaving with him his younger sister,

Sophia, who took charge of his household. Pastor Stouber introduced him to the parishioners; and in April, 1767, in the twenty-seventh year of his age, Oberlin became pastor of the Ban de la Roche. About a year after this event had taken place, a lady of highly cultivated mind and agreeable disposition came to Waldbach on a visit to Sophia. Her name was Madeline, and she was the orphan daughter of Professor Witter of Strasburg. She soon relieved Sophia of her cares as her brother's housekeeper; for, despite of a long-cherished determination never to marry a clergyman, Madeline Witter became the wife of Oberlin. A more judicious choice it was impossible to make. She was the sharer of his trials and his joys. Her prudence and foresight balanced and controled his enthusiastic disposition: her devoted piety, which led her to fully participate in his anxiety to promote the welfare of his people, cheered him when desponding, and heightened his joy when successful.

The testing time had now come to Oberlin. He was a pastor and a husband. His wife, one of the best of women; his flock, wretched, ignorant, scattered—a prey to laziness and hunger—without the merest necessaries of life, and contented to remain so. Let us, then, look at what this young man possessed that his hopes should be so strong of turning this wilderness into a "garden of God." What had he?—wealth? No, not a stiver; but he had that which wealth could

not, *cannot* purchase—an earnest, devoted, loving heart, a thoughtful and well-disciplined mind, considerable scientific skill and practical ability, a natural and suasive eloquence which at once won its way to the heart, habits of self-denial, of promptitude, of perseverance, and a joyous willingness to endure all things, if by so doing he could promote the glory of God and the good of mankind. That such a man should accomplish what he did is no marvel. It would have been miraculous, indeed, if he had failed.

When he had gone over the parish, he saw that Stouber's picture of its degraded state was by no means too highly colored, and he felt that all his resources would be taxed if he sought to effect any change for the better. His quick mind at once perceived the connexion which existed between their physical misery and their moral degradation, so he immediately began to devise plans to promote their civilization. His first was to bring them into contact with the inhabitants of the neighboring towns, rightly judging that the comfort, and cleanliness, and intelligence which they would behold in those places would present such a strong contrast to the state of things in the Steinthal as at once to beget a desire in their minds for improvement. But how was he to move? All the roads connected with the parish were literally impassable during the greater portion of the year, in consequence of land-slips which completely blocked them, or their being

torn up by the rushing down of the mountain-torrents during the winter. The people thus shut in could neither find a market for their produce nor obtain agricultural implements which they required. There was but one way to effect the desired change. Oberlin made a careful survey of the parish, and the result was a determination to open up a communication with the high-road to Strasburg; but to do this it would be necessary to blast the rocks and to construct a solid wall to support a road, which he proposed to carry for about a mile and a half along the banks of a deep mountain-stream called the Bruche, and then, at Rothau, to build a bridge across it. He called his parishioners together, and announced his project. They were astonished. "He was mad," they said. "The thing was utterly impracticable. They had thought for some time that there was something strange about him, but now they were sure he was downright insane." Thus they thought and said, and one and all began to excuse themselves from having any share in what they deemed such a wild and foolish undertaking. But Oberlin pressed the matter upon them, refuted their objections respecting the impossibility of accomplishing his plan, pointed out the manifest and numerous advantages which would result from it, both to themselves and to their children, and wound up his harangue by shouldering a pick-axe and exclaiming, "Let those who see the importance of what I have stated come and work

OBERLIN—THE PASTOR.

"Let those who see the importance of what I have stated come and work with me."—PAGE 178.

with me!" The effect was electric. Opposition gave way to cheerful acquiescence and the most unbounded enthusiasm. He appointed to each man a certain task. He soon had more helpers than he could find tools for. The news of his undertaking reached Strasburg, and implements and funds were sent to him. Rocks were undermined and blasted; torrents which had overspread and inundated the meadows were guided into channels which had been cut to receive them; where the land threatened to slip, walls were built to sustain it; the road was completed to Rothau; at that place he threw a neat wooden bridge across the Bruche, which to this day is called Le Pont de Charité. The whole was finished, and a communication opened up with Strasburg in 1770, about a year and a half after his marriage.

But how fared it with his duties as a religious teacher all this time? Did he neglect them? No; on the contrary, like the great apostle of the Gentiles—who thought it not beneath him to make tents during the week—Oberlin, who on week-days headed his people in their arduous task, on the Sabbath directed them with equal zeal and earnestness to "the rest which remaineth for the people of God." The immediate effect of the success of his scheme was the gaining of almost unbounded influence over his parishioners. They no longer regarded him as a madman, but as the only wise one among them. They now cheerfully

engaged in any work which he devised, and, very soon, convenient and necessary roads traversed the Steinthal, and connected the various villages. While he was tutor in M. Ziegenhagen's family in Strasburg, he became intimately acquainted with botanical science, and acquired not merely that knowledge which enables the empiric to classify and denominate, but he understood the properties of almost every plant, and could at once tell you whether it could be used as food or medicine. This knowledge he at once turned to account. He introduced the culture of several leguminous plants and herbs; imported seed from Riga, and raised flax; introduced Dutch clover; taught the farmers the use of manure, to make composts, to improve the growth of the potato, which had so far degenerated that fields which had formerly yielded from one hundred and twenty to one hundred and fifty bushels, now yielded only about thirty or fifty, which the people imputed to the sterility of the soil, instead of their own neglect. His success was most unequivocal, and the consequence was the augmentation of the resources of the Steinthal. As an example of the manner in which he was wont to connect all those efforts for the temporal welfare with the spiritual instruction of his people, the following incident is characteristic. Although he had been so successful in the affair of the road-making, and in the introduction of an improved style of husbandry, still among the parishioners there was a hankering

after "old fashions," and, for the life of them, they could not understand how it was that he who never dug, or ploughed, or owned an acre of land in his life, should know more about the management of fields and cattle than they did. Oberlin's sagacity at once discovered this, and so, when he wished to make any improvement, or to introduce any new kind of plant, or vegetable, or tree, he began in his own garden, and when the curiosity of the people was excited, he detailed to them the name of the root, the object he had in cultivating it, the mode to be observed in its culture, &c., until he had thoroughly instructed them, and kindled a desire in their minds to imitate him. There was scarcely a fruit-tree worth a groat for miles around, and there were few gardens which grew anything but the most luxuriant weeds. To talk about the matter Oberlin knew would be quite useless; so he betook himself to his old plan of teaching by example. He had a servant who was an intelligent and devoted man; they took counsel together. There were two gardens belonging to the parsonage, each of which was crossed by a well-frequented thoroughfare. One of these gardens had been noted for years for the poverty and sterility of its soil; this he determined to convert into a nursery-ground! Trenches, accordingly, were dug, and the land laid out; slips of walnut, apple, plum, and pear trees were planted. In due time the trees blossomed; and

when the period of fruitage came, the crop was abundant. The plan, as Oberlin anticipated, succeeded admirably. Week after week the villagers were wont to pause, and wonder how trees could grow in such a soil. Then they began to contrast the appearance of their pastor's garden with their own; and then they came to him in crowds, begging that he would be kind enough to instruct them how to grow trees for themselves. The object he sought was accomplished. According to his accustomed mode, he first directed their thoughts to Him "who causeth the earth to bring forth her bud, and who crowneth the year with his goodness," and then gave them the desired information. To aid them he gave them a supply of young trees from his nursery, and instructed them in the art of grafting. The consequence was, that in a little time the whole district changed its aspect: the bare and desolate-looking cottages were speedily surrounded by neat little gardens; and, instead of the indigence and misery which formerly characterized the villagers and their dwellings, they now put on the garb of rural beauty and happiness. So rapid were the advances which the people made under his direction, that, in 1778, Oberlin formed an Agricultural Society, which he connected with the central society at Strasburg. By doing so, he secured the use of the society's publications and periodicals, and received its assistance in the distribution of the prizes, which were annually awarded to the peasants who distinguished

themselves in the grafting and culture of fruit-trees, and in rearing or improving the breed of cattle. The Strasburg Society, as a testimony of its sense of the advantages which Oberlin's labors had bestowed upon the people, placed two hundred francs at his disposal, to be distributed among such agriculturists as he might deem worthy of a prize. He soon began to reap the fruit of his toil. Everywhere around him civilization and the power of the Gospel made themselves manifest. With the improvement of their physical condition, their moral advancement went hand in hand, till, at length, in the district around, and in the towns and cities of the basin of the Rhine, few things awakened more astonishment, or attracted so much attention, as the remarkable change which had taken place in the people, and the no less remarkable character of the pastor of the Ban de la Roche.

To Oberlin belongs the merit of being the founder of Infant Schools; a fact which justly entitles him to the gratitude of mankind. When he took the cure of the Ban in 1767, there was but one schoolhouse in the five villages, and that was a hut erected by Pastor Stouber, which then was in a ruinous state. He called the parishioners together, and proposed that they should either build a new one or repair the hut. They gave a decided negative to his proposition, nor would they again listen to him on the subject, until he engaged that no part of the expense should fall on the funds of the parish. His income, arising from his salary

as pastor, and his little property, did not amount to more than about forty pounds a-year; nevertheless, he gave the required promise, and the schoolhouse was built. "Why should I hesitate in this matter?" said he; "I seek only the glory of God, and therefore I have confidence that He will grant me what I desire. If we ask in faith, and it be really right that the thing should take place, our prayer is certain to be granted. When, indeed, are our plans more likely to be successful than when we enter upon them in humble and simple dependence upon God, whose blessing alone can cause them to succeed?" Thus Oberlin reasoned, and time proved that he reasoned aright. God *did* grant his prayer. His fast friends at Strasburg, who watched his progress with anxiety, came to his help; and further, in the course of a few years the inhabitants in the other four villages voluntarily proposed that a school should be built in each, of which they would cheerfully bear all the expense! And so they did. The young are the hope of the world. The men and women of the next generation will be what the children of the present are. The future is only the development of the present; "the child is father to the man." Oberlin directed all his energies to the instruction of the young of his flock. The habits of the adults might be modified, but not eradicated. The men were as ignorant of the commonest mechanical arts as their wives were of domestic economy or home

comfort. They had passed their learning time. Not so, however, with their children. So Oberlin selected the most promising, and sent them to Strasburg, to acquire the trades of mason, carpenter, glazier, wheelwright, and blacksmith. When they returned to the Ban, they became the instructors of others. Their earnings increased the little treasuries of the district, while their skill accelerated its improvements.

The schools which were erected were devoted to the use of children from the age of ten to seventeen. The shepherd-masters who formerly played the "dominie" were cashiered, and the most respectable of the inhabitants were prevailed upon to take their places under the imposing title of "regents." The plans of instruction were drawn up, and the "regents" drilled in the science of education by Oberlin. While the schools were working well under his careful superintendence, he noticed that the *infant* children were almost wholly neglected by their parents, and were therefore forming habits which in after years would increase the task of the schoolmaster, if not altogether nullify his labor. His active mind at once devised a remedy for the evil. The result was a plan for the establishment of Infant Schools—the first of the kind ever known. Experience of his own family and keen observation in the families of others, led him to the conclusion that children begin to learn even in the cradle; that at the earliest age they are capable of being taught the

difference between right and wrong; and are easily trained to habits of obedience and industry. His beloved and intelligent wife entered heart and soul into his views. The most pious and intelligent females of the community were induced to take charge of the schools. For their use, Oberlin rented a large room in each village, and out of his own pocket paid the salaries. The instruction given to the little ones was mingled with amusement, and habits of attention and subordination were formed, while information of the most valuable kind was communicated in a manner which rendered it attractive to the infant mind. The songs of "dear mamma" had left too deep and hallowed an influence upon Oberlin's mind to cause him to overlook the value of music in the instruction of youth. Singing was taught in all the schools. At a proper age the children were transferred to the public schools, prepared, by the progress which they had made, to enjoy the advantages which were there afforded to them. In addition to reading, writing, arithmetic, and geography, they were carefully instructed in the principles of agriculture and other industrial arts, in sacred and uninspired history, and in astronomy. Their religious cultivation was a task which Oberlin considered his own, and faithfully did he fulfill it. With the view of encouraging the spirit of emulation between the several schools, and to improve the modes of instruction pursued by the various masters, a weekly meeting of all the scholars was

held at Waldbach. By this the machinery of the whole was kept bright and in good working order. The master and the pupils were stimulated, knowing that the weekly meeting would bring disgrace to the idle, but to the industrious and good public commendation, and the approval of "dear papa," as Oberlin was called by his people. In addition to this weekly examination, on every Sabbath, at each village church in rotation, the children assembled to sing the hymns and to repeat the passages of Scripture which they had learned during the week. At the close he usually gave them an address; and superlatively happy was the child or young person who was fortunate enough to merit the approving smile of "dear papa."

His benevolent efforts were well seconded by the Christians of Strasburg. They sent him several sums of money, all of which were devoted by him to the public use. A printing-press was added to the resources of the Ban. This enabled him to print several books which he composed and compiled for the exclusive use of the schools and his parishioners, and to award prizes both to the teachers and pupils. He also made a collection of indigenous plants, and procured an electrical machine, and several other philosophical instruments; various works on natural history and general science were circulated on the "book society" plan, each village retaining them for three months, care being taken that every house, according to the number of the family, possessed them for a definite time. Every individual

was impressed with the conviction that it was a first duty, as well as a great privilege, to promote the glory of God and the welfare of mankind. Every work which was undertaken of a public or private nature was discharged, each one bearing in mind his responsibility to promote the prosperity of all, by "provoking his neighbor to love and to good works." Thus the Ban was changed. Where ignorance and its never-failing attendants, cruelty, vice, poverty, reigned supreme, piety intelligence, meekness, and plenty, held triumphant sway.

All that knew him loved him. His worth was acknowledged not only by those who were near, but by those who were far off. Louis XVIII. sent him the ribbon of the Legion of Honor, and the royal agricultural society of France voted him a gold medal. When Count François de Neufchâteau proposed this vote, he said, "If you would behold an instance of what may be effected in any country for the advancement of agriculture and the interests of humanity, friends of the plough and of human happiness, ascend the Vosges Mountains, and behold the Ban de la Roche!" At the time of the foundation of the British and Foreign Bible Society, his fame had spread into Britain; and one of the first grants made by the Society was to pastor Oberlin for the inhabitants of the Ban.

Oberlin's heaviest trial, though not his first, was the loss of his wife. She died in January, 1784, in the sixteenth year of their union. She departed

almost suddenly, leaving him seven, out of nine, children, the youngest being only about ten weeks old. Nothing could be more characteristic than his conduct on this distressing occasion. Her death was wholly unlooked-for. When the intelligence was brought to him, he was stunned, and remained for some time in silence, quite incapable of giving utterance to his feelings. He then fell on his knees and returned "thanks to God that his beloved partner was now beyond the reach or need of prayer, and that her heavenly Father had crowned the abundance of His mercies towards her, by giving her so easy a departure." At their marriage they had prayed that they might always have death before their eyes, and always be prepared for it; and "if it be a thing," they added, "which we may ask of Thee, oh! grant that we be not long separated one from another, but that the death of one may speedily, very speedily, follow that of the other." From the period of his wife's death a deepened seriousness was observable in his conversation and deportment. He was grave, not gloomy. A word of repining or murmuring never escaped his lips. It was the Lord's doing, and it was right. About six months after he had laid her in the grave, he composed an address to his parishioners, and laid it aside, to be delivered to hem after his decease, as his last charge. In this document he briefly states when and where he was born, when he took charge of the Ban, the time of his marriage, the number of his children, "two of

whom," he said, "have already entered paradise, and seven remain in this world;" he also names the day and the circumstances in which his wife died.

"Upon this occasion," he goes on to say, "as upon a thousand others in the course of my life, notwithstanding my overwhelming affliction, I was upheld by God's gracious assistance in a very remarkable manner. I have had all my life a desire, occasionally a very strong one, to die, owing in some measure to the consciousness of my moral infirmities and of my frequent derelictions. My affection for my wife and children, and my attachment to my parish, have sometimes checked this desire, though for short intervals only. I had, about a year since, some presentiment of my approaching end. I did not pay much attention to it at the time; but, since the death of my wife, I have received unequivocal warnings of the same nature. Millions of times have I besought God to enable me to surrender myself with entire and filial submission to his will, either to live or die, and to bring me into such a state of resignation as neither to wish, nor to say, nor to do, nor to undertake anything, but what He, who only is wise and good, sees to be best. Having had such frequent intimations of my approaching end, I have arranged all my affairs as far as I am able, in order to prevent confusion after my death. For my dear children I fear nothing; but as I always greatly preferred being useful to others to giving

them trouble, I suffer much from the idea that they may occasion sorrow or anxiety to the friends who take charge of them. May God abundantly reward them for it! With regard to my children themselves I have no anxiety; for I have had such frequent experience of the mercy of God towards myself, and place such full reliance upon his goodness, his wisdom, and his love, as to render it impossible for me to be at all solicitous about them. Their mother was at a very early age deprived of her parents; but she was, notwithstanding, a better Christian than thousands who have enjoyed the advantages of parental instruction. Besides, I know that God hears our prayers; and ever since the birth of our children, neither their mother nor I have ceased to supplicate him to make them faithful followers of Jesus Christ, and laborers in his vineyard. And thou, O my dear parish! neither will God forsake thee. He has towards thee, as I have often said, thoughts of peace and mercy. All things will go well with thee; only cleave thou to him, and leave him to act. Oh! mayest thou forget my name, and retain only that of Jesus Christ, whom I have proclaimed to thee. *He* is thy pastor; I am but his servant. He is that good Master who, after having trained and prepared me from my youth, sent me to thee that I might be useful. He alone is wise, good, almighty, and merciful; and as for me, I am but a poor, feeble, wretched man." . . . This touching document concludes thus: "O, my God! let thine

eye watch over my dear parishioners; let thine ear be open to hear them; thine arm be extended to succor and protect them! Lord Jesus, thou hast intrusted this parish to my care, feeble and miserable as I am; oh! suffer me to commend it to thee—to resign it into thy hands. Give it pastors after thine own heart; never forsake it; overrule all things for its good! Enlighten them, guide them, love them, bless them all; and grant that the young and old, the teachers and the taught, pastors and parishioners, may all, in due time, meet together in thy paradise! Even so, Father, Son, and Holy Spirit! Even so. Amen!"

Forty-two years after this parting address was written, it was found among his papers, and was read in the churchyard to his assembled people, before his body was lowered down into the grave. Those forty-two years were spent, like those that preceded them, in unremitting attention to the instruction of his flock. The death of his sons, which took place when they had attained the age of manhood, seemed only to quicken his diligence, and to deepen his solicitude respecting the eternal welfare of his charge. The apostolic injunction came with power to his heart—he was "instant in season and out of season," and always "fervent in spirit." He did not content himself with preaching publicly, but paid pastoral visits to every cottage in his large parish, and conversed with the people upon their spiritual condition, and

upon the various efforts which were made by benevolent individuals to diffuse religious knowledge throughout the world. On every Friday he conducted a service in German, for the benefit of about two hundred persons in the Ban, to whom that language was more familiar than the French. At his Friday evening service he used to lay aside all form, and the now silvery-headed old man seemed more like a father surrounded by his children than the minister of an extensive district. At those meetings, in order that no time might be lost, he used to make his female hearers knit stockings for their poorer neighbors, not for themselves; it was a work of charity, he said, and needed not to either distract their attention or to diminish their devotion. When he had for some time read and expounded the Bible to them, he would often say, "Well, children, are you not tired? Have you had enough?" If they said, "Enough for one time," he would leave off; but the more frequent reply was, "No, dear papa, go on; we should like to hear a little more!" His discourses for the Sabbath were carefully prepared. In them he preserved a colloquial plainness, scrupulously avoiding the use of words or phrases which were not level to the apprehension of his hearers. He drew largely upon natural history, with which his people were well acquainted, for illustration; and he frequently introduced biographical anecdotes of persons who were eminent for piety or benevolence.

The close of his earthly career was, like that of a summer day, calm and peaceful. His was a green old age, the snows of time, although they rested upon his head, sent no chill into the warm affections of his heart. In the latter part of his life, the increasing infirmities of age prevented him from occupying himself, as he was wont, in the discharge of his pastoral duty. If he could not visit nor preach to his flock, he could pray for them. The sand was now low in the glass. The last grain ran out on the morning of the 1st of June, 1826, when he was in the eighty-sixth year of his age. The illness which preceded his departure continued for four days. On the morning of the first of June, at six o'clock, his pain abated. His children were grouped around his bed, and at intervals he clasped their hands and pressed them to his heart. His limbs soon became cold and lifeless, and he lost the use of his speech. His last act was to take off his cap, and to join his hands as in prayer, and to raise his eyes toward heaven; his countenance as he did so, beaming with joy and love. He closed his eyes never to open them again until the day of the resurrection. About eleven o'clock, the toll of the passing-bell informed the inhabitants of the valley that he who had watched over them for nearly sixty years would watch no more.

Four days afterwards he was buried. During the interval which elapsed between his decease and the simple and affecting ceremony which con-

signed his remains to the grave, heavy clouds rested on the surrounding mountains, and the rain poured down in incessant torrents. Nature seemed to sympathise with the feelings which swelled the hearts of his people, and which bowed their souls with the sincerest sorrow. Oberlin's remains were placed in a coffin with a glass lid, and laid in his study, where, despite of the inclemency of the weather, the inhabitants of the Ban and of the surrounding districts (of all ages, conditions, and religious denominations) congregated to take a farewell look at his beloved face.

Early in the morning of the day fixed for the interment, the clouds cleared away and the sun shone with its wonted brilliancy. As the procession left the house, the president of the consistory of Barr placed Oberlin's clerical robes upon the coffin, the vice-president of the consistory placed his Bible upon it, and the mayor affixed the decoration of the Legion of Honor to the funeral pall. At the conclusion of this ceremony, ten or twelve young females, who had been standing round the bier, sung a hymn, and at two o'clock the procession began to move, the coffin being borne by the mayors, elders, and official magistrates of the Ban and of the neighboring communes.

The region round about seemed to have sent forth all its inhabitants, so great was the concourse which assembled. The interment took place at Foudai, two miles distant from Oberlin's house,

but the foremost of the funeral train had reached the churchyard before the last had left the parsonage! The children and youths of the different schools formed part of the melancholy procession, chanting at intervals sacred hymns, selected and adapted to the occasion. When they approached Foudai, a new bell, which had been presented in commemoration of this day of sorrow, was heard to toll for the first time, and to mingle its melancholy sound with the bells of the valley. The burying-ground was surrounded by Roman Catholic women, all dressed in deep mourning, and kneeling in silent prayer. On arriving at the church, the coffin was placed at the foot of the communion-table, and as many persons entered as the little place would contain, the great multitude having to remain in the churchyard and the adjoining lanes. Notwithstanding the presence of so great a number of persons, the utmost order and solemnity prevailed. Several persons, who could find room nowhere else, sat down on the steps beside the coffin, as if anxious to cling to the ashes of one whom they loved so well. Many distinguished persons were present, and several Roman Catholic priests, dressed in their canonicals, sat among the members of the consistory. At the conclusion of the president's address, a hymn was sung, and the coffin borne to the grave, which is on one side of the little church, beneath a weeping willow that shades the tomb of his son Henry. Here, amidst

the tears of the assembled thousands, the earth was heaped upon the house of clay which once contained the spirit of John Frederic Oberlin, the world's benefactor, while the humble and Christ-like pastor of the Ban de la Roche.

Reader, do you wish to die as he died? If so, live as he lived; and your memory, like his, will be green and fragrant throughout all ages.

ELIHU BURRITT, THE LINGUIST.

Elihu Burritt was born at New Britain, Connecticut, on the 11th of December, 1811. He was the son of a shoemaker, who reared a family of five children in the fear of God and love of virtue. During Elihu's boyhood, he assisted his father with the lap-stone; about four months of every year he enjoyed the privilege of attending the district school, but the remainder of his time was required as a contribution to the general labor necessary for the support of the family. Elihu lost his father when at the age of sixteen. It now became necessary for him to strike out a path for himself; he determined to learn the blacksmith's trade; and, entering into the necessary arrangements, he apprenticed himself to a blacksmith, with whom he remained until he was twenty-one years of age.

At a very early age Elihu evinced an extraordinary thirst for knowledge. He read everything upon which he could lay his hands. When he

entered upon his apprenticeship he was familiar with the Bible, the history of the Revolutionary War, and had the advantage of a few desultory volumes. But he now had access to the town library, which he availed himself of with so much assiduity, that in a brief period he had exhausted every book of history upon its shelves. He next turned to poetry. This kind of reading he was very fond of; he perused Thomson's Seasons, Young's Night Thoughts, Pollock's Course of Time, Shakespeare and Milton. But his passion for reading did not retard his advancement in his trade; he became a first-rate blacksmith, as well as an earnest scholar. Having exhausted the library and mastered his trade, he now became animated with a desire to obtain access to those authors who were beyond his reach. Scholarship became his pastime. His indentures having terminated, he placed himself under the tuition of his brother, a lawyer and a man of education. This gentleman enabled him to pursue the study of mathematics; he also took up Latin and French. Employing his winter this way, in the spring he returned to his forge, and, in order to make up for lost time and supply himself with the means of pursuing his studies, he undertook to do the work of two men, laboring hard at the anvil for over fourteen hours a day.

"After he could read French with pleasure," says the Reverend R. W. Bailey, to whom we are indebted for the materials of this sketch, "he took

up Spanish. After reading the Spanish with ease he commenced the Greek, carrying his grammar in his hat while he worked, and studying at the anvil and the forge. He pursued this course until the fall of the year (1833.) He then made his arrangements to devote himself to study for another winter. He went to New Haven, not so much, as he said, to find a teacher, as under the conviction that there was the proper place to *study*. As soon as he arrived he sat down to the reading of Homer's Iliad alone, without notes, or translation, or any other help. At the close of the first day, after intense application, he had read fifteen lines, much to his own satisfaction. After this successful effort, he determined to go on without a teacher; he accordingly made a systematic distribution of his time and studies. He rose at four, and studied German until breakfast, then studied Greek until noon, then spent an hour at Italian. In the afternoon he studied Greek until night, and then studied Spanish until bed-time. This course he continued until he could read two hundred lines a day of Homer, besides carrying forward the other studies in their order. During the winter he read twenty books of Homer's Iliad, besides studying with equal success the other languages in the hours assigned to them."

In the Spring he accepted an invitation to teach a grammar-school. In this situation he remained for a year; he then acted as agent for a manufacturing company, and traveled extensively

through the country. During this period his studies were nearly entirely interrupted. He returned to the anvil once more, and resumed his studies with fresh enthusiasm. He soon became proficient in the ancient and European languages, and turned his attention to the Oriental tongues. The means for acquiring these were limited. He determined to enlist as a sailor, that he might travel to places more available for this purpose. He proceeded to Boston and endeavored to obtain a ship. He was unsuccessful; but while in that city he heard of the American Antiquarian Society at Worcester. He proceeded there at once, and found, as he says, such a collection of books on ancient, modern, and Oriental languages as he never before conceived to be collected together in one place. The use of this library was at once tendered him; he made arrangements to study three hours a day, and work at the anvil for his support at other times. In this manner he pursued the study of the most difficult of the languages, and advanced with such marvelous rapidity that before he left Worcester he was able to read Hebrew, Greek, Latin, Gaelic, English, Welsh, Irish, Celtic, French, Spanish, Portuguese, Italian, German, Flemish, Saxon, Gothic, Icelandic, Polish, Bohemian, Russian, Sclavonic, Armenian, Turkish, Chaldaic, Syriac, Samaritan, Arabic, Ethiopic, Indian, Sanscrit, and Tamul.

Mr. Bailey publishes an interesting account of a visit to Mr. Burritt's *smithy*. "On my first ar-

rival at Worcester, I proceeded directly from the cars to inquire out Mr. Burritt. After two or three directions, I arrived at an extensive iron foundry. In a long line of workshops I was directed to that in which Mr. Burritt was employed. I entered, and, seeing several forges, sought for the object of my visit. 'He has just left, and is probably in his study,' said a son of Vulcan, resting his hammer on his shoulder meanwhile; 'there is his forge,' pointing to one that was silent. I had but a moment to study it. Its entire structure and apparatus resembled ordinary forges, except that it was neater and in better order. Mr. Burritt is a bachelor and a journeyman, and earns a shilling an hour by contract with the proprietor of this foundry. He lives and furnishes himself with books by this laborious application to his trade. Seeing on his table what appeared to be a diary, I read as follows: 'August 18. Forged 16 hours—read Celtic 3 hours—translated 2 pages of Icelandic, and three pages of German.' This was a single item of similar records which run through the book. To abate my surprise, he told me that this was a correct memorandum of the labors of every day; but the sixteen hours of labor was that which he performed in a *job*, and for which he was paid by the estimate of its value, but that he performed it in eight hours, thus gaining both time and money by double labor. Eight hours a day is his ordinary habit of labor at

the forge." The same writer describes Mr. Burritt (1843) as a person of middle stature, rather slender proportions, high, receding forehead, deeply set, steady, grayish eye, thin visage, fair complexion, thin, compressed upper lip, a hectic glow, and hair bordering on the brown or auburn.

In 1844 Mr. Burritt commenced the publication of a newspaper called the "Christian Citizen," and from that time has been largely known for his advocacy of peace doctrines—views which he has disseminated with enthusiasm. He is also an advocate of an ocean penny postage, in the furtherance of which he has visited Europe, and delivered popular lectures in several of the principal cities. Mr. Burritt's literary productions include, mainly, "Sparks from the Anvil," "A Voice from the Forge," and Peace Papers for the People." He has also printed some translations from the northern classics.

"Mr. Burritt furnishes a remarkable instance of what may be accomplished by perseverence in spite of the most unfavorable circumstances. A forge, of all places in the world, would seem the least favorable for the prosecution of studies demanding an unusual concentration of mind; yet, by a contented exercise of the will, Mr. Burritt was deaf to the tumult which surrounded him, and was able to accomplish an amount of study which places him in the front rank of great scholars. The other phase of his character, in which he has manifested decided originality and philanthropy,

will be better appreciated when the beneficence of his efforts are reviewed by the historian. In every respect Mr. Burritt is great and noble, and his name will descend to future generations as a bright example of a self-made man."

WILHELM, THE KNIFE-GRINDER.

"Knives to grind!" cried Wilhelm, as he limped through the streets of Brussels, driving his old crazy machine before him. "Knives and scissors to grind!" Wilhelm did not limit his trade to the grinding of knives and scissors exclusively; he would not refuse to put an edge upon a butcher's cleaver, and he was even very thankful to obtain a hatchet to reduce to chopping acuteness, but he only cried "Knives and scissors to grind," as has been the custom of itinerant cutlers since the days of Cataline. Wilhelm drove his machine before him very slowly, and he perhaps required to do so, as it was rather fragile in its constitution; but he called "Knives to grind" with a lusty, cheerful, happy voice, that seemed to belie his own constitution; for he, too, like his precursor combination of beams, and stones, and wheels, was none of the most robust of creation's works. He was a little, ragged, lame, and feeble Fleming, with an old and well-worn grinding wheel as his

only property; and anybody particular in affinities would have said they were made for each other.

Wilhelm's face would have been notified merely as "a face," by a passer by. Any one would have been satisfied at a glance that it was deficient in none of the constituent parts of the human visage; but the thought of whether it was beautiful or ugly would never have intruded itself amongst his impressions. His large, old, broad-brimmed hat was slouched over his back and shoulders, and threw a deep shade upon his brow; and then, again, his thick black hair clung in large curls down his pale cheeks, and also partly obscured his features; so that Wilhelm's countenance was not put forward to advantage like those of the bucks who promenaded the Boulevards, and therefore it might be full of hidden beauties for aught the world knew. His well-patched blouse hung loosely round his spare form, investing it with even more than its own due proportion of apparent robustness; but poverty's universal and palpable mantle hung over him all, with a truthful tell-tale earnestness of whose reality there could be no mistake. In this guise Wilhelm limped along, then, crying out for customers, and looking sharply about him for the same. He would turn his glancing eyes to the high windows of the quaint wooden-fronted houses, from which pretty damsels were looking into the street, and then he would look earnestly at the portly merchants who leant lazily over their half doors; but, though neither dame nor burgher

would pay any attention to him, Wilhelm would still jog on and shout as gaily as if he were a wild bird uttering his accustomed cry.

It was through the lower or Flemish part of the city that the knife-grinder pursued his slow and devious course, and either mantua-making and knife-using were at a discount, or all these utensils had been in good repair in that quarter, for poor Wilhelm had little, save the echo of his own cry from the throat of some precocious urchin, for his pains.

Up one street went Wilhelm, and down another. He often rested in front of the great Church of St. Gudule, and looked admiringly at its architecture, for he had a strong love for the beautiful, although he was only a knife-grinder; and sometimes he would seat himself upon the handle of his machine, in order to contemplate the outward grandeur of the Hotel de Ville; but if any one had supposed that there was one envious thought in all his contemplations, he did the knife-grinder injustice, for no envy had he, poor though he was.

To those who knew all about Wilhelm, there was nothing more incomprehensible in the world than his lightness of heart. That he should sing was one of the most startling of anomalies—he, whose father, the fireman, perished in trying to rescue his own wife and Wilhelm's mother from the flames of his burning home. It was often said by those who saw the knife-grinder's ever-cheerful aspect, that he might think of his father and mother, and if nothing else could remind him of them,

surely his own lameness might; for it was upon the night when they perished that he was afflicted, and yet he didn't seem to think so.

Wilhelm's life was a lonely enough one, without adding to it the pains and penalties of a morbid melancholy; but some folks didn't think so, and would have had him forever sad as well as lonely. It was acknowledged that Wilhelm was a wonderful lad, however; and as this phrase is capable of a multiplicity of explications, it may be as well to state that he had refused all offers of a pecuniary nature from anybody whatever, had established himself in a little dwelling, and supported himself by his grinding-machine, and this is why he was termed wonderful. If it had been possible to look into the bosom of the knife-grinder, there would have been seen throbbing there, and sending through every channel of his frame a current of boundless love, a heart as rich and pure as ever bosom bore. It was a wonderful heart, too; for it was stout and strong, and bore up as if it had been a giant's sent to animate a weakling. There was no flinching in its courage, no drooping in its joyous mood, no change in its loving pulsations from morn to night as he plodded up one narrow street, down another, through crossings and squares, and courts, and by-ways. Wilhelm the knife-grinder's heart was a hero's; and let who will say otherwise, we will maintain, with tongue and pen, that it was, and of the proudest order, too. It is easy, it is natural for hearts to maintain their

beauty and their goodness in those sunny spots of the world to which love and beauty are indigenous. By cheerful hearths, where, in the ruddy glow of the log, and in the bright flame, you picture golden gardens, and caverns, and groves, or behold the brightly lighted faces of childhood, how can the heart wither or grow sad? In the duality of love resides its natural life. Heart answering heart, bright eye enlightening eye, kind words echoing back love's gentle aspirations—these maintain the eternal spring of the affections, as sunlight and heat give to the earth her summer. If Wilhelm had resided in the Park where the nobility and English dwelt, or in the great Sablon Square among the merchants and savans, it would have been easy for one so constituted to have been happy and gay; but to maintain a vital relation to bright and glorious heaven, amidst the darkness and gloom of a lonely little room in the dingiest spot of the low town of Brussels, was heroism, let the world say as it will.

"Oh, have pity, and give the poor little homeless one a mite!" said a soft and gentle voice—so soft and gentle that the words might have been with propriety addressed direct to Heaven, as well as in the ear of one of Heaven's humblest agents upon earth, Wilhelm the knife-grinder.

It was in a dark and wretched quarter of the town where he was thus accosted, a spot whose gloom the shade of evening scarcely deepened; black walls, grim with the smoke of ages and

crumbling to ruin, rose on either hand, and, converging at the top, seemed agreed to meet and exclude the blue heavens and sunbeams. Little windows, dirty, dingy, broken, and rag-patched, told that these high walls were the walls of homes, and the faces of human beings, peeping now and again from them, were the indices of immured life and thought. Yet, even in that lofty series of chambers, where humility scarcely could brook to live, the little outcast, who had breathed her piteous accents to Wilhelm, had no spot to lay her head.

"One little farthing to buy a roll to poor Lelie," pursued the child, in tremulous tones; "oh, I am hungry!" and she laid her hand on that of Wilhelm, and looked up in his face.

The knife-grinder's machine dropped from his hands as if he had been suddenly struck, and he turned towards the suppliant with so benign a look that the child smiled in his face and crouched nearer to his person.

"Poor Lelie," said Wilhelm, descimating his fortune and presenting the tithe to the infant, "art thou hungry?"

"Yes; and cold, and sad," said the child, artlessly; "I have no father nor mother, nor anybody to care for me; I am a beggar and an outcast."

The knife-grinder held in his breath, as he bent to listen to the words of Lelie, and when she had done he caught her hand, stretched himself proudly

up, and breathed long and freely, while his eyes became radiant and his face illumined with a sudden and noble purpose.

"Alone, like me," exclaimed the knife-grinder; "poor child! Oh! is there another even more destitute of all the reciprocities of love than lame Wilhelm?" and he turned his kindly face towards the little girl; "I could sit at my lone fire at night when the world around me slept, and I could hold communion with my parents' spirits in silent peace and joy; but Lelie, what will night be to her but houseless horror. I am a man," pursued Wilhelm, again stretching himself and striving to look strong; "I am independent," and he shook the coppers in his pocket; "can I not snatch this child from sorrow and hunger? Jan Roos the water-carrier keeps a great dog, which I am sure will eat more food than Lelie—why not keep a child as well as a dog?" The spirit within the knife-grinder seemed to say, why not? and the spirit of the outcast child seemed to know it, for Lelie crouched still closer to Wilhelm, and looked up in his face as if she knew him. "And does no one care for you, Lelie?" said the poor lame youth, softly; "is there no one to love you?"

"None but the Father who dwells beyond the stars with good angels," said the child, timidly.

"Then thou shalt go with me for His Son's sake," said Wilhelm, snatching her up in his arms and kissing her pale, thin cheek, as lovingly and rapturously as if it had bloomed in health and

beauty. "Thou shalt go with me, and I will love thee and take care of thee, and thou shalt grow up to be a woman, and I will be to thee as a father. Sit there, Lelie, and hold on firmly; my machine is not very strong, but it will bear thee. I am not so brave and stout as the sentinels at the castle gate, but I will be weaker if I cannot carry thee home; so here we go;" and, with a heart overflowing with feelings which he had never known before, and his eyes dancing with a pleasure which surpassed all former emotions, he limped on with his crazy wheel and smiling child, the proudest man that night in Brussels.

"Here we are," cried Wilhelm, as he hurled Lelie into the dark passage of his home, opened his door, and, lifting her gently down, placed her upon his cold hearth-stone. "It won't be cold long," cried he, laughing cheerily, as he struck a light and applied it to the wood from the forest of Soignies, which filled his grate. "It isn't a palace this, Lelie; but if you are not as happy as a little queen, it shall be no fault of mine. Come, let me wash thy face and hands with this sweet water from the Seine, and eat thou of this brown bread."

After ministering in every possible way to the comfort of his protegé, Wilhelm sat him down, and looked upon her with eyes that sparkled in the light of his crackling logs. A strange elevating sensation stole over his spirit—a sense of dignity and power that he had never known in his

loneliness. Was it not a direct radiation from heaven which exalted the soul of this poor man, with an inward cognizance of paternity? "My child," muttered Wilhelm, with a sweet smile; "mine!—I now have something to care for; something that will learn to care for me. Jan Roos's dog loves him, I know, and would fight for him; but his dog is but a brute. This young Lelie was sent from heaven, fresh, rosy, and glowing with a celestial nature, and then misfortune blighted her, to render her a fit companion for the heart-lone Wilhelm Voss."

Everybody wondered to see how clean and neat Wilhelm the knife-grinder became all at once. He felt that it was necessary to give Lelie a good example in all things, and so he kept his blouse as clean as if every day were Sunday. A change came over the aspect of his home, too; he became particular with regard to scrubbing his floor, and burnishing his two little cooking pans, and arranging his crockery; and when he took Lelie to school, and paid a weekly instalment of what he intended to pay for her education, she and he were so trig and neat that the teacher said he was glad to see a brother have such care over his sister.

Wilhelm became filled by degrees with a sense of home and an assurance of love. When he was abroad, his thoughts were dancing in the flames of his own beaming hearth, and smiling in the face of pretty, blooming Lelie. In every penny he

earned, he recognized her share; in every step he took at nightfall towards his dwelling, amongst his anticipations of peace, rest, and comfort, her face was seen smiling him on, and her hands were seen spreading his board. Wilhelm's fortunes began to mend as the little girl began to grow up. He could not account for it unless as a gracious dispensation of that Great Ruler of good, who sent a double share of work to him for Lelie's sake. But work came to him now, when he didn't call out for it; and as he was respectable, and could go with his new machine to the Park, it was astonishing how much money he would carry home in the evenings. Nobody would have believed that the Wilhelm Voss who had his name painted jauntily on a board in front of his machine, and wore a smart blouse and beaver, was the same lame Wilhelm who bore home the little foundling five years previously. His cheeks were clean and ruddy, and his bright black eyes were scarcely brighter than his well-combed locks; and the cookmaids who brought him knives to grind often declared that his face was very handsome; and, blessings on their woman's hearts, they pitied him that he was lame, and you would have thought that they blunted the knives on purpose, so regularly did they bring them to Wilhelm to sharp.

Little Lelie grew up as tall and straight as a poplar, and as beautiful as any orange-tree in the royal conservatory of Brussels; and how pleasant to Wilhelm to watch her growth and opening

loveliness; but he could hardly define the happiness that thrilled him, when the truth dawned upon his observant spirit that she was like unto him in her ways. Every little delicate kindness that ever this lame knife-grinder had shown to this poor outcast, she strove by some spiritual impulse to reciprocate; she loved him with a strong and passionate earnestess that he knew not of; and every smile he gave her, every happy word he spoke, fell on her heart like heavenly music; and it was because of the refined and delicate manners which she observed in him, and which she so assiduously strove to imitate, that she loved him. Wilhelm had never hinted at the link which bound him and Lelie together; she was old enough when he found her to know that he was no relation of hers; and she had so distinct a remembrance of the vice amongst which she had dwelt, that the gentle words which Wilhelm constantly spoke, and the little prayers and hymns which he taught her to repeat, gave her at first a dim idea of maternal care, and then of human goodness, which she was constrained to love and venerate, and to which she had some indefinite affinity; but she had no sense of charity, no feeling of dependence, for Wilhelm had consulted her about every little household act, and had so identified her with himself in all he said or did, that she, too, had no thought of doing anything beyond the knowledge of "our Wilhelm."

Lelie would go out of the afternoons to meet her modest protector at some appointed place, and the knife-grinder looked so happy and so brave, and Lelie looked so beautiful and smiling, that the great folks began to take notice of the cheerful pair, and to declare that *that* knife-grinder and his pretty sister deserved to be encouraged. And so Wilhelm was encouraged; for, when he opened his cutler shop in the Place de Ville, customers came pouring on him, and, assuredly, Lelie had a busy time of it serving them. Dinner sets of knives and forks for the quiet, calculating dames, who were queens in their way, for each ruled a home; long black scalpels for physicians; large carvers for keepers of cook-shops; pruners and hedgebills for agriculturists; and hooks and scythes for reapers; together with penknives for students of law and divinity; these constituted part of the stock of Wilhelm Voss, and these were the class of his ready-money, constant customers.

In twelve years from his finding Lelie, Wilhelm was a man of standing and importance amongst the guildry of Brussels. He was esteemed wise, and good, and rich, which last was, perhaps, the most important consideration of the whole in the eyes of some. But he esteemed himself especially blessed of heaven in Lelie, and she was the chief of all his earthly treasures. And what a treasure of grace, and beauty, and affection, had that young child become! It was a picture far finer than any of the paintings in the city gallery, and

the finest of Flemish paintings were there; it was a finer sight than them all to behold Lelie seated behind the counter of Wilhelm's well-filled shop, on the fine summer afternoons, when the sunbeams streamed through the little panes, and fell upon her fine ruddy cheeks, smooth brown hair, and blue eyes, as she bent thoughtfully over a book, or wrought away with her needle. Wilhelm, grown a thoughtful man, with a dignified air that became him wonderfully well, would stand and gaze upon the maiden from his back workshop, and bless her from his heart; and then he would wonder if any one could envy him of this jewel of his home. Was it envy, or that most selfish of all the passions, sometimes misnamed love, that prompted Ritter Van Ostt, the skinner, to come so often to the shop of Mynheer Voss? He was a great gallant, Ritter, who was ambitious of illumining the world; for, like many other people whose money had accumulated in their coffers, he, with great modesty, and, no doubt, truth, felt assured that his intellect had brightened and expanded too; and if there had been an election for primarius of the University of Ghent or Louvain, and it had been left to Ritter to choose the fittest person to fill the academical chair, he would not have required to leave his bed to find such a person. He came to the shop of Wilhem day after day, finely done up in velvet and linen, with his beaver stuck up a little at the side to give it a rakish air, and his cloak hung carelessly upon one

shoulder, in cavalier fashion. He was a very large specimen of the human frame, and he spoke very loudly and authoritatively upon everything and even nothing, and few in Brussels thought themselves so high and killing as Ritter Van Ostt.

Brussels is a fine city. There is the Park, with its fine broad gravel walks, and its old green shady walnut-trees; and then there is the Botanic Garden, with its orange grove as old as the Prince of Orange himself; and there are galleries, and museums, and many other sights, all agreeable to look upon and profitable to contemplate. Ritter Van Ostt would ask Lelie Voss to accompany him to all these places, and Lelie, who had been at them all already with Wilhelm, would refuse, and declare that she had sufficiently seen them; and then Ritter would appeal to Wilhelm, who, remembering how happy she had been with him, would urge her to go for her own sake, but always in such tones that Lelie would still refuse three times out of five. And what was it that stirred Wilhelm Voss when Lelie would reluctantly go with Ritter? Was it the old sensation of his poor and lonely years—his sense of friendlessness that came back upon him? It was a strange vague feeling—a dread of nothingness, that stole over his heart as if to extinguish it. Ah, if Lelie were to leave him now! and then the tears would rush into his manly eyes, and Wilhelm knew that he loved her. It is a truth, and an almost uni-

versal one, that the strongest and most beautiful minds feel most sensitively the oppression of corporal infirmities. Wilhelm was lame, and he knew that Lelie was surpassing beautiful. He was only twelve years her senior, and he had known, loved, and tended her longer than any other mortal had; but though he had deemed himself fit to be a father and instructor to Lelie, he was convinced that she would hardly reckon him a fit companion to brighten and sustain her life—a worthy object to whom she might apply the name of husband.

"Ah, well, Wilhelm, I shall tell Myneer Van Ostt to walk by himself henceforth," said Lelie, gravely, as she threw off her cloak and hood after one of her walks. "I am done with him."

"And why, dear Lelie?" said Wilhelm.

"For various weighty reasons," said Lelie, smiling, "but chiefly on my own account."

"And how on your own account?" said Wilhelm, earnestly.

"Lest I should fall in love with so stupid a creature," said Lelie, laughing; "and then, you know, according to your theory, I should become like him."

Wilhelm was silent for a few moments, and then he said, "So you would prefer some other companion to Ritter, Lelie?"

"Ay, that I would, to all the Ritters in the Netherlands. Do you think, my own Wilhelm, that I am happy when I am in the gardens with

Van Ostt? Ah, if you do, how mistaken you are!"

Wilhelm was troubled, and then quietly said, "Ritter Van Ostt is a man of substance and of honest fame——"

"Oh, fame!" cried Lelie, interrupting him; "that he blows forth most lustily himself; they should put a trumpet in his hand when they erect his statue on the top of the Town-House."

"I have asked you to go with Ritter merely because I thought it would be pleasant for you to see the green trees, and to inhale the fragrance of the flowers."

"Then you should come with us if you wish them to be beautiful in themselves or agreeable to me," said Lelie, with charming naïveté.

Wilhelm looked at his portegé in amazement, and then a sweet smile overspread his face, as he replied, "And so you prefer to talk to Wilhelm and to walk with him, although he is not the finest talker or walker in Belgium."

"This hearth is the brightest spot I know or have ever known on earth," said Lelie, in low, tremulous, earnest tones. "This face is the handsomest to me in the world," she continued, as she leant upon Wilhelm's breast and spread back the dark curls from his brow. "These lips have ever been the sweetest exponents of wisdom and goodness that I have known. Ah, Wilhelm, Wilhelm! what should poor Lelie do if you were to bid her leave you?"

The knife-grinder caught the earnest tearful girl in his arms, and he gazed into her face. Was he dreaming? Was this some passing illusion too bright to last? Ah! no; for truth in its integrity and purity was reflected in her eyes. Through the vista of a few years he saw himself a poor and ragged youth, friendless and almost spiritless, plodding the streets of his native city for the precarious bread derived from a precarious calling. He saw a little girl thrown in his path even more friendless and wretched than he. The political economist who draws conclusions only after casual reflections and with arithmetical precision, would inevitably have seen in the adoption of this child by Wilhelm an addition to his misery; but, by a law which political economists and philosophers have never been able to write down, the blessing had come with the burden. A good deed more than rewards itself; the deed is but the action of a moment; the reward begins on earth, and goes on increasing through eternity. From a drooping, almost satisfied, son of poverty, Wilhelm, by the stirring of the nobler impulses of his nature, had grown slowly and gradually into a refined and honored man; and Lelie, from a beggar and an outcast, had been trained into beauty, goodness, and virtue.

"Well, Wilhelm, I consider it but right as a matter of courtesy, and what not?" said Ritter. Ritter always finished his sentences with the words, "and what not." "I consider it right," said he,

"to let you know that it is time Lelie was married."

"I was thinking so myself," said Wilhelm, as he leant over his counter, and smiled in the face of Van Ostt.

"And I consider it but right to let you know that I mean to have her, which, I daresay, will be as agreeable to you as to her, and what not?" said Ritter, cocking up his beaver and swelling out his cheeks.

"As agreeable to the one as to the other, doubtless," replied Wilhelm, quietly.

"You are a man of substance, Voss," said the skinner, looking more important than ever he had done, "and it is to be hoped that you will be liberal to the girl."

"I have never laid past a stiver but her share was in it," said Wilhelm, seriously; she shall have my all when she marries."

"I always said that you was a good fellow, and a liberal fellow, and what not?" said Ritter, grasping Wilhelm's hand, and slapping him on the shoulder with the other. "Odds Bobs, man, how glad we shall be to see thee in the evenings!"

"I shall keep at home in the evenings as hitherto," replied the knife-grinder, with a merry twinkle in his eye; "my wife shall feel lonely without me else."

"Your wife!" said Ritter, staring at Wilhelm; "who is she? when is it to be? and what not?"

"Why, Lelie has her wedding garments to

make, and what not?" said Wilhelm, laughing outright; "but whenever she says the word, I am ready."

"Lelie! you!" cried Ritter in amazement, as he looked at Wilhelm, and then, strutting up and down the shop, looked first at his limbs, and then at the cloth of his doublet. "Well, who ever heard of the like?"

"Ay, ay, Ritter, and so you envied me of my little girl, did you?" said Wilhelm, smiling; "she wouldn't have you, though, although you were twice as large and rich as you are. I shall take care and give thee a bidding, however, to our wedding."

Wilhelm and Lelie Voss were the father and mother of honest burghers, and of burghers' lovely wives. Everybody loved them who knew them, and their children almost adored them; but there was a class of children who had reason, above all others, to bless their name, and to rejoice that prosperity had not made them forget their own early days. The poor and outcast children of humanity, who roamed the streets in rags, were ever recognized by Wilhelm as brethren in soul and suffering; and the little girls who trembled on the verge of youthful purity and irreclaimable vice, were sisters to the bosom of Madame Lelie. Holy, purifying suffering! which, like the crucible of clay that is continent of gold, refines while it burns, how many have passed through thy ordeal preparatory to a mission of love and benificence!

Who so active as Wilhelm in founding the Foundling Hospital of Brussels? and who so careful in tending the school for orphans as Lelie? And Wilhelm and Lelie had means and time, too, to attend to these things; for he became burgomaster of all the crafts, and rich to boot, and lived at last in the Park where he once limped about, a poor itinerant knife-grinder.

THE STORY OF HUGH MILLER'S EARLY DAYS.

Hugh Miller was born at Cromarty, in 1802. His ancestors were a race of adventurous and skillful sailors, who had coasted the Scottish shores as early as the days of Sir Andrew Wood and the bold Barton. His great grandsire, one of the last of the buccaneers that sailed the Spanish Main, had invested a portion of his surplus doubloons in the long, low cottage where the subject of our sketch first drew breath. To avoid the hereditary fate of the family—which, in its male members, had, during many generations, nearly all perished at sea—Hugh Miller's grandmother consigned his father to the care of an aunt married to a neighboring farmer. But an agricultural life was not his destiny. The boy was sent to drown a litter of puppies; his young heart relenting, he found the task impossible, and towards gloaming wandered home to his mother with the doomed quadrupeds tucked up in his kilt. "Mother," said the

boy, in reply to a maternal ejaculation of surprise, "I couldna drown the little doggies, mother! and I brought them to you." The youth who "couldna drown the doggies" afterwards did very effective execution upon the Dutch off the "Dogger Bank." in the memorable naval action of the name.

Retiring from the service of his country—into which, indeed, he had been pressed without his consent—the next glimpse we have of Hugh Miller's father, he is master of a craft that sails from his native Cromarty. For a time fortune smiles upon the hardy tar; but, while sunning himself in success, he was doomed to feel how quickly adversity sometimes follows upon the heels of fortune. Early in November, 1797, Miller's sloop, which for some days had lain wind-bound in the port of Peterhead, left its moorings and bore out to sea. The breeze which had lured the craft from her haven speedily freshened into a gale, the gale into a hurricane, and his bark, the Friendship, is next morning in splinters on the bar of Findhorn. By the assistance of a friend, the money required to purchase a new sloop was provided, and soon a vessel nearly equal to the old is once more the property of the sailor.

Ten years pass away; it is again November; and again Miller's sloop—not now wind-bound as before, but compelled by the gale—seeks shelter in Peterhead. The tempest seems abated, and on the 10th of the ill-fated month, Miller has left the harbor of refuge. Soon a storm arose, more ter-

rible than the storm in which the Friendship went to pieces. All that skill and seamanship could do was done; but the night fell wild and tempestuous, and no vestige of the hapless sloop or ill-starred mariner was ever more seen. On the 9th November, Hugh Miller's father's last letter was addressed to his family. It had been received in the humble dwelling at Peterhead as only the letters of the sailor are received. But the night after the reception of the farewell epistle, the house door, which had been left unfastened, fell open. Hugh Miller, then just turned five years, is dispatched to shut it. Of what follows, it is perhaps well that the man should tell the recollections of the boy. "Day had not wholly disappeared, but it was fast posting into night. Within less than a yard of my breast, as plainly as I ever saw anything, was a dissevered hand and arm stretched towards me. Hand and arm were apparently those of a female; they bore a livid and sodden appearance; and directly fronting me, where the body ought to have been, there was only blank, transparent space, through which I could see the dim forms of the objects beyond. I was fearfully startled, and ran shrieking to my mother, telling her what I had seen. I communicated the story," continues Hugh Miller, "as it lies fixed in my memory, without attempting to explain it;" and we shall best respect the memory of the dead by leaving the apparition as its narrator has left it, unexplained. But whatever

doubt might be entertained about the reality of the vision, there could be none about the loss the boy had sustained. Long after hope had died in every breast save his own, was little Miller seen looking wistfully out from the grassy protuberance of the old coast line above his mother's house, into the Moray Frith, for the sloop with the white stripes and the square top-sails, but sloop nor sire never came again. In opening manhood Hugh Miller embalmed in verse the record of the catastrophe which beclouded "life's young day" with this great sorrow; but the boy of five years, day by day, and month after month, mounting that grassy knoll, intent only on discovering, amid "the yeast of waves," the bark which has borne his father from him never to return, is a nobler poem than any "a journeyman stone-mason" wrote.

The death of a father so keenly mourned, was in some measure compensated by his two maternal uncles—types of a class of men that, from age to age, have been the glory of the peasantry of Scotland. In his "Schools and Schoolmasters," the subject of our sketch has paid a generous and affecting tribute to this pair of noble brothers. Uncle James was a harness-maker—and wrought for the farmers of an extensive district of country—a keen local antiquary, and possessed of an astonishing store of traditionary lore. Ever just in his own dealings, he regarded every species of meanness with thorough contempt. Uncle Alex-

ander was characterized by the same strict integrity, though of a somewhat different cast from his brother, both in intellect and temperament. An old sailor, he had served under Duncan at Camperdown, taken part in the campaign under Abercrombie in Egypt, and by his descriptions of foreign plants and animals, had kindled in his nephew his own special tastes. Uncle Sandy, in point of fact, was Hugh Miller's professor of natural history. Before his father's death, young Miller had been sent to a "dame school," and, under the tuition of an old lady, he got through the Shorter Catechism, the Proverbs, the New Testament, and at length entered the Bible class. At first his tasks proved irksome in the extreme; but so soon as Hugh Miller discovered that in the art of reading consisted the art of finding stories in books, all the drudgery was over. After this discovery, his progress, which had hitherto been nothing extraordinary, accelerated in something like a geometric ratio. The stories of Joseph, of Samson, of David, of Goliath, of Elijah and Elisha, were all speedily mastered. From these Hebrew worthies, he turned to the classical romances of childhood—"Jack the Giant Killer," "Jack and the Bean Stalk," "Blue Beard," "Sinbad the Sailor," "Beauty and the Beast," "Aladdin, or the Wonderful Lamp." From these he passed, without any conscious line of division, to the "Odyssey" of old Homer, and from the "Odyssey" turned to that marvelous production of the Tinker of Elstow,—the

"Pilgrim's Progress." Subsequently, "Howie's Scots Worthies," "Napthali, or the Hind let Loose," "The Cloud of Witnesses," &c., were made his own. About this time, also, it was that Hugh Miller's "Uncle James" put into his hands "Blind Harry's Wallace." When the boy had read how Wallace killed young Selbie the constable's son, how Wallace had fished the Irvine water, and how Wallace killed the churl with his own staff in Ayr, his uncle with a dash of the dry humor that makes a joke effective, said to him, as the book seemed a rather rough sort of production, he need read no more of it unless he liked. But young Miller rather did like to read of Wallace. The fiery narrative of the blind bard intoxicated his young heart; all he had previously read or heard of battles seemed tame in comparison with the deeds of Scotland's hero guardian.

After some twelve months' instruction in the dame school, young Miller was transferred to the grammar school of Cromarty. Its master was a good scholar, but by no means an energetic instructor. If a boy wished to learn he could teach him, but if a boy wished to do nothing, he was not required to do more than he wished. Meeting one day with Uncle James, he urged the harness-maker to put his nephew into Latin. The recommendation of the master possessing a sort of pre-established harmony with the ideas of the uncle, Hugh Miller was transferred from the English to the Latin form. In the Latin class, however, he

appears to have forgotten his axiom about the art of reading. "The Rudiments" was to him by far the dullest book he ever read, and it was not long before he began miserably to flag, and to long for his English reading, with its picture-like descriptions and its amusing stories.

A few of the wealthier inhabitants of Cromarty, irritated with the small progress of their sons under the care of the parish teacher, got up a subscription school, to which they transferred their children. Uncle James, sharing the general impatience, sent his protegé thither likewise. The teacher of the subscription school was rather a clever young man, considerably smarter than the parish dominie, to whom the pleasures of sitting still seemed superior to all other pleasures. But unfortunately the master of the new academy soon proved quite as unsteady as he was clever. Having got rid of him, a licentiate of the Church of Scotland was procured. For a time this second teacher promised well, but, getting immersed in a special theological controversy, he ultimately resigned his charge. A third teacher was got, but unluckily he also soon gave up in despair. Young Miller's opportunities for exploring Cromarty and its environs were, in consequence of these mishaps, quite as great as ever. His recollections of excursions made into the interior at this early period, partially lift the veil which now, during fifty years has been falling over the antique customs of northern society.

"The Cromarty Sutors have their two lines of caves—an ancient line, hollowed by the waves many centuries ago, when the sea stood, in relation to the land, from fifteen to thirty feet higher along our shores than it does now; and a modern line, which the surf is still engaged in scooping out. Many of the older caves are lined with stalactites, deposited by springs that, filtering through the cracks and fissures of the gneiss, find lime enough in their passage to acquire what is known as a *petrifying*, though, in reality, only an incrusting quality. And these stalactites, under the name of 'white stones made by the water,' formed of old—as in that Cave of Slains specially mentioned by Buchanan and the Chroniclers, and in those caverns of the Peak so quaintly described by Cotton—one of the grand marvels of the place. Almost all the old gazetteers sufficiently copious in their details to mention Cromarty at all, refer to its 'Dropping Cave' as a marvelous marvel-producing cavern; and this 'Dropping Cave' is but one of many that look out upon the sea from the precipices of the Southern Sutor, in whose dark recesses the drops ever tinkle, and the stony ceilings ever grow. The wonder could not have been deemed a great or very rare one by a man like the late Sir George Mackenzie of Coul, well known from his travels in Iceland, and his experiments on the inflammability of the diamond; but it so happened, that Sir George, curious to see the sort of stones to which the old gazetteers referred, made

application to the minister of the parish for a set of specimens; and the minister straightway deputed the commission, which he believed to be not a difficult one, to one of his poorer parishioners, an old nailer, as a means of putting a few shillings in his way.

"It so happened, however, that the nailer had lost his wife by a sad accident, only a few weeks before; and the story went abroad that the poor woman was, as the townspeople expressed it, 'coming back.' She had been very suddenly hurried out of the world. When going down the quay, after nightfall one evening, with a parcel of clean linen for a sailor, her relative, she had missed footing on the pier-edge, and, half-brained, half-drowned, had been found in the morning, stone dead, at the bottom of the harbor. And now, as if pressed by some unsettled business, she used to be seen, it was said, hovering after nightfall about her old dwelling, or sauntering along the neighboring street; nay, there were occasions, according to the general report, in which she had even exchanged words with some of her neighbors, little to their satisfaction. The words, however, seemed in every instance to have wonderfully little to do with the affairs of another world. I remember seeing the wife of a neighbor rush into my mother's one evening, about this time, speechless with terror, and declare, after an awful pause, during which she had lain half-fainting in a chair, that she had just seen Christy. She had been engaged, as the night was falling, but ere darkness had quite set

in, in piling up a load of brushwood for fuel outside her door, when up started the spectre on the other side of the heap, attired in the ordinary workday garb of the deceased, and, in a light and hurried tone, asked, as Christy might have done ere the fatal accident, for a share of the brushwood. 'Give me some of that *hag*,' said the ghost; 'you have plenty—I have none.' It was not known whether or no the nailer had seen the apparition, but it was pretty certain he believed in it; and as the 'Dropping Cave' is both dark and solitary, and had forty years ago a bad name to boot—for the mermaid had been observed disporting in front of it even at mid-day, and lights seen and screams heard from it at nights—it must have been a rather formidable place to a man living in the momentary expectation of a visit from a dead wife. So far as could be ascertained—for the nailer himself was rather close in the matter—he had not entered the cave at all. He seemed, judging from the marks of scraping left along the sides for about two or three feet from the narrow opening, to have taken his stand outside, where the light was good, and the way of retreat clear, and to have raked outwards to him, as far as he could reach, all that stuck to the walls, including ropy slime and mouldy damp, but not one particle of stalactite. It was, of course, seen that his specimens would not suit Sir George; and the minister, in the extremity of the case, applied to my uncles, though with some little unwillingness, as it was known that no remu-

neration for their trouble could be offered to them. My uncles were, however, delighted with the commission—it was all for the benefit of science; and, providing themselves with torches and a hammer, they set out for the caves. And I, of course, accompanied them—a very happy boy, armed, like themselves, with hammer and torch, and prepared devotedly to labor in behalf of science and Sir George.

"I had never before seen the caves by torch-light; and though what I now witnessed did not quite come up to what I had read regarding the Grotto of Antiparos, or even the wonders of the Peak, it was unquestionably both strange and fine. The celebrated Dropping Cave proved inferior—as is not unfrequently the case with the celebrated—to a cave almost entirely unknown, which opened among the rocks a little further to the east; and yet even it had its interest. It widened, as one entered, into a twilight chamber, green with velvety mosses, that love the damp and the shade; and terminated in a range of crystalline wells, fed by the perpetual dropping, and hollowed in what seemed an altar-piece of the deposited marble. And above and along the sides there depended many a draped fold, and hung many a translucent icicle. The other cave, however, we found to be of much greater extent, and of more varied character. It is one of three caves of the old coast-line, known as the Dovecot or Pigeon Caves, which open upon a piece of rocky beach, overhung by a

rudely semicircular range of gloomy precipices. the points of the semicircle project on either side into deep water—into at least water so much deeper than the fall of ordinary neaps, that it is only during the ebb of stream tides that the place is accessible by land; and in each of these bold promontories—the terminal horns of the crescent—there is a cave of the present coast-line, deeply hollowed, in which the sea stands from ten to twelve feet in depth when the tide is at full, and in which the surf thunders, when gales blow hard from the stormy north-east, with the roar of whole parks of artillery. The cave in the western promontory, which bears among the townsfolk the name of the 'Puir Wife's Meal Kist,' has its roof drilled by two small perforations, the largest of them not a great deal wider than the blow-hole of a porpoise, that open externally among the cliffs above; and when, during storms from the sea, the huge waves come rolling ashore like green moving walls, there are certain times of the tide in which they shut up the mouth of the cave, and so compress the air within, that it rushes upwards through the openings, roaring in its escape as if ten whales were blowing at once, and rises from amid the crags overhead in two white jets of vapor, distinctly visible to the height of from sixty to eighty feet. If there be critics who have deemed it one of the extravagances of Goethe that he should have given life and motion, as in his famous witch-scene in 'Faust,' to the Hartz crags, they would

do well to visit this bold headland during some winter tempest from the east, and find his description perfectly sober and true:

"'See the giant crags, oh ho!
How they snort and how they blow.'

"Within, at the bottom of the crescent, and where the tide never reaches when at the fullest, we found the large pigeon cave, which we had come to explore, hollowed for about a hundred and fifty feet in the line of a fault. There runs across the opening the broken remains of a wall erected by some monopolizing proprietor of the neighboring lands, with the intention of appropriating to himself the pigeons of the cavern; but his day had, even at this time, been long gone by, and the wall had sunk into a ruin. As we advanced, the cave caught the echoes of our footsteps, and a flock of pigeons, startled from their nests, came whizzing out, almost brushing us with their wings. The damp floor sounded hollow to the tread; we saw the green mossy sides, which close in the uncertain light, more than twenty feet overhead, furrowed by ridges of stalactites, that became whiter and purer as they retired from the vegetative influences; and marked that the last plant which appeared, as we wended our way inwards, was a minute green moss, about half an inch in length, which slanted outwards on the prominences of the sides, and overlay myriads of similar sprigs of moss, long before converted into stone, but which, faithful in death to the ruling law of their

lives, still pointed, like the others, to the free air and the light. And then, in the deeper recesses of the cave, where the floor becomes covered with uneven sheets of stalagmite, and where long spear-like icicles and drapery-like foldings, pure as the marble of the sculptor descend from above or hang pendent over the sides, we found in abundance magnificent specimens for Sir George. The entire expedition was one of wondrous interest; and I returned next day to school, big with description and narrative, to excite, by truths more marvelous than fiction, the curiosity of my class-fellows.

"I had previously introduced them to the marvels of the hill; and during our Saturday half-holidays, some of them had accompanied me in my excursions to it. But it had failed, somehow, to catch their fancy. It was too solitary, and too far from home, and, as a scene of amusement, not at all equal to the town-links, where they could play at 'shinty,' and 'French and English,' almost within *hail* of their parents' homesteads. The very tract along its flat, moory summit, over which, according to tradition, Wallace had once driven before him, in headlong route, a strong body of English, and which was actually mottled with sepulchral tumuli, still visible amid the heath, failed in any marked degree to engage them; and though they liked well enough to hear about the caves, they seemed to have no very great desire to see them. There was, however, one little fellow, who sat at the Latin form—the member of a class lower and

brighter than the heavy one, though it was not particularly bright neither—who differed in this respect from all the others. Though he was my junior by about a twelvemonth, and shorter by about half a head, he was a diligent boy in even the Grammar School, in which boys were so rarely diligent, and, for his years, a thoroughly sensible one, without a grain of the dreamer in his composition. I succeeded, however, notwithstanding his sobriety, in infecting him thoroughly with my peculiar tastes, and learned to love him very much, partly because he doubled my amusements by sharing in them, and partly, I daresay, on the principle on which Mahomet preferred his old wife to his young one, because 'he believed in me.' Devoted to him as Caliban in the 'Tempest' to his friend Trinculo,

> "'I showed him the best springs, I plucked him berries,
> And I with my long nails did dig him pig-nuts.'

"His curiosity on this occasion was largely excited by my description of the Doocot Cave; and, setting out one morning to explore its wonders, armed with John Feddes's hammer, in the benefits of which my friend was permitted liberally to share, we failed, for that day at least, in finding our way back.

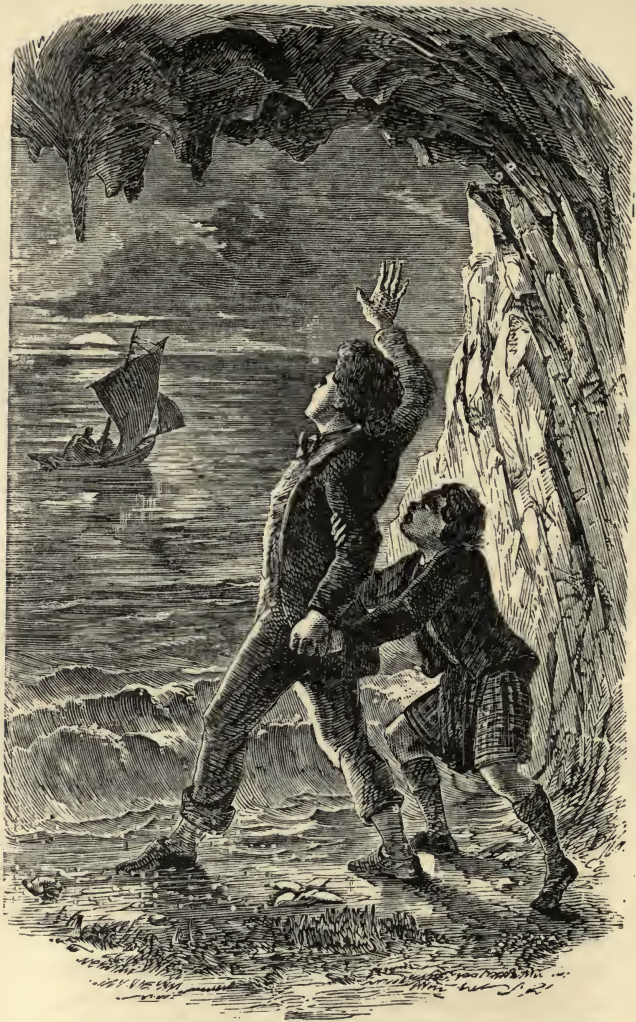
"It was on a pleasant spring morning that, with my little curious friend beside me, I stood on the beach opposite the eastern promontory, that, with its stern, granitic wall, bars access for ten days out

of every fourteen to the wonders of the Doocot; and saw it stretching provokingly out into the green water. It was hard to be disappointed and the caves so near. The tide was a low neap, and if we wanted a passage dry-shod, it behoved us to wait for at least a week; but neither of us understood the philosophy of neap tides at the period. I was quite sure I had got round at low water, with my uncles, not a great many days before, and we both inferred, that if we but succeeded in getting round now, it would be quite a pleasure to wait among the caves inside until such time as the fall of the tide should lay bare a passage for our return. A narrow and broken shelf runs along the promontory, on which, by the assistance of the naked toe and the toe-nail, it is just possible to creep. We succeeded in scrambling up to it; and then, crawling outwards on all-fours—the precipice, as we proceeded, beetling more and more formidable from above, and the water becoming greener and deeper below—we reached the outer point of the promontory; and then doubling the cape on a still narrowing margin—the water, by a reverse process, becoming shallower and less green as we advanced inwards—we found the ledge terminating just where, after clearing the sea, it overhung the gravelly beach at an elevation of nearly ten feet. Adown we both dropped, proud of our success; up splashed the rattling gravel as we fell; and for at least the whole coming week—though we were unaware of the extent

of our good luck at the time—the marvels of the Doocot Cave might be regarded as solely and exclusively our own. For one short seven days—to borrow emphasis from the phraseology of Carlyle—'they were our own, and no other man's.'

"The first few hours were hours of sheer enjoyment. The larger cave proved a mine of marvels; and we found a great deal additional to wonder at on the slopes beneath the precipices, and along the piece of rocky sea-beach in front. We succeeded in discovering for ourselves, in creeping, dwarf bushes, that told of the blighting influence of the sea-spray; the pale yellow honey-suckle that we had never seen before, save in gardens and shrubberies; and on a deeply-shaded slope that leaned against one of the steeper precipices, we detected the sweet-scented woodroof of the flower-pot and parterre, with its pretty verticillate leaves that become the more odoriferous the more they are crushed, and its white delicate flowers. There, too, immediately in the opening of the deeper cave, where a small stream came pattering in detached drops from the over-beetling precipice above, like the first drops of a heavy thunder-shower, we found the hot, bitter scurvy grass, with its minute cruciform flowers, which the great Captain Cook had used in his voyages; above all, *there* were the caves with their pigeons—white, variegated, and blue—and their mysterious and gloomy depths, in which plants hardened into stone, and water became marble. In a short time

we had broken off with our hammer whole pocket-fuls of stalactites and petrified moss. There were little pools at the side of the cave, where we could see the work of congelation going on, as at the commencement of an October frost, when the cold north wind ruffles, and but barely ruffles, the surface of some mountain lochan or sluggish moorland stream, and shows the newly-formed needles of ice projecting mole-like from the shores into the water. So rapid was the course of deposition, that there were cases in which the sides of the hollows seemed growing almost in proportion as the water rose in them; the springs, lipping over, deposited their minute crystals on the edges; and the reservoirs deepened and became more capacious as their mounds were built up by this curious masonry. The long telescopic prospect of the sparkling sea, as viewed from the inner extremity of the cavern, while all around was dark as midnight—the sudden gleam of the sea-gull, seen for a moment from the recess, as it flitted past in the sunshine—the black heaving bulk of the grampus, as it threw up its slender jets of spray, and then, turning downwards, displayed its glossy back and vast angular fin—even the pigeons, as they shot whizzing by, one moment scarce visible in the gloom, the next, radiant in the light—all acquired a new interest, from the peculiarity of the *setting* in which we saw them. They formed a series of sun-gilt vignettes, framed in jet; and it was long ere we tired of seeing and admiring in them much



YOUNG HUGH MILLER IN THE CAVE.

"There was a vessel crossing the wake of the moon at the time, scarce half a mile from the shore; and, assisted by my companion, I began to shout at the top of my lungs, in the hope of being heard by the sailors."—PAGE 243.

of the strange and the beautiful. It did seem rather ominous, however, and perhaps somewhat supernatural to boot, that about an hour after noon, the tide, while there was yet a full fathom of water beneath the brow of the promontory, ceased to fall, and then, after a quarter of an hour's space, began actually to creep upwards on the beach. But just hoping that there might be some mistake in the matter, which the evening tide would scarce fail to rectify, we continued to amuse ourselves, and to hope on. Hour after hour passed, lengthening as the shadows lengthened, and yet the tide still rose. The sun had sunk behind the precipices, and all was gloom along their bases, and double gloom in their caves; but their rugged brows still caught the red glare of evening. The flush rose higher and higher, chased by the shadows; and then, after lingering for a moment on their crests of honey-suckle and juniper, passed away, and the whole became sombre and gray. The sea-gull sprang upwards from where he had floated on the ripple, and hied him slowely away to his lodge in his deep-sea stack; the dusky cormorant flitted past, with heavier and more frequent stroke, to his whitened shelf high on the precipice; the pigeons came whizzing downwards from the uplands and the opposite land, and disappeared amid the gloom of their caves; every creature that had wings made use of them in speeding homewards; but neither my companion nor myself had any; and there was no

possibility of getting home without them. We made desperate efforts to scale the precipices, and on two several occasions succeeded in reaching mid-way shelves among the crags, where the sparrowhawk and the raven build; but though we had climbed well enough to render our return a matter of bare possibility, there was no possibility whatever of getting further up: the cliffs had never been scaled before, and they were not destined to be scaled now. And so, as the twilight deepened, and the precarious footing became every moment more doubtful and precarious still, we had just to give up in despair. 'Wouldn't care for myself,' said the poor little fellow, my companion, bursting into tears, 'if it were not for my mother; but what will my mother say?' 'Wouldn't care neither,' said I, with a heavy heart; 'but it's just back water, we'll get out at twall.' We retreated together into one of the shallower and drier caves, and, clearing a little spot of its rough stones, and then groping along the rocks for the dry grass that in the spring season hangs from them in withered tufts, we formed for ourselves a most uncomfortable bed, and lay down in one another's arms. For the last few hours mountainous piles of clouds had been rising dark and stormy in the sea-mouth: they had flared portentously in the setting sun, and had worn, with the decline of evening, almost every meteoric tint of anger, from fiery red to a sombre thundrous brown, and from sombre brown to doleful black. And

we could now at least hear what they portended, though we could no longer see. The rising wind began to howl mournfully amid the cliffs, and the sea, hitherto so silent, to beat heavily against the shore, and to boom, like distress-guns, from the recesses of the two deep-sea caves. We could hear, too, the beating rain, now heavier, now lighter, as the gusts swelled or sank; and the intermittent patter of the streamlet over the deeper cave, now driving against the precipices, now descending heavily on the stones.

"My companion had only the real evils of the case to deal with, and so, the hardness of our bed and the coldness of the night considered, he slept tolerably well; but I was unlucky enough to have evils greatly worse than the real ones to annoy me. The corpse of a drowned seaman had been found on the beach about a month previous, some forty yards from where we lay. The hands and feet, miserably contracted and corrugated into deep folds at every joint, yet swollen to twice their proper size, had been bleached as white as pieces of alumed sheep-skin; and where the head should have been, there existed only a sad mass of rubbish. I had examined the body, as young people are apt to do, a great deal too curiously for my peace; and, though I had never done the poor nameless seaman any harm, I could not have suffered more from him during that melancholy night had I been his murderer. Sleeping or waking, he was continually before me. Every time I dropped

into a doze, he would come stalking up the beach from the spot where he had lain, with his stiff white fingers, that stuck out like eagles' toes, and his pale broken pulp of a head, and attempt striking me; and then I would awaken with a start, cling to my companion, and remember that the drowned sailor had lain festering among the identical bunches of sea-weed that still rotted on the beach not a stone-cast away. The near neighborhood of a score of living bandits would have inspired less horror than the recollection of that one dead seaman.

"Towards midnight the sky cleared and the wind fell, and the moon, in her last quarter, rose red as a mass of heated iron out of the sea. We crept down, in the uncertain light, over the rough slippery crags, to ascertain whether the tide had not fallen sufficiently far to yield us a passage; but we found the waves chafing among the rocks just where the tide-line had rested twelve hours before, and a full fathom of sea enclasping the base of the promontory. A glimmering idea of the real nature of our situation at length crossed my mind. It was not imprisonment for a tide to which we had consigned ourselves; it was imprisonment for a week. There was little comfort in the thought, arising, as it did, amid the chills and terrors of a dreary midnight; and I looked wistfully on the sea as our only path of escape. There was a vessel crossing the wake of the moon at the time, scarce half a mile from the shore; and, as-

sisted by my companion, I began to shout at the top of my lungs, in the hope of being heard by the sailors. We saw her dim bulk falling slowly athwart the red glittering belt of light that had rendered her visible, and then disappearing in the murky blackness; and just as we lost sight of her forever, we could hear an indistinct sound mingling with the dash of the waves—the shout, in reply, of the startled helmsmen. The vessel, as we afterwards, learned, was a large stone-lighter, deeply laden, and unfurnished with a boat; nor were her crew at all sure that it would have been safe to attend to the midnight voice from amid the rocks, even had they the means of communication with the shore. We waited on and on, however, now shouting by turns, and now shouting together; but there was no second reply; and at length, losing hope, we groped our way back to our comfortless bed, just as the tide had again turned on the beach, and the waves began to roll upwards higher and higher at every dash.

"As the moon rose and brightened, the dead seaman became less troublesome; and I had succeeded in dropping as soundly asleep as my companion, when we were both aroused by a loud shout. We started up, and again crept downwards among the crags to the shore; and as we reached the sea, the shout was repeated. It was that of at least a dozen harsh voices united. There was a brief pause followed by another shout; and then two boats, strongly manned, shot round the

western promontory, and the men, resting on their oars, turned towards the rock, and shouted yet again. The whole town had been alarmed by the intelligence that two little boys had straggled away in the morning to the rocks of the Southern Sutor, and had not found their way back. The precipices had been from time immemorial a scene of frightful accidents, and it was at once inferred that one other sad accident had been added to the number. True, there were cases remembered of people having been tide-bound in the Doocot Caves, and not much the worse in consequence; but as the caves were inaccessible during neaps, we could not, it was said, possibly be in them; and the sole remaining ground of hope was, that, as had happened once before, only one of the two had been killed, and that the survivor was lingering among the rocks, afraid to come home. And in this belief, when the moon rose and the surf fell, the two boats had been fitted out. It was late in the morning ere we reached Cromarty, but a crowd on the beach awaited our arrival; and there were anxious-looking lights glancing in the windows, thick and manifold; nay, such was the interest elicited, that some enormously bad verse, in which the writer described the incident a few days after, became popular enough to be handed about in manuscript, and read at tea-parties, by the *élite* of the town. Poor old Miss Bond, who kept the town boarding-school, got the piece nicely dressed up, somewhat upon the principle on which

Macpherson translated Ossian; and at her first school examination—proud and happy day for the author!—it was recited with vast applause, by one of her prettiest young ladies, before the assembled taste and fashion of Cromarty."

About this period, schoolmaster number four is appointed to the Cromarty subscription academy. The new master appeared, to his more advanced pupils, a combination of the coxcomb and the pedant. It will not surprise readers in possession of this information, to learn that the subject of our sketch (through life as little as possible of either pedant or coxcomb) did not long keep on the most amicable terms with the new teacher. A fight arose out of some dispute about spelling, which so soon as finished, Miller takes down his cap from the pin, and bids the pedagogue good-bye, having got about as little benefit from his half-dozen preceptors as probably ever did any man of equal eminence.

Hugh Miller is now nearly seventeen years of age: the period has arrived when he must decide what shall be the business of his life. His uncles had expected to see their nephew attaining eminence in some of the learned professions. Their labor was their only capital, yet they would gladly have assisted him in getting to college. But to all their entreaties he pertinaciously demurred. He thought himself destitute of any peculiar fitness for either the legal or the medical professions, and the church was too serious a direction in which to look

for his bread, unless he could regard himself as called to the church's proper work. With extreme reluctance Hugh Miller's uncles resigned their nephew to a life of manual labor. Consent, however, was at length wrung from them, and their protegé, whom they would gladly have sent to the university, becomes a mason's apprentice, and may be seen arrayed, not in the gown of the scholar, but in a suit of moleskins, and a pair of heavy hob-nailed shoes. Unwilling that labor should wield over him a rod entirely black, the profession of a mason was chosen by Hugh Miller, in the hope that in the amusement of one half the year, he should find compensation for the toils of the other half. Just turned seventeen, Miller enters the quarry of Cromarty, the mason's of his native place combining both occupations. Now he is about to reap the first fruits of his prolonged excursions with Uncle Sandy. The quarry was an upper member of that formation known to geologists as the Lower Old Red Sandstone, and here Hugh Miller soon discovered the same phenomena he had witnessed on the sea-beach, when laid bare by the ebb tides. His own description of the scenes and circumstances in which his first day of toil was passed is highly fascinating:

"A heap of loose fragments which had fallen from above, blocked up the face of the quarry, and my first employment was to clear them away. The friction of the shovel soon blistered my hands, but the pain was by no means very severe, and I

wrought hard and willingly, that I might see how the huge strata below, which presented so firm and unbroken a frontage, were to be torn up and removed. Picks, and wedges, and levers, were applied by my brother-workmen; and simple and rude as I had been accustomed to regard these implements, I found I had much to learn in the way of using them. They all proved inefficient, however, and the workmen had to bore into one of the inferior strata, and employ gunpowder. The process was new to me, and I deemed it a highly amusing one; it had the merit, too, of being attended with some such degree of danger as a boating or rock excursion, and had thus an interest independent of its novelty. We had a few capital shots: the fragments flew in every direction; and an immense mass of the diluvium came toppling down, bearing with it two dead birds, that in a recent storm had crept into one of the deeper fissures, to die in the shelter. I felt a new interest in examining them. The one was a pretty cock-goldfinch, with its hood of vermilion, and its wings inlaid with the gold to which it owes its name, as unsoiled and smooth as if it had been preserved for a museum. The other, a somewhat rarer bird, of the woodpecker tribe, was variegated with light-blue and a grayish-yellow. I was engaged in admiring the poor little things, more disposed to be sentimental, perhaps, than if I had been ten years older, and thinking of the contrast between the warmth and jollity of their green summer

haunts, and the cold and darkness of their last retreat, when I heard our employer bidding the workmen lay by their tools. I looked up and saw the sun sinking behind the thick fir wood beside us, and the long dark shadows of the trees stretching downwards towards the shore.

"This was no very formidable beginning of the course of life I had so much dreaded. To be sure, my hands were a little sore, and I felt nearly as much fatigued as if I had been climbing among the rocks; but I had wrought and been useful, and had yet enjoyed the day fully as much as usual. It was no small matter, too, that the evening, converted, by a rare transmutation, into the delicious 'blink of rest' which Burns so truthfully describes, was all my own. I was as light of heart next morning as any of my brother-workmen. There had been a smart frost during the night, and the rime lay white on the grass as we passed onwards through the fields; but the sun rose in a clear atmosphere, and the day mellowed, as it advanced, into one of those delightful days of early spring, which give so pleasing an earnest of whatever is mild and genial in the better half of the year. All the workmen rested at mid-day, and I went to enjoy my half-hour alone on a mossy knoll in the neighboring wood, which commands through the trees a wide prospect of the bay and the opposite shore. There was not a wrinkle on the water, nor a cloud in the sky, and the branches were as moveless in the calm as if

they had been traced on canvas. From a wooded promontory that stretched half-way across the frith, there ascended a thin column of smoke. It rose straight as the line of a plummet for more than a thousand yards, and then on reaching a thinner stratum of air, spread out equally on every side, like the foliage of a stately tree. Ben Wyvis rose to the west, white with the yet unwasted snows of winter, and as sharply defined in the clear atmosphere as if all its sunny slopes and blue retiring hollows had been chiseled in marble. A line of snow ran along the opposite hills; all above was white, and all below was purple. They reminded me of the pretty French story, in which an old artist is described as tasking the ingenuity of his future son-in-law, by giving him as a subject for his pencil a flower-piece composed of only white flowers, of which the one half were to bear their proper color, the other half a deep purple hue, and yet all to be perfectly natural; and how the young man resolved to riddle and gained his mistress, by introducing a transparent purple vase into the picture, and making the light pass through it on the flowers that were drooping over the edge. I returned to the quarry, convinced that a very exquisite pleasure may be a very cheap one, and that the busiest employments may afford leisure enough to enjoy it.

"The gunpowder had loosened a large mass in one of the inferior strata, and our first employment, on resuming our labors, was to raise it from its

bed. I assisted the other workmen in placing it on edge, and was much struck by the appearance of the platform on which it rested. The entire surface was ridged and furrowed like a bank of sand that had been left by the tide on hour before. I could trace every bend and curvature, every cross hollow and counter ridge of the corresponding phenomena; for the resemblance was no half resemblance—it was the thing itself; and I had observed it a hundred and a hundred times, when sailing my little schooner in the shallows left by the ebb. But what had become of the waves that had thus fretted the solid rock, or of what element had they been composed? I felt as completely at fault as Robinson Crusoe did on his discovering the print of a man's foot on the sand. The evening furnished me with still further cause of wonder. We raised another block in a different part of the quarry, and found that the area of a circular depression in the stratum below was broken and flawed in every direction, as if it had been the bottom of a pool recently dried up, which had shrunk and split in the hardening. Several large stones came rolling down from the diluvium in the course of the afternoon. They were of different qualities from the sandstone below, and from one another; and, what was more wonderful still, they were all rounded and water-worn, as if they had been tossed about in the sea, or the bed of a river, for hundreds of years. There could not, surely, be a more conclusive proof that the

bank which had inclosed them so long could not have been created on the rock on which it rested. No workman ever manufactures a half-worn article, and the stones were all half-worn! And if not the bank, why then the sandstone underneath? I was lost in conjecture, and found I had food enough for thought that evening, without once thinking of the unhappiness of a life of labor."

He had entered the school of labor with the timidity of the yet undeveloped mind that shrinks from grappling with the stern realities of life; but surrounded with images of grandeur, of beauty, and of liberty, on every side, the spirit of the future geologist shook off the shrinking and timidity with which it had been oppressed, and the remembrance of those early days of toil dictated that noble apostrophe to labor, with which he has adorned his "Schools and Schoolmasters:" "Upright, self-relying toil! Who that knows thy solid worth and value would be ashamed of thy hard hands and thy soiled vestments, and thy obscure tasks—thy humble cottage, and hard couch, and homely fare! Save for thee and thy lessons, man in society would everywhere sink into a sad compound of the fiend and the wild beast, and this fallen world would be as certainly a moral as a natural wilderness."

Though the dreaded proved imaginary, nevertheless some real evils followed his entrance upon a life of toil. The seeds of that mysterious combination of physical and mental disease which,

some forty years afterwards, did its work in so very terrible a manner, were sown in the quarry of Cromarty. Wandering pains in the joints, an oppressive feeling about the chest, frequent fits of extreme depression of spirits, and inability to protect himself against accident, are noted as suffered by Hugh Miller during the first months of his apprenticeship. And if to these we add partial fits of somnambulism, of which he was also at this time the victim, we shall not be far wrong in concluding that the calamity which laid him low, was a calamity he had long silently combated. Retiring from the over-wrought quarries of Cromarty, Hugh Miller crossed the Moray Frith, and began work in a new field. Here, by the hill of Eathie, he discovered a liassic deposit, so amazingly rich in organisms, that the great Alexandrian library, with its tomes of ancient literature, the accumulation of long ages, was but a meagre collection in comparison. The working season of the mason is now over, and the next three months are Hugh Miller's exclusive property. In the company of a cousin he makes a Highland tour—visits his cousin's father-in-law in the upper district of Strathcarron. The road to the shieling of this aged shepherd lay through an uninhabited valley strewed with the ruins of fallen cottages, in other days the roof-trees of the best swordsmen in Ross. Returned from his excursion into the interior, Hugh Miller formed, or rather we should say renewed, acquaintance with an apprentice house-

painter in Cromarty. William Ross was a lad of genius, but diffident and melancholy, with a fine eye and keen relish for the beautiful and sublime, but the joy with which the contemplation of nature inspired his soul was overcast by the consciousness that soon her raptures would be for other eyes than his. Many a moonlight walk the two friends took together, visiting at nightfall the glades of the surrounding woods, and listening to the moaning winds sweeping sullenly along the pines. But now winter is past, and moonlight walks and moody reveries must have an end for a time. Spring has come again, and again Hugh Miller girds himself for the active duties of the stone-cutter. Before midsummer, however, work has failed his master, and the squad is thrown out of employment. Uncle David, during twenty-five years an employer of labor, is compelled to become a journeyman. The old man, after considerable effort, at length found "a brother of the earth to give him leave to toil." Hugh Miller, too loyal to abandon his master in the hour of adversity, was first brought by this misfortune into contact with the bothy system, then only in its infancy, but now unhappily diffused over a large area of Scotland. Bothy life, it might have been supposed, was not likely to bring the subject of our narrative into contact with anything save the riotous glee and practical joking of the barrack, but it was not so. From reason's earliest dawn until reason was no more, Hugh Miller was ever encompassed with

much of the wild and supernatural. On the evening of the first day passed in this new school, he had repaired to a hay-loft, the only place of shelter he could find. Exhausted nature found its needed repose on a heap of straw. But, unaccustomed to so rough a couch, he awoke at midnight, and was looking out from a small window upon a dreary moor, a ruinous chapel, and a solitary burying-ground. Suddenly a light flickered among the grave-stones, and what seemed a continuous screaming was heard from among the tombs. Quitting the churchyard, the light crossed the moor in a straight line, tossed with many a wave and flourish. In a moment the servant girls of the mansion-house came rushing out in undress, summoning the workmen to their assistance. Mad Bell had broke out again. As the masons appeared at the door, they were joined by the solitary watcher from the loft. It was, however, soon discovered that the maniac was already in custody. Two men were dragging her to her own cottage. On entering her hut, they proceeded to bind her down to the damp earth. Hugh Miller and a comrade successfully remonstrated—the maniac was not bound. Mad Bell's song ceased for a moment, and, turning a keen, scrutinizing glance upon the youths who had spoken good for her, she emphatically repeated the sacred text, "Blessed are the merciful, for they shall obtain mercy."

Hugh Miller had just turned twenty-one, when, work failing in the north, he bade adieu to

northern scenes and northern friends, and sailed from his native town, ambitious to mate himself with the stone-cutters of the metropolis, then reputed the best stone-cutters in the world. After a four days' voyage he landed at Leith, and from Leith proceeded to Edinburgh. While sauntering along Princes Street, admiring the picturesque views with which the Scottish capital so abounds, he is laid hold of by a slim pale lad in moleskins. It was William Ross; and during what remained of that night the two friends explored the city together. Hugh Miller found work in the vicinity of Niddry Mill; and beneath the shade of Niddry Wood it was that he first became practically acquainted with combinations. A reduction of wages had produced a strike. Hugh did not believe in strikes, and predicted that the one in which they had become involved would be a failure. The leader of the squad more than half admitted he was right. But to that reckless daredevil Charles, or Cha, as his comrades called him, the excitement of a monster meeting on Bruntsfield Links outweighed the dictates of prudence. So the masons marched away to the gathering on the Links. The outdoor meeting over, a low tavern in Canongate received the heroes from Niddry. They were to meet again in the evening, in one of the halls of Edinburgh, but in the tavern they grew deaf to time, and oblivious of all connected with the strike. Hugh Miller, leaving his companions to their revel, passed the night with

his friend William Ross. William took a warm interest in strikes, and entertained quite as sanguine hopes about the happy influence of the principle of union upon the British *proletair* as the most ardent of French Socialists. But though the two friends could not agree in their opinions upon trades combinations or the value of strikes, in the tastes and sympathies shared in common these differences were forgotten.

The following graphic sketch of "poor Charles," who figures as leader in the strike, shows in a very forcible manner how talents of no mean order are frequently shipwrecked: "No man of the party squandered his gains more recklessly than Charles, or had looser notions regarding the legitimacy of the uses to which he too often applied them. And yet, notwithstanding, he was a generous-hearted fellow; and, under the influence of religious principle, would, like Burns himself, have made a very noble man. In gradually forming my acquaintance with him, I was at first struck by the circumstance that he never joined in the clumsy ridicule with which I used to be assailed by the other workmen. When left, too, on one occasion, in consequence of a tacit combination against me, to roll up a large stone to the sort of block bench, or *siege*, as it is technically termed, on which the mass had to be hewn, and as I was slowly succeeding in doing, through dint of very violent effort, what some two or three men usually united to do, Charles stepped out to assist

me; and the combination at once broke down. Unlike the others, too, who, while they never scrupled to take odds against me, seemed sufficiently chary of coming in contact with me singly, he learned to seek me out in our intervals of labor, and to converse upon subjects upon which we felt a common interest. He was not only an excellent operative mechanic, but possessed also of considerable architectural skill; and in this special province we found an interchange of idea not unprofitable. He had a turn, too, for reading, though he was by no means extensively read; and liked to converse about books. Nor, though the faculty had been but little cultivated, was he devoid of an eye for the curious in nature. On directing his attention, one morning, to a well-marked impression of lepidodendron, which delicately fretted with its lozenge-shaped net-work one of the planes of the stone before me, he began to describe, with a minuteness of observation not common among working men, certain strange forms which had attracted his notice when employed among the gray flagstones of Forfarshire. I long after recognized in his description that strange crustacean of the Middle Old Red Sandstone of Scotland, the *Pterygotus*—an organism which was wholly unknown at this time to geologists, and which is but partially known still; and I saw in 1838, on the publication, in its first edition, of the 'Elements' of Sir Charles Lyell, what he meant to indicate by a rude sketch which he drew

on the stone before us, and which, to the base of a semi-elipsis somewhat resembling a horse-shoe, united an angular prolongation not very unlike the iron stem of a pointing trowel drawn from the handle. He had evidently seen, long ere it had been detected by the scientific eye, that strange ichthyolite of the Old Red system, the *Cephalaspis*. His story, though he used to tell it with great humor, and no little dramatic effect, was in reality a very sad one. He had quarreled, when quite a lad, with one of his fellow-workmen, and was unfortunate enough, in the pugilistic encounter which followed, to break his jaw-bone, and otherwise so severely to injure him, that for some time his recovery seemed doubtful. Flying, pursued by the officers of the law, he was, after a few days' hiding, apprehended, lodged in jail, tried at the High Court of Justiciary, and ultimately sentenced to three months' imprisonment. And these three months he had to spend—for such was the wretched arrangement of the time—in the worst society in the world. In sketching, as he sometimes did, for the general amusement, the characters of the various prisoners with whom he had associated—from the sneaking pick-pocket and the murderous ruffian, to the simple Highland smuggler, who had converted his grain into whisky, with scarce intelligence enough to see that there was aught morally wrong in the transaction—he sought only to be as graphic and humorous as he could, and always with complete

success. But there attached to his narratives an unintentional moral; and I cannot yet call them up without feeling indignant at that detestable practice of promiscuous imprisonment which so long obtained in our country, and which had the effect of converting its jails into such complete criminal-manufacturing institutions, that, had the honest men of the community risen and dealt by them as the Lord-George-Gordon mob dealt with Newgate, I hardly think they would have been acting out of character. Poor Charles had a nobility in his nature which saved him from being contaminated by what was worst in his meaner associates; but he was none the better for his imprisonment, and he quitted jail, of course, a marked man; and his after career was, I fear, all the more reckless in consequence of the stain imparted at this time to his character. He was as decidedly a leader among his brother workmen as I myself had been, when sowing my wild oats, among my school-fellows; but society in its settled state, and in a country such as ours, allows no such scope to the man as it does to the boy; and so his leadership, dangerous both to himself and his associates, had chiefly, as the scene of its trophies, the grosser and more lawless haunts of vice and dissipation. His course through life was a sad, and, I fear, a brief one. When that sudden crash in the commercial world took place, in which the speculation mania of 1824–25 terminated, he was, with thousands more, thrown

out of employment; and, having saved not a farthing of his earnings, he was compelled, under the pressure of actual want, to enlist as a soldier into one of the regiments of the line, bound for one of the intertropical colonies. And there, as his old comrades lost all trace of him, he too probably fell a victim, in an insalubrious climate, to old habits and new rum."

With bitter grief, Hugh Miller discovered that his early companion, William Ross, was fast losing confidence in his own powers—the shadow of the cypress shed its sadness into his soul. In reply to an effort to rally him, with characteristic modesty he exclaimed: "Ah, Miller! what matters it about me? You have stamina in you, and will force your way, but I want strength; the world will never hear of me." The prophecy was all too surely and too swiftly realized. But a little while, and that thin, pale, fair-haired, flat-chested, stooping figure, already a drooping and withered flower, has quietly dropped into the grave, and his one friend on earth sighs for "the touch of a vanished hand, and the sound of a voice that is still."

When Hugh Miller was working as an operative mason at Niddry, not London itself was the centre of a greater literary activity than the Scottish capital. Yet, though living in the light of that galaxy of genius which then shed so great a lustre over Scotland, he was never fortunate enough to catch a glimpse of either Jeffrey or Wilson, Dugald Stewart or Sir Walter Scott.

His personal recollections dating from this period (with the single exception of the historian of Knox and Melville) embrace none of the celebrities of the metropolis. When leaving Cromarty, the last injunction of his uncle was, "Be sure and visit Dr. M'Crie's Church when in Edinburgh." The precept was obeyed. Much has since been said and written about Thomas M'Crie, but the most impressive picture of that thin, spare, semi-military, semi-ecclesiastical figure, with an air of melancholy spreading its soft shadow upon his countenance, has been painted by Hugh Miller.

After about a couple of years of labor in Edinburgh, the subject of our narrative felt premonitions of that disease of the lungs and chest which has made the stone-cutters of the metropolis a short-lived race. To recruit his exhausted energies, he resolved to revisit his birthplace; and after a somewhat tedious voyage, he again sets foot on the beach of his native town. On his return to Cromarty, Hugh Miller found an old companion, one of a band he had long led in days of youthful frolic, relinquishing superior commercial prospects for the work of the ministry; and to the influence of this reunion and disinterested example did he trace it that now religion's tranquil star shed over his soul its selectest influence. For some months after his return to Cromarty, he continued in delicate and indifferent health. Not a moment too soon had he made his escape from the stone-cutter's malady. When

health was again somewhat established, he set about executing sculptured tablets and tombstones —a kind of work in which he excelled. But a sufficiency of this species of employment not being found in Cromarty, he visited Inverness. Here his skill as a stone-cutter received the promptest recognition; and while his days were given to toil, his nights were employed in preparing a volume of poetry for the press. The volume of verse did little else for his fame than bring him into contact with Mr. Carruthers, editor of the *Inverness Courier*. Mr. Carruthers introduced him to the late Principal Baird, and, at his suggestion, that most delightful of all Hugh Miller's works, his "Schools and Schoolmasters," was planned and written. About this time, also, it was he made the acquaintance of the late Sir Thomas Dick Lauder. He likewise, now, became known to certain young ladies, and especially to Miss Lydia Mackenzie Frazer.

A branch of the Commercial Bank having been opened in Cromarty, Hugh Miller was appointed accountant. To gain the necessary experience, he was sent to one of the branches of the Commercial at Linlithgow. At first he was a little awkward in his new vocation, but, having mastered the central princple, around which the details grouped themselves, he suddenly shot up into an accomplished accountant. During the first year of his accountantship, "Scenes and Legends of the North of Scotland" appeared, wherein he says:

—"There is no personage of real life who can be more properly regarded as a hermit of the churchyard than the itinerant sculptor, who wanders from one country burying-ground to another, recording on his tablets of stone the tears of the living and the worth of the dead. If possessed of a common portion of feeling and imagination, he cannot fail of deeming his profession a school of benevolence and poetry. For my own part, I have seldom thrown aside the hammer and trowel of the stonemason for the chisel of the itinerant sculptor, without receiving some fresh confirmation of the opinion. How often have I suffered my mallet to rest on the unfinished epitaph, when listening to some friend of the buried expatiating with all the eloquence of grief on the mysterious warning and the sad death-bed—on the worth that had departed, and the sorrow that remained behind! How often, forgetting that I was merely an auditor, have I so identified myself with the mourner, as to feel my heart swell and my eyes becoming moist! Even the very aspect of a solitary churchyard seems conducive to habits of thought and feeling. I have risen from my employment to mark the shadow of tombstone and burial mound creeping over the sward at my feet, and have been rendered serious by the reflection, that as those gnomons of the dead marked out no line of hours, though the hours passed as the shadows moved, so, in that eternity in which even the dead exist, there is a nameless tide of continuity, but no division of

time. I have become sad, when, looking on the green mounds around me, I have regarded them as waves of triumph which time and death had rolled over the wreck of man; and the feeling has been deepened, when, looking down with the eye of imagination through this motionless sea of graves, I have marked the sad remains of both the long departed and the recent dead, thickly strewed over the bottom. I have grieved above the half-soiled shroud of her for whom the tears of bereavement had not yet been dried up, and sighed over the mouldering bones of him whose very name had long since perished from the earth."

During the second year of his accountantship, Lydia Mackenzie Fraser became Mrs. Miller; and in order to supplement his income, which did not now look quite so large as once it would have done, the bank accountant began to write for the periodicals. "Wilson's Tales of the Borders," and, subsequently, "Chambers's Edinburgh Journal," were enriched with frequent contributions from his pen. The period had, however, now come when Hugh Miller was to be drawn aside from the serene walks of literature and science, into the stormy arena of ecclesiastical polemics. The great Non-intrusion controversy was at its height. The House of Lords had decided the Auchterarder case. A sleepless night passed by Mr. Miller after learning that decision resulted in "A Letter from one of the Scotch People to the Right Hon. Lord Brougham." This *brochure* was no sooner

published, than it was pronounced one of the ablest appeals from the popular side of the Church which the controversy had produced. Its racy English was enjoyed by O'Connell, and even Mr. Gladstone pronounced a fervid eulogium on its surpassing merits. Stimulated at once by his own intense interest in the question, and by the notice his first pamphlet attracted, a second, quite equal to the first, was quickly ready. These pamphlets were his passports to the position he was about to be called to occupy in Edinburgh.

The Non-intrusion leaders were in quest of an editor for a paper they were about to start in the metropolis; and no sooner had one of the most distinguished of them read those rare tractates, than with characteristic promptitude he exclaimed, "Here is the man for our *Witness*." A letter to the bank accountant was dispatched from Edinburgh, summoning him to a conference with the leading Non-intrusionists; Hugh Miller repaired to the Scottish capital, accepted the editorship of the projected journal, and terminated his engagement with the Commercial Bank. Thus it came to pass, that he who in early life felt no call to become a minister of the Church, now, in the maturity of his power, voluntarily assumes the onerous position of defender of the Church's most sacred spiritual privileges. It is no purpose of this sketch to enter upon the discussion of vexed questions in Church controversy; we are ready to acknowledge that widely different opinions may

be formed upon the justness of the principles for which Hugh Miller contended, and to the advocacy of which the *Witness* was devoted. There can, however, be only one opinion respecting the great and peculiar ability which he brought to the defense and vindication of the principles of his party. Nor, while remembering and recording this fact, must it be forgotten that the *Witness* newspaper has ever been something very different from a merely ecclesiastical organ. Hugh Miller brought to his editorial labors a mind imbued with the noblest literature of England. His perfect familiarity with the great masters of English prose gave to all his works that charm of style for which they are so remarkable. In the literature of the Scottish Legend, he rivaled Hogg; and as a geologist, he at once took his place beside the Bucklands and the Murchisons, the Sedgwicks and the Lyells. From all these varied sources he drew at will treasures new and old, wherewith to enrich the columns of the journal with which, for the last sixteen years of his life, his name was identified. If there were brother editors his superiors in that prompt concentration of mental power which enables the journalist to write well upon the topic of the hour, we know no journalist, either Scottish or English, who has furnished a series of leading articles, on nearly every conceivable topic within the range of newspaper criticism, so distinguished at once by imaginative, logical, and high literary power. By turns humorous,

satirical, and poetical, ever instructive and ever entertaining, the stamp of intense individuality is upon them all. Latterly, under a benevolent impulse, he took the field as a lecturer. On his first appearance in this new capacity, his chairman was the Duke of Argyle—a nobleman who, ever since Mr. Miller's introduction to the British Association, cherished for him the highest consideration. Like Burns, who, casting from him the poor sixpence a-day, served zealously as a volunteer, whatever oral services he could render his countrymen were rendered gratuitously. At length, however, this continuous and multifarious toil proved too much. Even with prolonged periods of nearly complete cessation from the labors of the journalist, he did not rally as formerly. He had been forbidden all mental exertion by his medical advisers during the latter months of 1856; but "The Testimony of the Rocks" kept him in harness until the middle of December. The last sheets of the work had been corrected, and its author had begun to rejoice in his completed toil, when the same enemy that so mysteriously prostrated the stripling in the quarry of Cromarty, menaced the sage with seven-fold fury. In dreams and visions of the night, when deep sleep falleth upon men, horrible spectres haunt his pillow—reason reels—he feels as if ridden by witches, and rises from his couch more wearied than he lay down. These painful and ominous symptoms induced Mrs. Miller to request the kind friend, whose

professional attentions are so touchingly alluded to in the dedication of "The Testimony of the Rocks," to visit her husband. The visit of the genial and accomplished Professor exerted the happiest influence, and the evening was spent quietly with his family. During tea, Mr. Miller read aloud Cowper's "Castaway," and the sonnet to Mary Unwin. A little while afterwards he went up stairs to his study. At the appointed hour he took the bath his medical adviser recommended, but the medicine prescribed he did not take. Next morning his body was found lying lifeless on the floor—the feet upon the study rug—the chest pierced with the ball of a revolver, which had fallen into the bath by his side. On looking round the room, a folio sheet of paper was discovered on the table, and on the centre of the page the following lines were written:

"DEAREST LYDIA:—My brain burns. I must have *walked*, and a fearful dream rises upon me. I cannot bear the horrible thought. God and Father of our Lord Jesus Christ have mercy upon me! Dearest Lydia, dear children, farewell. My brain burns as the recollection grows. My dear wife, farewell. HUGH MILLER."

> "O life, as futile then as frail—
> O for thy voice to soothe and bless!
> What hope of answer or redress
> Behind the veil, behind the veil?"

In awe and mystery we stand by the grave of genius, thus suddenly disappearing from the scene

of its triumphs, rather disposed to meditate in silence than read aloud the lessons to be learned there. Mr. Miller's concluding words in "The Story of my Education" convey, however, the most appropriate lesson which could be given in such a volume as this. He says: "In looking back upon my youth, I see, methinks, a wild fruit tree, rich in leaf and blossom; and it is mortifying enough to mark how very few of the blossoms have set, and how diminutive and imperfectly formed the fruit is into which even the productive few have been developed. A right use of the opportunities of instruction afforded me in early youth would have made me a scholar ere my twenty-fifth year, and have saved to me at least ten of the best years of life—years which were spent in obscure and humble occupations. But while my story must serve to show the evils which result from truant carelessness in boyhood, and that what was sport to the young lad may assume the form of serious misfortune to the man, it may also serve to show that much may be done by after diligence, to retrieve an early error of this kind—that life itself is a school, and nature always a fresh study—and that the man who keeps his eyes and his mind open will always find fitting, though, it may be, hard schoolmasters, to speed him on in his life-long education."

And now, before closing this brief narrative, the reader will perhaps pardon us for interposing a correction of a mischievous misreading of that lesson

which has, in some quarters, obtained currency. Hugh Miller, it is said, fell the victim of a baffled ambition and an austere theology. His grand effort to reconcile geology with Genesis had failed, and the consciousness of that failure was the cause of the eclipse in which reason and life were extinguished. So the terrible tragedy of the 24th December, 1856, is interpreted. To such as possess any true conception of his character, the interpretation must be eminently unsatisfactory. That the precise mode in which science and revelation might be harmonized, presented no difficulties to Hugh Miller, we do not affirm. But, while quite aware the theory on which he lavished the riches of his imagination was open to question —had, indeed, been already questioned—the hopes inspired by the book of God never wavered. While exploring the abysmal depths of his favorite study, heaven's own light still shed its supernal splendors over his spirit, and in quite another than a despondent mood did he contemplate the termination of his labors upon "The Testimony of the Rocks." The doubt with which the discords of nature inspire some minds did not perplex his. Through all the mists of scientific speculation, the eternal pole-star still remained for him an authentic luminary. No scrap of writing, no word breathed even in the ear of friendship, warrants the conclusion to which grave and able editors have not scrupled to rush. We have said that the seeds of the malady which prostrated Hugh

Miller were sown in the quarry of Cromarty; perhaps it had been more correct to have said, that there they received their first marked development. If the matter was completely investigated, we suspect that a constitutional tendency to cerebral disease would be found to have existed. For some six or seven years he had been complaining that he no longer worked as he was wont to do. With double toil, but half the results of earlier, better days, could now be produced. The jaded spirit was spurred to its tasks under the pressure of motives whose force the noblest minds alone can feel. Remonstrances of affection and predictions of physicians were alike unheeded. Nothing was feared until, suddenly, the dread of a calamity no longer to be concealed precipitated the very catastrophe from which he recoiled. A clearer case of cerebral disorder does not exist. That, with the warnings received, he should have continued unawakened to the perils of his position, only shows how sometimes the best of men, absorbed in special pursuits, may neglect what is of unspeakable importance to remember. In his eagerness to read the wondrous story of an earlier world, Hugh Miller forgot he was himself fearfully and wonderfully made. Over all men the natural and organic laws assert paramount authority. A man so constitued as Hugh Miller was ever in imminent and peculiar peril from their transgression; yet the peril was put far from him, and every monition of its approach, even while confessed, was un-

heeded. He could warn brother editors of the dangers of overwork, yet by a singular fatality he himself continued to burn the midnight oil. Thus it came to pass, that he who had done for the geology what Burns had done for the songs of Scotland, perished in the meridian of his powers.

LINNÆUS, THE NATURALIST.

Like many other men of genius, Linnæus was of humble origin. He could not boast a noble parentage; he did not in any degree owe his fame to the rank and wealth of his connections. His ancestors were obscure peasants; his father was an humble Christian pastor in the village of Rashult, in the province of Smaland, in Sweden, where, on the 23d of May, 1707, the celebrated naturalist was born. The original family name was Nils; but the father of Linnæus, being the first member of a learned profession known to belong to his line, had, in accordance with a custom prevalent in Sweden, changed his family name with his profession. That he now adopted was borrowed from a large Linden-tree which grew in the vicinity of his native place. Charles was destined for the church, but he early showed that passion for flowers—that ardent thirst for the beauties of nature, which shaped his subsequent career. A patch of the garden was assigned to

him, in dressing which, Charles spent many of the sunny hours of his boyhood. Cultivating the little nook in his father's garden, the genius and tastes of the boy were developed; and we fancy him bending with fond delight over one favorite flower bursting into bloom, or with intense anxiety gazing on another about to droop and die. When seven years of age he was sent to school. His first teacher was no ornament to his profession. At this school Charles acquired but little. At his second—the grammar-school at Wexio, a town adjoining his native village—he was by no means noted for his diligence and proficiency. The fields were his study—flowers, fruits, and insects, the objects of his first love. Hence, instead of attending to the tasks prescribed to him, he spent his time in rambling over the country; and though his teacher discovered in him some traits of genius, he was regarded by his schoolfellows as a truant.

At the age of seventeen, he entered the upper college at Wexio, where his deficiencies as a classic were quickly detected, and threatened with severe and summary punishment. The same constitutional tendency still held sway; the books were neglected, the fields were frequented. Complaints were made to his father, who, convinced that his son would never prosper as a divine, resolved to apprentice him to a shoemaker.

Through the timely interference of a medical professor in the College of Wexio, who had saga-

city enough to detect the buddings of genius in the mind of Charles Linnæus, this purpose was fortunately abandoned. This man, whose name was Dr. John Rothmann, offered to take him under his charge for a year, and to supply all his necessary wants. As natural history was not likely to prove a very paying study, it was resolved also that Charles should qualify himself for the practice of medicine. Under the roof of this medical professor, he had ample means of enlarging his information; and that, too, upon the particular department of science to which he was devoted. Here he remained till he was about twenty, when he entered the university of Lund. On quitting his first college, the rector gave him a testimonial in these most appropriate terms:—"Students may be compared to the trees of a nursery. Often among the young plants are found some which, notwithstanding the care that has been bestowed, resemble wild shoots; but, if transplanted at a later period, they change their nature, and sometimes bear delicious fruit. With this hope I send this young man to the university, where another climate may prove favorable to his progress." At this new seminary, under the kind care of the professor of medicine and botany, Linnæus made great improvement, enjoying as he did numerous facilities for cultivating his favorite tastes. He afterwards entered the University of Upsal, where he had to encounter many of those privations with which the student has so often to

struggle. He was, in fact, chiefly dependent for food and clothing on the charity of his college companions.

At this time an event happened, most favorable to his views and pursuits. The bleak and barren regions of Lapland had been less explored than any of the Swedish provinces. A society was instituted at Upsal, chiefly with the view of making inquiry regarding the natural productions of that kingdom. By this association he was chosen to make this inquiry. He has left us an account of the manner in which he was equipped when he set out on his expedition. "My clothes," says he, "consisted of a light coat of West Gothland linsey-woolsey cloth, without folds, lined with red shalloon, having small cuffs and collar of shag; leather breeches; a round wig; a green leather cap; and a pair of half-boots. I carried a small leather bag, half an ell in length but somewhat less in breadth, furnished on one side with hooks and eyes, so that it could be opened and shut at pleasure. This bag contained one shirt; two pair of false sleeves; two half-shirts; an inkstand, pen-case, microscope, and spying-glass; a gauze cap, to protect me occasionally from the gnats; a comb; my journal, and a parcel of paper stitched together for drying plants, both in folio; my manuscript Ornithology, Flora Uplandica, and Characteres Generici. I wore a hanger at my side, and carried a small fowling-piece, as well as an octangular stick for the purpose of measuring. My

pocket-book contained a pass-port from the Governor of Upsal, and a recommendation from the Academy."

Thus, somewhat grotesquely accoutred, with a few of the necessaries, but none of the luxuries, for such an expedition, did Linnæus start for the cold regions of Lapland. After great privations and untiring industry, his mission proved eminently successful.

Returning to Upsal, the members of the Royal Academy of Sciences evinced their sense of the worth of his services by choosing him as one of its members; and in 1775 he commenced a course of lectures on botany, chemistry, and mineralogy. As he had not yet taken his degree, his doing this was contrary to the statutes of the university: he was accordingly dragged before its senate, and forbidden to continue his lectures. His prospects in connection with the University of Upsal being for the time blasted, Linnæus, along with some of his pupils, visited the province of Dalecarlia, with the view of making fresh discoveries in mineralogy and botany. While resident in Fahlun, the capital of the province, he became acquainted with one of its most eminent physicians, whose name was Moræus, and who, in addition to his professional distinction was reputed as one of the wealthiest individuals in the district. The physician had two daughters, with the oldest of whom Linnæus fell violently in love. The lady did not object, but, on the contrary, thought she could never give her

hand to one worthier of it. The old man, however, was more difficult to please. When the future son-in-law mustered courage to moot the question to Dr. Moræus, he was given to understand that, though there were no objections on the score of character, his present circumstances and future prospects were scarcely all that could be wished. His answer to Linnæus was to this effect: that should he obtain his diploma, and in the course of three years thereafter succeed in establishing for himself a respectable practice, he should have the hand of his favorite Sarah. The terms were by no means unreasonable; but as Swedish students at this time required to take their degree at some foreign university, this involved an expense too heavy for our botanist. Miss Moræus, however, had contrived to save a considerable sum off the pocket-money allowed her by her father, which was placed at her lover's disposal. This, in addition to his own earnings, enabled him to accomplish the desired object. After visiting his friends and the grave of his mother, who had died some months previous, preparing his academical dissertations, and arranging his papers, he set out from Fahlun in the month of April, 1735, and obtained his degree at Harderwycke. He subsequently visited Leyden, where he published several of his most valuable treatises, and became acquainted with Dr. Boerhaave, and many other celebrated persons. These treatises were the result of much toil and patient research—his industry at

this period almost surpassing belief. When he had visited England and some other countries on the Continent, he returned to Sweden; and, having gained for himself a respectable practice—we should say rather, having risen to the top of his profession—he led Sarah Elizabeth, the eldest daughter of Moræus, to the altar of wedlock, with the consent of all parties. Though his talents and professional zeal would almost have secured his success anywhere, his rapid advancement, his several appointments to be botanist to the King of Sweden and physician to the Admiralty, were in some measure due to his having completely cured Queen Eleonora of a cough, which had for some time troubled her Majesty.

He was subsequently appointed to one of the medical chairs in the University of Upsal, and was afterwards made professor of botany—a situation most congenial to his taste, and for which we need not say, he was admirably qualified. Thus was awarded to him an honor, which, we may believe, of all others he most coveted—an honor, however, no more than the just reward of the zeal he had displayed in the prosecution of his studies.

Linnæus had his own share of bodily ailments. He suffered much, especially towards the close of his career, from repeated attacks of rheumatism and gout. He may be said to have fallen, as heroes of every name rejoice to fall, at his post; for, after an attack of apoplexy, with which he was seized when delivering one of his lectures in the

Botanical Garden, he never recovered his strength. The period of second childhood came. The accomplished Linnæus ceased to recognize his own works, and, it is said, even forgot his name. He died on the 10th of January, 1778, having exceeded by about one year, the threescore and ten. The following is his own account of his personal appearance: "The head of Linnæus had a remarkable prominence behind, and was transversely depressed at the lambdoid suture. His hair was white in infancy, afterwards brown, in old age, grayish. His eyes were hazel, lively, and penetrating; their power of vision exquisite. His forehead was furrowed in old age. He had an obliterated wart on the right cheek, and another on the corresponding side of the nose. His teeth were unsound, and, at an early age, decayed from hereditary toothache."

The department of science to which Linnæus devoted himself has a charm for almost every mind. While insects are humming around us, and flowers sending their fragrance across our path, his name is not likely to be forgotten. He was a prince among naturalists, as Newton and Kepler were among astronomers.

SMEATON, THE ENGINEER.

The simple means which men of genius find to bring the wonderful faculties with which they are endowed into action, is indeed a fit subject for admiration. He who has music in himself imparts it to some rude instrument of his own construction; a burned stick has been known to be the first implement with which a gifted artist has practiced his divine art; and, as in the case of Giotti, as he watched his flocks, the faithless sand has supplied the first tablet to which his sketches have been transmitted. Handel, in his childhood, was prohibited from hearing a note of music, and it was by stolen snatches that this sublime genius found vent for the inspiration which was to charm the world. Everything was done to repress the passionate love of his art, which Michael Angelo Buonarotti evinced from his earliest days. The father of Sir Joshua Reynolds was seriously displeased with him when he discovered the drawings which he had made on his exercise-book.

The reproof which he gave the boy remained in black and white on the copy-book, long after Sir Joshua had attained the highest eminence—"Done by Joshua out of pure idleness." Watt was very sharply rebuked by his aunt, one evening at the tea-table, for his "*listless idleness*," as she observed him taking off the lid of the kettle, and putting it on again—now holding a cup, and then a silver spoon over the steam, as it issued from the spout, and reckoning the drops of water into which it was condensed. Little did the good lady think, when she chided the "*troublesome brat*," that he was taking his first hints for the application of the mighty power which was to produce such momentous changes in the world, and by which his name was to be immortalized.

The genius of John Smeaton, the great engineer appeared from his earliest infancy, and was not at all in accordance with his father's plans for his advancement. When a child in petticoats, he might be seen dividing circles and squares. He rejected all the toys in which children delight, selecting for his playthings the tools with which he fashioned models of machines. But his greatest enjoyment was to watch men at work, and ask them questions. When about six years old, he was one day missed, and, on being searched for, was at last found, to the terror of his father and mother, mounted on the roof of a barn, fixing up a windmill of his own construction. It was at about the same period that he watched with great

interest the progress of some men who were fixing a pump in the neighborhood. Having procured from them a piece of bored pipe, he determined he would have a pump of his own. He succeeded in making one which could raise water. There were heavy complaints made against "Master John" for destroying the fish in the ponds with his models of machines for raising water from one to the other. His daughter, in alluding to his infant days, speaks of his career having been one of incessant labor, *from six years old to sixty.* At school he had to give his attention, during the day, to his exercises; but at night, while others slept, he resumed his favorite pursuit. When about fourteen, he had made for himself an engine to turn rose-work; and bestowed boxes of ivory and wood, turned by himself, on his acquaintances. A friend of his, who was destined for a mechanical employment, was perfectly astonished, when he went on a visit to him, to see all that he had accomplished. He forged his iron and steel, and melted his metal himself. He had made tools of every kind for working in wood, ivory, and metals. He had made a lathe, by which he had cut a perpetual screw in brass—a thing little known at that time. He had manufactured an extensive set of tools, with which he worked in most of the mechanical trades—genius and industry more than supplying the place of the instruction of which he had never had advantage.

His father was an attorney, and intended him

for the bar. He went up to London to attend the courts, but his heart lay in those pursuits by which he became so distinguished. Longing to devote himself exclusively to them, he wrote strongly to his father on the subject, who wisely acceded to his wishes, and allowed him to turn to that profession for which nature herself seemed to have intended him—a profession embracing all that is most useful in science, and calling into action some of the noblest attributes of man—energy and judgment, forethought and patience. The wonderful ingenuity of invention which he applied to machinery of various kinds, and the improvements which he introduced in the construction and working of mills, were of incalculable benefit. His industry was equal to his ability. Ever ardent in desire for improvement, he went to Holland and the Lower Countries, for the purpose of inspecting the works of art, and traveled on foot.

An opportunity was soon to occur to bring his great abilities into notice. The Eddystone Lighthouse, which had been swept away by the memorable storm of the 26th of November, 1703, had been rebuilt, but was again destroyed by a fatal catastrophe. It happened on the 2d of December, 1755, that some fishermen went to prepare their nets at a very early hour in the morning. They were much startled on perceiving volumes of flame issuing from the Eddystone Light-house. They instantly gave the alarm, and a neighbor-

ing gentleman sent out a boat and men to relieve the sufferers, if they were still in life. They did not reach the light-house till about ten o'clock. The fire had now been raging for about eight hours. It was first discovered by the light-keeper upon watch, who went into the lantern at about two o'clock, to snuff the candles. He found the place filled with smoke, and, on opening the door of the lantern into the balcony, flames issued from the cupola. It was some time before his companions heard him call for assistance, as they had been all asleep. By the time they reached him, all the water left in the buckets at hand was expended. He urged his companions to fill them again from the sea; but the difficulty of getting it from such a height, and their confusion and terror, rendered them quite powerless. The poor light-keeper—now in his ninety-fourth year—continued to make the most wonderful exertions; but, completely exhausted by the unavailing labor, and the severe injuries which he had received from the melting lead, he was obliged to desist. The three men who were with him, terrified by his miserable situation, and the extreme agonies he was suffering were quite incapacitated. As the fire approached them more nearly, they rushed into one of the lower rooms, to delay the horrible doom which threatened them, even for a few moments. When the boatmen reached them, they found the poor sufferers crouching together in a kind of cave, or rather hole on the east side of the rock, just under

the iron ladder. They had contrived to reach this cleft, into which they crept to escape the falling timbers and red-hot bolts. It was with the greatest difficulty they were got off. They had no sooner reached the shore, than one of the poor men, no doubt crazed by the terrors which he had undergone, ran away, and was never heard of again. The poor old man languished in great torture for about ten days, when death relieved him from his sufferings. Soon after this dreadful disaster, it was resolved that the light-house should be rebuilt; but some difficulty arose as to finding a competent person to undertake such a stupendous work, when Mr. Smeaton was strongly recommended by Lord Macclesfield, president of the Royal Society, under whose notice he had been brought by the communications which he had forwarded, from time to time, for the last seven years, descriptive of improvements and inventions of his own, remarkable for great ingenuity, and showing ability of a very high order. Such an impression had he made on the society, that he was unanimously elected one of its members. Wilson, the painter, was deputed to announce to Smeaton that he had been appointed to superintend the great work. So unthought of was such an offer, that Smeaton was at a loss to understand Wilson's letter; but, concluding that a permission to send proposals for undertaking the work was couched under ambiguous terms, he wrote such an answer as showed his mistake. Another letter

arrived from Wilson. It was opened. There was no possibility of misunderstanding its meaning. "Thou art the man," was all that it said.

Every engagement was relinquished, and Mr. Smeaton entered, with all the energy of a great spirit, into the undertaking, and on those wild rocks succeeded in erecting a building as remarkable for strength and durability as it is for picturesque effect—a building which is the proudest monument with which a name can be associated. The wild appearance of the rocks, the rushing eddies, and the foaming waves, make the situation of the light-house one of the most striking that can be conceived. In three years the work was complete. Of that time, it has been calculated that there were but 431 days when it was possible to stand on the rock, and so small a portion of these was available, that the building in reality occupied but six weeks. The whole was completed without the slightest accident to any person; and so well and systematically arranged was the whole conduct of the work, that neither confusion nor delay retarded its progress for an hour. Nothing can show the dreariness of the situation where this building stands, more than an account of the life which the four men lead who are appointed to take care of it. They take the charge by two, and are relieved by the others at the end of six weeks, if winds and waves permit; but it often happens, particularly in tempestuous weather, that no boat can touch there for many months. Salt

provisions are laid up as for a ship prepared for a long voyage. When winds prevail, "the dashing of the waves creates such a briny atmosphere, that a man exposed to it could not draw his breath. During such visitations, the two lonely beings keep closely shut up in their solitary abode, living in darkness, and listening to no sound but the awful howling of the storm, and the wild rushing waves, as they lash against the building." Our respect and admiration for the consummate skill and ability to which the success of so great an undertaking was owing, and for the fine qualities of mind which were essential for the endurance of the labor and fatigue with which it was accomplished, have given a deep interest to whatever we have chanced to meet with relative to Mr. Smeaton. He was just thirty-five years of age when the light-house was finished. By his promptitude and skillful measures, London Bridge was saved from falling, when its destruction appeared inevitable. He made the river Calder navigable —a work that could only have been achieved by the greatest judgment and skill, as its floods were frightfully impetuous. He planned and superintended the execution of the great canal in Scotland, for conveying the trade of the country either to the Atlantic or German Ocean. He applied his own improvements and inventions to the constructing of mills, and a great variety of works. Moderate in his desires and temperate in his habits, he had no wish to amass great wealth, and

declined splendid offers from the Empress of Russia, made through the Princess Dashkoff. She earnestly desired his superintendence over the great national works which she had in contemplation, and would have secured it at any cost. He felt that his own country had the first claim on him, and he declined the offer. "You are a great man, sir," said the Princess, "and I honor you. I doubt whether you have your equal in abilities, but in character you stand certainly single. The English minister Sir Robert Walpole, was mistaken, and my sovereign has the misfortune to find a man who has not his price." That "the abilities of the individual were a debt due to the common stock of public happiness or accommodation," was a maxim of his, to which, on all occasions, he acted up.

For many years of Mr. Smeaton's life, he was a constant attendant on parliament; and whatever bill he supported was in almost every instance carried. It was his invariable rule, when requested to forward any measure, to make himself thoroughly acquainted with its merits before he would engage in it. His complete knowledge of the subject, and the remarkable clearness with which he expressed himself, carried great weight, and secured the attention and confidence of all who heard him. Lord Mansfield and others complimented him from the bench, for the new light which he threw on difficult subjects. His language in speaking and writing, was so strong

and perspicuous, that his meaning could never be mistaken, and all that was necessary for those who worked under him was to hear what he said, and do neither more nor less than he desired. Contact with the world, which in too many instances blunts the feelings and takes from native simplicity of character, has generally been found to have a contrary effect on those engaged in pursuits which promote the happiness and comfort of others; for they are almost invariably conspicuous for simplicity of disposition and tenderness of heart. That it was so with John Smeaton, we have ample testimony, and none more touching than that borne by his daughter, who says that he was "devoted to his family with an affection so lively, a manner at once so cheerful and serene, that it is impossible to say whether the charms of conversation, the simplicity of instructions, or the gentleness with which they were conveyed, most endeared his home—a home in which from infancy we cannot recollect to have seen a trace of dissatisfaction, or a word of asperity to any one." The simple integrity of his deportment to those of higher rank was sure to win their esteem, and his kindness and consideration made him an object of veneration to his inferiors. He was highly regarded and looked up to by the members of his own profession. The modesty which almost always accompanies real greatness of mind must have served to endear him to them. So little, indeed, was he elated by his acknowledged superi-

ority, that even in his own family it was a matter of some difficulty to lead him "to speak of himself, his pursuits, or success." Many of his evenings were passed, with his professional friends, in the Society of Civil Engineers, which he had been one of the first to form.

Early in life, Mr. Smeaton formed an intimacy with the Duke and Duchess of Queensberry which was curiously brought about. It happened one evening, when he was walking in Ranelagh with Mrs. Smeaton, that he observed an elderly lady (who was the eccentric Duchess of Queensberry) looking at him with evident interest. After some time, Mr. and Mrs. Smeaton stopped, and the lady advanced, and addressed Mr. Smeaton: "Sir," said she, "I don't know who you are, or what you are; but you resemble my poor dear Gay so strongly that we must be acquainted. You must come home and sup with us; and if the minds of the two men accord, as do their countenances, you will find two cheerful old folks, who can love you well; and I think—or you are a hypocrite—you well deserve it." An invitation so oddly given was as frankly accepted, and for the remainder of his life the warmest friendship subsisted between them, and in their society Mr. Smeaton found his most agreeable relaxation.

It was the intention of Mr. Smeaton, whenever he could find time, to publish an account of his various inventions and the works in which he

had been engaged. In the year 1785, his declining health suggested that the time was come when he might relinquish more active occupation, and that it was a fitting period for putting his intention into execution, and he felt that he could not set about anything which could be more useful. But he could not resist the solicitations of his friends, who urged him to take the superintendence of various works. He was so warmly pressed to accept the place of engineer to the harbor of Ramsgate by his friend Mr. Aubert, who was chairman, that he was unable to refuse. As he was not able to devote himself exclusively to preparation for his publications, as he had wished, some valuable acquisitions to the libraries of the scientific may have been lost; but after his death several works, in addition to those which had already appeared, were published. Among these eminently useful productions, is "Smeaton's Reports," which ranks high as a standard work, and is indeed a text-book which none of the profession would be without.

The sad misfortune which Mr. Smeaton had long anticipated, occurred as he was walking in his garden, on the 16th of September, 1792—he was struck with palsy. The dread of outliving his faculties was far more distressing to him than the thought of any bodily suffering; but he was happily spared the trial, and nothing could exceed his pious thankfulness in finding his intellect uninjured. The tender consideration which he showed

for the feelings of his family on this afflicting occasion served to endear him still more. He used every means to soften the blow to them, by setting them an example of entire resignation. Still it was his wish to be released; but he lingered on for six weeks. During that interval, as we are told by his daughter, "all his faculties and affections were as clear and animated as ever, and he exercised his ingenuity in devising means by which he could assist himself without troubling those about him. He occupied himself with calculations with as much interest as before the stroke. He desired to see all the occupations and amusements of the family go on as usual. He took his accustomed interest in the music and drawing, and joined in conversation with all his wonted cheerfulness. He sometimes fancied and lamented—what no one else could perceive—his own slowness; and then he would add—with a gentle smile, 'It could not be otherwise—the shadow must lengthen as the sun goes down.' A few evenings before he died, his family were gathered about him, and one of his children asked him about some phenomena of the moon. He gave the required explanation with all the clearness and precision for which he was so remarkable. While he yet spoke, the moon shone brightly into the chamber. He gazed on it in rapt earnestness for a few moments; then, turning to those about him, he said: 'How often have I looked up to it with inquiring wonder to that period when I shall have the vast and

privileged view of a hereafter, and all will be comprehension and pleasure!'" On the 28th of October, 1792, in his 68th year, John Smeaton was removed from the world, for which he had done so much.

RITTENHOUSE, THE MATHEMATICIAN.

David Rittenhouse was born near Germantown, Pennsylvania, April 8th, 1732. The family originally came from Guelderland, a province in Holland. They settled in the State of New York, while it was a Dutch colony, and were the first who engaged in the manufacture of paper in this country. The father of David Rittenhouse abandoned the occupation of a paper-maker, when about twenty-nine years of age, and commenced the business of a farmer, on a piece of land which he had purchased in the township of Norriton, about twenty miles from the city of Philadelphia. It seems that he very early designed his son for this useful and respectable employment. Accordingly, as soon as the boy arrived at a sufficient age to assist in conducting the affairs of the farm, he was occupied as a husbandman. This kind of occupation appears to have commenced at an early period of his life. About the fourteenth year of his age, he was employed in ploughing in

his father's fields. His brother Benjamin relates, that while David was thus engaged at the plough, he (the informant), then a young boy, was frequently sent to call him to his meals; at which times he repeatedly observed, that not only the fences at the head of many of the furrows, but even his plough and its handles, were covered over with chalked numerical figures. Astronomy was a favorite pursuit. He also applied himself industriously to the study of optics, the mechanical powers, &c., without the advantage of the least instruction. About the seventeenth year of his age, he made a wooden clock of very ingenious workmanship; and soon after, he constructed one of the same materials that compose the common four-and-twenty hour clock, and upon the same principles. He had, much earlier in life, exhibited proofs of his mechanical genius, by making, when only seven or eight years old, a complete water-mill in miniature.

With many valuable traits of character, old Mr. Rittenhouse had no claims to what is termed genius. Hence he did not properly appreciate the early specimens of talent which appeared in his son David. He was, for some time, opposed to the young man's earnest desire to renounce agricultural employments, for the purpose of devoting himself altogether to philosophical pursuits, in connection with some such mechanical profession as might best comport with useful objects of natural philosophy, and be most likely,

at the same time, to afford him the means of a comfortable subsistence. At length, however, the father yielded his own inclinations, in order to gratify what was manifestly the irresistible impulse of his son's genius. He supplied him with money to purchase, in Philadelphia, such tools as were more immediately necessary for commencing the clock-making business, which the son then adopted as his profession. About the same time, young Mr. Rittenhouse erected, on the side of a public road, and on his father's land, in the township of Norriton, a small but commodious workshop; and after having made many implements of the trade with his own hands, to supply the deficiency in his purchased stock, he set out in good earnest, as a clock and mathematical instrument maker. From the age of eighteen or nineteen to twenty-five, Mr. Rittenhouse applied himself unremittingly, both to his trade and his studies. Employed throughout the day in his attention to the former, he devoted much of his nights to the latter. Indeed, he deprived himself of the necessary hours of rest; for it was his almost invariable practice to sit up at his books until midnight, sometimes much later.

When Mr. Rittenhouse's father established his residence at Norriton, and during the minority of the son, there were no schools in the vicinity at which anything more was taught, than reading and writing in the English language, and the simplest rules of arithmetic. Young Ritten-

house's school education was, therefore, necessarily bounded by very narrow limits. He was in truth *taught* nothing beyond those very circumscribed studies, which have been named, prior to his nineteenth year. The zeal with which he pursued his studies will be seen from the following extract of a letter, written in September, 1756, being then little more than twenty-four years of age. "I have not health for a soldier" (the country was then engaged in war), "and as I have no expectation of serving my country in that way, I am spending my time in the old trifling manner, and am so taken with optics, that I do not know whether if the enemy should invade this part of the country, as Archimedes was slain while making geometrical figures on the sand, so I should die making a telescope."

An incident now occurred which served to make known more extensively, the extraordinary genius of Rittenhouse. His mother had two brothers, David and Lewis Williams (or William), both of whom died in their minority. David, the elder of these, pursued the trade of a carpenter, or joiner. Though, like his nephew and namesake, he was almost wholly an uneducated youth, he also, like him, early discovered an unusual genius and strength of mind. After the death of this young man, on opening a chest containing the implements of his trade, which was deposited at Mr. M. Rittenhouse's (in whose family it is presumed he dwelt), a few elementary books, treating

of arithmetic and geometry were found in it. With these, there were various calculations and other papers, in manuscript; all the productions of David Williams himself, and such as indicated not only an uncommon genius, but an active spirit of philosophical research. To this humble yet valuable coffer of his deceased uncle, Rittenhouse had free access, while yet a very young boy. He often spoke of this acquisition as a treasure, inasmuch as the instruments belonging to his uncle afforded him the means of gratifying and exercising his mechanical genius, while the books and manuscripts early led his mind to those congenial pursuits in mathematical and astronomical science, which were ever the favorite objects of his studies. This circumstance, probably, occurred before his twelfth year. "It was during the residence of Rittenhouse with his father at Norriton," says his eulogist, Dr. Rush, "that he made himself master of Sir Isaac Newton's Principia, which he read in the English translation of Mr. Motte. It was here, likewise, that he became acquainted with the science of fluxions; of which sublime invention, he believed himself for a while to be the author, nor did he know for some years afterwards, that a contest had been carried on between Sir Isaac Newton and Leibnitz, for the honor of that great and useful discovery." Mr. Rittenhouse's early zeal in his practical researches into astronomy, prompted him to desire the greatest possible

accuracy in the construction of time-pieces adapted to astronomical purposes; and uniting, as he did, operative skill with a thorough knowledge of the principles upon which their construction depends, he was enabled, by his own mechanical ingenuity, to gain a near approach to the perfection to which the pendulum-chronometer may be brought.

"There is nothing peculiar in the mechanism of this time-piece which requires to be mentioned, except the pendulum; especially the apparatus for counteracting the effects of temperature. For this purpose, there is fastened on the pendulum-rod (which is of iron or steel) a glass tube about thirty-six inches long; bent in the middle into two parallel branches, at the distance of about an inch from each other; the bend being placed downwards, immediately above the bob of the pendulum. The tube is open at one end, and closed at the other; the arm which is closed at the top is filled, within about two inches of the lower end or bend, with alcohol, and the rest of the tube, within about one half of an inch of the upper extremity, or open end, with mercury; a few inches of the tube, at this extremity, being about twice the width of the rest of the tube.

"Now, when the heat of the air increases, it will expand the pendulum-rod, and would thus lower the centre of oscillation, and cause the clock to go slower; but this effect is completely counteracted, by the expansion of the alcohol chiefly, and of the mercury in part; which equally

raises the centre of oscillation, and thus preserves an equable motion in all the variable temperatures of the atmosphere."

The great accuracy and exqusite workmanship displayed in everything belonging to the profession which Mr. Rittenhouse pursued, that came through his hands, soon became extensively known in that portion of the United States where he lived. This knowledge of his mechanical abilities, assisted by the reputation which he had already acquired as a mathematician and astronomer, in a short time procured him the friendship and patronage of some eminent scientific men. In mechanics he was entirely *self-taught.* He never received the least instruction from any person, in any mechanic art whatever. If he were to be considered merely as an excellent artist, in an occupation intimately connected with the science of mechanics, *untutored* as he was in any art or science, he would deservedly be deemed an extraordinary man.

In the bosom of his father's family he long continued to enjoy the tranquil scenes of rural life, amidst the society of an amiable and very intelligent family circle, and surrounded by many estimable neighbors, by whom he was both loved and respected. His chief occupation was that of the profession which he had chosen; but the occasional intervals of leisure from his business, which his assistant workmen enabled him to obtain, he devoted to philosophical and abstract studies.

In February, 1766, Mr. Rittenhouse was married to Miss Eleanor Colston, the daughter of a respectable member of the Society of Friends who lived in the neighborhood. After her death he married Miss Hannah Jacobs.

In 1767, among other things, he contrived and made a very ingenious thermometer, constructed on the principle of the expansion and contraction of metals by heat and cold, respectively. This instrument had, under glass, a face upon which was a graduated semicircle; the degrees of heat and cold corresponded with those of Fahrenheit's thermometer; and these were also correspondingly designated by an index moving on the centre of the arch. Its square, or rather parallelogramical form, its flatness and thinness, and its small size, together with its not being liable to the least sensible injury or irregularity, from any position in which it might be placed, rendered it a very convenient thermometer to be carried in the pocket.

About this time Mr. Rittenhouse made a very ingenious orrery. Though no description, in words, can give an adequate idea, yet we subjoin a part of the philosopher's own account of it. "This machine is intended to have three faces, standing perpendicular to the horizon; that n the front to be four feet square, made of sheet brass, curiously polished, silvered and painted, in proper places, and otherwise properly ornamented. From the centre arises an axis, to support a

gilded brass ball, intended to represent the sun. Round this ball move others, made of brass or ivory, to represent the planets. They are to move in elliptical orbits, having the central ball in one focus; and their motions to be sometimes swifter, and sometimes slower, as nearly according to the true law of an equable description of areas as possible, without too great a complication of wheel-work. The orbit of each planet is likewise to be properly inclined to those of the others; and their aphelia and nodes justly placed; and their velocities so accurately adjusted as not to differ sensibly from the tables of astronomy in some thousands of years.

"For the greater beauty of the instrument, the balls representing the planets are to be of considerable bigness, but so contrived that they may be taken off at pleasure, and others, much smaller, and fitter for some purposes, put in their places.

"When the machine is put in motion, by the turning of a winch, there are three indices which point out the hour of the day, the day of the month, and the year answering to that situation of the heavenly bodies which is there represented; and so continually, for a period of five thousand years, either forwards or backwards.

"The two lesser faces are four feet in height, and two feet three inches in breadth. One of them will exhibit all the appearances of Jupiter and his satellites, their eclipses, transits, and inclinations; likewise all the appearances of Saturn,

with his ring and satellites. And the other will represent all the phenomena of the moon—particularly the exact time, quantity, and duration of her eclipses—and those of the sun occasioned by her interposition; with a most curious contrivance for exhibiting the appearance of a solar eclipse at any particular place on the earth, likewise the true place of the moon in the signs, with her latitude and the place of her apogee in the nodes; the sun's declination, equation of time, &c. It must be understood that all these motions are to correspond exactly with the celestial motions; and not to differ several degrees from the truth in a few revolutions, as is common in orreries."

Some general idea, perhaps, of this instrument may be derived from the preceding description; at least it will afford sufficient evidence of the extraordinary philosophical and mechanical powers of Rittenhouse.

Among the most important service which he rendered for the world, was the observation of the *transit of Venus* over the sun's disc, which took place on the third of June, 1769. There had been but one of these transits of Venus over the sun during the course of about one hundred and thirty years preceding that of 1769; and, for upwards of seven centuries, antecendently to the commencement of that period, the same planet had passed over the sun's disc no more than thirteen times. The next transit of Venus will take place on the 8th of December, 1874, which but few,

if any persons then on the stage of life will have an opportunity of observing. From 1874, down to the 14th of June, A. D., 2984, inclusively—a period of upwards of eleven centuries—the same planet will pass over the sun's disc only eighteen times.

The great use of the observation of the transit of Venus is to determine the sun's parallax.* Only two of these phenomena had been *observed* since the creation of the world, and the first had been seen by only two persons—Jeremiah Horrox and William Crabtree, two Englishmen. As the time approached when this extraordinary phenomenon was to manifest itself, the public expectation and anxiety were greatly excited. The American Philosophical Society appointed thirteen gentlemen, to be distributed into three committees, for the purpose of making observations. Rev. Dr. Ewing had the principal direction of the observatory in the city of Philadelphia; Mr. Owen Biddle had the charge of superintending the observations at Cape Henlopen, and Mr. Rittenhouse those at Norriton, near his own residence, on an elevated piece of ground, commanding a good range of horizontal view. It was completely furnished with the necessary instruments, owing very much

* A parallax denotes a change of the apparent place of any heavenly body, caused by being seen from different points of view; or it is the difference between the true and apparent distance of any heavenly body from the zenith. The fixed stars are so remote as to have no sensible parallax; and even the sun and all the primary planets, except Mars and Venus when nearest the earth, are at so great distances from the earth, that their parallax is too small to be observed.

to the liberality of some scientific gentlemen in England.

"We are naturally led," says Dr. Rush, in his eulogium, "to take a view of our philosopher, with his associates, in their preparations to observe a phenomenon which had never been seen but twice before by any inhabitant of our earth, which would never be seen again by any person then living, and on which depended very important astronomical consequences. The night before the long-expected day was probably passed in a degree of solicitude which precluded sleep. How great must have been their joy, when they beheld the morning sun; and the 'whole horizon without a cloud;' for such is the description of the day, given by Mr. Rittenhouse in his report to Dr. Smith. In pensive silence and trembling anxiety, they waited for the predicted moment of observation: it came—and brought with it all that had been wished for and expected by those who saw it. In our philosopher, in the instant of one of the contacts of the planet with the sun, there was an emotion of delight so exquisite and powerful, as to induce fainting;—such was the extent of that pleasure, which attends the discovery or first perception of truth."

The observations of Mr. Rittenhouse were received with favor by the whole philosophical world. Mr. Ludlam, one of the vice-presidents of the Philosophical Society of London, and an eminent astronomer, thus writes: "No astronomers could

better deserve all possible encouragement; whether we consider their care and diligence in making their observations, their fidelity in relating what was done, or the clearness and accuracy of their reasoning on this curious and difficult subject. The more I read the transactions of your Society (the American Philosophical), the more I honor and esteem the members of it. *There is not another Society in the world that can boast of a member such as* Mr. RITTENHOUSE; theorist enough to encounter the problems of determining, from a few observations, the orbit of a comet; and also mechanic enough to make, with his own hands, an equal-altitude instrument, a transit-telescope, and a time-piece. I wish I was near enough to see his mechanical apparatus. I find he is engaged in making a curious orrery."

Dr. Maskelyne, Astronomer Royal at Greenwich, says: "The Pennsylvania Observations of the transit were *excellent* and *complete*, and do honor to the gentleman who made them, and those who promoted the undertaking." Dr. Wrangel, an eminent and learned Swedish clergyman, speaking of the Transactions of the American Philosophical Society, says: "Your accurate observations of the transit of Venus have given infinite satisfac- to our Swedish astronomers."

On the 9th of November following, Mr. Rittenhouse, in connection with several others, observed a transit of Mercury over the sun's disc.

In the autumn of 1770, Mr. Rittenhouse removed with his family to the city of Philadelphia.

A new phenomenon in the heavens soon after engaged his attention; this was the comet which appeared in June and July, 1770. "Herewith I send you," says Mr. Rittenhouse, writing to Dr. Smith, "the fruit of three or four days' labor, during which I have covered many sheets, and literally drained my ink-stand several times." In another letter he remarks, "I told you that some intricate calculation or other always takes up my idle hours (he seems to have considered all his hours 'idle' ones which were not taken up in some manual employment), that I cannot find time to write to my friends as often as I could wish; a new object has lately engrossed my attention. The comet which appeared a few weeks since was so very extraordinary, that I could not forbear tracing it in all its wanderings, and endeavoring to reduce that motion to order and regularity which seemed void of any. This, I think, I have accomplished, so far as to be able to compute its visible place for any given time; and I can assure you that the account from York, of its having been seen again near the place where it first appeared, is a mistake. Nor is Mr. Winthrop of Boston happier, in supposing that it yet crosses the meridian, every day, between twelve and one o'clock, that it has already passed its peripelion, and that it may, perhaps, again emerge from the southern horizon. This comet

is now to be looked for nowhere but a little to the north of, and very near to the ecliptic. It rises now a little before day-break; and will continue to rise sooner and sooner every morning."

In March, 1771, the Legislature of Pennsylvania bore the following honorable testimony to the worth of Mr. Rittenhouse:.

"The Members of Assembly having viewed the orrery constructed by Mr. David Rittenhouse, a native of this province, and being of opinion that it greatly exceeds all others hitherto constructed, in demonstrating the true situations of the celestial bodies, their magnitudes, motions, distances, periods, eclipses, and order, upon the principles of the Newtonian system:

"*Resolved*, that the sum of three hundred pounds be given to Mr. Rittenhouse, as a testimony of the high sense which this House entertain of his mathematical genius and mechanical abilities, in constructing the said orrery."

In January, 1771, Mr. Rittenhouse was elected one of the Secretaries of the American Philosophical Society. In 1789, the honorary degree of Doctor of Laws was conferred upon Mr. Rittenhouse by the college of New Jersey. In January, 1791, on the death of Dr. Franklin, Dr. Rittenhouse was, with great unanimity, elected President of the American Philosophical Society. In 1795, he was elected a member of the Royal Society of London. This high honor had been previously conferred upon only three or four Americans.

But he did not live long to enjoy his distinguished honors. Soon after his entrance upon the sixty-fifth year of his age, in June, 1796, he died.

The Rev. Dr. Ashbel Green, being pastor of the congregation in which Dr. Rittenhouse had often attended divine worship during the latter years of his life, pronounced an appropriate address at his interment. "This," says Dr. Green, "is emphatically the tomb of genius and science. Their child, their martyr is here deposited—and their friends will make his eulogy in tears. I stand not here to pronounce it; the thought that engrosses my mind is this: how much more clear and impressive must be the views which the late spiritual inhabitant of that lifeless corpse now possesses of God—of his infinite existence, of his adorable attributes, and of that eternal blaze of glory which emanates from Him—than when she was blinded by her vail of flesh! Accustomed as she was to penetrate far into the universe—far as corporal or mental vision here can reach—still what new and extensive scenes of wonder have opened on her eyes enlightened and invigorated by death! The discoveries of Rittenhouse, since he died, have already been more, and greater, than while he lived. Yes, and could he address us from the spiritual world, his language would be—

> 'All, a'l on earth is shadow, all beyond
> Is substance.—'"

In a conversation with the Rev. Dr. Sproat, Dr. Rittenhouse, a short time before his death, declared, that "he could with truth say, that ever since he had examined Christianity and thought upon the subject, he was a firm believer in it; and that he expected salvation *only* in the way of the Gospel." He had not attached himself to any particular church. The members of his family were mostly of the Society of Friends. In the last years of his life he read many books on natural and revealed religion. He was much pleased with the "Thoughts of Pascal."

He was a very modest and unassuming man, and in this strikingly resembled Sir Isaac Newton, for whose character and works he had the highest veneration. His usefulness, though great, was considerably circumscribed by his want of an early education. In consequence of this, he felt an unbecoming diffidence in his own powers, and failed to commit his discoveries and thoughts to writing, which, in a published form, would, doubtless, have eminently increased his usefulness, and the honor of the country which gave him birth.